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Special Issue of Department of Library, Lokmanya Mahavidyalaya Warora, Dist. Chandrapur
On

USE OF INFORMATION TECHNOLOGY IN LIBRARY SERVICES

Principal's Message……..

Lokmanya Mahavidyalay, Warora, Dist. Chandrapur, run by Lok Shikshan Sanstha, Waroda and affiliated to Gondwana University, Gadchiroli faced NAAC and was assessed and accredited with 'C' status in the first cycle in 2010 and 'B' in the second cycle in 2017.The college could do much in such a small period simply because of the unhindered guidance and support from Prof. Shirkant Patil, President, Principal Anil Dongre, Vice-President, the Secretaries Shri Shrikrishnaji Ghadyal Patil and Dr. Milind Despande and honorable members of Lok Shikshan Santha, Waroda. It is only because of their candid and unfailing support that the college could take the shape that it has today. However, the active and enthusiastic support of the faculty and members of administrative staff cannot be down-played. The entire success story of the college has, in fact, been essayed by the teachers, administrative staff, and the students, who leave no stone unturned for the desired output.

Today, education and research are highly interdisciplinary. Research as a careful critical inquiry of examination in seeking facts or principals or new knowledge through a systematic scientific and analytical approach in any branch of knowledge. Lokmanya Mahavidyalaya has constituted a research committee to promote, monitor and address the issue of research.

It is matter of great pleasure to note that the Department of **Library** has organized One-Day National E-Seminar on June 28, 2021, Monday, with the academic objective to deliberate upon **"Use of Information Technology in Library Services"**. Participation of intellectuals and academicians form across the country with defiantly make the endeavor of the department and those who take pains in making it succeed, fruitful.

Obviously, efforts of the Department of **Library** will open up new vistas, and prove to be a step forward in the field of research and new learning. As the chairman of organizing committee, I express satisfaction for the seminar and academic exercised an extend my best wishes to virtual conference. Research Paper are invited form scholars and academicians form the different part of the country. These papers are published in an International Peer Review, Refereed **Scholarly Research Journal for Interdisciplinary Studies with ISSN 2319-4766, Impact factor 7.380**.

I am sure the ideas expressed in the research paper will open up new areas of quality enhancement of higher education.

Dr. Subodh Kumar Singh

Principal

Editorial………

        Our age is known as the age of Information Technology. Information technology is playing an increasingly important role in every field in also library services with the help of Information Technology published literature can be stored safely and retrieved. Whenever needed, Information Technology facilitate the free flow of information, effective service.

        Therefore, it is important to discuss about the use of information technology in library services so the department of Library of Lokmanya Mahavidyalaya Warora, Chandrapur has organised one-day National seminar on 28 June 2021 on the topic of **"Use of information Technology in Library Services."**

        The paper of this topical importance and relevance through analytic base are invited from academicians from various parts of the country which is publish then in an **International Peer Reviewed and Refereed Scholarly Journal with ISSN 2319-4766 with impact factor 7.380.**

        I am grateful to the keynote speaker for this e- seminar, Dr. Shriram Rokade (Principal at Commerce College Ralegoan, District Yeotmal) for his valuable keynote speech. It is a matter of great pleasure and privilege for me to extend warm regards to Dr. Manish Vajpayee (librarian, Dr Ram Manohar Lohiya National Law University, Lucknow) who was the resource person and Inspirational speech for this e-seminar. I am also grateful to Dr. Nandkishor Motewar (librarian Gondwana University, Gadchiroli) for his valuable suggestions and chairperson for second session of e-conference paper presentation. I am also grateful to Prof. Shrikant Patil (President of the Lokmanya Mahavidyalaya, Warora) inaugurating the session. I am also thankful for the

valuable guidance of Dr. Subodh Kumar Singh (principal Lokmanya Mahavidyalay Warora) who was chairperson in inauguration session .I express my thanks to all concerned.

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Librarian,

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APPLICATION OF DATA COMMUNICATION TECHNOLOGY IN ACADEMIC LIBRARIES

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Abstract

The advancement of data and Technology has made an incredible change most aspects of human life. Today's libraries aren't exceptions. Libraries and knowledge centers are using ICT based resources & services to satisfy the various information needs of their users. The paper discusses the Impact of data communication & technology on library & its services.

***Keywords** : ICT, Academic Libraries Library, Information Technology, ICT based Library Services*

Introduction: Library Services Introduction Internet access is one among the best technological advancement being experienced within 21st century. It revolves around advancements in Information and Communication Technology (ICT) which has gone extended thanks to influence the mode of data gathering, storage, retrieval and dissemination in these times. Internet access is employed for electronic mailing service, electronic on-line chats, and group activities among others. It resulted in increased access to timely, accurate, relevant and current information in most ICT compliant libraries everywhere the planet. Academic institutions play major roles within the manpower development of any nation since they supply the high also as middle level manpower needed for the social, economical and political advancement of a nation. This is often done through their programmers' of teaching, learning research and community services. The central place of educational libraries is named into play because it's the duty of those libraries to supply the required information to the lecturers and students to realize their learning and research needs within the easiest, fastest and comprehensive way.

Information and Communication Technology

ICT is an integration of telecommunications, computers, middleware also as necessary software, storage and audio-visual system, which enable users to make, access store transmit and manipulate information. In other words, Information and Communication Technology consists of IT also as telecommunication, broadcast media, all sort of audio and video processing and transmission and network based control and monitoring functions.

Objectives

1. To supply greater and easier access information.
2. To permit access to computers and therefore the internet for everyone.
3. To help people to develop their ICT skills for accessing information.
4. To give access to give digital materials, which are set to increase in both quality and quantity?
5. To supply staff expertise to hunt out information or learning materials-staff become skilled gatekeeper not just of printed source but of the digitized ones too.

Advantages

1. Enhancement educational development.
2. Quick and convenient information exchanges.
3. Transfer of knowledge between machine and supply great platform to possess fun and be entertained.
4. Improved access to information.
5. Digitization of local content.
6. Conservation of library space.
7. Enhancement of team work across geographical distance.
8. Access to archive information worldwide.
9. As a reference tool, the web provides wealth of up-to-date resource unavailable in Bond volumes.
10. In enables you to succeed in your fellow librarians with messages and documents Independent of the constraints of mail, telegraph or maybe fax.
11. One can collect news and fact which may be stored in one's computer.
12. Resource within the internet allow libraries to supply better service to their patrons by giving on-line access to information which will be difficult to locate in the other manner.
13. Librarians can make the choice of books required in their institution and other gets them Organized without going from one bookshop or publisher to a different.

Problems in Implementing ICT

1. Inadequate fund is major obstacle to the appliance of ICT facilities in academic libraries.
2. Poor and inadequate telecommunication facilities.
3. Poor level of ICT literacy even within the tutorial community.
4. In reduced circumstance level ICT infrastructure facility within the academic institution.
5. Indigent level electric supply.
6. Lack of trained personnel on IT
7. Negative attitude of management peoples there on.

Conclusion

1. ICT infrastructure facilities are requirement for Globalization of academic libraries.
2. Academic libraries require sufficient funding to their operation.
3. Training of library staff in various ICT Skills.
4. Positive attitude of management.
   If above point fulfill they will reach near the goal.

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ARTIFICIAL INTELLIGENCE IN LIBRARIES

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Abstract

The use of computerized reasoning includes the regions like man-made brainpower, master framework, counterfeit neural organization, fluffy rationale, picture handling, normal language preparing, discourse acknowledgment, mechanical technology and so forth in spite of the fact that these regions are not discrete, on occasion at least two applications are adding to enhance the library administrations. In this article, the writers have investigated the different potential utilizations of computerized reasoning as referenced previously. Furthermore, creators clarify the potential regions where not many of these applications can be executed which improves the nature of administrations and consequently make the possible effect of AI on library administrations.

Keywords- Artificial Intelligence, Modern Libraries, Machine learning

Introduction

An endeavor to supplant human force with the machines was the making of the principal mechanical upheaval. The effect of man-made consciousness and progressed PC innovation on the idea of future libraries will be tremendous, and the quality contrasts will be not quite the same as what our present work anticipates. Most library-situated man-made consciousness applications created until the present time or right now a work in progress are essential business helps of the runtime in light of the fact that they constructed today. Potential applications incorporate frameworks that help play out the various assignments for the library like individuals, financial plan, assortment advancement, booking and so forth These applications incorporate frameworks for upgrading client administrations, like prepared references and data stockpiling and recovery.

Artificial Intelligence

Computerized reasoning spotlights on non-algorithmic techniques for taking care of issues and images. Computer based intelligence relies upon the expertise of planning the images. New applications have set out extraordinary open doors for enlightening analysts, like mixed media frameworks, advanced libraries, GISs and internet business. As the application turns out to be progressively amazing, differentiated, squeezing, a few known issues in discovering data turned out to be much more significant in this mechanical time The fundamental strategy in the IR remembers the recognizable proof of key attributes for the item. For instance, regular language preparing and programmed ordering used to recognize significant words. As a rule, picture distinguishing proof uses surface, shading or shape - based ordering and division strategies. They used to recognize significant portrayals in their streams for applications like sound, video, discourse acknowledgment and scene division. To perform semantic examination on interactive media articles or text, a few sorts of strategies are utilized. AI, diagram based grouping and arrangement, measurable based multivariate examination, fake neural organizations, and development based writing computer programs are mainstream methods. These advances are acceptable option for summing up, breaking down and handling countless mixed media

messages, which is extraordinary and quickly evolving. The aftereffects of the semantic investigation measure communicated as semantic organizations, choices, rules, or predicate rationale. Initiation based, Propagation-based thinking strategies regularly used to arrange different designs of huge scope information. All web indexes for text, pictures and recordings increment client assumptions for introducing and controlling data. Late advances in language and stage improvement, for instance VRML, Java, OpenGL, and the arrangement of moderate top notch realistic workstations have likewise made representation of data point of view in the field of exploration.

Albeit man-made brainpower is a youthful order, it makes society past creative mind.

Man-made intelligence sub-regions, specifically master frameworks, normal language preparing, design acknowledgment and mechanical technology, mean to mimic human knowledge with PCs. Some new processing methods and regions for computerized reasoning improvement talked about beneath:

A**. Master System:** The Expert System is a mechanized information framework that fills in as a passage or interface for giving admittance to the data set and acquiring applicable data. It goes from basic administrative with level information to extremely huge scope, coordinated improvement that requires numerous years to create. A specialist framework is a PC program that offers master guidance, choices or answers for a specific circumstance. Information base, deduction motor and UI are the different parts of the master frameworks.

B. **Characteristic Language Processing:** One of the longstanding objectives of CS is to instruct PCs to comprehend the language we are discussing today. A definitive age of coding is Natural Language. Computerized reasoning researchers have had the option to assemble a characteristic language interface utilizing a restricted jargon and sentence structure. The PC can comprehend the key language ideas inside an inquiry and arrangement through the normal language measure. It plans to plan and make a PC that examines the language that an individual use, comprehends, and creates. Discourse blend, machine interpretation, etymological methodologies, data recuperation, data extraction and discourse acknowledgment are the different components of regular language handling.

C. **Example Recognition:** The new upgrade and the presorted boost agree intently by this interaction. This interaction happens persistently through the existences of every living being. Example acknowledgment is being concentrated in numerous spaces, including brain research, ethology, intellectual science, and informatics. Example acknowledgment dependent on earlier information or on information from the examples. Ordered examples ordinarily comprise of gatherings of measurements or perceptions that characterize focuses in a multi-dimensional space. Segments for design acknowledgment are information assortment, pre-preparing, choice of characters, determination of models and preparing, and assessment.

D. **Mechanical technology:** The field mechanical technology is often portraying as an AI subfield, which manages engine and insightful assignments. Robot is a mechanical gadget, which completes robotization undertakings utilizing man-made consciousness methods, either straightforwardly human control or a foreordained program.

E. **AI:** Arthur Samuel, an American pioneer in PC gaming and computerized reasoning, imagined the term 'AI' in 1959 and characterized it as "it enables PC to learn without unequivocal programming". Contingent upon the idea of the "sign" or "reactions" to the learning framework, AI applications separated into the three essential classifications, i.e., (a) Supervised learning (b) Unsupervised learning (c) Reinforcement learning (d) Semi-regulated learning.

F. **HAMLET:** The framework is HAMLET (How about Machine Learning Enhanced Theses) right now an engineer at the Berkman Klein Center for Internet and Society at Harvard. HAMLET utilizes the doc2vec calculation. This is a calculation for assessing the similitude in significance between various archives, in light of a broadly utilized calculation word2vec, which appraises the comparability between words. It investigates the outcomes online at the URL in the dark box. HAMLET has three model interfaces: a suggestion motor, a transferred record prophet, and a writing audit amigo.

Application of AI in Library Services

A.   Expert System in Library Services

Library activities related to reading materials, users and staff. Application of expert systems where dialogue between staff and users, users and databases is promising. The expert system will help the librarian to understand the need for improvement in productivity. A well-programmed expert system will also improve quality.

1)**Reference service** is the foremost activity of any library and the expert system will serve as a substitute for reference librarians. REFSEARCH, POINTER, Online Reference Assistance (ORA), AMSWERMAN, PLEXUS all of these systems are advisory systems for locating reference resources and factual data.

2) **Cataloging** is one of the oldest library techniques. Recent attempts to automate cataloging through expert systems have focused on descriptive cataloging because it is rule-based (AACR2). There are two ways to apply artificial intelligence techniques in cataloging: (a) Human-machine interfaces, where intellectual work is divides between the intermediary and the support system. (b) An expert system with full cataloging capabilities associated with electronic publishing systems. Since the cataloging text is generating online, it can be passed through a knowledge-based system, and the intermediary does the cataloging process without any intellectual input.

3) **Classification** is the basic activity of a knowledge organization. Therefore, it is prominent in all systems that organize knowledge in libraries and information centers. The application of expert systems in the field of library classification includes Coal SORT, EP-X, and BIOSIS.

4) **Indexing** of periodicals is another area where expert systems are developed. Indexing a periodical article involves identification of concepts, to translate the into verbal descriptions, & selecting and assigning controlled vocabulary terms that are conceptually equivalent to verbal descriptions. The reason for automating the intellectual aspects of indexing is to improve indexing consistency and quality. Based on the information provided by the indexer, the systems can arrive at appropriate preferred terms automatically to assign relevant subdivisions. The system can make inferences & based on the inference, it can take appropriate action. The 'Med

Index' is the best example of the library indexing system. As there is a lack of exposure to these expert system oriented services in many libraries, very few library users have interacted with knowledge-based systems. In addition, most of these expert systems oriented services are evolving over the period and undergoing many improvements to suit the needs of the library patron.

5) **Acquisition:** The users of the library have a significant role to play in building library collection and online resources in particular. Several systems have been incorporating for the acquisition of these resources. Monograph Selection Advisor, a pioneering effort in applying this emerging technology is another area of building library collection. Specifically, the task modeled is the item-by-item decision that a subject bibliographer makes in selecting monographic. The prerequisite is that the knowledge base has to be broad enough and the interfacing aspect must be easy enough for the library to get the desired information from the machine

B.   **Natural Language Processing in Library Services**

When we think about the term NLP, the primary thing that strikes a chord is the capacity to talk or compose a total sentence and have a machine cycle of mentioning and talking. NLP can have applied to numerous orders, including libraries. When apply to the field of library and data science, all the more explicitly, to look through data sets, for example, the Online Public Access Catalog (OPAC), ordering is the premise of archive recovery. The motivation behind the record is to improve the exactness of recovering pieces of the important reports; and to diminish the extent of reviews and related documents recovered.

C.   **Machine learning in Library Services**

One explicit test that is ready is the improvement of library metadata age. Libraries, through different merchants as a component of the buying and acquisitions measure, procure a great many bits of metadata for print and advanced assets made accessible to their library clients. In situations where a digital book stage does exclude metadata, libraries they produce their own. For the expanding of conceived computerized assets, AI gives a variety of potential apparatuses to assist libraries with creating metadata for advanced assets, permitting listing to speed up metadata age as well as incomprehensibly improve the profundity and expansiveness of subject terms.

D.   **Robotics in the Library Services**

 The robot is "A reprogrammable, multipurpose controller, naturally controlled, programmable in at least three tomahawks, which can be fixed on the area or compact for use in computerization applications". Libraries giving an expanded assortment of administrations and assets for computerized libraries, they are as yet procuring an extraordinary number of printed records. This joined strain to give electronic and printed assets and administrations has caused genuine space imperatives for some libraries, particularly scholarly libraries and exploration. The goal of CAPM (thorough way to deal with printed material) is to fabricate a customized mechanical checking framework dependent on an arrangement, which permits the perusing of engravings progressively through the web interface. The client incorporates a CAPM framework that,

thusly, begins a robot that recuperates the thing mentioned. This thing is conveyed to another mechanical framework, which opens the thing and pivots pages consequently.

E.   Intelligent Interfaces to Online Databases Online admittance to information bases is as yet hard for some expected clients. The client may have to know distinctive correspondence conventions, ace language control, search methods, information base document structures, and expressed phrasing. The point of the insightful interface is to work with the admittance to the development of a portion of the vital information in the front-end programming used to test the online inquiry framework. This objective doesn't concur determined to make a smart hunt framework. The interface of admittance to existing on the web frameworks, with every one of their impediments and drawbacks, so it tends to be similarly fruitful as an on-line search framework. The interface doesn't tackle the issue of rebuilding the information base, but instead permits the hunt framework itself to make the methodology shrewder. Looking through online information bases can be useful these select the fitting hosts and information bases;

• permit the searcher to express a data need in their own wording;

• decide the level and admittance to the data mentioned;

• adjust the degree of the data to be recovered;

• define the jargon question utilized in the chose data sets;

• express an inquiry question in the configuration required; and

• Present indexed lists in a supportive manner, for example positioning in the request for likelihood of pertinence.

Challenges in Implementation of Artificial Intelligence: Recent analysis shows that the library and knowledge professionals area unit keen to adopt the advanced technologies within the library and knowledge centers they serve. Intelligent librarians can predict that AI makes a big a part of the library system. it's evident from the recently conducted surveys, several researchers that an awfully less range of libraries run AI-related operations in their libraries. Despite sufficient awareness among library professionals concerning AI, several libraries face internal problems for adopting AI technology. Overcoming this resistance would possibly cause an improved understanding of the challenges in implementing AI in libraries. The lack of awareness and sufficient data on the advantages and cost-saving opportunities of Artificial Intelligence will bring difficulties for the library in implementing AI technology into the library system. Budget isn't the sole constraint that is stopping the libraries from adopting AI, at the side of different trendy techniques. Few library employees typically show resistance to address new technologies. several libraries area unit explaining the motivation for taking new workflows and technologies, however still learning interest among library employees not up to the mark. ability gaps in digital fluency area unit proving to be a hindrance to adopting AI technologies and different trendy technologies.

Some of the numerous problems within the implementation of AI technologies in libraries are-language state, system needs, privacy issues, a threat to intellectual freedom they need been shortly represented as follows:

a) **Privacy:** AI designed to be told specific knowledge sets with the assistance of machine learning technology. Personal knowledge might become a goods and incorporates a high risk of obtaining used for illicit functions. Hence, Librarians ought to secure privacy by providing new ways in which of interacting with AI.

b) **Intellectual freedom:** AI would possibly cause intelligent freedom threats while seeking associate degreed receiving data from an AI system. this can be as a result of the non-public data are going to be explored through machine learning. Users' queries and search activities can be saved by the AI system, which may be later accustomed get persons' personal knowledge.

c) **Quality of Intelligence:** the amount of quality of associate degree AI system will be determined by 2 main factors, i.e., logical algorithms and corpus capability. Consistent algorithms area unit technically connected, whereas corpus capability has relevancy to knowledge. With the speedy technological advancements, a lot of and a lot of algorithms area unit being developed and optimized. To cope up with the technological trend, a sufficient range of crawlers would be necessary to get the network and improve the standard of intelligence.

d) **Cost:** Budget is one in all the first barriers to adopting AI within the information sector. Most of the bogus Intelligence systems area unit business. Investing in AI technologies has not nonetheless got abundant importance within the library and knowledge centers thus it needs a lot of clarity among library professionals.

e) **Linguistic Styles:** Chatbots have restricted memory, and its process power doesn't support intensive vocabulary. during this regard, programmers ought to predict and develop suitable responses to the Chatbots. This task is difficult for a rustic like Asian country because the language and accent vary in each state. Prescribed communication designs might not be ideal for all kinds of interactions.

f) **Bias:** The consultants have continuously questioned the transparency and answerability of the AI system. The algorithms of AI systems operate supported the developer's preference.

Conclusion : There are a number of possible applications of Artificial Intelligence implemented and they have been creating a positive impact on libraries. This has proved that applications of AI saves time and money in almost all sectors in the society. The application of AI in the academic libraries have been increasing in very high speed. As authors of this paper discussed, implementation of AI in libraries has triggered the discovery of many new ideas. The development of expert system libraries greatly benefited, sometimes it appears like "Librarianship is at stake" and now it is challenging to ensure the values of librarianship. Artificial intelligence (AI) systematically tops popular lists of the most imperative emerging technologies. With a mixed feeling of fear and eagerness, readers seem to agree that the AI shapes the future libraries.

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BAR CODE TECHNOLOGY FOR LIBRARIES

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Abstract

In the present days libraries have become multimedia due to adoption of technological advances and changing nature of their services. If we look into the past, we find that our libraries have tremendously transformed themselves to merge into present technological environment. It is fact that almost all types of libraries are involved today in a period of revolutionary change. It seems that computer age, which has already dawned, would show more transforming effect on library than due to other two important revolutions i.e. invention of movable type by Gutenberg and subsequent development of duplicating techniques or reprography. In fact, it becomes necessary and inevitable need to provide efficient and fast information service through automation, Our concern here is mainly with development and advance of technology, which is bar code technology and how does the bar code system works, its purpose and Importance.

Key words: Bar code, Computer, Information Technology, Library.

Introduction: Due to explosion of knowledge, libraries and scientist felt a difficulty of acquiring and storing the collection of reading materials and with a view to solve this problem and save the time of users bar code technology used in the library is most important. Bar coding is the most important step in computerization of library. In the computerised circulation system, the library staff has to input data manually, which is prone to errors. To overcome such errors in manual operations and to achieve maximum affiance and quality, the system can be further improved by entering data through barcode. By implementing this technology the circulation management become simpler and quicker. The manpower utilised in manual work can be used to offer personalised services to users. Infact after implementing bar code in libraries, borrowing and returning books will be matter of second. Since each member will have a uniquely bar coded library card, the risk of mistaken identity will be avoided. Human error will be virtually eliminated. More accurate follow-up on overdue books shall be possible. Barrowing and Returning operations are faster. Reconciliation of stocks is possible. Faster stock taking operations can be done.

Bar code: The barcode was invented by Norman Joseph Woodland and Bernard Silver and patented in the US in 1951. The invention was based on Morse code that was extended to thin and thick bars. In 1973, the barcode design developed by George Laurer. Laurers bardoce, with vertical bars, printed better than the circular barcode developed by Woodland and Silver. Their use has spread to many other tasks that are generically referred to as automatic identification and data capture. Barcodes became commercially successful when they were used to automate supermarket. Today, stripes as shown below on packages of products sold at super markets, convenience and on the printed books in libraries. A bar code is simply a way of representing data through series of machine readable bars and spaces. When this is scanned, the element gives a reflective or non-reflective response that the bar code readers convert into a readable

character message. In reality, the characters that make up a bar code are not much different than the characters of the font we are reading right now. In both cases character is signified as a dark shape against a light background and put together in a specific order, they form an intelligible message. The difference is that the bars and space that compose a bar code simply provide the easiest and most accurate format of recognition by scanning device.

Working of Bar code system: Bar code acts in much the same way as keyboard.   As depressing a key sends signal containing a character code to computer, reading a bar code result in same king of signal being sent to the procedure. The bar code acts as a unique control number, which is associated with a record giving appropriate details of individual items. While scanning, the light is reflected from the bar code and the pickup optical device receives less light from the dark bars then from the space between them. The signals received through this process are then converted in to form, which can be recognized by the computer. Bar code labels can be printed in house using the software and printers or may be purchased from the commercial suppliers.

Purpose and Importance: To effective administer a library system and its inventory, there is a requirement for a tool that can provide quick and easy access to information. The key to unlock data is a quality bar code label.it offers the most efficient and accurate method of capturing the accessing information in a cost effective manner. Although bar code labels are the most inexpensive element of the automation system, it is important to keep in mind that they are also the most significant factor in answering the successful operation of the system. It is essential to make certain that our bar code label provide a high percentage first scan read rate when they are protected from abrasion by an over laminate to provide for years of use. Other bar code applications in library include sock verification, registering the periodicals, transfers of stock reference to lending and vice versa, as well as weeding out the collection and updating the records and providing location code such as department library.

Symbology: Symbology is a specific language (made from bars and spaces), which sends a number to software through a scanner. Our circulation software determines all bar code symbologies. Each software programme reads specific language. A bar code is read which a beam of light from a scanner is passed over the bars / space. There are many types of bar code symboligies in use, the 3 of 5. Many software systems can recognize multiple symbologies but some older systems require a specific type.

Start and Stop Characters: Special characters found at the beginning and end of the code symbol that indicate to the bar reader when the encoded message starts and stops.

Check Digit: Check digit is the result of mathematical algorithm applied against the value of each character is symbol message. Verified by automation software to ensure the integrity of the data being scanned and virtually eliminates input errors. Usually the last character bar code in the shop character and may be displayed in the human readable message, usually as the last number.

Quiet Zone: Is the white area immediately preceding and following the bar code symbol and it must be of a specific size in order to allow the effective scanning of the bar code.

Conclusion: Automation is a concept to a achieve excellence through machine. Bar coding is just one of the techniques made use in the inventory management across stores. Libraries have adopted this techniques for circulation and stock management, to the library users. It also helps to satisfy the need for economy and parsimony in the present time of shrinking budgets and reducing manpower.

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CHANGING ROLE OF LIBRARY AND INFORMATION PROFESSIONALS IN DIGITAL ERA

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Abstract

In the digital world, digital information, electronic technology, WWW's growing popularity and the tremendous growth of CD-ROM products. Digital libraries offer a huge range of multimedia information, everything from movies, speeches, images and photos to sounds, text and beyond. The amounts of online, CD-ROMs and other digital sources of information are exploding and infrastructure for accessing material improves almost daily. In building the next generation of digital libraries, multimedia and artificial intelligence will play several important roles. The multimedia nature of digital libraries requires digital librarians for the locating of relevant information efficiently and cost effectively and disseminating it in a wide variety of a formats of digital information system. The advent of digital libraries presents a plethora of challenges and opportunities to the digital librarian. Digital librarians add value and can make digital libraries truly useful and user friendly.
Key words: Digital Library, Electronic technology, Information, Library Professionals.

Introduction

With the development and application of information and communication technologies (ICTs), the library environment has shifted from the traditional library to hybrid library, and then digital library and virtual library. With such changes, the structure and nature of library and side by side the LIS profession has also changed in a dynamic way. Now in this present situation the LIS professionals are playing all-round multimodal roles to satisfy the different approaches of the end users. Traditional librarianship is all about sitting down in the midst of books and expecting people to come and read. If they do not come, then, the librarian closes at the end of the day. This is the daily ritual. But a modern-day librarian in the Digital Age must be sound in the storage, retrieval and dissemination of information with the aid of information communication technology (ICT). This may be through computer, internet, E-mail, CD-ROM, slides, teaching aids, telephones, including the global system of mobile telecommunications (GSM), fax machines, etc. Archival materials could be stored on CD-ROMs for easy retrieval and dissemination to prospective users. Librarians can now conveniently store archival materials on CD-ROMs. CD-ROMs are highly compatible with most computers; this means vital information can be preserved and retrieved easily when needed. The term "digital covers the creation and distribution of all types of information over network. Digital library that delivers scientific, technical, and business information to users with a personal computer, Internet access, and one of the common worldwide web browsers.

Library Professionals in Digital Age: The rapid changes brought about digital libraries have opened up additional facilities; provide multiple choices of media, show improved performance and assure greater economy in time, money and effort. At the same time, there is increased complexity in selecting the right useful, authoritative information from vast available

information sources, so in information & communication technological era library professional have to change them as information professional. Now information specialists have to work as e-information resources. Librarians obtain professional knowledge through various educational courses, professional and working experiences. The knowledge helps them to acquire certain professional skills that are not merely confined to mechanical skills but also include the expertise and intellectual activity. They have also adapted the new electronic information environment and learn about new technologies for aware of the strengths& weaknesses of them and for can work properly in the present electronic/digital era. Various professional groups are expected to map out the strategies that lead to produce, manage, maintain and provide the information. The information professional must be able to actively participle in the educational process rather than gathering information and disseminate it to the public through workshop, orientations, training. Now a day's number of resources is available for students. Their use of technology increases day by day. They need latest information regarding their domain. Due to the high cost of books, time-space limitation and availability of resources, user gives priority to the library. Every institute is having lot of print collection, but because of dissemination of collection, users are unable to retrieve information. For better utilization of resources, librarian needs to develop various techniques for easily searching of resources. In academic, Librarians are mediator of students and teachers. They help students to find their information, he explains how to search information, he helps its user for finding books from stacks, they also guide how to use library OPAC for time saving and easily search and which help the users to fulfil their requirement. To meet the changing needs of library users in ICT environment librarians are expected to continuously enhance their competencies and skill in the age of technological era in order to improve productivity and efficiency. If they don't change with the time, they always lag behind. Librarian required skills for doing a job effectively and to achieve set objective. So, every library professional should have the following skills to perform their duties effectively.

Need for Digital Library Professionals: Necessity is the mother of invention. The emerging global digital libraries or world-wide digital information centres generate the need for creating a new job-title ``digital librarian'' to manage their digital knowledge resources. The huge digital libraries are emerging as knowledge warehouses. Digital librarians are required:

➢ To manage the digital libraries.
➢ To organize digital knowledge and information.
➢ To disseminate digital information from the computer-held digital information.
➢ To provide digital reference services and electronic information services.
➢ To provide knowledge mining from the emerging knowledge warehouses.
➢ To handle the tasks of massive digitization, digital storage process, and digital preservation.
➢ To provide universal access and retrieval of digital knowledge.
➢ To catalogue and classify digital documents and digital knowledge.

Skills Required for Library Professionals:

(1) Communication Skills : Using good communication techniques, librarians can bridge the gap, stay in touch, build trust, monitor performance and attain the intensive visitor/user. Good communication helps in communicating the message effectively and increases the co-ordinations within the institute. Hence the Library professionals should have this competency to discuss and engage required stakeholders like students, staff and management.

(2) User- Orientation Skills: Librarian should provide enough support to users for effective use of library resources. They should provide information of new arrivals to the group effectively. They should engage staff in selecting the new books of respective subjects.

(3) Collection Development Skills: Wealthy collection of library is foundation of library service. Librarian need to find out new ways of getting information's through latest books and E-services available in the market from various institutes.

(4) Time Management Skills: The fourth law of library science by Dr. S. R. Ranganathan indicates the importance of time management for the library professionals as well as for the users. The library professionals should make proper planning of all services provided by the library so that time of both can be saved and used effectively.

5) Leadership Skills: Leadership is style of working and motivating the users. Leadership considered from personal qualities, behaviour styles and decision-making ability of leaders. It is about getting people to move in right direction and motivating them to achieve desired results. It is most important skill required for librarian to achieve the objectives of library usages. As a leader, librarian should have good relationship with management, staff and user.

6) Interpersonal Skills A librarian should have interpersonal or interactive skill to build and maintain the relationship with required stakeholders in order to achieve the objectives of library. He must encourage and engage their staff to give their best to achieve the target. As a librarian he/she manages and organizes different types of activities like for user he arranges library orientation course for user to motivate them.

(7) ICT Skills Information and communication technology is developing day by day in all type libraries. A librarian should have knowledge to handle the technology which is being used in libraries to perform various operation of library. New information sources are available, as a librarian we accept technological changes and learn new things. Librarian should have a knowledge how technology is implemented in library service.

Functions of Library Professionals in the Digital Era

To provide intellectual access to information.: Providing intellectual access to information is a role librarian have filled for a long time. Traditionally librarians have done this via print-based resources. During the second half of the twentieth century the range of available resources expanded to include microform, video and audio formats. The final decades of the twentieth century witnessed a further explosion in formats, and libraries can now offer information in the form of print, audio, video, microforms, numeric, computer programs, or multimedia composites of each. For librarians, the most important issue is to provide the information in whatever form it is packaged**.**

Providing electronic access to journal literature was one of the first ways libraries began to use the newly-evolving technologies. The development of electronic reserve (e-reserve) collections, demonstrates another way in which librarians are adapting new technologies to deliver services more effectively. Electronic reserves provide the ability to digitize a printed document, video, audio, or data, so that many students can access it simultaneously without the limits of attending a library building within opening hours.

To evaluate available sources of information.: Young (1998) observed, 'the computer will not replace the book any more than the book has replaced speech'. He also contends that printed resources and digital media are not alternatives. This is an important distinction and forms a significant issue for librarians. Electronic sources of information are excellent for data which must be timely and is subject to frequent change, such as stock market data, weather reports, and population statistics. It is also valuable for the ease in which information such as full-text articles from newspapers and journals can be delivered. Printed resources may continue for a long time to be the most efficient form of delivering ideas and theories as opposed to data in subject areas such as history, philosophy, and literature.

In evaluating electronic sources of information there is also a distinction to be made between those sources of data which have been digitized for the speed and ease of transportation, and data which is of limited usefulness, volatile and fluid in nature.

To organize and structure information.: Traditionally, librarians have organized0 and managed information resources through classification schemes. The retrieval of information relevant to a user's enquiry has been facilitated by standardized0 methods of describing resources, such as MARC.

Metadata specifies the format for describing a digital resource in much the same way the MARC format specifies the descriptive elements of an item held in a library collection. Seven workshops have been held around the world to first define, and later refine, the core elements to be used in describing networked resources. The first, held in Dublin, Ohio in the United States in 1995, give the Dublin Core its name. The aim of this scheme is that the creators of internet resources can insert the descriptive data about their resources at the time of creation, and this will lead to an environment where the majority of resources available on the Internet are searchable using a standard scheme.

To ensure the preservation of information.: The issue of preservation in the virtual library environment is a complex one. Librarians and archivists have long-established standards and guidelines for the preservation and storage of print materials for long-term survival. The preservation of electronic and digital information resources creates new dilemmas for librarians and archivists.

As Klemperer and Chapman (1997) observe, digital media have not been around long enough for fail-safe archiving and preservation procedures to be developed. One of the significant issues affecting preservation of digital information resources is the very technology which creates them. These technologies have an increasingly rapid obsolescence and the preservation of digital information is dependent on ensuring that the software and the mediating technology is also

preserved. Many research initiatives have been directed to the preserving of digital information resources.

To Information Retrieval.: Information retrieval is the most obvious skill a librarian demonstrates to the public. The increasing sophistication of search engine design is creating an environment where anyone can, at varying levels of efficiency retrieve information from the internet. It has been suggested that the skills of the reference librarian are becoming superfluous (Odlyzko, 1996). However, without professional guidance many searchers, particularly novice internet-users, do not exploit the full potential of search engines and consequently do not retrieve all the relevant information available to them. Pollock and Hockley (1997) examined the use of the internet by internet-naïve but PC-literate users and concluded that to execute successful searches, internet users need at least a basic understanding of internet searching concepts, but also very high levels of support - from a librarian or other experienced internet searcher.

6. Role of Library Professionals in Digital World:

Guardian of information superhighway (ISH): The information superhighway is a vision or a metaphor. It envisions a fusion of the two-way wired and wireless capabilities of telephones and networked computers with a cable TV's capacity to transmit hundreds of programs. Services would be delivered by telecommunications networks, cable TV networks, and the Internet and mobile communications (William et al., 1995). Infrastructure that provides band width-on demand and information-on-demand services are called information superhighway. There will be two types of information services such as public (free) services and commercial services. The use of existing telephone, fax, analogue TV broadcast services will be supported in the initial information superhighway. In addition, new services such as videophone, multimedia electronic messaging.

Guardian of the global digital library/ the universal digital library: The digital library is really a transitory phase towards the universal digital library, a vast distributed information and active repository accessible from anywhere with increasing improved indexing, extraction and summarization techniques. It will be a library without walls or national boundaries.

Digital librarian acts as Intermediary in human-machine: The digital librarian acts as an intermediary in the task of massive digitization of information, its storage, dissemination, managing the archive, and making available digitized networked information to the end users. Digital librarians and computers depend on each other for processing and dissemination of digital information and both are interrelated.

Navigation, browsing and filtering: The navigation of the future would tend to integrate with the human-assisted information retrieval from the networked universe and would support rapid information navigation and precision retrieval. The digital librarian is an expert in navigation, browsing and filtering, digital reference services and electronic information services from the digital information sources.

Multimedia search and indexing: A multimedia digital library requires not just standard indexing and retrieval, but also sub-document indexing and summarization techniques ± more than that of paper documents.

Knowledge and data mining: The digital librarian will require a limited knowledge of data mining and discovery of knowledge from digital libraries to extract unmet information needs of users. For this purpose, unsupervised learning techniques such as clustering, and composite term discovery techniques etc., are useful.

Search and retrieval co-ordination: It requires comprehensive knowledge of the retrieval engines and indexing structure so that the digital librarian can achieve the goal of creating information queries with respect to the search system.

Intermediary roles in the management of DIS: A fundamental role of a DL in digital libraries is to act as an intermediary who brings together users and information. Digital library access tools are the right set of tools used in novel ways to tackle a plethora of challenges and opportunities for information access technology and faster access.

Digital information access: There is a variety of information retrieval techniques, including metadata searching, full-text document searching. Accessing and retrieval of digital information through digital library access tools. The method used to store, find and retrieve digital information from DIS is called the access method. The technology used to access information digitally provides ``navigation paths or digital library access tools'' through the digital information system (DIS). Mobile information accesses a vision of tomorrow. The ability to access information on demand at any location confers competitive advantage on individuals in an increasingly mobile world. The data from shared file systems, relational databases, object-oriented databases, and other repositories must be accessible to programs running on mobile computers.

Conclusions: Development of information technology is playing a crucial role in restructuring of the libraries. Shift from human dependent operations to machine dependency, mechanization (data processing) to knowledge processing, stand-alone system to network computing, local LAN to wireless access protocol systems. Document centered information to user (Access) centered information; print media to electronic (Access) media, data capture methods, human to machine oriented. Library automating (in-house) to web-enabled services (WAN Access), Online information retrieval to CD-ROM Databases to Internet. These prolonged shift in application of innovative IT to library and information profession can be attributed to the changes emanated in the last two decades. The role of librarian has changed in the digital library era. It is, therefore pertinent on the part of the librarian to acquire new skills required for developing and managing the digital libraries. The library and information professionals are required to acquire such knowledge and skills as the library is one of the highly IT influenced service profession. The empowerment of library and information professionals with IT skills is aimed at providing services that are expected of from the clientele in the new environment.

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CLOUD COMPUTING APPLICATIONS IN LIBRARIES

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Abstract

The cloud computing is new way of computing. It enables users to work with new avenues-different working environment. It has impacted the working of libraries worldwide. Users can access the data as per their needs. On demand computing services is important feature of cloud computing. Libraries can use services, data processing, preservation tools through cloud for patrons. In Information technology industry cloud technology is the third revolution after Personal Computer and Internet. The attempt is made to write about SaaS applications in libraries.

Keywords – Cloud Computing, SaaS in library

Introduction

Cloud computing provides the user various applications without installation of that application in their own computer to access their data. The library can implement cloud computing for storing digitized data consisting of huge images, text, audios, videos etc. The advantage of duplication of data many times as per requirement is special feature which is needed by library.

Definitions

(Mell and Grance 2011), National Institute of Standards and Technology published following definition-

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models. Gartner defines Cloud Computing as follows-

Cloud computing is a style of computing in which scalable and elastic IT-enabled capabilities are delivered as a service using internet technologies.

History of Cloud Computing

The concept of cloud computing has sprung from J.C.R. Licklider's "intergalactic computer network" in 1960.(Susanto 2012). He put forth idea of using computer residing anywhere in the world. John McCarthy in 1961 gave concept of computer use for public service similar to water and electricity supply. This concept however, declined in early 1970`s due to the lack of physical infrastructure that could not satisfy the needs of implementation of cloud technology.

One of the pioneering company Salesforce.com firstly introduced the SaaS concept on subscription model. Salesforce.com established offsite data center to host SaaS applications. In 2006, Amazon also started providing access to their system via Amazon web services (AWS) on a utility computing. In 2007, the leading companies like Google, IBM and many universities are on a large scale started research projects on cloud computing. In early 2008, Eucalyptus came with the first ever open source Application Platform Interface (API) for installing private clouds.

In the mid of 2008s, one of the leading research firm Gartner forecasted the prospects & growth of SaaS. (Pandey 2014)

Cloud Computing

Cloud computing is delivering of computing services such as servers, storage and databases,software and networking over the internet("the cloud"). (https://azure.microsoft.com/).   It facilitates the use of computing facilities as and when required by users. It is user centric technologywhich run on network environment standards. It is considered as fifth generation computing after mainframe, PC, client-server operations and web.(Rajan and Jairath 2011). These services can be used from nook and corner of the world by users. Technology and services from virtual world are taken to users in the form of applications desired by individuals.

 Attributes of Cloud Computing given by Gartner

Gartner, Inc. (NYSE: IT) is the world's leading information technology research and advisory company. The five attributes of cloud computing by Gartner are: Service-Based, Scalable and Elastic, Shared, Metered by Use, Uses Internet Technologies

Characters of cloud computing

- Technology improvement : As new technology is implemented by cloud vendor, libraries will able to use them
- Service based : Main aim is to provide services, irrespective of one service failure other services can run successfully.
- Multi – tenancy : At the same time many users can work on one application ensuring security of data
- Economy of scale and skills : Pay –Per Use is possible and skills of IT can be increased or decreased.
- Upgradation : No upgrades are required as such updations are taken care by cloud vendors
- Any time any where : Possible to work from anywhere, convenient to staff and patrons
- Virtualized service : With basic minimum internet connectivity many services can be availed
- Fault –tolerant : Powerful backups help to reduce faults and can be removed easily
- BYOD : Users can allow to **B**ring **Y**our **O**wn **D**evice in library to use library
- Community power : Sharing of resources is major advantage of cloud computing
- Collaborations : Online collaborations are possible due to easy sharing

Merits of cloud computing use in libraries

- Automation : Many services are automated by cloud providers minimizing IT staff requirements.New computing services can be introduced.
- Storage capacity : Libraries deal with big data, and cloud provides such storage needs.

- Flexible : Services are provided as per need so addition and deletion of services is convenient
- Cost effective : With initial investments, it is cost beneficial in long term
- Restoration : With the help of back-ups high data retrieval possible
- Mobility : Users can use library data from any location, with any device
- Resource Sharing : It is boon for resource sharing in library community

Demerits of cloud computing use in libraries

- Data privacy : Library has concern over patrons' data which may be at stake sometime.
- Dependency : Library have to rely upon outside agency
- Electricity supply : Load shading may interrupt services
- Bandwidth : For data transfer high bandwidth is essential
- Service providers : Life and services of service provider

Challenges of cloud computing use in libraries

- Reliability
- Security
- Privacy of patrons data
- Non-flexible options
- Lack of standard services
- Fixed subscription prices
- Vendor lock-in period
- Poor integration with existing systems on campus and other cloud solutions

Types of Cloud Computing   1.
Software as a Service (SaaS) :
It provides software or applications and associated services linking deployment and hosting of the application by the service provider to the serving clients or customers through the internet (Chudasama et al 2019). Less customization is required and control is not with users. Users avail this type of service at low initial cost.e.g.Hotmail, Skype **2. Platform as a Service (PaaS) :**
In this type service providers allow users to use computer platform alongwith tools hosted on their servers. It enables users to host, generate various web applications. The users have to be careful with policies of providers to use it. e.g.Ebsco
Discovery Service
3. Infrastructure as a Service (IaaS) :
It comprises computing facilities as well as storage services. Most of the time pay per use model is practiced which saves cost of users. The services such as data centre, bandwidth space to host or backup of websites are some applications under this service. Amazon EC2,S3.

Deployment model of cloud computing

There are four models as follows:-

Public cloud : In this type institutions can rent cloud for public use over internet. It offers easy resource management, scalability, and flexibility with an economical pay-as-you-go model.(Shaw and Sarkar 2019).Infrastructure is accessible to institution and organizations which purchases cloud services from host institution. e.g. Rackspace, Amazon

Private cloud : In such type of cloud, infrastructure is owned by one institution. It is also known as internal cloud. Cloud computing facilities will be available to institution's employees only. Institution can hire IT expertise or can employ staff for IT functions. e.g. TCS cloud

Hybrid cloud : It is combination of public and private cloud. Combined cloud is another name for it. In this type qualities of both clouds are retained and work as new entity. The hybrid model would let libraries maintain more control over the applications and data stores that contain sensitive, private information about patrons (Mishra and Arumugam 2013). e.g. Google apps.

Community cloud : This type of cloud is used by one group of users with similar aims and objectives or policies. e.g. Gmail of institution's members

Cloud computing and Libraries

Libraries are adopting technologies for ages. Cloud computing technology is not an exception to it. Libraries are in the stage of rapid transition from conventional set up to the modern outlook by enabling new technologies (Kantharaja and Bharathi 2020). Cloud computing has made possible to serve users with desired information anytime, anywhere in the world. It can be a solution to budget crunch and IT expert man power to elevate patron satisfaction. It will allow libraries to get access to current, high technology at less cost. Increased flexibility and market agility as the quick deployment model of cloud computing increases the ability to re-provision rapidly as required (Kumar and Mandal 2013). It will also help to reduce digital divide. The use of cloud will open new opportunities to libraries in terms of integrated services, upgraded library management software, data storage etc. It can be used to build digital libraries, website hosting, searching scholarly contents, building community power and library automation (Wada 2018).

Need of Cloud Computing in Libraries

It is need of the hour to go with new and current technology as forced by users of libraries in past. Libraries are more user centric than ever before. Libraries have undergone different changes in terms of patron's needs, collections and method of working. The most influencing factor is use of technology as it gets advances with due course of time. The use of updated technology will only satisfy patron needs. The libraries could focus more directly on services and materials for patrons if their computer hardware and software were handled by IT companies of the cloud (Sudhier and Seena 2018).

Cloud Computing Applications in Libraries

Library automation have started a new phase characterised by cloud computing, web based systems, service oriented architecture and fresh approaches to functionality that recognize current library realities (Breeding 2011).

OCLC Wordshare Management Services-WMS

OCLC has worked in the area of application of IT in Libraries since long time. It has come up with Webscale Management Services. The notion behind it was to serve library users at the scale of web.The OCLC WorldShare Platform facilitates collaboration and app-sharing across the library community so that libraries can combine library-built applications, partner-built applications and OCLC-built applications. This enables the benefits of each single solution to be shared broadly throughout the library community. The critical elements of the shared infrastructure needed to effect a large-scale transition from print to electronic research collections were owned and managed by the library community (Malpas 2011).

Alma

ExLibris Alma interface is served via a web browser. In addition to removing the need to manage and maintain local servers, Alma frees system administration staff from the need to install and maintain clients on local PCs. All of Ex Libris Cloud Data centers meet the highest standards related to security and high availability. (Bracke 2012)

DuraCloud

DuraCloud is a cloud-based service developed and hosted by the nonprofit organization. DuraSpace supported by Gordon and Betty Moore Foundation and the Andrew W. Mellon Foundation. This service deals with digital preservation of data across many cloud service providers. Rice University's Fondren Library Digital Scholarship is giant project undertaken by DuraCloud where digital resources are archived.

 Indian scenario

Service provider segments such as TCS, Wipro and Netmagic in India are evolving into major cloud offerings that are playing a major role in cloud computing adoption in India (Yuvraj 2016).Libraries are adopting these applications in India. Few SaaS based Library Management Softwares are discussed here.

Koha

It is open source Libray Management Software. It is the most preferred Open Source Library System (Gireesh Kumar 2016).The companies that provide contract services in Koha software (SaaS) for installing, maintaining, migrating, customization are Informatics India Ltd. ,Avior Technologies Private Limited,L2C2 Technologies , First Ray Consulting, Jivesna Tech Pvt. Ltd, OpenLX Inc. **e-Granthalaya**

It is a Digital Platform developed by National Informatics Centre, Ministry of Electronics and Information Technology, Government of India for Government Libraries. Under the platform, NIC provides a complete ICT solution with integrated Library Management Software, Digital Library Module, Cloud hosting environment and a Library Portal (OPAC) with NICSI empaneled Roll-out Services support. e-Granthalaya is useful to transform traditional libraries to eLibrary with Digital Library Services which includes, automation of in-house activities of libraries, digital library integration, and to provide various online member services using Single Window Access System. Latest version of eGranthalaya i.e. Ver.4.0 is a 'Cloud Ready Application' and provides a Web-based solution in enterprise mode with a centralized database for cluster of libraries.

Libman

It is a ERP based SaaS application which is highly integrated, user-friendly and compatible system for complete computerization of all the in-house operations of any size or type of library. The library management software is intuitive, efficiently and compliant. It is provided by MasterSoft ERP Solutions Pvt. Ltd.

Libsoft

It is a multiuser package designed and developed by a team of library professionals and software experts for effective library management. It is designed to handle huge volumes at lightening speed. It provides cloud based Library Management System. It is Simplified package, which requires minimum user interaction. It is provided by Environ Software Pvt. Ltd. **easylib**

It is entire Automation System for Libraries. Includes Web OPAC, Student Login, Requisition, Acquisition, Cataloguing, Accessioning, Membership, Circulation, periodicals, SMS, Emails, Reports, Security, Set Up, Website for library. eResources Management, Machine Learning and AI. ERP based solution as also available. It is provided by Easylib Software Pvt Ltd.

Smartlib

It is provided by Orell Software Solution. It aids library to have essential elements that help them face the complexities and challenges regarding cataloguing, database and manual errors with its futuristic cloud facility. The cloud system is a storage service that maintains controls and secures the data in a distant platform.

Conclusion:

Cloud Computing is amalgamation of technology and application. It brings libraries new working environment to serve patrons. It helps libraries to provide its services, expertise and resources to users' doorsteps as per their needs and convenience. Though the application of cloud computing in libraries in India is in the preliminary stage, it will get momentum in near future.

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COLLECTION AND DEVELOPMENT OF E-RESOURCES IN E-LIBRARY

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Introduction: In the age of computer technology and telecommunication technology every user become already the computer survey. When we are introducing computerised library services in the library very few minute it will take the user to understand it once the database or any other information communication technology hold on the internet user can access as easily as possible.

Dr. S.R. Ranganathan's law of library science converted as

Web resource are for for use

Every user his/her web resource

Every resources it's user

Save the time of user

Web is a growing organism

E-book: Net library does is provide a rich collection of more than 51000 electronic book, most of them academic to library. To allow publisher fears about cannibalising sales of physical copies, net library takes a 'one book, one user' approach. It sales libraries an actual electronic copy a work and allow one user in viewing it, no once else can price are about the same as hard cover net libraries cost in running the system. Including the internet services that host the electronic book.

Metadata: The key to locating using and preventing digital content is metadata or structural data about digital objects and collection many digitisation effort have been unsuccessful due to inadequate metadata.

Types of Metadata:

There are three types of Metadata

1] **Descriptive Metadata:** these metadata provides information allows discovery of collection through the use of research tool and provide sufficient context for understanding what has been found.

2] **Structural Metadata:** structural metadata describe the association with in or among related individual information object. A book which consist of page and chapter it one of the most strainthforword example of structural metadata.

3] **Administrative Metadata:** administrative Metadata facilities once management and preservation of digital resources or player necessary

To access the object automatically opening that viewer or player when a user select that resources.

Digital preservation: Digital preservation refers to the management of digital information overtime preservation of digital information is widely consider to more constant and organising attention than preservation of other media. This constant input of effort, time and money to handle rapid technological and organisational advanced is consider the main stub ling block for

preserving digital information written heritage from several thousand year ago, the digital information created merely a decade ago is an several danger of being lost.

Strategies:

* Refreshing is the coping of data newer media of system.

* Migration is the transferring of data to newer system environment.

* Replication creating duplicate copies of data on one or more system is called replication.

* Emulation is the replication are functionally of an absolute system.

* Trustworthy digital object that can speak or their own authenticity.

Collection Development: Library have been in the collection business for centuries and are defend largely by the function of collection development and management that is by a continues of process to select content appropriate for a particular community make it accessible, manage it and preserve it.

Features of digital libraries

No physical boundary: The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long as an Internet connection is available.

Round the clock availability: A major advantage of digital libraries is that people can gain access 24/7 to the information.

Multiple access: The same resources can be used simultaneously by a number of institutions and patrons. This may not be the case for copyrighted material: a library may have a license for "lending out" only one copy at a time; this is achieved with a system of digital rights management where a resource can become inaccessible after expiration of the lending period or after the lender chooses to make it inaccessible (equivalent to returning the resource).

Information retrieval: The user is able to use any search term (word, phrase, title, name, subject) to search the entire collection. Digital libraries can provide very user-friendly interfaces, giving click able access to its resources.

Preservation and conservation: Digitization is not a long-term preservation solution for physical collections, but does succeed in providing access copies for materials that would otherwise fall to degradation from repeated use. Digitized collections and born-digital objects pose many preservation and conservation concerns that antilog materials do not. Please see the following "Problems" section of this page for examples.

Space: Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them and media storage technologies are more affordable than ever before.

Added value: Certain characteristics of objects, primarily the quality of images, may be improved. Digitization can enhance legibility and remove visible flaws such as stains and discoloration.

Easily accessible

Conclusion:

E-library maintain one of the challenge, it is so difficult to manage properly. There are so disadvantages of the Digital library is that networking problem without network we cannot use the Digital library resources. Electronic library given us accurate information with in a second. Modern day user prefer E-resources for their research and reading purpose.

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DEVELOPMENT OF COLLECTION – VARIOUS TYPE OF COLLECTION

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Abstract

The paper discusses the development collection in the libraries and in collecting thevarious type of E-collection have to be taken into consideration while developing a quantitative collection for the benefit of the users. It is equally important to the evaluate the collection to usesits use and moreover the usefulness of collection development in electronic environment. The main purpose of this paper to examine the current practices related to e-resource collection development in librarian of India with special reference to the national capital region(NCR) of Delhi with some constitute suggestions for improvement in this area.

Keywords:- collection development ,Electronic Resource Electronic ResourceManagement, Type of E-collection .

Introduction:-

Applying an informal and practical approach herby provides beginning librarians with the essential stet to effectively manage a library collection . Karby argues that building a quality collection is no longer enough and offers strategies to ensure that warmers actively engage with the materials supported by the national library standard and ALA/AASL/ CAEP standard for university preparation programs, this recourse introduce the key component that influence collection development including

1.   policies, practices, and selection sources to evaluate, weed, and build dynamic and diverselibrary collection;

2.   methods and example for analyzing collection, curriculum, and community needs;

3.   strategies for showcasing the library collection to learners stakeholder ;and

4.   charts, checklists, worksheets, discussion questions, and tips from practicing librarians.

A library collection is the sum total of library material i.e. books manuscripts serial, government publication, pamphlets, catalogues, reports, recording, microfilm real's micro films, microfiche etc.

By focusing on the basics, readers, can begin to reflect on and customize plans for action. A timesaver for the busy librarian, this collection development digest is the tool you need to ensure success

Definition:-

According to AACR2 2005 Update, an electronic resource is Material (data and/or program(s) encoded for manipulation by a computerized device. This material many require to use of a peripheral directly connected to the computerized device   (e.g.CD-ROM drive) or a connectionto the computer network (e.g. internet) This definition does not include electronic resources that do not require the use of computer, for example, music compact discs and videodisc.

According to library and information technology Glossary term use to describe all of the information product that a library provide though a computer network

According to Wikipedia, electronic resources means Information (usuallya file) which can be store in the from of electrical signal usually on a computer, information available on the Internet.

According to Gradman glossary A publication in digital format which must be store and read on a computer device. There are to type direct access these are physical objects such as CD-ROMs diskettes, computer taps, and computer cards, containg text, images, software etc.

What is the collection?

1) The art or process of collecting the collection of data the calculator of faxes.

2)   sometime collected especially and accumulation of objects gathered for study, comparison or exhibition or us a hobby a calculation of poems a calculation of photography a baseball card collection

What is the development?

Development is a process that creates growth, progress positive change or the addition of physical economic, environmental social and demographic components

Collection development policy:-

1.   material selection and acquisition.
2.   replacement of worn or lost materials .
3. removal (weeding) of material no longer needed in the collection.
4.   planning for new collections or collection areas.
5. institutional mission.
6. Cooperative decision-making with other libraries or within library consortia

Electronic Resources:-

The men aim of this paper is to evaluate the satisfaction level of researches with electronic resources as well as uses, purposes, reason and problem faced by them in using of these resources in the context of Pakistan universities

Design/method/approach

This paper opted for a quantitative study using a questionnaire for survey. Response rate was 80 per cent and data were analyzed from 261 researchers of two university of Pakistan five point likert scale ranked from dissatisfied to extremely satisfied was used to evaluate the satisfaction level of researcher.

Findings

The paper found that mostly researchers were very satisfied with electronic resources though they fact faced problem in using of these recourses.

Research limitation/implication

Research scholar from faculty of art, the Islamia university of Bahawalpur and bahayuddin Zakariya University of Multan, Punjab, Pakistan, were included in this paper .

Practical implication:-

This paper advances knowledge about the current states of te use of university library electronic resources help librarian in Pakistan university libraries understand the information need of the researchers more specifically, and provide some guidelines for the efficient and effective use of these resources.

Originality/value

This paper fulfils identified need of researches and indicate how researcher can utilize electronic recourses in a batter way

Electronic Resource Management

Electronic resource management (ERM) is the practices and techniques used by librarian and library staff to track the selection, acquisition licensing, access, maintenance, usage, evaluation, retention and de-selection of library's electronic information recourses. These resources include, but are not limited to, electronic journal, electronic book, streaming media, databases, CD- ROMs, and computer software.

Early history :-

Following the advent of the digital revolution, library began incorporating electronic informationresources in to their collection and services. The inclusion of these resources was driven by the core values of library science, as expressed by Ranganathan's five law of library science especially the belief that electronic technologies made access to information more direct, convenient, and timely by the end of 1990s, however, it became clear that, the techniques use by librarian to manage physical resources did not transfer well to the electron medium. In January 2000, the digital library foundation (DLF) conducted and informal survey aimed to identifying the major challenges facing research library regarding their use of information technologies. The survey revealed that digital collection development was consider the greatest source of anxiety and uncertainty among librarian and that knowledge regarding the holding of electronic resources was rarely shared outside individual libraries, as a result the digital library federation created the collection practices initiative and commissioned three reports with the gold of documenting effective practice in electronic resource management .

Various Types of E-Collection Resources:-

Sr. No.	Type of E-Resources	Description
1	E-Book	E-Book is many formal computing for prime time including adobe PDF, Microsoft reader, mobipocket reader, EPUB kindle ipad
2	E-Journal	An e-journal is very important of the every library collection e-journal are one application f information technology
3	E-Newspaper	E-Newspaper is also kwon as online newspaper or webnewspaper that exists on the world wide web or intenet
4	E-magazines	An E-magazines is very important part of every library collection E-magazines are one application information technology

5	Indexing and abstracting databases	These are the sources which provide bibliographic information about journal including abstract of the article
6	Full text database	Today is there are number of database available on the networkthey are either free of with charges E-database is an organized collection of information of a particular subject
7	Reference Database	These are many dictionaries, almanacs, Encyclopedia whichare available on internet in electronic format
8	Statistical database	These database contain a numerical data useful for masscommunity
9	Image collection	Due to advancer of e-image facility this type of database isdeveloped
10	Multimedia product	These type of database included image video audios and text etc.
11	E-thesis	These database are contained with PhD thesis and dissertationpublished though e-format
12	E-clipping	The main objective of e-clipping is retrospective search andcomprehensive analysis of new items
13	E-patterns	E-pattern is the exclusive right granted by the government tomake use of an invention for the specific period of time
14	E-standards	Written definition, limit rule, approved and monitored forcomplains by authoritative

Conclusion :-

The library is the trinity of reader, resources and staff. Without the reason the parent organization cannot thing of the existence of the library. Once the reader are there, then arises procurement of reading material. After the reading material acquired, then it become the responsibility of library staff to technically process and organize for the right use by the right reader. In order to meet the goal of the library and increase the uses of library material. The librarian plays a pivotal role. The librarian must know the purpose of collection development, availability of latest document worldwide to print media along with internet recourses on different subject. The organization and maintenance of the reading material also play a major role which can mar of reputation of the library and can be helpful in increasing the uses of the library material The librarian need to be computer literate and should know to work in a networked environmental in order to meet the objective of resources sharing and cooperative collection management. The efficiency in library service attracts more and more reader and the available library resources are rightly evaluated for future reference. To, conclude collection development should be geared primarily to identify and needs to the readers. Collection development to be effective and efficient, the collection development staff must be responsive to total community's needs not just to those current or most active users. Collection

development should be carried out in a participatory mode. Organizing exhibitions and involving the internal and external members of the library in book selection can fulfill this objective. Collection development, was, is, and always be a subjective. Biased work. The interventions of the selector's personal values in to the process can not be entirely avoided. Collection developmentis not something that one learns by reading. Only though practice one can become expert.

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DEVELOPMENT OF LIBRARY WEBSITE USING FREE RESOURCES: THE CASE STUDY OF D.B.J. COLLEGE, CHIPLUN

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Abstract

Comprehensive applications of ICT in every part of life and the increasing expectations of Library users have made libraries to adopt modern technologies in the Library. ICT has given the boost to each and every field of services. Library users also expecting the library services and e-which are accessible 24 hours a day, seven days a week, and 365 days a year. It is critical for LIS professionals to modify their mindsets, as well as the forms of documents and fulfill the demands of users. As a result, having a library website is a requirement of the digital era in order to give the finest services to local as well as remote customers, and it may also be utilized as a promotion tool to increase library usage. The present case study provides the basic idea to develop such an informative library website with the help of free e-resources and techniques.

Keywords: Digital Library, Library automation, E-Books, E-Journals, Library website

1. Introduction: A website is an important tool that most established institutions utilise to raise awareness about their institutions and deliver information to their consumers. All websites compete with one another in terms of style and price. When it comes to website design, the way information is presented is crucial. Another crucial factor is user friendliness and accessibility. Rather of searching the internet for information, a person can gather all necessary data on a single page. A library website's job is to keep this information up to date so that users don't have to deal with dozens of different online interfaces to access the information they need. Various educational resources, such as e-books, e-journals, theses and dissertations, lecture notes, and old question papers, may also be found at the College Library. However, due to ignorance or financial constraints, only a limited number of resources are being utilized by the users. One can increase usage to the maximum level by creating a web portal and uploading these resources to a server. Users can save time and money by searching the vast collection of resources available on the internet for the information they need. Exam results, syllabus, course details, affiliated college norms and regulations, admission procedure for various courses, university facilities, and so on are all available through the university. Aside from these resources, the web portal can be used to upload and share important e-resources with colleges. Through a digital interface, the library website, an attempt can be made to explore the various resources of a College.

2. Objectives of developing a Library website:

Maximum usage of the available resources is the prime motive behind every web portal created by the developer. Theoretically, following are the main objectives to create a library website-

a) To create web portal for the college library to store, organise, and disseminate educational information to students and faculty.

b) To make available online information from the college.

c) To assist students and faculty members by providing unbiased, trustworthy, credible, research-based information.

d) To make knowledge resources available to people all over the world.

e) To notify students and faculty members about academic activities and other available resources.

f) To create a comprehensive database with information on a variety of courses and other educational applications.

g) To save the valuable time of users and maximize the usage of library collection.

3. Tools for developing free websites for Libraries:

A website is a technology on the Internet that delivers customized features to its visitors as well as a link to other information. It is built to provide services from a variety of sources using distributed applications, various numbers and types of software, and hardware. Furthermore, web sites are created to allow a group of people or institutions to share resources. There are end numbers of web tools available on the internet to create a interactive, sophisticated website for the Library. Following are some of the important website creating tools available on the web, which provides readymade, compatible templates for the Library.

1. https://www.drupal.org/
2. https://www.wix.com/
3. https://wordpress.org/
4. https://www.joomla.org/
5. https://www.weebly.com/in
6. https://sites.google.com/
7. https://www.jimdo.com/
8. https://www.strikingly.com/
9. https://www.webs.com/
10. https://app.site123.com/

4. Advantages to adopt free and open source website builders:

Many free website builders provides following facilities for users. These web tools become very convenient to the Library professionals.

4.1 Drag and Drop editors: One of the most significant elements to consider when selecting a website platform is the drag and drop editor. A drag and drop editor allows you to create web pages by moving the pieces of your web design around. It's super easy to do and really effective.

4.2 Number of web templates: Any website builder that includes a large number of web designs is ideal for you. This implies you'll have more options. It's usually a nice thing when it happens.

4.3 Full responsive templates: It's critical that the website builder you choose has responsive templates. This ensures that your website appears excellent on any platform, be it a computer, tablet, or Smartphone.

4.4 Quality web designs: Most of the web builders serve with variety and quality designs of templates and tools. This can attract the users to discover the e-resources on the website.

4.5 Easy to use: The more user-friendly a website builder's interface is the better. The main goal of website builders is to allow people to create websites without any assistance. Users should be able to do this on their own, without any assistance or knowledge of Visual Design, CSS, or coding.

4.6 Uploading custom templates: Some free website builders allow you to create your own website templates rather than using ones from the gallery. This enables you to construct a website that looks exactly how you want it to, regardless of the platform's template type and quality.

4.7 Opportunity to edit site HTML/CSS Codes: HTML coders and programmers are likely to find this option useful. You can customize your website without using the visual editor by modifying the HTML code manually. This feature may be critical for experienced users who have the requisite web creation capabilities.

5. D.B.J. College Library Website: A case study:

D.B.J. College was established in 1965 by the Navkonkan Education Society with the aim of providing high-quality education to the rural population of Konkan region. Situated in the hilly area of Chiplun (Ratnagiri), the college is re-accredited by NAAC, Bangalore, with "A" grade and a 3.10 CGPA. The college was chosen as 'Best College' for the academic year 2008-2009 by the University of Mumbai. Recently the college is honored with ISO 9001:2015 certificate.

About Library: The Knowledge Resource Center since the beginning, i.e. from 1965, the Library caters the information and syllabus related needs of its students, teachers and other users'. Library has of more than 67000 books and 60 National & International journals. Library also subscribes to INFLIBNET-NLIST online resources. It has three storied building with sufficient facilities. Automated with Koha OSS, Library has its separate website (www.dbjlibrary.com), DSpace Repository, Xerox and Plagiarism checking facility in the Library. Apart from the routine services, the Library also organizes some useful training programs for the Library professionals on time to time.

6. The Website:

Previously, the Library had hosted its website on freewebs.com platform, but from the year 2020, the Library is using the WIX platform for its separate website. WIX is an Israeli software company, providing cloud-based web development services. It allows users to create HTML5 websites and mobile sites through the use of online drag and drop tools. Users can add social plug-ins, e-commerce, online marketing, contact forms, e-mail marketing, and community forums to their web sites using a variety of Wix-developed and third-party applications.

Following are the main features of the website developed by the D.B.J. College Library.

6.1 Home: The every objective of every home-page is to give the introductory and overall information about the institute and its functioning. The Home-page of D.B.J. College library also provides following information on its home-page.

1. Programs photos
2. Total Collection at a glance
3. Library Notices
4. Web-OPAC
5. Offline OPAC
6. New Additions
7. Recorded Video of Book Exhibition
8. Library News Publications
9. Various forms for downloading

Figure 6.1: Home Page

6.2 About Us: This page gives short information about the history of the Library, its past Library Authorities and their tenures. Sub-categorized as-

➢ Mission & Objectives
➢ Physical Layouts
➢ Library Rules & Regulations

Figure 6.2: About Us

6.3 The Team: The Library personnel are the backbone of every Library. So, their introduction is must in the website. Here, the photos and with their names & designation have been given for as the Team Member of the Library. At the beginning of the page, the Librarians welcome message gives brief about the Library personnel. The page also provides information about the Library Committee members in its sub-page.

Figure 6.3: The Team

6.4 Resources: This page is very important which provides the exact numerical information about the Library collection. It includes, number of Books (Text and Reference), Periodicals, Newspapers, CDs/DVDs, Theses, Maps etc. The page also enumerates the list of important reference sources available in the Library.

Figure 6.4: Resource

6.5 Digital Library: Digital collection of a Library fascinates the users and it becomes the most demanded collection in the age of ICT. This library also tries to satisfy the digital expectations of the users by providing following services.

- University Syllabus
- Previous/old Question Papers
- Links for Audio Books
- Links for Competitive Exams Preparing Students

Figure 6.5: Digital Library

6.6 Library Services: The page gives enumerative services providing the Library for its users. Many users are unaware of the services provided by the Library. For them, such kind of information on website is very essential. The page is also sub-categorized under following pages.

- ❖ Extension Services
- ❖ Best Practices
- ❖ Library Automation
- ❖ Library Awards

Figure 6.6: Library Services

6.7 Photo Gallery & Contact us: These last two pages gives the information of the programs (Workshops, Seminars & functions) organized by/in the Library during the last five years. The page is full-fledged with photo galleries of the program and the reports. In the last 'Contact us' page, the feedback facility is provided for library users. Users can give their feedback, as well as suggestions/complaints regarding the library services and facilities to the Librarian. There is also given a Google map to reach the college location.

7. Conclusion: Website is the boon for the library to get the publicity for its activities and efforts. This website helps to envisage educational material as well as other pertinent information of the Library. The website of a college library should be user-friendly and straightforward. It's a great way to stay up to date on library events and new services. The website will serve as a link between information seekers and academic institute information providers. The College Library website' can deliver services and resources to its users at any time (24/7) at the lowest possible cost and with the least amount of labor.

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DIGITIZATION OF LIBRARY INFORMATION RESOURCES IN PRESENT INFORMATION TECHNOLOGY WORLD

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Abstract

ICT play a vital role in Libraries for information generation and dissemination. In recent time the availability and use of ICT/web based technologies in libraries, the creation and sharing of information through the digital (virtual methods changes the traditional function of the library as a place for storage and preservation of library resources. With the digitization of information the library move towards one step ahead to digital acceptance to serve their service to user digitally. This paper discusses the various aspects of digitization like concepts, problems and specially discusses process of digitization of resources.
Keywords: *Digitization, ICT, Digital Library, Copyright, Library Resources*

INTRODUCTION

The use of Information and communication Technology and the web technologies/internet facilities in library/information centre the traditional function of the library as a place for storage house of resources and preservation of library resources has changed dramatically. Academic libraries are duly bound in routine work of acquisition, preservation and dissemination of information of whatever source available to their user regularly, but with the involvement and advancement of technologies it very essential to preserve such information and made available in a more convenient and accessible format.

Digitization of information materials is the process of converting analogue information to a digital format. The information contained in traditional print and written form such as document, books, papers, manuscripts, or a combination of these or other similar documents cannot be preserved for a very long time. With the help of technology it is possible to convert and preserve these traditional material into digital image format (PDF, TIFF,JPG etc.) which are machine readable and make it available for a long time in the form of electronic document for future use as archive. By the process of digitization the information in electronic document usually used to store and preserve on the CD, DVD, CD-ROM and Intranet/Internet. Digitized materials are easy to access for user at any time any were and also single documents can be accessed by more than one user at time.

NEED OF DIGITIZATION OF LIBRARY RESOURCES

Due to excessive growth and explosion of information it is very difficult to manage the printed material for a long time in library. In the academic libraries the new information generated every day. Digitization is the process of converting and storing traditional written and printed record materials into electronic form. The information contained in traditional print and written form such as books, papers, manuscripts or a combination of these or other similar documents cannot be preserved for a very long time. As the time passes, the information contained in this traditional form material gradually fades out and finally the traditional medium document becomes unusable. These traditional print and written documents can be lost forever unless there are

alternative arrangements for preserving, recapturing and reproducing them. Hence there is need of digitization of such library material with the use of technology. Recent technological advances have provided suitable alternatives for the preservation of such valuable documents for a long time by providing high security and all media preservation and make the document ready for use again.

PURPOSE OF DIGITIZATION OF LIBRARY RESOURCES

1. Digitization helps in Acquiring, storing, processing and disseminating the information
2. Digitization makes Traditional information Resource available electronically
3. Digitization Support the teaching, Learning & research process
4. Digitization improves wider access and collaborative sharing of information resources.
5. Digitized documents allow the users to search the full text of the documents
6. Digitization of documents can be accessed by more than one user at a time.
7. Digitization helps in Timely access of information
8. Digitization helps in long term preservation of electronic information with security
9. Digitization of documents helps making institutional Repositories and Archives of old/rare information resources for future user.
10. Digitization helps the organization to focus on opportunities to merge the best of both digital and traditional resources.

UNESCO (2002) in one of her publication titles "the guidelines for digitization project" stated that the reason for implementing a digitization project are varied, and may well over lap. These reasons include:

- Increase access: This is the most obvious and primary reason where there is thought to be

  high demand from users and the library or archive has the desire to improves access to a specific collection;

- Improve services to an expanding user's group by providing enhanced access to the Institution's resources with respect to education, long life learning.

- Reduce the handling and use of fragile or heavy used original materials and create a "backup" for an endangered material such as brittle books or documents;

- Give the institution opportunities for the development of its technical infrastructure and staff skill capacity.

- Establish sharing partnership with other institutions to create virtual collection and increase worldwide access;

- Seek partnership with other institutions to capitalize on the economic advantages of a shared approach

PROCESS AND STEPS OF DIGITIZATION

There are several stages in the life cycle or process of digitization. Digitization is the core activity; it consists of the process of converting information into digital form. The process is a step- by- step procedure that follows the process of digitization, archiving, access and

management. The stages may vary depending on the nature of materials. The general steps of the digitization process are as follows.

- **Digitization Policy making:** Good goal setting is important for any new initiative. The policy should contain the purpose and objectives of digitization project. The objective of the project should be clear. Higher authority should make clear policy decision for digitization project.

- **Policy Approval from authority: For the implementation of digitization process, t**he policy should be approved by appropriate higher authorities before actual project for digitization, In this step there is need of approval of project and sanction of funding from funding agencies before any digitization project.

- **Planning and budgeting, monitoring:** It is most important step of digitization process. It consist of actual planning of digitization, Monitoring and allocation of budget for different heads of project, so there must be sanction of budget from higher authorities for digitization. The budget allocation for salaries, staff training, cast of equipments, maintenance charges etc.

- **Acquisition of Appropriate Technology (Software/Hardware selection):** In this process is very crucial to select proper hardware and software technology for digitization. Relatively cheap hardware equipments required for digitization. Also it is very important to select proper scanner and software for scanning, Image Processing/editing and OCR for document.

- **Legal /copyright issues**
  It is one of the most important resources selection criteria for digitization that is copyright status or intellectual property rights of the original materials. This is very challenging aspect where need to take precaution about legal issues like copyright and ownership status of resources while using resources for digitization.

- **Selection of documents/records for digitization:** The UNESCO, IFLA, and 1CA (International Council on Archives) suggest that digitization projects - should be user driven or based on high demand for (enhanced) access (UNESCO, IFLA&ICA,2002). The proper selection of resource for digitization is necessary which is to be converted into appropriate digital form. Specially old and rare document should be selected for digitization for easy access and availability.

- **Verification & Preparation of document:** verification of resources before digitization is essential it must check and confirm that whether digital copies of such materials already exist or not. Then after the resource ready and prepared for the final digitization or conversion process.

- **Conversion of information into digital form: I**n this process there is actual conversion of resource media takes place using digitization software's (camera, Scanner, OCR etc) into images or Optical Character Recognition (OCR) forms. (OCR) software converts a scanned image into a text file that a word processor can read while camera and scanner used to take photos make images and PDF files of resources.

- **Editing digitized documents and storage:** Before storing the digital resources making editing and corrections with proofreading is necessary. After scanning and conversion the raw digital data should be edited by using image processing software's and stored in with quality forms.
- **Metadata Organization**: Metadata is data that provides information about data. Metadata simply means information about resources that describes digital objects and enables users to find, manage and use digital objects. It represents the total historic record and information of the resource object. Metadata helps to identify the resource. It indicates the bibliographic information about resources. In digitization process it is very important to make metadata description of digital resource for identification and indication of digitized resources.

MAJOR DIGITIZATION INITIATIVES IN INDIA

Some of important digitization initiatives undertaken in India are given below:

- The National Science Foundation, USA has initiated the "million book project' at Carnegie University in USA in collaboration with The Indian Institute of Science, Bangalore. By 2005 almost one million books have been digitized in India alone.
- National Library of India has undertaken digitization of often used books and documents such as East India Co. records, diaries etc. as well as MSS on paper and palm leaves.
- The Parliament Library has digitized all debates, questions, committee reports, bio-data of present and past members of Parliament including photographs, speeches etc.
- National Mission for Manuscripts launched by Government of India in 2003 is milestone in conservation and preservation of manuscripts.
- Cultural Heritage Digital Library in Hindi- the Indira Gandhi National Centre for Arts (IGNCA) is pioneering digital treasure of Arts, digital images etc. and recognized as the nodal agency for National Mission for Manuscripts of Government of India.
- Indian Academy of Sciences has digitized all its journals.
- Traditional Knowledge Digital Library of India (TKDL)
- Indian National Digital Library in Engineering Science and Technology (INDEST)
- Archives of Indian Labor- V.V. Giri National Labor Institute, Noida
- Some of Institutions and Universities, namely IIT, Delhi and Mumbai, Banaras Hindu University, Varanasi, University of Hyderabad, Physical Research Laboratory, Ahmadabad, have started the digitization of their Manuscripts/Thesis /Dissertations under digitization projects.
- IIT, Kanpur, Allahabad University, Central Institute of Higher Tibetan Studies, Varanasi, etc are digitizing the collection of books (free from copyright) under the project initiated by The National Science Foundation, USA in collaboration with The Indian Institute of Science, Bangalore.
- The National Chemical Laboratory has the digitized rare national collection of industrial micro organism.

CHALLENGES/PROBLEMS OF DIGITIZATION OF RESOURCES

- Sufficient Project Funding or Project cost
- Resource/ Document Selection for Digitization
- Technical knowledge and Expertise
- Inadequate Technology (Software and Hardware)
- Legal/ Copyright Issues
- Human resource or Staff   management
- Constantly Technological Obsolescence

CONCLUSION

Digitization is an essential process with respect to current day to day vast information generation. Resource Digitization has opened up new doors for effective information dissemination, preservation and secure access of information resources. It also helps in facilitating the integration of library services into the learning process of academic institution/centers. It helps in long term resources collection preservation with effective usability.

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DIRECTORY OF OPEN ACCESS JOURNALS (DOAJ): AN OVERVIEW

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Abstract

DOAJ is an open database or e-journals started in 2003. This paper attempts to explain it in brief to users, students, research and faculty. Purpose of this paper is to create awareness about DOAJ among users and to promote its users. Paper also highlight its origin and development, mission, objectives, constitution, team, guideline to author, steps of indexing journals in DOAJ, features, benefits, participated publishers and update details revised etc are explained in brief. Overall status of the database shows that this is appropriate, standard and qualitative database now made available in 80 .languages. 133 countries have participated in the project.
Key words : DOAJ. Open e-Resources, users, library staff, e-publications.

Introduction :

Staff /professionals of academic libraries are experiencing changing style of users of accessing information from 2005 onwards. Users are preferring e-Resources than print documents. Users even faculty are not visiting libraries. Books are just lying on shelves. This situation has left space for rethinking whether the efforts taken on acquisition, automation and processing will be beneficial or not in the future if the use of print documents is continued to come down. .

Same time many professionals have focused on preparing various databases of their concern fields. To quote some examples of databases like Agricola, AGRIS, INIS, MEDLAR, INSPEC, CAB, CeRA, etc. Later on 2000 onwards new databases have come up such as NLIST, DOAJ, American Society of Mechanical Engineers (ASME), ASCE (American Society of Civil Engineers), Springer nature, science direct, JGATE, EBSCO etc

Types databases / e-Resource : Databases includes two types. One is commercial means subscribed payment based and other is open means available at free of cost. CeRA, CAB, N-LIST are the examples of subscribed e-Resource and DOAJ, NOPR, Amazon Kindle Free e-Book Collection. Free classics and out-of-copyright, Kindle. Barnes & Noble Free eBooks, Google books, internet archives, digital library are the examples of open e-Resource

Open e-Resources are also of equally important and useful to users..There is no space for doubt about quality and standards of open e-Resources. With regards to its access it notices that e-Resources are easy to access as there are no more steps and need of pass word and verification process. As compare with other e-Resources DOAJ seems to be most common. Keeping in view the status and use of DOAJ this database has been selected for study. Purpose behind this is paper is to create awareness at mass level among user community and help to

promote use of DOAJ. This study was carried out with the help of its website. Details of DOAJ are described in the paper. . .

DOAJ (Directory of Open Access Journals):

DOAJ is a website that hosts a community curated list of open access journals, maintained by infrastructure services for Open Access. It means freely available directory of electronics journals on internet. It covers free, full text, quality controlled scientific scholarly journals. Its basic aim was to cover all subjects and languages

Origin of DOAJ: The thought of DOAJ was the outcome of the discussions of experts in the first Nordic conference on scholarly communications held in the year 2002. Lund University took the responsibility of setup and maintain the DOAJ. Accordingly the university performed work till 2013 when Infrastructure Services for Open Access (IS4OA) took over.

Initially the DOAJs was launched in 2003 at Lund University, Sweden, with 300 open access journals. Today, this database has reached to 12000 open access e-journals covering subject like science, technology, medicine, social science and humanities.

DOAJ is the membership organization.: Membership of DOAJ has made available for three classes viz.. 1) Publisher, 2) Ordinary Member and 3) Sponsors. Qualitative, Peer Reviewed referred e-journals are provided through DOAJ. So the DOAJ members are expected to follow these principles as a condition of membership DOAJ reserves the right to reject applications for membership, in case of in any illegal practices such as manipulation of information and copyright. DOAJ has reserved its right for taking necessary actions.

DOAJ is a community-curated list of open access journals and aims to be the starting point for all information searches for quality, peer reviewed open access material. To assist libraries and indexers keep their lists up-to-date, we make public a list of journals that have been accepted into or removed from DOAJ but we will not discuss specific details of an application with anyone apart from the applicant. Neither will we discuss individual publishers or applications with members of the public unless we believe that, by doing so; we will be making a positive contribution to the open access community.

DOAJ publishes Information for Publishers on this site to help Publishers adhere to the Principles and to assist them in completing an application. DOAJ also publishes a list of FAQs relevant to all members of the publishing community, particularly libraries and authors. All information on this site is available to both members and non-members.

Mission of DOAJ:

Primary mission of DOAJ's is to increase the visibility, accessibility, reputation, usage and impact of quality, peer-reviewed, open access scholarly research journals globally, regardless of discipline, geography or language. DOAJ works with editors, publishers and journal owners in order to help them understand the value of best practice publishing and standards and apply those to their own operations. DOAJ is committed to being 100% independent and maintaining all of sites services and metadata as free to use or reuse for everyone.

Constitution of DOAJ :

DOAJ is a non-profit organization managed by Infrastructure Services for Open Access C.I.C. (Community Interest Company) based in the United Kingdom. DOAJ relies entirely on the voluntary donations of its members and on sponsorship. International Development Research Centre (IDRC) has provided grant to DOAJ in March 2016. It feels proud and happy to know that an Advisory Board and a Council members of DOAJ works voluntarily for the benefit of educationalist and needy users. This shows real contribution towards betterment of society.

DOAJ uses the services of approximately 100 voluntary editorial staff who review applications. Volunteers are bound by a Code of Conduct and an Agreement that they must sign and return to DOAJ before they can carry out their duties. At least two references are requested from everyone who volunteers and all volunteers are bound by the Code of Conduct to declare any conflicts of interest to the Managing Editors.

Hence, we can say that this is one of the best open resource database for users.

DOAJ Team:

In Project and Communication Manager Team consist of Senior Managing Editor, Managing Editor, Managing Director and Founder, Managing editors-3, Database Assistant, Operations Manager, Editor-in-Chief, Managing editors-4.

DOAJ Ambassadors, Advisory Board,

Council : The DOAJ Council was elected by the community 14 members.

Total number of Journals includes in DOAJ 14,462 Current status

Countries: 133

Articles : 4807181.

Role of working of DOAJ: DOAJ works with Editors, publishers and journal owners. Purpose behind it is to help to understand the value based practice.

Objectives of DOAJ:

1. To be a starting point for all information searches for quality, peer reviewed open access documents.
2. To assist libraries and indexers to keep their list up-to-date.
3. Promote use e-Resources.
4. Increase our coverage of journals from the Arts, Social Sciences and Humanities.
5. Increase our coverage of non-English language journals.
6. Increase our coverage of journals from specific subject areas.

Features of DOAJ:

All information on this site is available to both member and non-members. It means DOAJ is not restricted to any group of users. It is open for all.

Benefits of indexing in DOAJ:

A standard for Open Access quality: As stated, OA journals only make the cut for DOAJ after having met certain criteria and after being reviewed and accepted by the DOAJ staff and team of volunteer editors. So journals approved by DOAJ are considered to meet ethical and quality

standards- thus helping combat the problem of predatory journals. Many organizations and individuals around the world use DOAJ as the go-to resource for quality OA journals.

1. A 3X increase in Journal traffic: After being indexed in DOAJ, journals witness a 3X increase in website traffic, which translates to better visibility and more exposure. An increase in traffic helps attract better authors and quality submissions.
2. DOAJ metadata is freely and widely available: When author submit article to DOAJ, further it is distributed to all major aggregators, university libraries and research organizations. This helps to improves content reach manifold.
3. Promotes Open Access: DOAJ is working to promote open access as a sustainable model for scholarly publishing, peer reviewed OA journals.

Guideline for authors: DOAJ provides guideline to authors to contribute papers. There is one basic requirement for submission of papers to authors. It has mentioned that all articles written by the authors should go through quality system i.e. editorial or peer reviewed committee. Then the correct review must be stated clearly on the website.

Steps to index journal in DOAJ:

Step I.   Check eligibility: This is the basic eligibility criteria that need to be fulfilled before you can consider filling the application for DOAJ indexation. Your answers to each of the questions below should be a clear YES. If you answer No for any of them, you will need to fix it before you can proceed with your application. There are 43 queries that that should be filled in proper. In general the questions are about current issue, back issues, home page, URL No. ISSN, guideline for authors such as quality, pattern of writing, processing fees and so on.

Step II: Handy checklist before you send in your application : It includes

1. Read through these 'Principles of Transparency and Best Practice in Scholarly Publishing' and ensure your journal complies:
2. **Download and print this document**: A guide to filling in the application form. Fill it along with someone who knows everything about the journal you plan to submit for indexing.
3. **Proofread and double-check** the information you've filled into the document above to ensure that everything is accurate and matches the information on your website. This is extremely important because you will have to get your application right the first time. DOAJ rejects duplicated applications outright.

Step III: Applying for DOAJ indexing

The form is straightforward, provided you fill in the document linked above correctly. If you are not very comfortable with English, the application form is also available in 14 other languages (Arabic, Chinese, Farsi, French, Indonesian, Italian, Japanese, Polish, Portuguese, Romanian, Russian, Spanish, Turkish, Ukrainian). Still if you are not comfortable with any of these languages either, it would help to work through the form with someone who understands English well. Some very important things to keep in mind:

1. **The form does *not* auto-save.** So, you will need to have all the information handy and complete it in one sitting. This is why it's important to have filled in the document in Step II.

2. **Be careful while filling in the form**. If you miss questions or submit inaccurate information, your application will be rejected. You cannot resubmit since duplicated applications are also rejected outright as stated above.

3. **The contact details you provide should be of a real person with a real name**. This refers to the details you give in questions 9, 10, 11.

Step IV: Receive confirmation email.

Immediately upon submission: Once you submit your application, you will receive a confirmation email. Save this email because it may need it if you contact DOAJ with any questions regarding your application in the future. If you don't get a confirmation email, then contact DOAJ.

Step V: When the results come in

Accepted: Congratulations! Your journal will now be classified by subject and DOAJ will assign it an LCC code. You will receive two emails - one will be an automatic confirmation email about your acceptance and the second will have information on how you can log in to your DOAJ Publisher account. You will need this second email to upload your article metadata.

Rejected: If your application for DOAJ indexing has been rejected, tough luck. The reason for rejection will be communicated to you. You can submit again for inclusion in DOAJ after 6 months, provided the recommendations suggested in the rejection email have been implemented.

Step VI: Start uploading your article metadata to DOAJ

DOAJ does not automatically collect article metadata for indexed journals. You will have to upload them actively to DOAJ. There are three ways to do so:

1. **Upload manually**: This is tedious and okay for an occasional article or for correcting and overwriting an already uploaded article metadata.

2. **Upload DOAJ XML**: The XML of your article is 'read' by the DOAJ system and the metadata is auto-populated. Typeset eases this process by auto-generating ready-to-upload DOAJ XMLs of your articles in seconds.

3. **Using DOAJ API**: This is the easiest way to upload your metadata. You may need technical know-how or a software developer to help you with this. Read more about DOAJ API.

Publishers participated in DOAJ:

Sr. No.	Publisher	Web address
1	MDPI AG	https://www.mdpi.com/
2	BMC	https://bmcproc.biomedcentral.com/
3	Hindawi Limited	https://www.hindawi.com/journals/
4	Elsevier	https://www.elsevier.com/en-in
5	Frontiers Media S. A.	https://www.frontiersin.org/
6	Wolters Kluwer Medknow Publications	http://www.medknow.com/
7	Nature Publishing Group	https://www.nature.com/
8	EDP Sciences	https://publications.edpsciences.org/#!s=current&l=en
9	Copernicus Publications	https://publications.copernicus.org/

Updated DOAJ website: This website has been again revised in February, 2021 and introduced some changes and criteria to include new e-Journals and databases. It has offered benefits for supporting publishers organisation. DOAJ is receiving appreciable support from academic institutions, University and college libraries. JOAJ has offered special concessional rates for academic libraries and institution for 1 and 3 years commitment support for large and small organisations, to participate in consortium and library network. It also guide and justify the importance of journal to be indexed in DOAJ. It has global level editorial team for to conduct review, peer review, blind peer review, double blind peer review, post publication peer review and open peer review. This all indicates standards of DOAJ journals. This is the major indexing service of DOAJ. It is the best practice of DOAJ to promote ethical and quality standards in making the journal more attractive publishing channel and enhance use of open access e-Resources. Indexing or journal in DOAJ is helps to increase access to your website and give greater exposure to your published content. This is the mission of DOAJ.

Current status of DOAJ :

Sr. No.	DOAJ Features	Status		
		Beginning Year 2003	Year 2020	Year 2021
1.	Journals	300	14462	16321
2.	Articles	Nil	4807181	6077016
3.	Languages included	01 (English)	20	80
4.	Countries participated	01 (University Sweden)	126	133

As the library professionals it is our moral duty to create effective awareness about it use and advantages of DOAJ among users. Promote to make optimum use of this facility for academic growth. DOAJ is the most appropriate and useful open source for users.

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EFFECTIVE E-SERVICES THROUGH MOODLE IN LIBRARIES SPECIAL REFERENCE TO BHARATIYA MAHAVIDYALAYA, AMRAVATI'S CENTRAL LIBRARY

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Abstract

E-services in libraries are most important and essential kind of thing. There is need and demand of emerging for this even in small scale libraries because of pandemic situation. Libraries are interactive kind of tool and resource center so thus this pandemic should stop us. E-services have different kind of services and not include the face-to-face delivery of resources. Moodle is a software package for producing internet-based courses and websites. It is a Learning Management System (LMS) that allows better cooperation among learners, tutors and students. In this paper we explore the implementation of effective e-learning through Moodle and also present how the various facilities of Moodle are used by tutors to provide interactive and stimulating learning experiences in providing higher education in various colleges of technology.

Keywords: Moodle, IT in Library, library services in pandemic, E-Learning, Activities, Course development, online Assignment, Quiz, Communication

Introduction: E-services (electronic services) are services which use of information and communication technologies (ICTs). The three main components of e-services are- service provider, service receiver and the channels of service delivery (i.e., technology). For example, as concerned to public e-service, public agencies are the service provider and citizens as well as businesses are the service receiver. The channel of service delivery is the third requirement of e-service. Internet is the main channel of e-service delivery while other classic channels (e.g. telephone, call center, public kiosk, mobile phone, television) are also considered. E-services of libraries are deliver or dissemination of information through electronic media more preciously the network of internet linked with the education system or to the libraries. There are many platforms or approaches for the E-services of the libraries which may differ from libraries to libraries and institutions to institutions according to user demand and their needs. One simple approach can see as a social media which have online account linked with the email or the chatting applications linked with the contact numbers having broadcasting feature in it. The problem with such kind of platform is that there is only dissemination of information is possible and other things are impossible in it.

Objectives:

- To study the platform need for the E-services of the libraries.
- To bring the model or case study about Moodle platform for enabling the services by libraries.

- To study all the detailed features of the Moodle and elaborate separately the usefulness to library services.
- To bring the suggestions about E-services by Moodle to the librarians and motivate them to do so.

Moodle at a glance: Moodle is a part of online resource learning system based on an open source and free license system that anyone can use. It comes under category of Learning Management System (LMS) written in PHP and distributed under the GNU General Public License. Moodle used for blended learning and distance education and mostly in E-learning kind of motive. With customizable management features, it is used to create private websites with online courses for educators and trainers to achieve learning goals. Moodle allows for extending and tailoring learning environments using community-sourced plugins.

Use of Moodle in Bharatiya Mahavidyalaya, Amravati Central Library services:

There are some steps that need to follow to create course successfully and enroll all the students to Moodle and there are given the process of enrollment of students by some prescribe steps that we use in our Bharatiya Mahavidyalaya, Amravati's Central Library.

Step 1: Creating the Course

The first and initial step is to create the course for the library to deliver the services under library. This step is done by the Admin of the Moodle, this need expertise because in reference to our Bharatiya Mahavidyalaya, Amravati College there are different courses are added to Moodle already belongs to the different stream of education and faculty ex. Arts, Commerce and Science and different stream again includes different subjects. Library belongs to all the students and faculties and thus Moodle admin created new category of Miscellaneous and under which the course for library created of entitled "Library & Information Science"
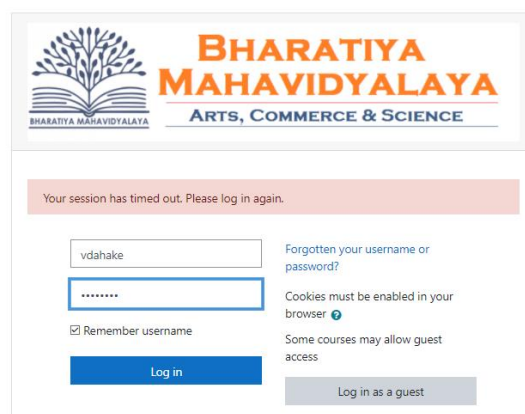
Fig: Registration of the Course Tutor

Step 2: Registration of the students

The registration process includes the enrollment of the students for the course. This process is done by the Moodle Admin, now here the main important thing that admin will upload the students to desire or admitted course only but in case of library here in Bharatriya

Mahavidyalaya, Amravati's Library we added all the students who enroll to all the course because of simple reason of library for all.

There are 386 students are enroll to the services of library under the name Library & information course.

Step 3: Initializing the Course by using different features

The final step after setup and course and enrolling the students the final step is to start posting to the course. In case of libraries we can firstly post the list of services that given by the libraries and so on. Then it is duty of the tutor to keep update into it and promote the course and let students know about the course.

1) **List of some things that libraries can post on Moodle:**

We can improve the library course on Moodle on following steps basis, I also do so according to the levels.

On the very first or initial level we can post some common things like the list of services, online services, some library user manuals and video tutorials, catalogues of the libraries through WEB-OPAC etc. On second or after basic level we should post the assignments having small and simple questions asking about the services about libraries and N-LIST. In case of Bharatiya Mahavidyalaya, Amravati's Central Library we already make the tutorials on How to use N-LIST and make the Google Site having the E-Resources which are already free and open source thus we make assignments on such concepts that finally belong to students and students will more know about the library services.

2) **Features of the Moodle that libraries can use:** Every system and service have different features and Moodle is not exception for this but in this section we'll discuss and focuses only on the features that important for academic purpose and preciously for our libraries only, we are ignoring all the technical requirements for this.

8.1) Registration Feature: For library there is need to enroll all the students admitted to college and available on Moodle so we need proper and sophisticated feature.

- We can register so many up to limitless (15000+ according to study) students under this which is really good for the library.
- There is search feature available according to initial alphabet of students.
- Moodle have one feature called **'Groups'** under which we can make the groups of the students which again beneficial for the libraries.
- Various filters can apply for the searching methods.
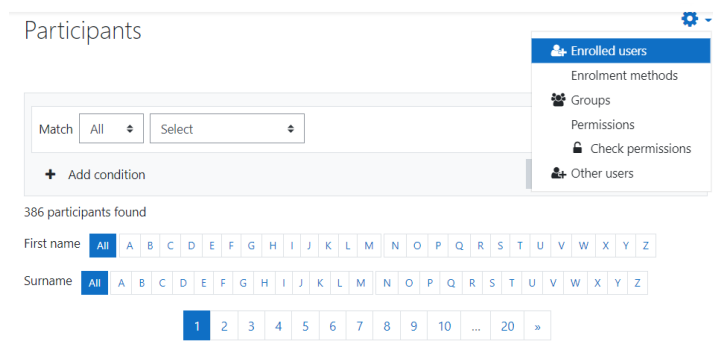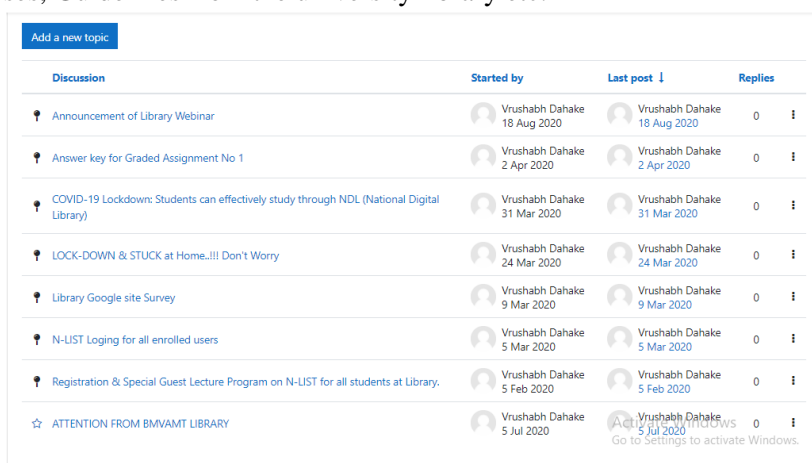
Fig: Moodle page showing the various features and filters for searching the students

8.2) Announcements: Announcement feature is very effective and important for the library users that personally I feel it very effective for us. Libraries need to give almost daily updates to the users so therefore rom this features we can give the updates.

Kinds of announcements that our Bharatiya Mahavidyalaya, Amravati's Central Library give through the Moodle
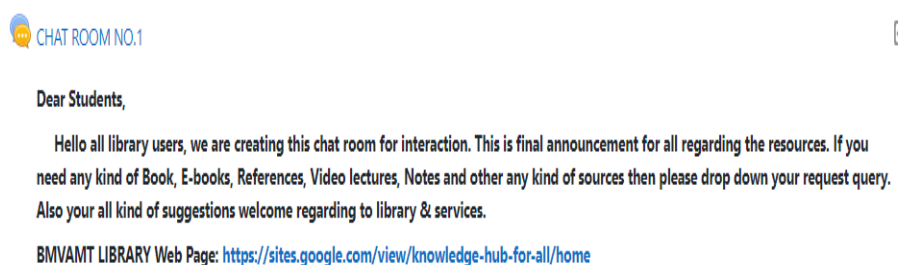
- Upcoming events of library, webinars and workshops.
- Assignments given by library on E-services.
- Forwarded news from the NDL, N-LIST platform user guidelines, SWAYAM platform courses, Guidelines from the university library etc.

Discussion	Started by	Last post ↓	Replies	
📌 Announcement of Library Webinar	Vrushabh Dahake 18 Aug 2020	Vrushabh Dahake 18 Aug 2020	0	⋮
📌 Answer key for Graded Assignment No 1	Vrushabh Dahake 2 Apr 2020	Vrushabh Dahake 2 Apr 2020	0	⋮
📌 COVID-19 Lockdown: Students can effectively study through NDL (National Digital Library)	Vrushabh Dahake 31 Mar 2020	Vrushabh Dahake 31 Mar 2020	0	⋮
📌 LOCK-DOWN & STUCK at Home..!!! Don't Worry	Vrushabh Dahake 24 Mar 2020	Vrushabh Dahake 24 Mar 2020	0	⋮
📌 Library Google site Survey	Vrushabh Dahake 9 Mar 2020	Vrushabh Dahake 9 Mar 2020	0	⋮
📌 N-LIST Loging for all enrolled users	Vrushabh Dahake 5 Mar 2020	Vrushabh Dahake 5 Mar 2020	0	⋮
📌 Registration & Special Guest Lecture Program on N-LIST for all students at Library.	Vrushabh Dahake 5 Feb 2020	Vrushabh Dahake 5 Feb 2020	0	⋮
☆ ATTENTION FROM BMVAMT LIBRARY	Vrushabh Dahake 5 Jul 2020	Vrushabh Dahake 5 Jul 2020	0	⋮

Add a new topic

Fig: Announcement feature and posted announcements from the library

8.3) Chat Room: Chat room is feature for the chatting, discussion forum and for asking the any doubts for the students. There is an option of creating chat room in our Moodle course and then after every student able to post their query and doubt into it.

🔵 CHAT ROOM NO.1   ☑

Dear Students,

  Hello all library users, we are creating this chat room for interaction. This is final announcement for all regarding the resources. If you need any kind of Book, E-books, References, Video lectures, Notes and other any kind of sources then please drop down your request query. Also your all kind of suggestions welcome regarding to library & services.

BMVAMT LIBRARY Web Page: https://sites.google.com/view/knowledge-hub-for-all/home

Fig: Screenshot of created chat room for the users in the Moodle

8.4) Upcoming Events: there is calendar given in the side corner in which we can add an upcoming events of the libraries like workshops, assignments and removal of Borrower Ticker etc.
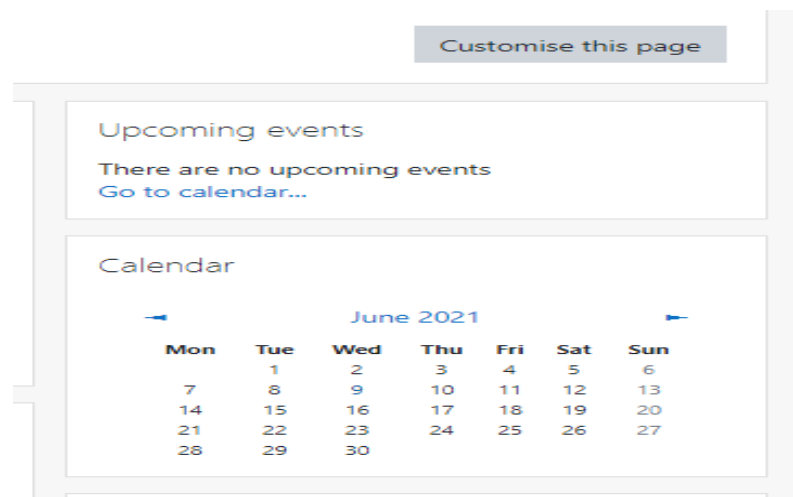
Fig: Feature of an upcoming events are shown

8.5) Assignments: The teaching members are uses this feature for conducting graded assignments from the students but we can use this this feature and our library uses this on following way.

i) By making the assignments on the library services we can promote our services.

ii) By posting question bank on the N-LIST and other Google Sites of our library we can also bring them those services.
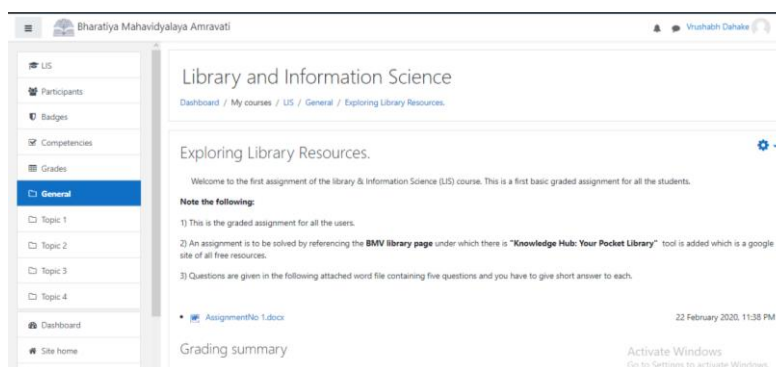
Fig: Assignments on the "Exploring Library Resources" for users

After assignments we can also give them a grade and by this we can see how many students solve this and know about the library, following queries are overcome by this feature.

- Library user survey is automatically happen by so.
- We can improve the services as we'll exactly know how many students know about library.

Fig: Assignments grading system

3) Challenges:

As we know there are so many libraries and user are still there that running traditionally and thus there are some challenges to the libraries as well as the users for implementation of this system

- It need one dedicated server in case of Non-cloud system, one dedicated system admin for running
- It needs to add and erase the users on every yearly basis, so there are so many things that are on practice basis.
- It is found in study and through experience that students try to avoid our assignments as there is no such grade for internal assessment for this.
- Promotion of this course is very high necessary and thus library need to update constantly to keep users in our touch.

4) Suggestions: Following are suggestions must be follow for this

- Librarians must go for this Moodle and if available already then we must include the course for Library for our E-Services.
- Moodle need only one time creation of assignments, regular event drafts and regular events and then we'll be able to post it regular.
- As a librarian we must create digital or video contain of N-LIST and other E-Resources and then it will be easy to promote it in Moodle.

5) Conclusions:
Moodle is an open source and free learning system platform that we should use in our college or institute, I make a conclusion over this research study that it is more friendly platform and libraries can easily use for promoting our services, for upcoming events, workshops and programs, we can give alert services and other reference services we also deliver on the Moodle. Other important conclusion is driven from this is that all the students are collectively join and active on the Moodle and join or attach with the library E-services which is very big thing.

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ELECTRONIC INFRASTRUCTURE: OPEN SOURCE SOFTWARE USE IN LIBRARY

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Abstract

Today's technology is the modern web based technology. Now all the member/staff/faculty uses the internet, through the computer, mobile phone or etc. So that's why easy to handle the computer operating system. Library automation is one part of the new technology and the automation is depending among the software. For ex. open source software, free software and Commercial software. This paper describes and discusses various open source software free available for the library automation. The results indicate that different types of open source software are better for different types of commercial library software's as their goals and achievements are different. Open source software use through the license copy.

Key-Words: *Open Source Software, Information Technology, Library Software, Drupal, Features of Open Source, Library Service.*

Introduction:

Open Source Software is the software created by programmers who want to share their source code, which is part of a program that is readable by anyone who finds it useful. According to Wikipedia "Open source software (OSS) is computer software that is available in source code from for which the source code and certain other rights normally reserved for copy right holders are provided under a software license that permits users to study, change and improve the software". "Open source refers to the software in which the source code is freely available for others to view, amend and adapt. It is maintained by a team of developers cutting across the institutional and national boundaries".

-Richard poynder.

In general open source is the free access to the design, development of the source code of particular software open source, the license of a program must guarantee the right to read, redistribute, modify and use it freely. Open source software is the best option for the library automation. Because many types of OSS are available in the market such as KOHA, DSpace, NewGenlib, Zoomala, Moodle, Evergreen, PMB Greenstone. This all software available free of cost. So many problems with the commercial vendors regarding their maintenance and annual rates. And this types of integrated software available in market cost in lakhs. To copy up with the need of college librarians should adopt the new technology tools to provide right information at the right time. That's why save the time of the reader. Open Source Software is software that allows users access to its source code. It allows users to modify the program according to need and to develop new code that improves the application a common misconception about OSS is that it is free of cost. While this is sometimes the case, the cost of OSS is often found in support services rather than in product acquisition. This fact sheet provides information about the value and potential cost associated with adopting Open Source Software discusses the relationship between Open Source Software and open government and provides questions to be asked when evaluating Open Source Software.

What is Open Source Software? Open Source Software is software like any other, however it is distinguished by its license, or terms of use, which guarantees certain freedoms, in contrast to closed proprietary software which restricts these rights. Open Source Software guarantees the right to access and modify the source code and to use reuse and redistribute the software, all with no royalty or other costs. In some cases, there can be an obligation to share improvements with the wider community, thus guaranteeing global benefit.

UNIX: UNIX is the first stage of open source. In the year 1950 to 1960, Computer technology and software was introduced to work in the educational and special industrial institutions.

Open source Software Licensing: A license defines the rights and obligations that a licensor grants to a license. Open source licenses grant licensees the right to copy, modify and redistribute source code.

OSS Attributes:
1. Source code must be include.
2. Distribution of license.
3. License must be technology-neutral.
4. License must be specific to a product.
5. Integrity of the author's source code.

Cost of Open Source Software: Open Source Software and its supporting code are generally free of cost to download, use, and modify; however, services related to Open Source Software. Might not be individuals and for profit businesses can charge for specialized training   or for developing new extensions to the core Open Source Software code.

Ranganathan's five laws VS Open Source Library Software: According to Mentor Cana used the term 'Software' as a basic element as Ranganathan's basic elements is book. Both book and software contains objective knowledge.

Type	1st law	2nd law	3rd law	4th law	5th law
Book	Books are for use	Every reader his/her book	Every book it's reader	Save the time of the reader	Library is growing organism
Software	Software is for use	Every use his or her software	Every software it's user	Save the time of the user	A software library is a growing organism

(Source http://www.kmentor.com/socio-tech-info)

Features of Open Source:
1. **Free circulation:** Any user can use Open Source Software and pass it on as often he or she wishes.
2. **Availability of source code:** The Software low cost is available with its source code.

Some Open Source Library Software:

Open Source Software is computer software for which the source code and certain other rights normally reserved for copyright holders are provided. This permits uses to use, change and improve the software, and to redistribute it in modified or unmodified from.

1. **Moodle:** The word Moodle was originally an acronym for which is mostly useful to programmers and education theorists. Moodle was created by Martin Dougiams. A web communication technology administrator at Curtin University, Australia who has graduate degree in Computer science and education. The word Moodle is actually an acronym for Modular. Object-oriented Dynamic learning environment, although originally the M stood for 'Martin's named after Martin Dougiamas, the original developer.

   Moodle has been evolving since 1999. The Moodle version is 1.9.7., which was released in November 2009. It has been translated into 80 different languages. Moodle is a software package for producing Internet-based courses and web sites.

Features:
   1. Activities.
   2. Resource types.
   3. Question types.
   4. Data field types.
   5. Graphical themes.
   6. Content filters.

2. **Brihaspati:** Brihaspati software establish in 2008 in India. The organization is dedicated to developing high quality, user friendly software products for all platforms, to provide full service for affordable off share web site design, for Open Source Software.   Brihaspati is implemented in Jawa using Turbine, an open source framework, as secure web application. In the current distribution, we have English, French, Hindi, Bangla and Marathi as supported languages.

Features for all users: (Admin, Instructor, Student, Author). Anybody can access all these features:
   1. Calculator.
   2. Glossary.
   3. Search engine.
   4. Calendar.
   5. Repository browser.
   6. Task manager.

3. **Plone:** Plone is a free and open Source content Management System built on top of the zope application server plone can be cased for in principle any kind of website, including blogs, internet sites, web shops and internal websites. The plone project was begun in 1999, by Alexander Limi, Alan Runyan and Vidar Andersen. The first version was released in 2001. The increase in community led to the creation of the annual plone conference in 2003, which is still running today.

Features:
1. In line editing.
2. Working copy support.
3. Link.
4. Reference integrity checking.
5. Automatic locking and unlocking, collaboration and sharing .
6. Work flow capabilities.
7. Authentication back-end.
8. Full text indexing of word and PDF documents.
9. Collections.
10. Wiki support.

4. Greenstone: Greenstone is produced by the New Zealand Digital library project at the University of Waikato, and has been developed and distributed in cooperation with UNESCO and the human info in Belgium. It developers received the International federation fir information processing's 2004 names award for contributions to the awareness of social implications of information technology, and the need for an holistic approach in the use of information technology that takes account of social implications.

Features:
1. Small bronze star in the top right corner of a page indicates that the content is featured.
(Krishnamurthy, M. 2007).

5. SCORM: (Sharable Content Object Reference Model).
SCORM Software located in India Ahmadabad Maduvan Infotech Pvt. Ltd.
MINFO started its full flagged operation in 1995, and has undertaken mission critical projects and product development on niche technology domains for global and Indian orients to their complete satisfaction.

Features:
Three types of user registration:
Open, Approval, Required or closed
1. Publish SCORM catalog.
2. Launch and track courses.
3. E-learning software keeps track of bookmark.
4. Scores and results of individual questions.
5. Online reports.
6. Full support for SCORM 1.2.
7. Place learners in groups.
8. Easy to use.
9. Customizable.'
10. Upgradeable.
11. Multilingual.

6. **Caroline:** Caroline is an open source e-learning and e-working platform allowing teachers to build and collaborative activities and the web. Translated into 35 languages, carline has a large worldwide user and developer community.

Features:

1. Publishing documents and files accessible to the users.
2. Creating directories and un-directories together files.
3. Creating hyperlinks and building your own HTML pages.

Conclusion: Today's age is the information explosion. It demands all the librarians to organize and provide right information to the right user at the right time. This paper consist that the basic overview of Open Sources Software and how libraries can be utilized by using Open Sources Software. No any software is perfect. The role of library software is cannot be neglected in the field of software development.

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GOOGLE TOOLS: BOON FOR LIBRARIES

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Abstract

Everybody is aware that Digital India is a campaign launched by the government of India to provide that government server are made available to people electronically by improved online infrastructure & by increasing internet connectivity or by making country digitally empowered in the field of technology.

Now a days we can see as the librarians also going to prefer of IT should include all those technologies which are expected to be used in the library activities and other services for collection, processing, storage, retrieval & dissemination of recorded information. Google is common tool in education but with this we getting the most googles application in our library. This paper explains how Google products or tools can be utilized in enhancing library services.

***Keywords:** Google tools /products, information technology, library, IT applications.*

Introduction

In this knowledge era we come towards awesome list of new application which leads to enhance and ease the quality of services provide by library and information centre. As we know it is said that knowledge about availability of knowledge is best knowledge. Knowledge about google tools or product plays a very important role in improving the effectiveness of   library and its services. Library use different tools and techniques to circulate the information to the user community.

In modern era, libraries can adopt new technology to provide it's services in a better and effective manner for the remote users.the use of technologies is to pull the resources of libraries at maximum level to the users who don't have enough time to know the status of resources of library or to get the information by their personal visit of libraries and to support the libraries. Libraries experiment with technology and services to support the information needs of their users wherever they may be .the adaptation of technology alerts the traditional relationship between libraries and their users and devices.

 Technology including the development, maintenance & use of computer system, software for the processing and distribution of data. Google has become boon to the libraries. As we know there are near about more than 251google tools or product here in this article we see some tools which are very useful in libraries to enhance the services.

About Google

In year 1995 American computer scientist and internet entrepreneur Larry page and sergey brin were at Stanford University in California .They created a search engine called 'back rub' and needed a new name. After lots of thinking, they went with Google-a play on the word "googol", the mathematical number 1 followed by 100zeros.

Google may be synonym for search, but it's not restricted to that feature alone if anyone is not a tech savvy person then there are chances that we are unaware about google product and service.

Google is much more than just a search engine. This is one of the biggest and most powerful companies in the world.

Here we will see some Google tools one by one

Google calendar: it is free online time management and scheduling calendar, includes Gmail integration, calendar sharing, and quick add function that allows inserting events using natural language input.

Google charts: is an interactive web based chart image generation from user supplied javascript.

Google docs: it includes documents, spreadsheet, drawing, survey & presentation application with document collaboration and publishing capabilities.

Google site: is a web page creation platform tool both for personal and corporate use.

Google hangouts: is an instant messaging and video chat platform by unified replacement for google talk.

Blog: it is a publishing tool by google where users can create custom hosted blogs with feathers such as photo publishing comments, group blogs blogger profile.

Federated search: It is a technique used to search multiple data sources at once. With federated search, you can retrieve information from many different content locations with just one query and one search interface.

Google desktop search: it is computer programme with desktop search capabilities, created by Google for Linux, apple mac os X Microsoft windows system. Few alternative applications for Google desktop also available like copernic desktop etc

One drive search: if we are working in one drive personal account, a search includes only the content of folder we have open. For example if a folder called xyz is open, search will look only at the files in the xyz   folder. to search all of our one drive files, use search in the files view.

Sweet search: is a Search Engine for Students. SweetSearch helps students find outstanding information, faster. It searches only the 35,000 Web sites that our staff of research experts and librarians and teachers have evaluated and approved when creating the content on findingDulcinea.

Grammerly: scans your text for common grammatical mistakes (like misused commas) and complex ones (like misplaced modifiers). Write with confidence. it has both free and paid plagiarism detector. We can able to check for free paper, docx word file or web page

Google translation: Google Translate can translate multiple forms of text and media, which includes text, speech, and text within still or moving images. it is multilingual machine translation service developed by Google to translate text, documents and websites from one language to another. Google Translate supports 109 languages at various levels and as of April 2016, claimed over 500 million total users, with more than 100 billion words translated daily

Customized search engine: Google's custom search engine is by far the most popular because it allows search results to be prioritized or restricted based on customized settings specified from a control panel. Several intrinsic features manage how the custom search engine responds from

within the particular intranet while the control panel provides the freedom to modify settings to fine tune the search results as per the user's request.

Google books: search engine for the full text of printed books.

Google scholar: a scholarly search engine that searches the full text of scholarly literature across the field of academic publishers

Google form: it is survey administration software included as a part of the free web based suit offered by Google. You want to create online surveys; quizzes, or questionnaires, *Google form* is one of the most versatile tools.

Google drive: it is useful storage and access for our files in one place securely. It is an online backup service and storage space**.**

Google one: it is subscription service developed by Google that offer expanded cloud storage. It is replaced the paid services of Google drive to emphasize the fact that the program is used by multiple Google service

Google news: it is news aggregator service developed by Google well known as world's largest news aggregator .it presents a continous flow of links to article organized from thousand of publishers and magazines.google news is available as an app. it is available in 35 languages

Google image search: image search engine with results based on the file name image, the link text pointing to the image, the link text adjacent to the image when searching, a thumbnail of each matching image is displayed.

Google advanced image search: Searching for photos or images on Google is simple. The Google toolbar has several options to choose from. The user has to click on the Images icon to access the Google Image data base.

Google reverse image search: it helps us to quickly discover visually similar images from around the web. Upload a photograph from your desktop to Google image & it will show related images used on other websites and also in various sizes

Google alert (create): an email notification service that sends alerts based on chosen search terms, whenever it finds new results

Collection tools: collection of linguistic applications, including one that allows users to translate text or web page from one language to another and another that allow searching in web pages located in a specific country or written in specific language

Google im feeling lucky: Google's homepage includes a button labeled "I'm Feeling Lucky". This feature originally allowed users to type in their search query, click the button and be taken directly to the first result, bypassing the search results page. It directs you to the first result of the page, without showing you the actual results page. In other words - if the search was perfect it would lead you to the desired result with one less click. "I'm feeling lucky" was a kind of provocation on the part of Google, as it said "you can trust my results".

Basic search with Boolean logic: Boolean operator**s** form the basis of mathematical sets and database logic. They connect your search words together to either narrow or broaden your set of results. The three basic Boolean operators are: AND, OR, and NOT.

Boolean Search uses a combination of keywords and the three main Boolean operators (AND, OR and NOT) to organize and sift through your searches. It produces more accurate and relevant results, allowing you to navigate through appropriate candidates, while disregarding the unrelated.

Paid search in Google: Paid search results have a little green box with the word "Ad" before the listing; this is where a company, like yours, has paid to have their page show up at the top of the list. This can be done through Google Ads search campaign, which charges you a small amount of money for every person who clicks on that link. Paid search works to drive traffic to your website through relevant ads.

Organic search in Google also known as natural search, refers to unpaid search results. In contrast to paid search results (pay-per-click advertising), which are populated via an auction system, organic search results are based on relevance to the user's search query, links and domain authority and other organic ranking factors.

Google Drawings: it is a powerful tool for educators. Google Drawings is diagramming software to create digital displays. Flowcharts, diagrams, concepts map, mind map etc. it allows importing images from the computer

Google Cloud: it is a platform offered by Google .it basically runs on same infrastructure as Google uses for its end- users.

Conclusion

Google has been the second most valuable brand in world. With the aim of organizing the worlds information, and make it universally accessible and useful Google is providing various services and products. Therefore these Google product or tools can be used in libraries for the benefits of user's. Libraries can attract users in the virtual world by using Google tools for providing ready reference services to users.

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ICT APPLICATION IN ACADEMIC LIBRARIES

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Abstract

Paper deals with application of ICT tools and techniques in academic libraries in present scenario .In education ICT used to maximize educational potential, and it is now widely use libraries ,access, retrieve store, manipulate and disseminate information to users. Information Communication Technology (ICT) has brought unpredicted change and transformation to academic library and information services , conventional LIS such as OPAC, user service , reference service, bibliographic service, CAS service, document service, interlibrary loan service etc.
Keywords: *ICT, Information Communication Technologies, Library Services.*

1. Introduction

The use of computers has been steadily increasing in science and technology since 2nd world war. Internet access is one of the greatest technological advancement being experienced in this 21st century. To render best services to users. Libraries and Library professional are using various type of technologies to provide the updated and desired information, computing communication, storage and retrieval are the areas of continues development and remodeling to dissemination information and to meet users satisfaction. Academic libraries are the central part of the only institution and mend for learning, teaching and research and development process.ICT act as primary roots of Banyan tree with many branches covering creation , communication, distribution and administration which are pillared by prop roots like Internet, Telephones, Mobiles. Television, Radio, Audio, Visual, sate light communication hardware, software, etc.

ICT have changed the work pattern in libraries also now the printing is covered by digital form. ICT has waste application but in librarians it has made remarkable change process of acquisition, storage, retrieval and dissemination. ICT have changed the we way line, learn and work as a result. Quality at every stage in line is improving the effectiveness in all sectors. In today's scenario ICT is acting as junction off all computer and communication technologies.

1.   Concept of Information and Communication Technology (ICT)

The term ICT represent all the activities and technologies associated with the use of software, hardware with internet and internet techniques. Which are use for exchange of information between sender and receiver. ICT is an integration of telecommunication, computers, middleware as well as necessary software, storage and audio-visual system, which enable users to create, access store transmit and manipulate information.IN other words, information and communication technologies consist of IT as well as telecommunication, broadcast media, all type of audio and video processing and transmit ion and network based control and monitoring functions.

ICT has completely revolutionized the information handling in the activities in the library and information centers in the digital era so as to provide improved services to users.

2. Need of Information Technology

Due to information explosion it is very difficult to handle large information with traditional library tools like manual catalogue , bibliography etc. In today library enviournment to provide the right way is not possible without ICT application has been necessity and need.

3. Objective .

. To provide greater and easier access information.

. To allow access to computer and the internet for everybody.

. To assist people to develop their ICT skill for accessing information.

4. Necessity for ICT in Libraries

To speed - up accurate and reliable data transfer in future there is a also a danger of non-availability of hard copies of document particularly to secondary sources that are available only on CD-ROM. Knowing this continuing education about act of libraries is essential The literature is almost all the fields is increasing tremendously and in a multidimensional way. Because of growth, manual bibliographic control is not feasible and ICT is needed. The information seeking behavior of the users is also changing according to their varied needs.

The quality users friendless, effectiveness, reliability an regularly of library services can be mach improved through ICT.

1. To utilize growing word of electronic information of ICT is necessary.
2. With the help of ICT it is possible to gain local, regional, national and international reputation.
3. To access experienced and expert individual in my fields.
4. To provide regular updates on topic of internet to users.

6. ICT Base User Services

They require access to the latest information, update information resource and access ICT in libraries enhance user satisfaction. It provide numerous benefits to library users,

some the benefits are.

. Provide speedily and access to information.

. Provide remote access to users.

. Provide round the clock access to users.

. Provide access to unlimited information from different sources.

Library are also providing various ICT based services to their users. including the following provision of web access to OPACs.

. Electronic document delivery.

. Network information resources.

. Delivery of information to user desktops.

7. Advantage of ICT in Library

. ICT make library work easier, faster, cheaper, and effective.

. Help to manage information overload is information retrieved is made easier in

Computerize system.

. Remote access is enabled through network system.

8. Challenges of Using ICT in Academic Libraries.

1. Inadequate found is manager obsolete to the application of ICT facilities in academic library.
2. Poor and inadequate telecommunication facilities .
3. Poor level ICT infrastructure facility in the academic institution.
4. Lack of technical IT knowledge by library staff.

9. Conclusion

Information Communication Technology (ICT) tools and techniques utilized has been spread widely in every work of human being all kind of organization .In academic enviourmental, ICT application use to create standardized and better academic enviourment in educational and institutional libraries are the central place to create the information need of students of the institution. Due to rapid changing enviourment, it is necessary to employ the application of ICT in libraries to serve the need of their users in better and faster way. ICT has improved the library services then additional one and now become the demand of the users as well as organization to fulfill the necessary requirement in time. It the demand of libraries to deeply ICT tools and train the library staff to run the library services based on ICT effectively.

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IMPACT OF INFORMATION TECHNOLOGY ON INFORMATION SEEKING BEHAVIOR OF POST GRADUATE SCIENCE STUDENTS

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Abstract

The aim of this study is to reveal the information seeking behaviour of post graduate students in different departments of the K.V.N. Naik Arts, Commerce and Science College Nasik. The study recommended, orientation programmes for P G students to make awareness of e- resource and better utilisation of the library services, it is also recommended that library should join some consortium for resources and for involve resources and services.

1. Introduction:- The Information Seeking Behaviour (ISB) mainly depends upon the attitudes skill and knowledge (ASK) of individual and resources and technologies available around. It also difference from person to person, time to time, as well as place to place and type of information. Hence, it is essential to know the ISB of the users of information. Due to ICT the concept of ISB is changing in a very alarming rate. The Present study is an attempt to search out the information seeking behaviour of students at KVNN Naik ACS College Nashik.

2. Background:-The present era is 'information era'. Information has become a vital component for the growth and development of a society. Information is a life blood of present society; it is accepted as key issue in today's competitive world (**Prabhavati,** 2011). Information seeking is a essential activity refers to the way individuals search for and make use of information to fulfil their information needs and requirements. It describes "how users search, get and use information in different contexts (**Esew, Makarft, goshie, and Jimada,** 2014).

3. **Need of the Study:-**The role of information is very vital in every activities of student's life. This study is necessary to find out how students seek the information, which channels of information they use while searching information, what type of library information sources and services they use. We are passing through the age of competition.

4. Objective of the Study:-The main objectives of the study are:-

Objective 1: To study the information-seeking behaviour postgraduate students.

Objective 2: To study the utility of electronic resources available in library.

Objective 3: To suggest strategies that improves postgraduate student's information-seeking behaviour.

5. Data Presentation, Analysis and Discussion-

The objectives of this study were to understand the information-seeking behaviour of postgraduate students. Hence, in-depth information was collected from the respondents using a questionnaire.

5.1. Academic year-wise distribution

From Table 5.1, it is observed that 223 (39.00%) respondents were from M.Sc. first-year while 37 (61%) were from M.Sc. second year indicating that a higher number of second-year students participated in the study. This may be due to various reasons. Firstly, second-year students have

spent more time in the institute as compared to the first-years and hence, are mostly aware about the resources available in the library. Secondly, students have to complete their research project in their second year and hence, are dependent on the library facility. Table 5.1 Academic year-wise distribution of respondents

Academic year	Number of respondents	% of respondents
M.Sc. 2nd year	37	61.00%
M.Sc. 1st year	23	39.00%
Total	60	100%

5.2 .Use of OPAC to find the reading material in library

Table 5 shows the use of OPAC by the respondents to find reading material in library. Out to the total 60 respondents, 58.00% library users used OPAC to find reading material in library while remaining 42.00 % users did not the same.

Table 5.2 Use of OPAC

Response	Number of respondents	% of respondents
Yes	35	58.00%
No	25	42.00 %
Total	60	100%

OPAC is the most efficient information retrieval system which plays a critical role in facilitating easy retrieval of library information resources in the library. It is a reliable and best way to retrieve the information according to user needs and is used to check availability of documents in a library. It was observed that the users lacked awareness regarding OPAC and its importance as well as skills and required proper guidance from library staff in searching and locating the resources as per their needs on the shelves.

5.3. Which of the following sources do you prefer?

Table 5.3. Depicts the data sources preferred by users during information-seeking. Out to the total 60 respondents, 100% library users preferred both print and electronic sources for seeking information. This was followed by 81.00% respondents who used e-books while 10.00 % respondents used library databases. Only 9.00% respondents preferred e-journals for information-seeking.

Table 4.17 Preferred information sources

Response	Maximum Number of respondents	Number of respondents	% of respondents
e-books	60	49	81.00%
Databases	60	6	10.00%
e -journal	60	5	9.00%
Both print and electronics	60	60	100%

An e-journal is a journal wherein full-text articles are available online. These may have features such as links to other articles, keywords, interactive citations, and an option to download as a PDF (which requires Adobe Acrobat Reader to read). Articles in PDF appear the same as the printed version. Some articles are also published in HTML format in addition to PDF. This is particularly useful in case one wishes to access articles remotely instead of coming onto campus.

E-journals use accessibility technology such as a screen reader or text-to-speech software which helps you read. It is easier to search for articles by keyword in Summon (which isn't always possible for print articles).

5.4. Which search engine do you use for searching information?

Table 5.4 shows search engines used by the respondents to search information. Out to the total 60 respondents, 86% library users said that they use Google for searching information while the remaining 14.00% respondents preferred Yahoo search engine. None of the respondents used Bane, Ask.com, AltaVista and MSN.

Table 4.18 Search engine used for searching information

Response	Number of respondents	% of respondents
Google	52	86.00%
Yahoo	8	14.00%
Bane	0	0%
Ask.com	0	0%
AltaVista	0	0%
MSN	0	0%
Total	60	100%

It is important to choose the right keywords for effective web search as there is a lot of information available and only some may be useful. It is better for new web user to use a plain keyword search. In this way, most of the hits will appear at or near the top of the list. It is difficult to get precise information by using natural language search or by using multiple words or phrases.

5.5. Are you aware through library orientation program about the rules, facilities and services of the library?

The awareness of the respondents regarding library orientation program involving rules, facilities and services offered by the library. Out to the total 60 respondents, 27.687% students are extremely aware about library orientation program while 25% respondents are moderately aware about the same. Additionally, it should be noted that 48.07% students are completely unaware about library orientation program.

6. Summary, Recommendations and Conclusion

Introduction

This topic discusses the major findings of the study along with its implications, provides recommendations for improving the functioning of libraries for students and also gives an insight of the future scope of the study

6.1. Major findings

The major findings of the study have been enlisted below: ..

- It was observed from the present study that ~51% library users used OPAC to find reading material in library while 49.46% did not use OPAC to locate their documents in the library. OPAC is an imperative service for any library system as it helps the users seek information. The search process in OPAC has more or less remained the same, i.e., with card catalogues but with increased access points, varieties of search features and

increased user-friendliness. End-users are not only expected to have technological searching skills but also theoretical and semantic information, relating to the query, especially for subject searching in order to articulate the question. OPAC is a revolutionary tool in today's libraries. Automated library system in universal and specifically online catalogues will carry on being productive and enhancing the usage of library collections. The OPACs of different organizations can be used as a union catalogue for better use of resources in a region.

- Search engine is an aid to find pin pointed information while to saving time and energy. However, as yet, there is no 'ideal' single search engine which constitutes as a complete and ideal tool for searching information searching on the internet. The study questionnaire included several common and frequently used search engines to access information on internet. It was observed that 86% respondents used Google search engine for searching information while the remaining 14% respondents used Yahoo. None of the respondents used Bane, Ask.com, AltaVista and MSN.

- Awareness of the students regarding library orientation program involving rules, facilities and services of the library was investigated. It was observed that ~27% students were extremely aware and 25% were moderately aware of the program while ~48% students were unaware about the same.

6. 2.Suggestions

i.   Popularity of the library as place to seek information should be improved by modernizing and promoting the available library resources and utilizing them to the fullest. From the present study, it was observed that preparation for exams and making notes are the main reasons for information-seeking and, hence, majority of students use printed reference books as formal source of information.

ii. The library staff should be equipped with sufficient ICT knowledge and browsing skills by the means of formal training programs. Library staff should serve the users by providing right information at the right time. There is a need to improve power supply as well. The library should be fully automated and also necessary information resources should be digitized for preservation and easy access.

iii. Students must take part in the library orientation program and the library skill classes that are taught by the library staff at the beginning of the new session. The library professionals and supportive staff must always be willing and ready to provide assistance to students who have little or no knowledge of using the library.

7. Implications for further study

The theoretical contribution of this research is that it considers a relationship between information- seeking methods, e-resources and staff co-operation with reference to library which is relatively new in literature. The construct of research includes students' awareness, barriers in information-seeking, e-resources and library staff members.

8 Academic value of research

This research provides compelling evidence that libraries and library staff have a positive impact on student's achievement. Studies show that this remains true when variables such as socio-economic factors are accounted for. The present research shows higher student performance, improved reading test scores, higher academic achievement, and positive attitudes towards learning are associated with the use of libraries.

9. Conclusion

The present study attempted to understand the information-seeking behaviour of postgraduate iscience students in KVNN Naik Arts, Commerce and Science College, affiliated to SPPU and located in Nashik district. A review of literature was undertaken to understand the research area, already conducted studies and identify the research gap. It was organized around the information- seeking methods, e-resources and staff co-operation with reference to library.

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IMPACT OF INFORMATION TECHNOLOGY ON LIBRARY SERVICES: AN OBSERVATION

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Abstract

Information Technology is playing vital role for developing the libraries and information centers. Information is a dynamic and unending resource that affects all disciplines and all walks of life as it supports education, research and development. As libraries and information centers deal mainly with information, majority of their technical applications will be in the collection, handling, storage, and dissemination of information or information technology. Technologies, especially computer and telecommunication technology have highly revolutionized the field of library and information services. They facilitate collection, storage, organization, processing, analysis, presentation, communication and dissemination of information. With the introduction of new technology, libraries are expected to use various types of technology to provide information, more quickly and in greater volume than before. The advantage of IT applied to information retrieval is the immediate and local access to a much wider range of library resources. Information Technology refers to anything which is related to computing technology. Presently majority of libraries are facilitating with web OPAC, E-journals, E-books, Repositories, Digitization & Digital Library. The implementation of information technology in the libraries has demanded new forms of library services to get more user satisfaction. Digital library service has evolved after the implementation of Information Technology in the library and information centers.

Keywords: Information Technology. Impact on Library Services, E-Resources

Introduction

Information and Communication Technology has transformed library services globally. In India, computerization of library had started in the year of 1955 at Indian Statistical Institute which have been used production of information product and services. Every facet of library work, in academic, school, public, and special libraries, is being transformed as a result of technological advances. Information Technology is playing vital role for developing the libraries and information centers. Information is a dynamic and unending resource that affects all disciplines and all walks of life as it supports education, research and development. As libraries and information centers deal mainly with information, majority of their technical applications will be in the collection, handling, storage, and dissemination of information or information technology. Technologies, especially computer and telecommunication technology have highly revolutionized the field of library and information services. They facilitate collection, storage, organization, processing, analysis, presentation, communication and dissemination of information. With the introduction of new technology, libraries are expected to use various types of technology to provide information, more quickly and in greater volume than before. The advantage of IT applied to information retrieval is the immediate and local access to a much wider range of library resources. Information Technology refers to anything which is related to computing technology. Presently majority of libraries are facilitating with web OPAC, E-journals, E-books, Repositories, Digitization & Digital Library. The implementation of information technology in the libraries has demanded new forms of library services to get more

user satisfaction. Digital library service has evolved after the implementation of Information Technology in the library and information centers. Therefore to study of use of information technology and E-resource in Academic libraries I choose this topic for research paper.

Objectives of research:
1. To study of use of Information Technology in libraries.
2. To study use of E-Resources in academic libraries.
3. To overview on Impact of Information Technology and E-Resources on Library Services.

Research Methodology:

For the purpose of this study used social science research methodology. to study the research topic Used scientifically analysis. In this method used secondary data tools. In this secondary data tool used reference books. Research articles, newspapers, journals, published and unpublished materials and also taken help of internet facilities. In the modern period academic Libraries are consists of many types of Academic materials therefore, to provide actual and fast service use of information technology and E-Resources is necessary in the academic Library.

Needs of information technology on Library Services

Dr. Rangnathan stated that "to increase the productivity of higher education in university & colleges, it should case to be curriculum centered & text book centered. It should become - centered & there should be a close & willing partnership between Libraries, Students & teachers." one of the primary aims of information service is putting knowledge to work. In order to put knowledge to work, one has to understand not only the characteristics of knowledge but also to know how knowledge is observed & assimilated, the motivation it induces & how it must be channelized for most efficient & effective utilization. Thus utilization of information is basically a communication process. Due to information explosion it is very difficult to handle large information with traditional library tools like manual catalogue, bibliographies, etc. In today's library environment, to provide the right way, is not possible without information technology application. Information technology has become necessity and need.

Need of E-Resources in Library: E-Resources enable the librarian to provide better service to the user community. The few considerable points are mentioned bellow;

- To get access to an information source by the more than one users.
- E-Resources can be searched quickly.
- These can be found easily by the user.
- These resources can be stored in huge amount.
- Amount of time spent on the E-Resources use.
- Analyses the purpose of using e-resources by respondent
- Know different types of e-resources commonly used by respondents
- To collect, store, organize information in digital form.

Characteristics of E-Resources

- Access to every document by anyone; from any where

- Retrieval of e-resources is quicker than print resources
- The users can be guided to the document by providing a link.
- Easy to search the text
- The collection available in electronic format can be of any media.
- Ownership not that important
- In electronic environment the interaction between user and librarian is frequent.
- No defined user group
- The software can help the users in retrieving the desired information; hardly intermediate can help users.

Impact of information technology on Library Services

In old days library was considered as mere storehouse of knowledge. But these days information technology has reshaped the functioning and services of libraries. The activities which were carried out manually are being carried out effectively and smoothly with the help of information technology. Information technology has changed the way of acquisition, technical processing, periodical subscription, and circulation activities etc. in such a way that library readers can get desired information and services effectively in shortest time with less man power involvement. Information has always been prime factor for the development of society and is often regarded as a vital national resource. Information services try to meet this objective. Information has become important part of our lives and should be available when needed. Information services are generated using new tools and techniques to facilitate the right users to the right information. This is the information age because information technology is growing fast. Traditional libraries are changing their role and functions according to the new trends in the society. Library is providing information through the computers and internet. It can be said that without the help of the computers and internet any library information Centre cannot satisfy the users. To speed-up accurate and reliable data transfer in future there is also a danger of non-availability of hard copies of documents, particularly to secondary sources that are available only on CDROM. Knowing this, continuing education about information technology for libraries is essential. Due to the escalation in prices of periodicals and books, no library can afford to acquire all the publications; resource sharing through networking is the only option. To participate in the network, computerization of libraries is a prerequisite. Many International databases like DIALOG, MEDLARS, INIS, AGRIS, etc. are delivering the information electronically. Unless the libraries are automated, there is no possibility for accessing the information from these global level databases.

Conclusion

Information technology has transformed library services globally. Most current information are recorded in electronic format, Information Technology has also contributed immensely to the performance of librarians in the discharge of their duties such as in cataloguing, reference etc. Information technology has also made an impact on the alerting services, mainly by providing speedy access to information that appears initially, and the news and business services of one

kind or another in electronic form. The implementation of information technology in the libraries has demanded new forms of library services to get more user satisfaction. Digital library service has evolved after the implementation of Information technology in the library and information centers. Information technology has had a significant impact and has successfully changed the characteristics of information services being generated in libraries. The technological advancement have made significant impact on the growth of knowledge and unlocking of human potential. In library, the impact is clearly visible on information resources, services, and people

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INFORMATION COMMUNICATION & TECHNOLOGY (ICT) INFRASTRUCTURE IN ACADEMIC COLLEGE LIBRARY

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Abstract

Academic College plays the important role in developing the knowledge power of any individual in a society. The libraries of academic colleges are not confined only to printed information sources in fact, they have started acquisition and management of digital or electronic or virtual information resources. Thus the academic college's library is able to fulfill the needs of the students, teachers and researchers by providing different kind of printed or digital resources. Better and effective library services can be ensured by the application of information and communication technology with skilled and qualified library manpower. The technological aspect of ICT has created few challenges in the academic college libraries especially in Amravati region in the state of Maharashtra. The study covers the academic degree colleges which have been imparting general education. The study investigated the ICT Infrastructure in the academic college Libraries of in the region of Amravati state of Maharashtra. This will identify the availability of ICT infrastructure facilities, and the barriers associated with the implementation of ICTs in the college libraries.

Introduction :

A library is the heart of an institution which collect, stores and transmits updated information to the teachers, students, scientists, researcher and those who are engaged in research activities. The quality of an academic institution depends upon the quality of services provided by the academic library. An academic library is known as the heart of any academic institutions. The college libraries have a tremendous role for enhancing the knowledge and skills of the academic students in both rural and urban communities. Information and communication technology are any combination of tools and procedures that facilitate the acquisition, storage, searching, retrieval and transmission of information. It fundamentally changes the access, storage and dissemination of information and facilitates global interconnectivity and accelerated information exchange.

ICT offers sufficient opportunities for libraries to automate the traditional activities, implement effective library co-operation and resource sharing networks, develop institutional repositories or digital libraries, provide value-added information services and initiate capacity building programs for the library staff and the users. The ICTs are used in libraries to provide better security services and fulfill the needs of the user as per their requirement. It is also used in libraries for development of new information services and improving the productivity and efficiency of library services. The ICT based resources help to save the library space by using the electronic storage media and virtual learning activities.

Academic Colleges is an important part of higher education which is usually identified with the education in colleges, universities, technologies and which deals mostly with adults and is a higher level of knowledge in terms of its complexity and understanding. After independence, Government of India has given importance to education sector for achieving the development

goals. Various committees and commissions were set up by the Government of India to look into the problems of educational reforms. These reforms have great impact in the development of higher education in the post independence period.

Objective of the study :

1. To identify the hardware infrastructure facilities in academic college libraries.
2. To identify the software infrastructure facilities in academic college libraries.
3. To identify the availability of ICT based technology in the academic college libraries.

Scope and Limitation of the study :

The study covers the academic degree colleges which have been imparting general education in the state of Maharashtra. The study have covers the 100 academic college in the region of Amravati The colleges which are imparting the academic education i.e. arts, commerce and science stream other colleges related to professional courses are excluded in the present study.

Research Methodology :

Research methodology of the study includes the use of questionnaire, interview and observation method for collection of primary data from the respondents. The purpose of the questionnaire is to get data regarding the Information Communication & Technology infrastructure in academic colleges in the region of Amravati. Random sampling method has been used to select the colleges and collect the data from the librarians. The questionnaires were distributed personally or by Google form to the college librarians and the same were received personally or through Google form. The data obtained from the filled up questionnaires is classified, analyzed, tabulated and logically interpreted with statistical technique i.e. frequency, mean and standard deviation etc.

Result and Discussion :

Table no. 1.1 ICT Related Hardware infrastructure availability in Academic college libraries.

Sr. no	Description	Response				Total	
		Yes	%	No	%	Total	%
1	Server	94	94.00%	06	06.00%	100	100%
2	Desktop	99	99.00%	01	01.00%	100	100%
3	Laptop	19	19.00%	81	81.00%	100	100%
4	Printer	95	95.00%	05	05.00%	100	100%
5	Scanner for general purposes	86	86.00%	14	14.00%	100	100%
6	Scanner for digitization	45	45.00%	55	55.00%	100	100%
7	Barcode scanner	78	78.00%	22	22.00%	100	100%
8	Barcode Printer	77	77.00%	23	23.00%	100	100%
9	Backup devices	62	62.00%	37	37.00%	100	100%
10	Projector	29	29.00%	71	71.00%	100	100%
11	Identity card printer	22	22.00%	78	78.00%	100	100%
12	CCTV	94	94.00%	06	06.00%	100	100%
13	Photocopy machine	96	96.00%	04	04.00%	100	100%

Table no. 1.2 ICT Related software infrastructure availability in Academic college libraries.

Sr. no	Description	Response				Total	
		Yes	%	No	%	Total	%
1	Library Management software	90	90.00%	10	10.00%	100	100%
2	Digital Library software	25	25.00%	75	75.00%	100	100%
3	Anti-virus	98	98.00%	02	02.00%	100	100%

Table no. 1.3 ICT based technology related infrastructure availability in Academic college libraries.

Sr. no	Description	Response				Total	
		Yes	%	No	%	Total	%
1	Barcode	90	90.00%	10	10.00%	100	100%
2	RFID	01	01.00%	99	99.00%	100	100%
3	Video Conference	08	08.00%	92	92.00%	100	100%
4	Internet	99	99.00%	01	01.00%	100	100%

Result :

Information communication related hardware infrastructure in availability in academic colleges it's shown that the highest 99.00% college libraries have the desktop computer facility followed by 96.00% of the colleges that have photocopy machine. Subsequent data in the gradation are 94.0% of each college libraries possessed server, printer and CCTV; 86.00% libraries have scanner for general purposes; 78.00% libraries have barcode scanner; 77.00% libraries have barcode printer; 62.00% libraries have backup devices; 45.00% libraries have scanner for digitization; 29.00% libraries have projector and 22.00% libraries have identity card printer. The least 19.00% of the colleges have laptop facility.

Information communication technology related software infrastructure availability in academic college library indicated that the highest 90.00% of the college libraries have library management software package followed by 98.0% of the libraries that have antivirus software while 25.00% of the college libraries have digital library software or institutional repository software.

ICT based technology related infrastructure availability in the academic college library have indicated that 99.00% of the colleges have internet technology in their libraries and it is followed by 90.0% of the college libraries that have adopted barcode technology. The least 1.00% of the college libraries has RFID Technology.

Conclusion :

In this study conclude that the availability of the hardware and software infrastructure facility in the college libraries of the respective academic colleges has reached a good condition. Almost all the college libraries have internet connectivity in functional status and most of these libraries have been subscribing internet service from BSNL service provider. Majority of the college libraries in have barcode and internet technology. Almost all the college libraries have

been providing photocopy and internet services. The college libraries have faced many problems in the implementation of Information Communication Technology. The main problems are caused by the lack of IT skilled manpower and inadequate training in ICT applications. The academic college authorities should allocate maximum funds to overcome the difficulties faced by the libraries. The authority should take initiative to recruit qualified library staff with IT skills as per the UGC norms. The librarians as well as library staff should join ICT based training programs organized by different agencies.

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INFORMATION SECURITY IN LIBRARIES USING RFID TECHNOLOGY

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Abstract
This paper deal with the Electronic Security System is one of the fasted growing and most beneficial technology being adopted by academic library for increasing efficiency and improving the safety, security, productivity, accuracy and convenience. This paper gives brief idea about the emerging radio frequency identification technology, its importance in the library system and its working. It's also describes about the basic and optional component.
Keywords: - *RFID (Radio Frequency Identification), RFID Technology in Libraries, Types of RFID, Role of Librarians, Advantages and Disadvantages of RFID System*

INTRODUCTION:-

RFID is a subset of group of technologies, often referred to as automatic Identification, at are used to help machines identify objects, and which include bar codes and smart cards. RFID refers to the subset of automatic identification that uses radio waves to automatically identify bulk or individual items. In recent years, radio frequency identification technology has moved from obscurity into mainstream applications that help speed the handling of manufactured goods and materials. RFID enables identification from a distance, and unlike earlier bar-code technology, it does so without requiring a line of sight. In this paper, the author introduces the principles of RFID, discusses its primary technologies and applications, and reviews the challenges organizations will face in deploying this technology.

WHAT IS RFID?

RFID is the reading of physical tags on single products, cases, pallets, or re- usable containers which emit radio signals to be picked up by reader devices. These devices and software must be supported by a sophisticated software architecture that enables the collection and distribution of location-based information in near real time. The complete RFID picture combines the technology of the tags and readers with access to global standardized databases, ensuring real time access to up to date information about relevant products at any point in the supply chain.

RFID technologies are grouped under the more generic Automatic Identification (Auto-ID) technologies. Examples of other Auto-ID technologies include Smartcards and Barcodes. RFID is often positioned as next generation bar coding because of its obvious advantages over barcodes.

OBJECTIVES OF THE STUDY

A.   To find out benefits of RFID for Libraries
B.   To find out advantages & Disadvantages of RFID
C.   To find out role of Librarians for adopted RFID in Libraries
D.   To find out Impact of RFID technologies on Libraries

RFID TECHNOLOGY IN LIBRARIES

The concept of RFID can be simplified to that of an electronic barcode and can be used to identify, track, sort or detect library holdings at the circulation desk and in the daily stock maintenance. This system, consist of smart RFID labels, hardware and software, provides libraries with more effective way of managing their collections while providing greater customer service to their patrons. The information contained on microchips in the tags affixed to library materials is read using radio frequency technology regardless of item orientation or alignment. It provides a contact less data link, without need for line of sight. RFID-based systems have been implemented for efficient document tracking purpose throughout the libraries that combine, easier and faster charging and discharging of documents, security of materials, inventorying, stock verification and shelf handling. RFID tag's transponder listens for a radio query from the reader and responds by transmitting their unique ID code. Most RFID tags have no batteries; they use the power from the initial radio.

DIFFERENT TYPES OF RFID: - Three primary frequency bands are being used for

1.**Low Frequency** (125 / 134 KHz) –Most commonly used for access control, animal tracking and asset tracking.

2 High Frequency (13.56 MHz) –Used where medium data rate and read ranges up to about 1.5 meters are acceptable. This frequency also has the advantage of not being susceptible to interference from the presence of water or metals.

3 Ultra High Frequency (850 to 950 MHz) –offer the longest read ranges of up to approximately 3 meters and high reading speeds.

RFID SYSTEM EFFECTS IN LIBRARIES

Readers RFID: - readers or receivers are composed of a radio frequency module, a control unit and an antenna to interrogate electronic tags via radio frequency (RF) communication. The reader powers an antenna to generate an RF field. When a tag passes through the field, the information stored on the chip in the tag is interpreted by the reader and sent to the server, which, in turn, communicates with the integrated library system when the RFID system is interfaced with it. RFID exit gate sensors (readers) at exits are basically two types. One type reads the information on the tag(s) going by and communicates that information to a server. The server, after checking the circulation database, turns on an alarm if the material is not properly checked out. Another type relies on a "theft" byte in the tag that is turned on or off to show that the item has been charged or not, making it unnecessary to communicate with the circulation database. Readers in library RFID systems are used in the following eight ways

1. Conversion Station –Where library data is written to the tags

2. Staff workstation at circulation –Used to check-in and check-out materials

3. Patron self-check-out station–Used to check-out books without staff assistance

4. **Exit sensors** –Verify that all books leaving the library have been checked out

5. Patron self-check-in station –Used to check in books without staff assistance

6. Book drop reader–Checks in books when patrons drop them in the book drop Sorter

7. Automated system- for returning books to proper area of library Portable reader

8. Hand-held reader for inventorying and verifying that items are shelved correctly.

ANTENNA: -The antenna produces radio signals to activate the tag and read and write data to it. Antennas are the channels between the data acquisitions and communication. The electromagnetic field produced by an antenna can be constantly present when multiple tags are expected continually.

SERVER: -The server is the heart of some comprehensive RFID systems. It is the communications gateway among the various components. It receives the information from one or more of the readers and exchanges information with the circulation database. Its software includes the SIP/SIP2 (Session Initiation Protocol), APIs (Applications Programming Interface) NCIP or SLNP necessary to interface it with the integrated library software. The server typically includes a transaction database so that reports can be produced.

ROLE OF LIBRARIANS: -RFID technology introduces an ethical dilemma for librarians. The technology allows for greatly improved services for patrons especially in the area of self-checkout, it allows for more efficient use of professional staff, and may reduce repetitive stress injuries for library workers. And yet, the technology introduces the threat of hot listing and tracking library patrons. Librarians have taken extra steps to ensure that laws such as the USA PATRIOT Act cannot be used by government entities to invade the privacy of their patrons, and yet many of those same libraries are placing traceable chips on their patron's books. Libraries have traditionally acted to protect and defend the privacy of their patrons and yet some are implementing a technology before proper safeguards have been developed. Library use of RFID technology serves to legitimize the technology in the eyes of the community. Therefore, it is incumbent on the library community to ensure that the technology is developed in concert with established privacy principles and that any library use of RFID follows best practices guidelines consistent with library values.

ADVANTAGES OF RFID FOR LIBRARIES

1. RFID tags replace both the bar code and traditional security library". Check-out stations can be automated with easy, intuitive interfaces, since several items in a pile can be "grabbed" at a time;

2. Book returns can be automated with check-in and database updates completed simultaneously in the book return chute.

3. Fast and convenient on-the-shelf inventory allows accuracy in collection management; Automatic book sorting.

4. Reduce material handling time.

5. Improve customer service.

DISADVANTAGES OF RFID SYSTEMS

1. While the readers and gate sensors used to read the information typically cost.

2. Accessibility to compromise. It is possible to compromise an RFID system by wrapping the protected material in two to three layers of ordinary household foil to block the radio signal. It is also possible to compromise an RFID system by placing two items against one another so that one tag overlays another.

3. Removal of exposed tags RFID tags are typically affixed to the inside back cover and are exposed for removal. This means that there would be problems when users become more familiar with the role of the tags. In Indian libraries, it is a major challenge to keep the tags intact.

4. Exit gate sensor (Reader) problems. While the short-range readers used for circulation charge and discharge and inventorying appear to read the tags 100 percent of the time, the Performance of the exit gate sensors is more twice the distance of the other readers. There is no library that has done a before and after inventory to determine the loss rate when RFID is used for

5. User Privacy Concerns. Privacy concerns associated with item-level tagging is another significant barrier to library use of RFID tags. The probl that the tags contain static information that can be relatively easily read by unauthorized tag readers.

6. Lack of Standard. The tags used by library RFID vendors are not compatible even when they conform to the same standards because the current standards only seek electronic compatibility between tags and readers. The pattern of encoding information and the software that processes the information differs from vendor to vendor; therefore, a change from o other would require retagging all items or modifying the software.

CONCLUSION

RFID technology promises to change our world. It has the capability of making our personal lives and our work lives in the library more convenient. However, every new technology comes at a cost. In order to remediate those costs, efforts must be undertaken to guide its development and implementation. Libraries should not yet implement RFID systems.

Libraries that choose to implement RFID technologies in advance of policy safeguards being put in place should take extra precautions to follow evolving best practices guidelines. Libraries should continue to protect privacy by ensuring that they are not seen as proponents of RFID before it can be safely deployed. Libraries should work to ensure that RFID products are manufactured and used according to well-established privacy principles. Libraries should refuse to implement potentially unsafe RFID solutions simply finally; libraries must be outspoken in their public education efforts related to RFID. Not only are libraries one of many industries who can benefit from the safe implementation of RFID systems, but also because RFID represents the start of a slippery slope to ever greater loss of control over our personal information.

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INFORMATION TECHNOLOGY SERVICES IN LIBRARY SECURITY

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Abstract

Library security is a major challenge being faced by the Library professionals. The number of resources and users are increasing day by day and this causes increase in the vulnerabilities of theft and other related issues. Here we discuss about the different library security tools and techniques. There are some of the measures that is taken by the librarians to secure the library such as Anti-theft systems, natural hazards to print as well as electronic materials.

INTRODUCTION: In the present scenario libraries have good number of collection of books, periodicals, magazines, audio, video, CD ROM, DVD, Etc. Library professionals are facing a big challenge to preserve conserve keep it secure. It is a big challenge in front of the librarians, and library staff. A number of users in the library so that how to control the theft, to find misplaced reading material.

Protecting the library documents, employees, users, reading rooms and workflow are the most important areas of the library security system. The complex library security process can be accomplished by the aligned operation of various interdependent components of the protection system. System components include different forms of mechanical protection, the electronic signalling system and the incident monitoring or responding guard. All those components are supplemented and aligned by prevenprint material as well as electronic material. One of the determining elements of an electronic signalling system applied in libraries, the RFID technology elements of an electronic signalling system applied in libraries, the RFID technology.

Information security is not simply computer security. Whereas computer security relates to securing computing systems against unwanted access and use, information security also includes issues such as information management, information privacy and data integrity. For example, information security ina library would include personnel security and policies, steps taken for effective backups, and the physical integrity of computing facilities.

A number of libraries are facing similar challenge such as theft of books, tear of page, and some are natural hazards Here divided some different parts such as anti theft system, security of library building, security of print material as well as electronic which are discuss below in detail.

- **ANTI-THEFT SYSTEM:**

In the present time libraries have a number of collections include print, electronic, e-resource databases etc. Most of the libraries are facing many types of problems from which theft is major problem.

To overcome this problem some libraries are using some anti-theft systems. Some anti-theft systems are briefly discusses below:

➤ **RFID –**

Radio frequency Identification invented in 1969, patented in 1973, first used in harsh industrial environment in 1980s and standard presented in 2001. The beginning time of the RFID was used only for the security purpose but the trend has been changed, now RFID used in charging, discharging, tracking, stock verification and to sort out the reading material. The biggest impact of RFID technology on libraries, that they can secure the library material as well as avoid the theft of documents. Some components of RFID system such as: Tags, Reader, Computer host, application software, Antenna etc.

➤ **Bar Code –**

Barcode is an optical machine-readable representation of data. The usually describes data about the object that carries the barcode. It was invented by Norman Joseph Woodland and Bernard Silver and patented in US in 1952. Barcode technology is used for tracking of goods in the various sectors. Barcode technology is used in the library for the circulation and inventory control through which can reduce the theft problem. One of the barcode is QR codes which have capability to decode data in speed and accuracy. The information include in barcode may be URL of websites, phone number, content address etc.

➤ **Video surveillance-**

Video surveillance and security cameras is a good security tools for libraries, as they can protect large area of space and allow librarians and staff to immediately check in on concern from the reference desk or office. Security cameras places around the library can help to keep safe while reading, researching and browsing as well as the information resources they are using. A video surveillance system working in conjunction with a barcode and magnetic book control system could help prevent book theft and monitor the move of books and other resources as it moves from on user to another

• **SECURING LIBRARY BUILDING-**

Library security tool and technique is crucial for the library by which can make safe the different part of library like as library building, library collection (print and electronic) etc. There are some major tools and techniques for library building are discusses below:

➤ **Water Sprinkler –**

In the libraries smoking and short-circuit is the main reason of fire to overcome this problem. Most of the libraries automatic install of fire sprinkler in the library building because libraries have a lot of papers and plastic goods available in the library all material is very flammable. Sometimes fire takes on a terrible form for the fire extinguish also use water pipe line.

➤ **Emergency Gate –**

Emergency gate/window is very important in any library at the emergency time safety of staffs and user Library should make a map which is high lights all the sections of the library, and emergency gate.

➢ **Security Guard-**

Prevention of the misbehave the users security guards should be available twenty four hours in the library. To help the peaceful environment in the library role is very important of security guards.

➢ **Fire alarm –**

System has a number of devices working together to detect and warn people through audio visual appliances when smoke, fire, carbon monoxide or other emergencies are present.

➢ **Fire extinguisher-**

A fire extinguisher is an active fire protection device used to extinguish or control small fire, often in emergency situation.

➢ **Anti earth quake building-**

Library building should be anti earthquake. Some standards of library building they were follow the standard of library buildings.

• **SECURITY LIBRARY PRINT MATERIAL-**

This section briefly discusses about the security of print material lot of problems challenge by the library staff such as Rodent, anti Termite, Fungus of book etc.

➢ **Anti termite-**

There are mainly three types of termite: dry wood, damp wood, and subterranean. Termites eat all cellulose materials include wood, paper, binding cloth, and binding board. Some protection from termites can be given by the building design and active staff.

➢ **Regular cleaning of books-**

In the library regular cleaning is very important in the library for the print collection area where flammable, or chemicals are used where the library collections are storing

Many types of insects founds in the library which are damaging the library and archive materials and mostly found in our entire world such as: cockroaches, silver fish, Beetles termites and rodents etc.

➢ **Rat Capturing-**

In the library rat/mice is big challenge many times books life end by the rat. Firstly identify what type of rat is in our library then choose the type of trap you feel comfortable with this capturing technique is better than killing because after the death the environment becomes very nasty.

• **SUGGESTIONS AND OUTCOMES-**

Every librarian has to think about the planning of emergency how to face the problems of emergency situation such as: proper maintenance and periodic inspection of the building is required especially electronically wires and leakage, lift and escalators, library should keep ready the fire extinguishers to handle fire, library should install automatic fire sprinklers, the exit point should be clearly displayed for the library staff and the library users should be aware about it. If central government provides sufficient budget/ Donation to the library then the Librarian will be managed accurately in a different sections and subsections of the library such as: periodical, acquisition, as well the most important maintenances section so the library will be

maintain in a accurate manner with good facilities to the users. Libraries should have a good finance management is needed. Library staff should be trained for any type of emergency/problem library staff should be prepared to face the any type of emergency. In the fire section some expert staff their otherwise library may be totally destroys in which very expensive resources and number of goods the form of Ashes. A first aid section should be there and ambulance service also be provided. Sometimes fight between the library users at that condition library security plays an important role. In the library should be a telephone directory which is some telephone number such as: ambulance, security, Fire brigade, software expert, mechanics etc. Sometimes electrical failure, Water supply failure, and Lift failure for this type of work / problems a technical section should be in the library.

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INFRASTRUCTURE REQUIREMENT FOR ICT BASED SERVICES IN LIBRARIES

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Abstract

This paper attempts to present an infrastructure required for ICT based electronic libraries. Purpose of this paper is to aware library staff about electronics devices used in computerization, database management in electronic libraries and other supportive gadgets. So that library staff will find convenient, familiar and motivating to work in ICT environment. Keeping in view library staff at the centre concept of electronic library, hardware and software requirement, offline and online e-Resources, storage devices with their specifications are discussed in brief in the paper. Hope that this paper will be useful to staff of library and will also help them to explain to their authorities while demanding the requirements for development of electronic / digital libraries.

Key words: *Electronic library, e-Infrastructure, supportive devices, library staff, e-Resources & e-Services,*

Introduction:

20th century has experienced role of traditional libraries in education and society. Library movement after independence of India received focused attention for systematic development and introduced computerization process for effective bibliographic control over library collection, speedy services to users and management of variety of services. Last decade of the century brought Internet and Windows have made possible to develop electronics and complete ICT based libraries since the beginning of 21st century.

Electronic Library:

Electronic libraries needs infrastructure such as - Hardware, Software, supportive furniture, storage devices, Power Batteries, Network connection and planning to IT enabled services in libraries and also ICT trained staff.

Electronic libraries are of two types i.e. Offline and Online libraries. Online libraries also called digital and, virtual libraries. Digital libraries in views of experts are explained as under.

Lynch & Garcia – Molina (1995)' says that "digital library is a system that provides a community of users with coherent access to a large organized repository of information and knowledge".

Waters, (1998) says "digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities".

Bergman et-al (1996) says it is an "advanced form of information retrieval system, usually containing the full content of electronic documents, often in multiple media and available via distributed computer 10 networks".

De-Candida and Rogers (1990) say "a virtual library is a national collection of digitized texts, distributed among institutions and accessible from anywhere at anytime"

Content of electronic library: Electronic Library contains electronically stored files and databases (i.e. offline and online both e-resources). Present status of many libraries shows process of modernization is continues going on. Traditional libraries are converting into hybrid form means libraries possesses both print and e-Resources. Libraries have embraced the ICT concept. Fast increase in e-Resources and e-Services are dominating over print resources and its services. Beside facility of android phone has made it possible to access online database at our door step. There is no problem of shortage of document. Use of online database has been increased.

Requirement for ICT based libraries: To establish the electronic infrastructure in library, we need to meets with Information Technologist professionals to seek their suggestions about the how digitalize the traditional library into electronic library.

After discussing with IT professional team, they have suggested requirement of technical persons for installation of hardware, software and networking used in library. According to them electronic infrastructure should possess following sections –

1. Technical / Computer section: It is the section in which Server is installed and this room has AC and this is private room. In this section done all work of digital acquisition, cataloguing, storage of databases, external hard disks, pen drives etc.
2. Digital e-resource center: This center is for the digitally access of e-resources like e-books, e-journals, e-magazines and all digitally stored databases on server.
3. Digital Reading room: In this room text books of syllabus or general books are kept in tablets for smooth reading and these tablets are circulated digitally via software of library management.

The infrastructure of these sections depends on readers or number of accessing persons visited to this section. These rooms infrastructure should in between 150 Sq. Ft. to 300 Sq. Ft. In general these sections infrastructure contains four parts i.e. Hardware, Software, Networking and Conservation.

Hardware: Hardware means the physical parts of the electronic devices which are used to establish electronic infrastructure of library. Following are the parts or components which are required for setup-

Server, Desktop computers, Printers, Bar Code Printer, Air Conditioner, Tablets, Scanners, Bar code reader, Networking or Ethernet cable, ISP (Internet Service Provider), Routers, UPS Batteries etc.

Server: Server is the heart of this setup. Without server you cannot do anything in sharing the information or retrieve the required information from other computer connected in a network. Various companies make servers like Microsoft, Dell, IBM, Lenovo, etc. The

specification/configuration of server depends on budget. Following is the middle range server configuration –

Hard disk: 2 TB SATA or SSD: 1 TB
RAM: UDIMM 4 GB DDR4
Processor: Intel$^@$Xenon E or X
Display: 22" Inches
Key board, Mouse: 1
DVD/CD Writer: 1

Hard disk SATA is slower than SDD (Solid State Drive). Physically SATA drive is bigger than SSD. But working efficiency of SSD is many times greater than hard disk but its cost is high and depends on allotted budget. Data accessing speed from SSD is very high. When server fails then whole network collapse is the drawback of server system.

To secure the server use antivirus and use other server security settings. To protect from dust use covered cabinet. Because dust is enemy of electronic devices. Hence this server kept in AC infrastructure.

Desktop computers: To access the stored information on server or surfing on web, we need desktop computers. AC room also required to sustain life span electronic devices.
Appropriate configuration of computers required -

Hard disk: 500 GB SATA or SSD: 120 GB
RAM: 4 GB DDR4
Processor: i5 Gen. 7th
Display: 18" Inches
Key board, Mouse: 1
DVD/CD Writer: 1

Printers: A reader or student accessed information wants to print then printers are available them. Use printer cover for its physical protection from dust. Printers have in many forms like single function printer, multifunction printer. Even one can xerox the book then it can copy by this multifunction printer. Many companies make printers i.e. Canon, HP, Brother, Sharp, Samsung etc.

Bar Code Printers: For digital labeling this printer is used. Ex. HP, Canon, JET etc,

Air Conditioner: This is for all systems to keep cool. Big organizations kept all systems in AC room because system works more efficiently and consistently. Most famous companies like Voltas, Samsung, LG, Haier etc. are manufactures AC.

Tablets: Tablets make reading easy like zooming image, diagrams and increase font size. Because of handing of big books are travails. Tablets are mobile and small size, then can read anywhere in college campus or in digital reading room. On this tablet you can see presentations, videos etc. Samsung, Lenovo, Dell, iBall etc. are popular company's manufactures tablets.

Scanner: In traditional library books are in print form. To digitalize print books in digital format you needs scanner. It has various types like flatbed or photocopy/click scan. Canon, Samsung, iBall etc. are the companies makes scanner.

Bar Code Reader: This device can read the bar coded data of labeled book or any other material which having bar code. This can helps or make work effectively like circulation, stock verification etc.

Networking or Ethernet cable: To establish the network connections (LAN) between server and other clients, needs network cable or Ethernet cable. This cable is widely used in networking.

ISP (Internet Service Provider): It is a company or organization that provides service of internet connection like BSNL, Reliance, Airtel etc. The faster internet connection is Fiber optic cable connection. The ISP provides modem to access internet. Internet connection is most important thing in electronic infrastructure of library. Without internet connection library is dead, because readers or students cannot browse or search respective information on internet.

Routers: Router is the routing device than can forwards data packets in a group of systems connected in the same network. Client is connected through this network router. It is also called as network switch. Routers are connected to clients through networking cable. Router can manage traffic in network.

UPS/Batteries: For backup of power consumption needs UPS batteries for server and other computers.

Software: Software is a collection or set of programmes, instructions to perform a specific task or tells a computer how to do work. Software is made up for special type of functioning and makes work easy and errorless of users. There are two types of software viz. System software and Application software.

System software: The system software means they give us interface between hardware and user. These types of software are basic software and they give platform for application software to run on it smoothly. The best example of system software is Operating system. Operating systems are paid and freeware. This is for need computer systems and server. Doing library automation or make electronic infrastructure in library, needs this operating system. It is depends on technical person and budget. For installation of server in server machine, one of the operating system is used as server version and in desktop computers install only operating system to connect to the server.

Paid operating system examples: Microsoft Windows OS, Apple Mac OS, Android, Microsoft Windows Server 2012 etc.

Freeware or open source operating system examples: Linux Server – Fedora, Ubuntu, Red Hat etc. Windows and Linux are GUI oriented but Windows is very user friendly as compare to Open source (Linux). Because Linux operating systems uses GUI (Graphical User Interface) as well as uses commands. Hence you must know the commands of this operating system to install OS and packages.

Application Software: Application software is task oriented and hence they can perform a specific task like educational, professional and gaming etc. In this type library software comes.

Paid or subscription types: SOUL, MarvelSoft Library, GLibrary, MyLibrary, Library Management ERP, Apletrails Library, Shrideva Library Management, CodeAchi Library etc.

Freeware types: Also known as open source software's**.** Koha, Dspace, SANJAY, Evergreen, OpenBiblio, OPALS, PMB, NewGenLib, Librarian, BiblioQ, e-Granthalaya, CDS, LYBSYS etc.

Relational Databases software: This software is used for connecting databases. It is very important software in networking. This software solve queries and manages all system together in network..

Examples: MySQL, PostgreSQL, Oracle Databases, IBM Db2 etc.

Networking: Establishment of network infrastructure in library depends on budget. Because networking done by various forms like Wi-Fi network or cabled network. Wi-Fi network making is costly as compare to LAN. Local area network is strong network and it assigned IP addresses to the client computers or group of computers. These computers or clients are connected to the server by networking cable or Ethernet cable. These are connected by routers in network for accessing the data stored in server. This type of networking is most commonly used.

Conservation/ Preservation: Preservation of storage devices is very much important aspect in Library. Storage devices includes CDs/ DVDs, USB Pendrives External Hard Disk.USB Pen drives and Memory cards can store data upto 2 TB (Terabyte). It is commonly used.

External hard disk drive store data up to 20 TB. Solid state drive can hold data up to 8 TB. But the SSD's are more capable and efficient than HDD's.

Above stated data devises are stored in dry and cool place. Because these storage devices are flash drives and they can corrupt the data when they can come in contact with heat and dust. Hence its preservation is necessary. For their conservation we need to kept in cupboard in proper order and give them proper labeling.

Concluding remark: Above described things are needed to develop e-Libraries. Library staff should be motivated to work in ICT environment. This has become the need of the hour and there is no other alternative. Both library staff and authority should accept use ICT positively and should promote electronic libraries for the benefits of students, society and of course nation because each sector is transforming into digital form. Make digital India is the dream and ambitious dream of our Hon. Prime Minister, Narendra Modiji.

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INSTITUTIONAL REPOSITORY SOFTWARE - AN INTRODUCTION

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Abstract

Institutional Repository (IR) disseminates rich source of digitized materials drafted and published by learned societies. This paper discusses about the IR technology elements and use to college, university. Movement and future in India. This study clearly states that the institutional repository is a very powerful idea that can serve as an engine for institutions of higher education and more broadly for the scholarly enterprise that supports research activities.

Keywords : Institutional Repository, Colleges, Higher Education, Research

Introduction

The closed access system to most of the paved the way for institutional repositories. The essence of IR is to make research and development publications to be freely available on the internet. Some of these institutions provide access to their research documents and learning materials initially to the Indian Scholars in other institutions as well as to external scholars in institutional across the globe. Institutional repository is now becoming a platform for the sharing of knowledge.

What is institutional Repository Software

An institutional repository is an archive for collecting, preserving and disseminating digital copies of the intellectual output of an institutional, particularly a research institution. Deposit of material in an institutional repository is sometimes mandated by that institution.

Institutional Repository Software Package

DSpace, Greenstone and Eprint are instances of few preferred open source software applications for library and information management.

DSpace Repository

DSpace is an open source repository application that allows you to capture, store, index, preserve and distribute your digital material including text, video, audio and data. There are over 1000 digital repositories worldwide using the DSpace application for a variety of digital archiving needs.

Purpose of Repository

The main purpose of a repository is to store a set of files, as well as the history of changes made to those files.

Create an Institutional Repository

Building a repository consists careful planning.

1. First identify a suitable software
2. Select the collection to be uploaded
3. Prepare the policy document
4. Install software and customize the repository as per the requirement of you

Repository Mean

A place, room or container where something is deposited or stored , depository.

Important of Repositories

Repositories provide a method of sharing content for different audience. For example research output such as publications and data are not only used by other researcher but are also important resources for students. Research outputs as well as learning objects are important parts of the learning life cycle.

Institutional Repository PDF

An Institutional Repository is defined to be a web-based database (repository) of scholarly. Material which is institutionally defined (as opposed to a subject-based-repository) cumulative and perpetual (a collection of record) open and interoperable.

Institutional Library

Institutional libraries, organized to facilitate access by a specific clientele are staffed by librarians and other personnel trained to provide services to meet user needs. By extension, the room , building, facility that houses such a collection, usually but not necessary built for that purpose.

Important for Universities

First, an institutional repository provides the opportunity to create one central virtual place into which university members can deposit their scholarly and administrative digital content.

DSpace PDF

DSpace is the software of choice for academic, non-profit and commercial organizations building open digital repositories. DSpace preserves and enables easy and open access to all types of digital content including text, images, moving images, mpegs and data sets.

Download of DSpace Software

To download Dspace releases please logon with your personal mydSACE account you must either be the owner of a dspace license or have been registered for access to support information. Patch overview of update and patches for all dspace releases.

Types of Data stored in repository

Some common types of data repositories include a data warehouse.

- ✓ A data warehouse is a large data repository that brings together data from several sources or business segments.
- ✓ Data Lake
- ✓ Data Mart
- ✓ Metadata Repositories
- ✓ Data Cubes – Select the Right Tool
- ✓ Limit the scope initially
- ✓ Automate as much as possible

Physical Data Repository

A physical data repository is the grouping of the data scheme. A database may be centralized, typically in the case of a single small business with a single purposed database.

Database and Repository

A repository is a database that stores the metadata for designer objects. A database is just a place to store data or an application database is a place to store the data for a particular computer application.

Repository Tools

A repository manager generally refers to a software tool designed to optimize the storage and download of files (usually binary) used in software development. A repository is highly convenient and beneficial as it acts as a simple way for a developer to build and store data.

Types of Repositories

There are exactly two types of repositories : local and remote. The local repository is a directory on the computer where maven runs. It caches remote downloads and contains temporary build artifacts that you have not yet released.

Repositories Work

A repository is usually used to organize a single project. Repositories can contain folders and files, images, videos, spreadsheets and data sets – anything your project needs. We recommend including a README, or a file with information about your project.

Repository History

The definition of a repository is a place where things are stored for safe keeping or where there is an ample supply of something or a person or thing with a lot of information about something. A person who has extensive details on his family's history is an example of a repository of information.

Online Repository

An online repository is a digital library or archive which is accessible via the internet. All online repositories should have conditions of deposit and access attached. Most have free access to a part of a collection and require users to sign a license if they seek to use copies of original documents or audio files.

Developed DSpace

DSpace, a joint development effort by Hewlett pachard and MIT begun in 2002, was developed as open source software to manage research, scholarly and other published content in a digital repository, focusing on long-term storage, access and preservation.

Library a Repositor

A library is a repository, but a repository may not be a library. A repository is any place records are stored for safekeeping, many digital repositories can be accessed online. Repositories are still present in the real, bricks and mortar world, though.

Conclusion

It is clear from this study that the institutional repository is a very powerful idea that can serve as an engine of change for institutions of higher education and more broadly for the

scholarly enterprises that they support. This is an area where most the education institution need to invest aggressively, but where they also need to implement thoughtfully and carefully.

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LIBRARY CLASSIFICATION SCHEMES ACCESSIBLE ON WORLD WIDE WEB

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Abstract

In the contemporary era of ICT, library classification schemes sparked dynamically from print to digital. They provide variety of services to their users in network environment. The purpose of the study is to focus on Library Classification Schemes available on World Wide Web. The three major international web-based classification schemes- DDC, UDC and LCC provide multiple searching and browsing indexes, various facilities to the users, available in multilingual languages and most updated versions are highly worthy of action. The electronic versions of the DDC, UDC and LCC enhance the potential of library classification to improve subject retrieval.

Keywords: Library Classification Schemes, Web Accessible Library Classification Schemes, Dewey Decimal Classification, Universal Decimal Classification, Library of Congress Classification, WebDewey, UDC Online, Classification Web

Introduction

Library Classification is most powerful system in the library that classifies all types of documents. It is extremely useful for the systematic arrangement of various subjects of universe of knowledge on the shelves and to locate the material quickly, easily in the library. It traces the origins of the subject and leads on to the latest developments in it.[1] Classification is the heart of library science. Knowledge is like an ocean. It is increasing day by day. Thus, the classification is not only a technique but, it is the tool to organize universe of knowledge in a systematic manner and brings group related material together.

Library Classification provides fixed positions to the items are put in order on the shelf. In other words, without changing any sequence makes the things easy. The sequence of the subjects is mechanically maintained by the notation in a helpful sequence. Notation is an artificial language which provides to the book when using a classification system in library.[2] The notation changes according to classification schemes used. In a library, classification gives the prompt and fixed location and easy access of the document on shelf. Library Classification systems are quick guides to provide the classification number easily.

Objectives

The objectives of the study are enumerated as:

1. To explore online library classification schemes available on WWW.
2. To know and collect information regarding the online library classification schemes.
3. To access online databases of library classification schemes through trial accounts and study in detail.

4.   To compare the online library classification scheme's content, accessibility, authority, main features, web versions, characteristics, usage, operators, online services

Scope of Study

The present study deals with 12 library classification schemes available on WWW.

- Bliss bibliographic classification (BC)
- Dewey Decimal Classification (DDC)
- Library of Congress Classification (LC)
- Dickinson classification
- Harvard-Yenching Classification
- Nippon Decimal Classification (NDC)
- Chinese Library Classification (CLC)
- Korean Decimal Classification (KDC)
- Colon classification
- Cutter Expansive Classification
- Universal Decimal Classification
- Brinkler classification

After analyzing and comparing 12 schemes it is found that there are three topmost web accessible library classification schemes are DDC, UDC and LCC. The databases of these international schemes have been studied at ground level.

Research Methodology

This research is part of a Doctoral study, which examined Library classification schemes on WWW. It covers 12 library classification schemes studied main features and different form versions. In depth studied found that only 3 major Library Classification schemes are web accessible. The study was obtained from the databases of three scholarly international schemes DDC 22nd ed. known as WebDewey[3], UDC named as UDC Online[4] and Library of Congress Classification Scheme named as Classification Web[5]. A different search strategy was used for finding how such databases are effective, most powerful on web, updated and user friendly. Multiple search strategies are remarkable using in these databases.

Related Literature

Gulhane (2009)[6] deals with online DDC and CC Schemes. A library classification is a system of coding and organizing library materials-books, serials, audiovisual materials computer files, maps, manuscripts. It is a knowledge organization tool. Author introduces two library classification system especially DDC and CC. DDC is the top library classification system among all the library classification systems. She has defined DDC is the web accessible schemes and how to find the class numbers in the database. She has introduced WebDewey the online version of DDC 22nd edition and explained CC from edition 1 to 7.

Rakhunde (2010)[7] has introduced online LCC. She has focused on Classification Web is a web-based, effective and exclusive product of LCC Scheme. It is provided by Classification Distribution Service. It provides the users with access to WWW to browse and search the full

text of LCC schedules. The Classification Web contains LCC Schedules, LC Class and its Subdivisions and LCSH.

Chan (1986)[8] has studied the suitability of LCC, designed originally as a shelf arrangement tool for on-line retrieval. Some of the unique features of LCC are noted, with their implications for on-line retrieval. The potentials and limitations of LCC are considered for 3 areas of on-line subject searching: enhanced vocabulary; subject browsing; and class number searching.

Gopinath (1987)[9] dealt the schedule of CC 7th edition has developed. It is based on postulates in three planes of work, namely idea plane, verbal plane, and notational plane. The blending of the work in these three planes is guided by the laws of Parsimony and Symmetry. Hierarchy of formulation of class numbers is maintained as far as possible. The schedule contains five parts explaining common and special isolates.

Shastri (1987)[10] has stressed on literature survey, trends in classification and studied different classification systems- DDC, UDC, LC, BC and CC. His study has highlighted the development of library classification systems during the period 1971-75. It is focused on some major special schemes of classification. Many research groups, research societies and organizations have been formed to carry on activities in the field of classification. These activities are regularly reported to International classification.

Analysis and Comparison of Library Classification Schemes

The 12 library classification schemes have been analyzed in tabular format are given below.

Table - 5.1 Different Library Classification Schemes on Web

Sr. No.	Name of Library Classification Scheme	Founder	Country	First Ed. Pub. Year	Lan-guage	Title of First Edition Published	Details of First Ed.	Total Ed. Pub. & Year	Published on Web First	Trans-lation	Usage of all over the world
1	BC	Henry Evelyn Bliss (1870–1955)	U.S.A. Pub.	1940 - 1953	English	'Bibliographic classification- Extended by Systematic Auxiliary Schedules for Composite Specification and Notation'	First Ed. of BC Classification Published in 4 Vol.	2nd ed. 1977	Not Published on Web	Only English	-
2	BRC	Bartol Brinkler	-	1962	-	Brinkler Classification	-	-	Not Published on Web	-	-
3	CC	S.R. Rangana -than (1892-1972)	India	1933	English	Colon Classification	With 127 pages of rules , 133 of schedules and an index of 106 pages	7th ed. 1987	Not Published on Web	Only English	India
4	CEC	Charles Cutter (1837–1903)	USA	1891	English	'Expansive Classification: Part-I First six classification'	A single volume consist of 160 pgs contained the six classification printed Seriatum followed by an index for all and preceded by a brief introduction.	7th part Used for larger libra-ries	Not Published on Web	-	-
5	CLC	Under China's Administrati ve Bureau	China	1975	-	"Book Classification of	-	4th most recent 1999	Not Published on Web	National Classific-ation System	China

Sr. No.	Name of Library Classification Scheme	Founder	Country	First Ed. Pub. Year	Lan-guage	Title of First Edition Published	Details of First Ed.	Total Ed. Pub. & Year	Published on Web First	Trans-lation	Usage of all over the world
		of Culture affairs				Chinese Libraries"					
6	DC	George Sherman Dickinson (1888-1964)	-	1968	-	'The Dickinson classification : a cataloguing & classification manual for music' reprint published in Carlisle Books	-	-	Not Published on Web	Specific Classificati on System	-
7	DDC	Melvil Dewey (1851-1931)	USA (US Centric)	1876	English	'A classification and subject index for cataloguing and arranging the books and pamphlets of a library.'	Consists of only 44 pgs of which 12 pgs. Introduction; 12 pgs as table or schedule and 18 pgs for index	23rd ed. 2011	22nd ed. Published on Web 2003	Translated in over 38 languages	135 countries
8	HYC	Alfred Kaiming Chiu (1898-1977)	USA	1927	-	Harved Yenching Classification	Establishing a library classification system for Chinese language materials in the United States of America.	-	Not Published on Web	English	-
9	KDC	Adopted Korean Library Association	Korea	1964	-	Korean Decimal Classification	Based on DDC and divided universe of knowledge into 10 Main Classes	4th most recent 1997	Not Published on Web	National Classi-fication System	Korea
Sr. No.	Name of Library Classification Scheme	Founder	Country	First Ed. Pub. Year	Lan-guage	Title of First Edition Published	Details of First Ed.	Total Ed. Pub. & Year	Published on Web First	Trans-lation	Usage of all over the world
10	LCC	Dr. Herbert Putnam & Charles Martel	USA (Highly US Centric)	1897	English	Each schedule developed separately	LCC was developed in each schedule separately with different date of publication.	Latest Ed. (7th ed.) 2003	Published Web on 2002	Only one language	USA
11	NDC	Japan Library Association	Japan	1956	-	Nippon Decimal Classification	-		Not Published on Web	National Classific-ation System	Japan
12	UDC	Paul Otlet and Henry La Fontain (1854-1943)	Belgium	1905 to 1907	French	"Manuel du Répertoire Bibliographique Universal ('Handbook to the Universal Bibliographic" Repertory').	10 Main classes.	BS 1000 M: 1993	Published Web on June 2001	39 Diff. languages published	125 countries

Table no. 5.1, displays study of 12 library classification schemes. This table is based on the data collected about various library classification schemes from www. In all 12 schemes were found. Out of which only 03 are accessible online. General information is available about 09 classification schemes.

DDC is the oldest classification scheme founded in 1876 and CLC is the latest one founded in 1975.

DDC, LCC, BC, CEC, HYC have USA origin. UDC is originated from Belgium. CC is of Indian origin. And National classification schemes CLC, KDC, NDC have origin of China, Korea and Japan. Year of publication of first edition of all schemes are during the period 1876-1975. Most of the schemes are published in English language, and UDC was published in French language, and CLC KDC, NDC are published in Chinese, Korean and Japanese language.

Only DDC was published highest (23rd) number of editions. CC & CEC have reached upto 7th ed. out of 12 classification schemes only 3 are available online. DDC and UDC are translated in various languages.

Table – 5.2 Different Form Versions

Sr. No.	Name of Library Classification Scheme	Print	LAN Avail-able	Electronic Version (CD-ROM)	Web Availability	Total No. of Availability of form versions
1	BC	Yes	No	No	No	1
2	BRC	Yes	No	No	No	1
3	CC	Yes	No	No	No	1
4	CEC	Yes	No	No	No	1
5	CLC	Yes	No	No	No	1
6	DC	Yes	No	No	No	1
7	DDC	Yes	No	Yes	Yes	3
8	HYC	Yes	No	No	No	1
9	KDC	Yes	No	No	No	1
10	LCC	Yes	No	Yes	Yes	3
11	NDC	Yes	No	No	No	1
12	UDC	Yes	Yes	Yes	Yes	4

It is evident from table no. 6.2, UDC is the only Library classification scheme that makes available all forms (04) in Print, LAN (Local Area Network), CD-ROM and web environment. DDC (03) and LCC (03) are available in CD-ROM, print and accessible through web. Other library classification schemes are only available in print versions. They are not web accessible schem

Table - 5.3 Database Features of Web based Library Classification Schemes

Sr. No.	Online Database Features	Classification Web	UDC Online	WebDewey
1	Flexibility Search	Yes	Yes	Yes
2	Truncation Searches	Yes	Yes	Yes
3	Boolean Searches	Yes	Yes	Yes
4	Character Masking Wild Cards	Yes	No	Yes
5	Mathematical Operators	Yes	Yes	No
6	Punctuation	Yes	Yes	Yes
7	Hierarchical Display	Yes	Yes	Yes
8	Use of Hyperlinks	Yes	Yes	Yes
9	Links to LCSH	Yes	No	Yes
10	Enable Top-Down Navigation	Yes	Yes	Yes
11	Links to OPAC	Yes	No	Yes
12	Ease of Use	Yes	Yes	Yes
13	Keyboard Shortcuts	No	No	Yes
14	User Notes	Yes	No	Yes
15	View Records	Yes	Yes	Yes
16	View List	Yes	Yes	Yes
17	Book Marks	Yes	No	No
18	Subsets	Yes	No	No
19	Preferences	Yes	No	Yes
20	Outlines	Yes	Yes	Yes
21	Tutorials	Yes	No	Yes
22	Help	Yes	Yes	Yes
23	Moving Arrows	Yes	Yes	No
24	Back Buttons	Yes	Yes	Yes
25	Redisplay	Yes	No	No
26	Stop Lists	No	No	Yes
27	Clear	No	Yes	Yes
28	Delete	No	Yes	No

Table - 5.3a Analysis of Database Features of Web based Library Classification Schemes

Sr. No.	Web-based Library Classification Schemes	No. of Database features used
1	Classification Web	24
2	UDC Online	17
3	WebDewey	22

Table 6.3a shows the analysis of database features of web-based library classification schemes. Classification Web provides highest number (24) of features; UDC Online has (17) lowest features. WebDewey, UDC Online and Classification Web provide flexibility searches, truncation searches, Boolean searches, punctuations, Hierarchical display, use of hyperlinks, Topdown navigation, ease of use, view records, view list, Help, outlines, Back buttons. Classification Web and WebDewey provides the opportunity to create and search for user notes

in the database. They provide tutorials, wild cards searches, links to LCSH. WebDewey uses Right and Left truncation. UDC Online numbers can be truncated from the right, NOT the left. Classification Web uses Automatic Truncation. Classification Web is the only web accessible library classification scheme provides the opportunity to the users to see OPAC links of 20 libraries of U.S.A. in the trial service. In, WebDewey, the users can not log on directly to World Catalogue. Classification Web does not provide Keyboard shortcuts, stoplists, clear and delete buttons, but facilitates bookmark an subsets.

Table- 5.4 Web-based Library Classification Schemes Facilities

Sr. No.	Web based Library Classification Scheme Facilities	Classification Web	UDC Online	WebDewey (DDC 22nd ed.)
1	View Online	Yes	Yes	Yes
2	Search & Browse	Yes	Yes	Yes
3	Number Building Facility	No	Yes	Yes
4	User Friendly	Yes	Yes	Yes
5	Multiple Search Strategies	Yes	No	Yes
6	Hierarchy In Class Numbers	Yes	Yes	Yes

Table - 5.4a Analysis of Web-based Library Classification Schemes Facilities

Sr. No.	Web-based Library Classification Schemes	No. of having facilities
1	Classification Web	05
2	UDC Online	05
3	WebDewey	06

It is observed from table no. 6.4a that analysis of three topmost web-based library classification schemes having facility. WebDewey provides (06) all types of facility to its users. Classification Web and UDC Online provides (05) facility to its users.

All three Web-based schemes can view online and facilitating search and browse. These are user-friendly databases. WebDewey and UDC Online are hierarchical classification schemes. Though, Classification Web is not a hierarchical classification scheme, it reveals hierarchy of LC class numbers through hierarchy browser in classification schedules. It is not a synthesized classification system. UDC Online and WebDewey have the number building facility.

6.   Conclusion:

After studying all the library classification schemes, it is concluded that DDC, UDC and LCC are the well-known Library Classification Systems in the Universe published respectively their web based products WebDewey, UDC Online and Classification Web.

USA is most productive in developing Library Classification Schemes. Asian Classification schemes are also remarkable in number. Thanks to Dr. S.R. Ranganathan who has made special contribution to the field of Library Classification by devising CC. Although, UDC

is the only classification scheme to represent European countries i.e. Belgium, it is the most popular classification schemes.

Over the period of hundred years (DDC 1876-CLC 1975) many schemes have been invented as per the need of the country, universe of subjects etc. Although DDC is oldest scheme, it is most popular and updated classification scheme.

Most of the schemes have been devised after 1950s. Most prevalent and updated schemes DDC, LCC & UDC were founded in late 19th and early 20th century. Hence it can be concluded that although they are oldest they are most updated classification schemes, and they have made changes as per the need of the hour.

UDC was originally published in French, it's the only popular scheme translated in English. All other are published originally in English.

DDC with 23 editions has highest number of updations. Other schemes CC, LCC, CEC has 7 editions. BC is in its 2nd edition, CLC, KDC are in 04th edition. Latest edition of DDC was published in 2011. All other editions are published in 1990s or before that.

All though some or other information about classification scheme is available on WWW, only three schemes LCC, DDC, UDC are accessible online.

UDC is the first amongst three schemes to make its appearance on www in 2001. LCC appeared in 2002 and DDC was last to arrive in 2003. It can be concluded that although DDC has updated its print version regularly it was last to join WWW in 2003.

Only DDC and UDC are translated in other languages 38 and 39 respectively. Although DDC is most updated and popular, UDC is published in higher number of languages. All other schemes have not taken care to publish their scheme in languages other than English. CLC, KDC, NDC being published for those countries they are not translated in other languages.

DDC and UDC are two schemes which are used in more than 125 countries. However all other schemes are not so popular in other countries.

Classification schemes have bias of the country of origin. (WebDewey has American bias, Classification Web is US centric.)

Classification Web updates its version weekly. UDC updates its content once in a year.

Online versions of all three schemes are very powerful and also offer searching and browsing facility of indexes.

After studying characteristics of database it can be concluded that Classification Web has most of the features of database. WebDewey and UDC Online has least characteristics.

As the online library classification schemes are more user friendly they are easy to use, multiple search strategy, number building facility, searching and browsing of terms/numbers aid in user friendliness.

DDC is highest number of updations published its 15th abridged edition in Feb 2012; LCC does not publish abridged edition.

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10. Appendix:

1. Homepage of Classification Web
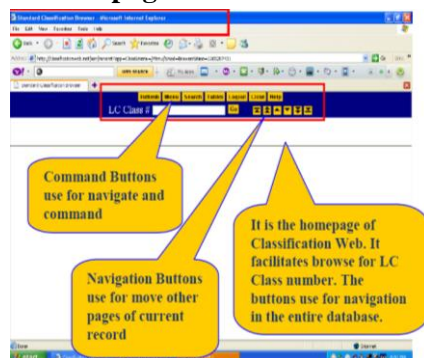
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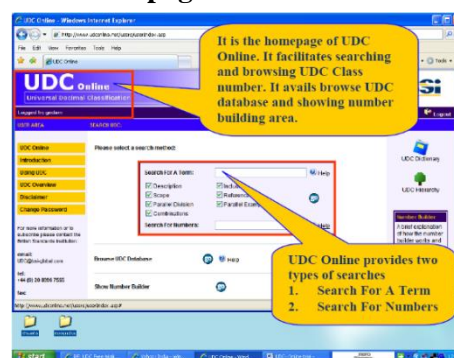
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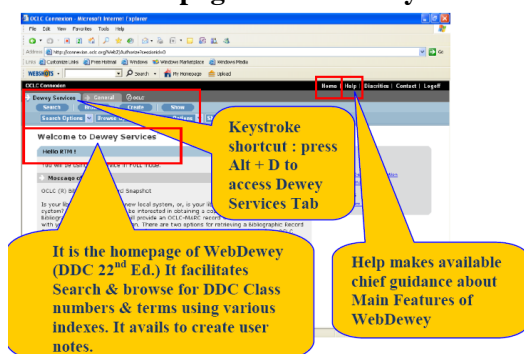
NEW ADVANCEMENT IN LIBRARY AND INFORMATION SCIENCE AND TECHNOLOGY: CHALLENGES AND OPPORTUNITIES

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Abstract

Information explosion has led to the emergence of electronic information era. Now a days the users are not satisfied with the printed available material, they require that printed information be supplemented with more dynamic multimedia documents and easy to access any time any where.

New Advancement has its impact in all areas of library work such as providing user access to digitized resources in the local environment and also remote access. Many libraries have added electronic materials and services to the traditional items associated with physical space. i.e. e-books, online catalogues, licensed databases, freely available web resources and local digital collection. A major impact has bee on the role of Librarian. Today we are being challenged by the notion of digital libraries. It is time empower the end-user and give him the right to self navigate, do much of his work at his own convenience. The future libraries are going to witness a tremendous growth in virtual Libraries or libraries without walls or global Libraries.

Key words: *Library science and Technology, New Advancement, Digitization, automation, Virtual Library, Consortia.*

Advancement in LIS Technology Environment:

Traditional things in Libraries	Advancement Libraries in Technology Environment
User goes to Library	Library goes to the user
Print Documents	Digital documents
Documents (Books, Journals etc)	E-Resources,(E-Books-Journals etc.)
Circulations (Issues & Returns)	Access direct with Network/ Internet facility
Reference Desk	Virtual Reference Desk/Online Help Desk
Human Security	Electronic Security
Resource sharing	Consortium
Inter Library Loan	E-mail based DDS
Card Catalogue	OPAC & WEB OPAC

ICT Trends in Library:

What is ICT?

The utilization of computer based technology and internet in order to retrieve and disseminate the information rapidly is nothing but the ICT. The term ICT includes any communication device or application, encompassing radio, T.V. cellular phoes, compuer and network, hardware and software, satellite systems and so on, as well as the various services and application associated with them.

Some Advantages of ICT

1) Remote access of information
2) Greater and easier retrieval of information
3) Information creation on digital format
4) Information communication through E-mail
5) Removal of all barriers and communication, distance and time
6) Online access and file transfer through internet and optimum utilization and sharing of resources among institutions in cost effective manner.

ICT has fundamentally affected the library operations and information services thus have great impact on the education and training of the users on various levels. The advent of low cost computers and easy to use word processing tools, computer based image processing techniques paved way for digitized information comprising textual to multimedia documents (text, images, voice, video, animation etc.)

Some of the ICT introduced paradigm shifts in Libraries are:

- Traditional libraries to digital libraries
- Card catalogs to Web OPACs
- Chains to RFID tags
- Ownership to access
- Print journals to online or electronic journals
- Print on paper to digital information
- Library access to remote and desktop access
- Information availability any time
- Photocopies to digital copies
- Real to virtual libraries
- Standalone libraries to Information networks
- DDS being provided through E-mail instead of post or fax

Impact of new Technology on Library And Information Services:

Technology Advancement have made significant impact on the growth of knowledge and in unlocking the human potential. the following are the innovative technological tends in Library and Information:

1. Internet
2. Censorial
3. Digitalization
4. Automation
5. RFID Technology
6. ICT in Libraries
7. Creation of institutional Repository
8. Learning Resources
9. Web 2.0 and Lib 2.0

10. Mobile Technology
11. Cloud Computing
12. Social Media
13. Information Literacy Programmes
14. Green House Technology
15. Ezproxy

Innovative Library Services in the Information Technology Environment:

➢ Automated issues and return of documents through library software, RFID etc.
➢ Document Delivery services through e-mail etc.
➢ Online inter Library loan facility by allowing external users to access the e-books, online journals as guest users.
➢ Digital Library Services
➢ Citation analysis through web of science.
➢ Web based CAS, Conference announcement new paper clipping services.
➢ Digital archiving of journal articles, research report, thesis, project reports and other internal publications through the institutional repositories.
➢ Information Services through Mobile technology.

Role of Library and Information Professionals in the Information Technology Environment:

• As a facilitator
• As a end user trainer/educator
• As a website builder or publisher
• As Interface designer
• As shifter of information resources
• As knowledge manager/professional
• As information architecture
• As information scientist/Specialist/consultant
• As marketing officer
• As resource preserver
• As researcher
• As a collection development builder
• As a Internet navigator

The Libraries have to provide the following services in technology environment in addition to the existing traditional services:

➢ Choosing resources and managing licensing.
➢ Creating metadata elements
➢ Collecting and digitizing archival material.
➢ Maintaining digital repositories.
➢ Information Literacy.

Activities of LIS Professional in the Information Technology Environment:

An academic librarian holds specialist responsibility for providing information on the subject which is dealt by the organization / institution. The following is a list of tasks typically undertaken by academic librarians:

➢ Managing budgets and in some cases, purchasing resources;
➢ Managing and developing collections of books, journals and websites;
➢ Managing buildings, furniture and equipments;
➢ Managing staff, which may involve recruitment and selection, appraisals, disciplinary action, staff training, as well as day to day management of staff.
➢ Contributing to academic course development and liaising with academic departments;
➢ Assisting researchers with literature searches using databases, printed resources and the internet;
➢ Delivering information and learning skills courses for students and staff;
➢ Dealing with user enquiries which may involve one on one advice session;
➢ Keeping up to date with relevant debates in the library sector,
➢ Participation in professional groups networks and consortia.

Skills Required for the New Generation LIS Professionals:

The following are the essential skills required for the library and Information professionals in the Information Technology Environment. The National Knowledge Commission (2207) recommends the minimum skills required for LIS professionals are;

➢ Good communication skills
➢ Transferable skills
➢ High level information handling skills
➢ To be flexible and adaptable
➢ ICT knowledge skills
➢ Service orientation
➢ Library and information-handling skills
➢ Marketing and Presentation skills
➢ Understanding of cultural diversity
➢ Knowledge mapping skills.

Challenges for professionals in the Information Technology Environment:

The information technology environment leads to sophisticated and challenging tasks to libraries. They are:

➢ Challenges in collection of Virtual Information
➢ Challenges in Accessing Virtual Information
➢ Changing Role of Librarian
➢ Technological Challenges
➢ Archiving or preserving the Virtual Information
➢ Special skills needed for Librarians to face the challenges in building a virtual library.

It is necessary to impact latest information technology skills and techniques to librarians to acquire such latest practical skills along with their professional knowledge. Otherwise it would be difficult for them to cope up with the situation in the fast changing global scenario. at times they may have to their ground for survival in to cognizance. Library professionals should equip themselves with the new IT skills and piratical knowledge is delivering the information services to users. Continuing Education programmes: Library schools will take the responsibilities in offering formal courses in handling Information Technology. Summer school run by the Universities offer extension courses. They provide practical demonstration of different works in library. Library schools and national library associations which provide refresher courses are meant:-

- Increasing of work efficiency
- In service training programmes should be organized to improve knowledge and to improve job efficiency
- Reading writing and editing
- Attending lectures, professional meeting conferences and workshop.

Suggestions:

- ➢ UGC should provide necessary funds to acquire necessary information technology equipment to supplement digital and online library services.
- ➢ Library and Information Science Schools should organize in service training programmes regularly to keep abreast of trends in LIS.
- ➢ The college library professional should be encouraged to use modern technologies.
- ➢ User Orientation programmes should be conducted for readers to enable them to use the library resources efficiently and effectively.
- ➢ Specialized and short term courses have to be conducted by the INFLIBNET and Library And Information Science Schools to library professionals to update their knowledge.
- ➢ Above all the LIS professionals should always be ready to accept the change and adopt the techniques to meet the user demands.

Conclusion:

In the present days it is very difficult to meet the user needs with the escalating cost of print and E-Resources and shrinking library budget on the other hands. The revolution in ICT has open up a lot of information sources and sources which can be make use to delivered the information in user preferred format at any where any time. Open access resources, Open source software, consortiums are the other available options to manage the situation and also to provide scholarly content of the library users. ICT is changing the work of Library professional and information services as per demand of users. Libraries and Information and Technology cenerscan function. The user of Library is so smart so that Librarian and library Professionals should modernization his/her college Libraries in today's era. and use of modern technology has assumed greater relevance in the context of fourth law of library science "Save the time reader/staff". The library professional should always be ready to accept for change and ready to

implement the ICT technological trends in Libraries to provide better services to the library users.

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OUTSOURCING THEME WITH INFORMATION TECHNOLOGY RELATED TO LIBRARY SERVICES

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Abstract

The profession of library services, today, is one of the most dynamic as it is constantly challenged by the various sources of information increasingly associated with the technological advances in information technologies. In the course of the study, it was observed that the library workers are lacked train in IT based education. So, there is only one solution for this problem is 'Outsourcing'. Outsourcing means to source from outside or in other words getting another person or organisation to provide a service on a contractual basis. It can be very helpful for libraries. This research paper seeks to examine the activities that can be outsourced. It also outlines the advantage and disadvantages of outsourcing.

Keywords :- Outsourcing, Information Technology .

Introduction:-

Information Technology changed every field in the world, library service also. So, the librarians have to keep app abreast of these changes if they have to remain relevant in their profession. Study has shown that most library users come to the library already familiar with one new source of information because of the popularity of the computer and its related gadgets. While the majority of libraries operate under two model-one is 80% workload depends upon Information Technology and 20% workload on traditional model. Outsourcing of some library services is not a new thing. The majority of libraries are still not ready to outsource Professional traditional library activities and services, whereas the literature shows that internally libraries outsourced tradition activities and services equally.

Indian libraries need to improvement library staff have to basic knowledge in information technology. There are some staff who have very much gain the knowledge but some workers need to training time to time. Knowledge of IT enhances the quality of library services.

In India, INSDOC , DESTDOC, DELNET and INFLIBNET offers the training about library network and computerisation of libraries. Some universities also provide the training of IT. through seminars, conference, workshop etc.to the library staff .The library staff needs training like-

1) Data entry
2) Familiar to Ms package
3) Database handling.
4) Programming skills
5) Knowledge in database management.
6) Hardware skills.

7)   Network skills

    so there is a need of update the library syllabus.

    Today, the lack of manpower in libraries and also unskilled staff is the main problem, to avoid this discrepancy, the only one solution outsourcing.

Definition:-

Information Technology:-

    UNESCO defines information technology as "The scientific, technological and engineering disciplines and the managerial techniques use in information handling and processing; their applications, computers and their interaction with men and machines an associate social, economic and cultural matters ."(peltu 1982)

    ALA glossary of library an information science defined IT as " The application of computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information." (American library association 1983)

    According to Olsen (1989) , the convergence of three key technologies viz. computers and telecommunications and microelectronics and the development of a whole range of media (magnetic optical and now Magneto optical.), software products and services constitutes the package being called information technology.

    Kathleen Guinee wrote "By information technology means the tools we use to perform calculations to store an manipulate text, and to communicate some of these 20th century tools include the adding machine, slide rule and calculator for performing calculations the typewriter and word processing text and the telephone, radio and television for communicating."

Outsourcing:-

    Outsourcing is the transfer of an internal service or function to an outside vendor. (by Bord eianu and benaud in 1997) Outsourcing is the potential tool to lower overall cost and improve the quality of library services and products .It began 25 years ago. It is the trend found in many types of libraries today. It has become a strategic tool in library management. "outsourcing is defined as the replacement of input or value added previously created in- house by an external provider within a long-term contractual relationship for the expected manual benefits" by Norodiva Hamzah. Et.al (2010)

Role of Librarian in Outsourcing:-

    The librarian perform's an important role to co-ordinate in the process of outsourcing. Librarians need to clarify and understand the outsourcing issues, positions and concern for providing outsourcing service clear understanding and agreement about the meaning of the terms and conditions. for example-outsourcing may be contractual method either project, and if contract is about long term then there may be many changes in services. In all cases librarians or permanent library professional have crucial role to play in this respect.

Drawbacks of Outsourcing :-

    There are many issues common to traditional libraries practice that may indicate the needs to consider outsourcing, including high cost, low productivity, poor management and

lack of communication. Harmony also present there. There is some inconvenience also when working with unknown person.

The employment of opportunities of the library personnel could be narrowed down if outsourcing take place in a large scale. There will be also quality problems.

Purpose of using Outsourcing :-

- Lack of required staff.
- Improve the quality of library services.
- Save manpower.
- save time and energy.
- To introduce new services.
- More efficient than in- house.
- To concentrate on core activity.
- Save money for continuous improvement in services.

Objectives:-

1. Tapping in to a knowledge base for better innovation.
2. Lower labour cost and increase realisation of economic of scale
3. Increase speed and the quality of delivery of outsource activities
4. To understand which service can be given by outsourcing,enhance the study of information technology
5. To make the awareness in library budget of the specific amount reserved for providing IT services.

Library Services that could be outsourced:-

Traditional libraries have fixed services, while providing outsourcing, it can be more developed The research revealed that most Indian library have been using selective outsourcing for many years, which has had impact on these libraries.

Indian libraries also want to continue and expand the use of outsourcing in the future.

Especially some project can be worked by outsourcing firstly, then library staff can do it properly. for example- RFID labelling can be done by outsourcing,then Library Staff can handle RFID proparly. This is called partly outsourcing.

There is another outsourcing also and that is called fully outsourcing. In this outsourcing. following service can be outsourced :-

- Hardware purchasing.
- LAN
- WAN
- MAN
- Bluetooth
- Wi-Fi
- Cloud computing

- Operating system
    - Window 10 installation
    - Linux installation
    - UNIX installation
- Data entry
- Document scanning
- Barcode labelling
- RFID labelling

Partly outsourcing can also be divided in following outsourcing:-

- Software Installation
- Blog
- Library app
- Mobile OPAC
- Academic Networking Sites.

Conclusion:-

In a nut shell, the study has provided an overview of outsourcing related with information technology with its pro and cons. Outsourcing gel generally positive aspect with the advantages of cost-saving and libraries with satisfaction, enhance users. Outsourcing is beneficial for libraries for that purpose some fund should be raised.

Through outsourcing, the modern libraries based on information technology can be not only qualitative, but also decreases the workload of library staff in some extent .It enhanced library services and improve library management.

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ROLE OF INFORMATION AND COMMUNICTION TECHNOLOGY (ICT) IN ACADEMIC LIBRARY SERVICES AFTER COVID – 19

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Abstract

Information is a dynamicsource for socialgrowth. Information Communication Technology (ICT) is playing vibrant role for developing the libraries and information centres. ICT refers to anything which is related to computing technology. Presently majority of libraries are facilitating with web OPAC, E-journals, E-books, Repositories, Digitization & Digital Library, etc.

Present paper roleof informationand communication technology in academic library services in during COVID – 19 Pandemic. The whole world is suffering with COVID – 19 pandemic, every institution, industry and public domain has been affected with the Corona virus. In this pandemic situation, libraries have been the gateways of relevant information and knowledge for conducting research and development on the related subject areas. The Library and Information services started to gain importance by providing researchers the opportunity to explore medical and scientific research, while prevention of the disease.

***Keywords**: Information Technology, Academic Library, Library Services, Library Resources, COVID – 19 Pandemic.*

INTRODUCTION:

Libraries around the world have been facing lockdown challenges in providing access to its collections and services. All types of libraries have promoted their digital services during the corona virus pandemic situation. However, the physical resources are often put on demand by the users most preferably in the scientific organizations where research on drugs and pharmaceutical is being carried out for medical diagnosis and drug discovery.

Libraries having significant number of e-resources may have enough opportunities to serve their users even in the lockdown period throughout the world. Several Libraries have brought out their out their digital services organizing virtual exhibitions, highlighting content on the websites and Lets Read Together online campaign. There have also been major efforts to boots access to the library resources online as well as offline, for example by increasing the number of e-Books/e-Journals/CD-DVD, etc.

The two words, information and technology, used together, have acquired special meaning and interpretation during 1990s.Information plays a very important part in human life. Since the mid-21st century,the role of information has increased immeasurably as a result of social progress and the vigorous development in science and technology. Information technology has profound effect on the progress and development of human civilization. The advance in science and technology has made a tremendous improvement and changed all activities of present society. Due to revolution of information technology, increased tremendously demand, consumption, and importance of information technology, increased tremendously demand, consumption and importance of information in present society. The librarians are faced

challenges to managing massive volume of information for storage, process, retrieve and disseminate in libraries (Ramana, 2004). The modern technology has greatly improved the capabilities of managing this explosive growth of information effectively. Information technologies today are characterized by their very dynamic development and increasing complexity.

Information technology application in library and information field has made remarkable progress in the world. Worldwide libraries have been exploring new technologies for providing better and faster access to vast information resources and efficient information services to their users.

Information Technology has offered better solutions to achieve greater level of efficiency, productivity and excellence services in libraries (Cholin, 2005). Elisha (2006) affirms that, academic libraries play a prominent role in providing information services in various forms to researchers ,scientist ,policy makers ,planners etc. he went further to state that a well-organised academic library should have ICT to assist both patrons and thus, today's library information systems is comprised of software systems capable of capturing , transmitting ,storing ,retrieving ,manipulating and displaying of information ,that support the personnel ,organizations ,or other software systems. This systems are referred in the library setting as automated system consisting of software that has been developed to handle basic housekeeping functions of the library that are majorly Acquisition processes, Cataloguing and Classification, Circulation, Reference Services, and Serials Control and Management, all of which are still complemented with manual operations.

DEFINATION OF INFORMATION TECHNOLOGY (IT)

The concept of information technology (IT) as a universal information technology is the new science of information collection, storage, processing and transmission. However, IT connotes an ensemble of technologies which covers computer and storage technologies, to store and processing information known as information processing, connected together with telecommunication technologies, which are capable of transmitting information to distances. Information technology covers all aspects of arts, or science of processing data to produce information. This information processing, storing and dissemination with the assistance of computer is called the information technology (IT) (Brown, 1983).

Marshall (1984), IT is the coming together of computing and telecommunications for the purpose of handling information; the application of technology to information handling; including generation, storage, processing, retrieval and dissemination.

Emuakpor {2002} went further to describe IT as all forms of technology applied to the processing, storing and transmitting information in electronic form; stressing that the physical equipment used for this purpose include computers, communication equipment and networks; fax machines and electronic, pocket calculator.

Ayo(2001) viewed it as the use of computer system and telecommunication equipment; consisting of essentially three basic components which are :-Electronic processing using the computer; Transmission of information using telecommunication equipment ; and

Dissemination of information multimedia. From the above aforementioned it becomes explicit that IT in libraries comprises all the electronic infrastructure and facilities employed by libraries to improve and provide efficient services. Such facilities, in board team, consist of hardware, software and communication links between the service outlets of different libraries the sharing of common resources; especially the library networks.

Osundina(1973) pointed out that the library should not merely store documents and preserve them; it must also devise means by which the contents of such documents can be rapidly and effectively transmitted for use.

INFORMATION TECHNOLOGY TRENDS IN ACADEMIC LIBRARIES:

The advent of information society can be traced to 1060s when a shift occurred from the industrial processes to a services based economy. Since 1960s, libraries worldwide have been using technology in general and computers to automate the administrative & technical tasks of the library (Raman, 1998). In India, computerization of library had started in the year of 1955 at Indian Statistical Institute, Calcutta. During 1970s DRTC, BARC, TIFR, IIT-Madras, and BHEL- Hyderabad have been used product and services (Raman, 1998). Every facet of library work in academic, school, public and special libraries is being transformed as a result of technological advances. Among the changes are: increased database access through CD-ROMs, local mainframes, or dial-up services; a shift in the focus of library instruction toward skills for using computer- based information systems; and the provision of access to local collections for remote users, and to remote collections for local users.

The World Wide Web became a significant vehicle for distributing information. Information technology has emerged as the most potent tool to collect, organized and disseminates information to the people at large scale through communication network.

Internet brought the biggest change in libraries as 1990s saw the rapidly increasing availability of access to computers generally. The Information and Communication Technologies (ICT) have brought revolutionary changes in handling delivering and storage of information. The transition of traditional library collections to digital or virtual collections presented the librarian with new opportunities and challenges.

INFLIBNET has played major role in bringing IT culture and establishing IT infrastructure in Indian Universities. It is involved in modernizing university libraries in India. To create awareness about library automation and spread IT culture among library Professionals, INFLIBNET organizing INFLIBNET Regional Training Programme on Library Automation (IRTPLA) in different regions of the country. Recently it has initiated subscription of the E-Journals for academic libraries in India. INFLIBNET, which is cost affective and user friendly software, has been installed in 170 universities/ubstutytuibs (INFLIBNET, 2003).

IMPACT OF INFORMATION TECHNOLOGY ON LIBRARY SERVICES:

The implementation of information technology in the libraries has demanded new forms of library services to get more user satisfaction. Digital library service has evolved after the implementation of IT in the library and information centres.

Information technology had a significant impact and has successfully changed the characteristics of information services being generated in libraries. The past two decades have seen great changes in library due to information technology.

One of the distinct gifts of information technology has been the invention of devices with huge storage capacity. CD-ROMS, DVDs and flash memory cards have changed the face of libraries. Online access to information has turned many libraries into "Virtual Libraries" (Mishra, 2001). Now Libraries are changing the way in which information is stored and disseminated to users.

The next benefit of IT is the automation of library activities. Many in-house operations in the library like acquisition, processing, circulations, maintenance, serial management are changed manual to automation. The need for automation arises as to reduce the effort a time required for these jobs. Now many software are available in market for library automation. IT has helped in establishing library networking and resource sharing through internet and intranet. Library networks have expanded the limitation of the scope of resource sharing and information exchange. Today internet is the major resource for librarians. Application of IT has contributed the improvement in provision of quick, quality services in the libraries.

Another impact is remote access of variety of commercial and non commercial information sources i.e. online full text databases, e-journals, e-books, library catalogue (OPAC) etc. the present day information seekers can access the worldwide information through internet on their desktop without any time limitation.

ADVANTAGES OF IT IN LIBRARY SERVICES:

Introduction of Information Technology (IT) in library has enormous advantages. According to Igbeka (2008), and Adeleke (2014) , they enumerated the benefits of IT to Library services as follows:

* Help researchers for effective literature review search needs.
* The Online Public Access Catalogue (OPAC) is the computer form of assisting library users to catalogue library materials.
* To provide need-based, browsing and retrospective search services to the users.
* To have large number of databases in CDs.
* Computers have aided libraries with digital library which occupies little space but large storage capacity.
* To utilize the staff for providing better information services.
* Placing orders, checking to avoid duplication of books, price, ordering etc. are done very effectively using ICT technique.
* To have access to a number of national and international journals which are being published only in machine readable form.
* To digitize the documents for preservation and for space saving.
* To capture, store, manipulate and distribute information.
* To improve the efficiency of library functions.
* To support library functions such as circulation, serials control, acquisition control, stock maintenance and other routine office works and developing in-house database.

- To access library catalogues databases of other libraries through library networks.
- Global integration of library services.
- Universal access to information due to the use of Internet.
- IT has reduced the services/organization of the library b storing, retrieving and discrimination of information in real time.
- Library automation has been of tremendous help to the library workers.

Conclusion:

The paper discussed definitions of Information technology, trends in academic libraries, and impact of information technology on library services, advantages due to use of information technology in academic library services. There is no doubt that Information and Communication Technology has great impact of library services in general and academic library services in particular.

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ROLE OF INFORMATION TECHNOLOGY IN LIBRARIES

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Abstract

This paper focus on the role of information technology with respect to libraries. Information technology has transformed many and almost all industries, bringing about a change in how people perceive, engage and function in general. Libraries are hence not far behind as this comes with various benefits and helps the library reach more people.

Introduction

Information technology has now become an inseparable part of our lives. This is because digitization comes with various benefits, one of them being : more profit. In the age where even the classes are conducted online, libraries are also moving forward and embracing the change i e. they are going digital.

Information Technology and Libraries

Information technology (IT) is the study and application of computer and telecommunications knowledge to develop devices and web applications to store, retrieve, study, transmit, manipulate data and send information. It is very helpful and is irreplaceable in daily life now. And, all corporations have IT departments to manage the technology related part of the businesses. Every business is now automating themselves in order to get better results and turn in more profit.

This cannot be delayed anymore and hence libraries are also getting automated. Moreover, Twenty-first century academic libraries extend beyond the walls of any building or institution and not only provide knowledge and information but also let the student, teachers or any stake holders for that matter , interact in a digital space in the form of forums or other online social communication. Which means that the library staff should be trained and be in a position to support and coordinate these diver and international communities online, all the while ensuring a good service.

In a fast growing international education environment there are new challenges created for academic library staff that call for an investment in skills development and continuous improvements on the basis of delivering effective, meaningful, interactive, flexible and culturally aware library services and programs. Other change for the library staff will be going digital completely because all this will involve the use of mobile technologies like iPads, Kindles, Smartphone, or other mobile devices.

Digital Libraries

Digital Libraries are the new norm. Colleges and Universities are moving towards providing digital library services with a rapid speed as it provides remote access from anywhere. Another point to be noted is that these books can be downloaded as a PDF, so the student and view them later, even when internet access is not available. A digital library is a collection of

documents – such as papers, images, sound files and videos, magazine articles, book – organized in an electronic form and available on the Internet or on a digital support, for example a CD-ROM disk. Moreover, when compared to CD-ROM disks, Internet-based digital libraries have a huge benefits: they can be updated on a daily basis.

Advantages of Digital Libraries

- MORE TO CHOOSE FROM: Digital libraries provide the students an opportunity to study from a wide range of books available online, even if it is located on a different continent , which means distance is not a factor anymore.
- BUILDING A HERITAGE FOR NEXT GENERATION: this allows us to preserve all the records in a digital manner , reducing the risk of losing important information as in the case of previous generations.
- INSTANT ACCESS: Digital Libraries provide instant access to the books and these eBooks can be downloaded for viewing later.
- ACCESS FOR ALL: One drawback about physical books is that one book can be used by only one person at a time, whereas the eBooks can be viewed by everyone, at the same time.

Conclusion

The impact of information technology has spread to each and every corner the library and has affected staff, buildings and materials. The success of e-library depends on library automation and skilled manpower. Academic library professionals must equip themselves with latest IT skills and practical knowledge and deliver the information services to the customer or user. Basic IT skills are easy to understand and very important as this whole venture depends on librarians and library applications.

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ROLE OF LIBRARIAN IN THE 21ST CENTURY IN THE CHANGING WORLD OF DIGITAL ENVIRONMENTS

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Abstract

Today, the walls of a library are giving way to digital environments to establish the links with information and virtual. Information is a valuable resource. The traditional libraries should be transformed into hybrid libraries focused on providing information collected in the form of books and electronic sources to survive and meet the need of end users. In this paper describes the role of librarian in libraries, which have collection in form of e- books, digital documents and various databases and common access to the internet. Modern libraries are creating the society of knowledge. The librarians are constantly open to any changes in their field and eager to improve their skills and knowledge.

INTRODUCTION:-

Information Technology is rapidly changing the whole world and creation new challenges and opportunities. The Global changes particularly in digital environment/ ICT have had an impact on the functioning of libraries. The development in ICT has changed the user expectations from the libraries in many ways. In this age of information, the LIS plays not only just an important learning supporting function but the library itself is emerging as site of learning sometimes more important than even the class-room. The library and Information services of higher education institutions play a central role in enhancing the quality of academic and research environment. The digital environment has changed the functions and duties of LIS Professionals; they are not only to extend assistance to users in searching information in a placed called library but also to provide services and instruction regardless of place, time or format. Now librarian acts as information provider, Website designer, Database developer, Services provider, Collection developer, Consortia manager, Information consultant, content manager and so on.

INFORMATION SOCEITY:-

The information age has arrived and modern society is commonly referred to as the "Information Society". Still, this term does not have a commonly accepted interpretation. Information society is described by the modern researchers as "the society in which the information is intensely used in economic, social, cultural, and political life it is a society with abundant means of communication and of information processing, the society being the basis for serving as a major part of the national income and ensuring the source of income for majority of the population. This information society, the popularity of the internet and electronic mass media is spreading very fast. The use of internet and e-resources created a new type of society and the analog technology has been abandoned in favor of digital technology within a couple of year. This new society is also referred to as the digital, Web, Internet or computer society. Information is the most sought-after and valuable merchandise in the society. It becomes indispensable for one

social and professional's development to keep up with information constantly, to gain and use it in practice, due to changes taking place in the modern world.

CHANGING LIBRARIES:-

The user expectations to the libraries to deliver high quality, comprehensive, user-friendly new generation services. As the world advances, the library must also evolve and redesign their activities in order to deliver highly quality, need based, and value added services according to the expectations of today's library user. The concept of library has been described by several different terms such as automated library, computerized library, digital library, electronic library, virtual library, library without walls and internet library. 21st century libraries have a lot in difference with the traditional model their dominant elements are changed.

Why are Librarians for Change?

 The explosion of information, the movement away from the use of textbooks the increased concern for learning styles, advances in instructional and information technologies, advocacy for cooperative learning and collaborative teaching are factors that increase the complexity in planning for instruction. These factors bring a need for teamwork with a librarian. There is no one better able to bring about change than a librarian working in partnership with administration, staff and students. With more sources of information, both print and electronic. The critical issue for institution in the face of these changes is implementation. Faculties have to attempt to include curriculum integration, resources-based learning, new evaluation practices and technology into their daily teaching. Faculties cannot implement such changes without support comes through collaborative processes. Librarians can contribute to these process by drawing on knowledge and skills gained in implementing library programs. They are in good position to nurture collaborative working relationships among staff, across the grads and the curriculum.

What Should the 21st Century Librarian be Like:-

 21st century libraries heap new task upon a librarian. Modern librarians are crucial now for not only their high level of expertise, but also for being able to associate with the modern individuals' personality. A 21st century librarian must be modern, with acquiring psychological, social and professional capabilities. A modern librarian is open to innovations and change. He/ She has an eager and interested attitude towards solutions because of the fast-paced, constantly evolving nature of changes in libraries. A modern librarian, can develop modern characteristics throughout ones professional career even after many years of work, one does not need to be young to be modern. A librarian must be aware of technological developments and be proficient in new technologies. Librarians play a role of psychologists, because they are challenged to distinguish the users need appropriately and help the user specify them. A modern librarian should also be qualified in terms of sources of information and using them, not to mention keeping up with constantly changing information sources. A librarian should also be equipped with general knowledge, to enable him to be conversant in a multimedia subjects. The current model librarians' university training is directed towards improvement in the scope of scientific information. Self-improvement and training.

ROLE OF LIBRARIAN IN INFORMATION SOCIETY:-

Technology is changing the nature of libraries and librarians and it continues to exert a major influence on the strategic direction of libraries in society. Librarians are important as a professional group and their role is not limited to passing books. Modern library staff works towards winning new readers, similar to commercial organizations winning customers. Readers may or may not to be aware of their information needs. The role of librarian consists in comforting the users inland supporting them so that they can overcome their own fears about being in the library. The knowledge of psychology pertaining to customer services is extremely important in the process of the librarian's in-service training.

Librarians must be computer literate and knowledge about internet to fully participate in the planning, design and implementation of future library services. The way, librarian goes about their work and the tools that they use have changed in the decade. Today librarian plays many roles in order to accomplish these goals-as a teacher, as a curriculum leader, as a instructional leader, as a information specialist, as a collaborator. Followings the roles of librarian.

1. **The role of librarian as a Information Specialis**t:- Librarian possess a unique knowledge of breadth and depth of information resources in various subjects specialist. By facilitating access to information finding it, analyzing, synthesizing and packing-librarians, would move to beginning of the information production cycle, playing a more substantial role in the information creation possess?

2. **The role of librarian as Knowledge Manager**:- the librarian should have following types of knowledge.

- Knowledge about the emerging library trends and technologies
- Knowledge about library information sources, products and services.
- Knowledge about where these sources stored and what is its use.
- What is current usage of these sources and how to increase its uses?
- Knowledge about users including teaching staff and researcher and who is using their information sources

3. Role of the librarian in E-Trends:- librarian purchase different types and varieties of electronics publication taking in view their nature and characteristics and for all this library need special skill which includes knowledge in the fields of computer, networking, digital sources, web sites and organization of data.

4. Role of librarian as a Marketing Officer:- librarian will have to bring the user and the information together which can be successfully done by the marketing of information products and services. Today's many ways to put marketing program by keeping on-line bulletin boards and displaying the new acquisition on the internet.

5. **Information Literacy and librarian**:- Information literacy is the ability to recognize the need for information and to identify, locate, access, evaluate and effectively use the information to address and help resolve personal, job related or broader social issues and problems.

6. **Role of the librarian as a Manager**:- Libraries are the centers for information, librarians should have acquired management skills, so that the interpersonal relationship should be maintained.

Conclusion:-

Libraries and librarian can play a critical role both in making their users information literate and bridge the digital divide that exists at local, regional or national levels. In the changed environment, the librarian's role has to shift from that of information locater to that of an information evaluator and instructor in the use and evaluation of information sources. Librarians are compelled to update their knowledge & IT skills in advanced IT environment. It implies the fact that man can only develop after have been acquired an ideal education. In addition, it is the result of IT that the role of librarian was totally changed.

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ROLE OF LIBRARY ONLINE RESOURCES AND SERVICES DURING THE COVID-19 PANDEMIC: A STUDY OF PACHHUNGA UNIVERSITY COLLEGE, MIZORAM, INDIA

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Abstract

This paper study about the role of college library in providing online resources and services during the COVID-19 pandemic. The paper also deals with the level of user's satisfaction with the effectiveness of electronic resources and services in college library. The study was concentrated in Pachhunga University College, Mizoram India and found that library play a crucial role during the COVID-19 pandemic. The study also observed that user awareness about the online resources and services provided by the library must be taken initiatives by the authority. It was also recognized that college library must do something to upgrade its online resources and services to satisfy users in practicing online learning

Keywords: College library, online learning, COVID-19, remote accessing, Pachhunga University College

Introduction

As a result of COVID-19 pandemic the world was on alarming and infecting millions of people and bringing economic activity to a near-standstill as many countries imposed tight restriction on movement to halt the spread of virus. Thus, because of pandemic all the academic institution were shut down and initiated practicing online learning. Likewise, all the undergraduate section within the state of Mizoram commenced virtual teaching-learning to continue education. The situation drastically changes the behavior of traditional classroom learning to virtual learning where the students and teachers interact through online mode. In such a way library and information centre play a crucial role in handling information resources and services for information seeker.

Digital library or remote accessing technology through institutional websites enables users to access library resources over online. It is also important for the library to spend more on digitizing information resources and make their services online for enhancing maximum usage by the users. User awareness for handling online resources is essential and information literacy is of paramount importance for the achievement of virtual learning.

Review of literature

Anyim (2018) study the Access and retrieval of E-Library Resources and Services for effective research activities in University of Kogi state Nigeria and indicate that e-library are adopted to execute university conventional libraries in providing students, faculty, researchers with equal access to relevant information in digital formats without discrimination and at no cost to the users. The researcher also recommended that universities should enhance and upgrade the e-library resources and services to facilitate access and retrieval of information effectively.

The study of awareness and utilization of electronic library resources by students of Tamale Technical University, Ghana by Bawa & Arthur (2018) observed that low awareness of

electronic resources by students in the school culminated in its low utilization. Akpojotor (2016) study awareness and usage of electronic information resources among postgraduate students of library and information science in southern Nigeria and revealed that postgraduate LIS students are skilled in the use of e-information resources and the researcher also observed that electronic information resources are essential tools for empowering postgraduate students of Library and Information Science in Southern Nigeria.

The study of electronic resources access and usage at Ashesi University College by Dadzie (2005) found that general computer usage for information access was high because of the university's state-of-the art IT infrastructure. The researcher also observed that the use of scholarly database was quite low but because of the low encouragement of information about the existence of library resources. The study of usage of online resources by undergraduates attached to the faculty of Agriculture by Lavanya & Santharooban (2018) revealed that slow internet connectivity, unavailability of time and lack of awareness are the barriers in accessing online resources. The researcher recommended that well-planned information literacy programme should be proposed to all students regardless of their academic year in order to access information in an effective way.

Scope of the study

In order to ascertain the role of college library in providing online resources and services, the present study was carried out by evaluating the opinions of students. The area selected for the study is Pachhunga University College, one of the finest institution providing undergraduate courses within the state of Mizoram, India.

Objectives of the study

1. To ascertain the level of user's satisfaction with the effectiveness of electronic resources and services in college library.
2. To determine the areas for improvement and innovation to enhance online information access and retrieval
3. To assess the level of utilization of electronic library resources by students

Methodology

The methodology adopted for the study comprise survey approach by means of online questionnaire using Google Form for gathering primary data from students of Pachhunga University College (PUC) under study. Stratified random sampling was used as the students' runs into thousands and hand out questionnaire link over social networking application. Total 196 filled in questionnaire have been received back for analysis. The MS-Excel has been used for data collection, analysis, and its interpretation during the study. The secondary data have been collected from journals and other research report.

Analysis and discussion

   (a) Gender wise distribution of respondents

Table 1: Gender wise distribution of respondents

Male	90	45.92%
Female	102	52.04%
Prefer not to say	4	2.04%
Total	**196**	**100**

Table-1 display the total number of respondents of male and female students of the study. The study highlighted that out of the total 196 respondents, 90 (45.92%) were male and 102 (52.04%) were female candidate. While 4 (2.04%) respondents prefers not to mention their gender identity.

   (b) Device used for online class

Table 2: Device used for online class

Mobile phone	182	92.86%
Laptop	3	1.53%
Desktop computer	2	1.02%
Mobile phone & Desktop computer	1	0.51%
Mobile phone & Laptop	7	3.57%
Mobile phone, Laptop, Desktop	1	0.51%
Total	**196**	**100**

Table-2 display the device used by students while pursuing online class. The collected data shows that majority of students 182 (92.86%) used mobile phone for pursuing online class. 7 (3.57%) students used both mobile phone and laptop and 3 (1.53%) students used laptop for online class. While only 1 (0.51%) each student used Mobile phone, and desktop computer and mobile phone, laptop and desktop.

   (c) Mode of learning preferred

Table 3: Mode of learning preferred

Online/virtual	54	27.55%
Online/virtual & Traditional classroom teaching	5	2.55%
Traditional classroom teaching	137	69.90%
Total	**196**	**100**

Table-3 displays the mode of learning preferred by the students for continuing learning. The research study shows that majority of students 137 (69.90%) endorsed more on traditional classroom teaching while 54 (27.55%) students preferred online/virtual learning for continuing their study. Whereas only 5 (2.55%) choose both online/virtual and traditional classroom teaching.

(d) Opinion with regard to the collection of information resources and services available online in library

Table 4: Opinion with regard to the collection of information resources and services available online in library

Adequate	98	50%
Inadequate	60	30.61%
Needs tremendous improvement	38	19.39%
Total	**196**	**100**

Table-4 shows the student's opinion regarding the collection of information resources and services available online in library. The collected data shows that students 98 (50%) students indicated adequate with the online resources while 60 (30.61%) students indicated inadequate with the resources which is available through online in library. However, 38 (19.39%) of students indicated that the resources and services available online in library needs tremendous improvement.

(e) Major source of study materials during the COVID-19 pandemic

Table 5: Major source of study materials during the COVID-19 pandemic

Browsing internet	37	18.88%
From library	1	0.51%
From teachers	140	71.43%
Sharing with friends	18	9.18%
Total	**196**	**100**

Table-5 display student's source of study materials during the COVID-19 pandemic. The data shows that 71.43% (140) of students acquired study materials from teachers followed by browsing from internet 18.88% (37) by their own and also 9.18% (18) students retrieved study materials from friends. Whereas only one (0.51%) student acquired study materials from college library.

(f) Availability of remote accessing system through institutional website

Table 6: Do your library provide remote accessing system through institutional website

Yes	76	38.78%
No	120	61.22%
Total	**196**	**100**

Table-6 shows the data of student's knowledge about the availability of remote accessing system through institutional website. Students 76 (38.78%) indicated yes while 120 (61.22%) indicated No regarding the availability of remote accessing system through institutional website.

(g) ***Level of satisfaction with an online resources and services provided by your college library***

Table 7: Level of satisfaction with an online resources and services provided by college library

Average	121	61.73
Satisfy	37	18.88
Not satisfy	38	19.39
Total	**196**	**100**

Table-7 highlights the level of satisfaction with online resources and services provided by college library. The collected data shows that 121 (61.73%) of students indicated average with an online resources and services provided by college library while only 37 (18.88%) students were satisfy. The research data shows that 38 (19.39%) students were not satisfy with the online resources and services provided by college library.

Findings of the study

Based on the study conducted and analysis of data there are major findings which are as follows:

1. Online questionnaire was responded by 196 students, out of which 45.92% were male respondents and 52.04% were female respondents. Whereas 4 students (2.04%) preferred not to mention their gender identity.

2. Almost all students (92.86%) used mobile phone for participating in an online class for continuing learning during college shutdown.

3. Majority of respondents (69.90%) preferred traditional classroom teaching while only 27.55% of respondents choose online/virtual class.

4. 50% of the students of the study area indicated adequate with the library resources and services available online while 30.61% specify inadequate. Whereas 19.39% respondents denote the need of tremendous improvement regarding the online resources and services provided by college library.

5. Majority of students (71.43%) indicated that teachers were their main source of study materials while 18.88% of students access internet to retrieved study materials by themselves. Only one student from the study indicated library as the source of study materials.

6. 61.73% of respondents feel average with the online electronic resources and services provided by library while 18.88% respondents satisfy with the resources and services. However, 19.39% of students' respondents were not satisfied with the online facilities provided by college library.

Conclusion

The study of role of college library in providing online resources and services by the researcher shows that college library play a crucial role in conveying successful online learning especially during the COVID-19 pandemic. State government imposes movement restriction and shutting down every academic institution for more than a year already and suggesting continuing learning

through online. Thus, the dramatic changes in the mode of learning behavior have a huge impact to the teachers and students as well as the information centre and library services.

From the study it was recognized that college library must do something to upgrade its online resources and services to satisfy users in practicing online learning. Moreover, the authority must taken initiatives to be more aware about the online resources and services provided by library. It is also important to impart information literacy for today's information seekers the ability to use information technology efficiently to access, retrieved and manage information.

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SCIENTOMETRICS : AN OVERVIEW

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Abstract

Scientometrics is the study of the quantitative aspects of the process of science as a communication system. It is centrally, but not only, concerned with the analysis of citations in the academic literature. In recent years it has come to play a major role in the measurement and evaluation of research performance. In this review we consider: the historical development of scientometrics, sources of citation data, citation metrics and the "laws" of scientometrics, and bibliometrics, Librametrics , Webometrics and Cybermetrics future developments.

Keywords: Scientometrics , bibliometrics, Librametrics , Webometrics and Cybermetrics

Introduction

Nowadays the scientometrics, studying mainly the quantitative aspects of science (in cognitive, as well as in social context), has strengthen its position as a significant component of the general Science of science, and it appears to be a completed disciplinary field with clearly outlined subjects of research, specific set of good elaborated research methods and techniques, a significant concerning size and geographical scope research community, numerous research institutions, constituted regular conferences and its own printed organ – the prestigious international journal Scientometrics .

Scientometrics Historical Background :

Bibliometrics :

The term 'Bibliometrics' has been defined differently by the people engaged in the study of Information. Some of the well - known definitions are provided below chronologically: The term 'Bibliometrics' was coined by two words, 'biblio' and 'metrics'. The word 'biblio' is derived from combination of a Latin and Greek word 'biblion' means 30Introduction book, paper. On the other hand the word 'metrics' indicates the science of metric i.e. measurement. Merton and Garfield (1963) defined it as the "field of inquiry given over to the quantitative analysis of science and scientific field". Pritchard (1969) defined it as "the application of mathematical and statistical methods to books and other media of communication". He also explained it as "the metrology of the information transfer process and its purpose is analysis and control of the process". Fairthrone (1969) defined the term as, "the quantitative treatment of the properties of recorded discourse and behaviour pertaining to it". The British Standard Glossary of Documentation of Terms (1976) explained bibliometrics as, "the study of the use of documents and patterns of publication in which mathematical and statistical methods have been applied.

Webometrics and Cybermetrics :

The term Webometrics was coined by Thomas Almind and Peter Ingwersen (1997) cited in Michael Thelwall (2009); however it took several years to become the generic term for the description of the quantitative study of the Web and its related phenomena.In the early years of Webometrics several other terms were used, among them Web Bibliometry (Chakrabarti, Dom, Kumar, Raghavan, Rajagopalan, Tomkins, 1999), Internetometrics (Almind & Ingwersen, 1996), Cybermetrics (Shiri, 1998) or in computer science Web metrics (Dhyani, Keong, Bhowmick, 2002). Today the term Webometrics is established. However, the main journal in Webometrics still carries the name Cybermetrics.

The field really took off, however, with the introduction of theWeb Impact Factor (WIF) metric to assess the impact of a website or other area of the web based upon the number of hyperlinks pointing to it.Ingwersen, P. (1998)

The information science field of webometrics is "the study of the quantitative aspects of the construction and use of information resources, structures and technologies on the web drawing on bibliometric and informetric approaches" (Björneborn, L., & Ingwersen, P. 2004, sited in Mike Thelwall. 2012)

The term cybermetrics arose in parallel with the development of webometrics. This term was used to describe essentially the same research as webometrics and was the name of an electronic journal launched in 1997 and a series of workshops attached primarily to the biannual conference ofthe International Society for Scientometrics and Informetrics starting in 1996. The difference between the two terms was resolved by allowing cybermetrics to be more general—referring to non-web Internet research, such as email or ewsgroup studies, in addition to web research (Björneborn & Ingwersen, 2004).

Long after its creation, webometrics was given its accepted definition as "the study of webbased phenomena using quantitative techniques and drawing upon informetric methods" (Björneborn & Ingwersen, 2004). The importance of this definition was its inclusion of informetric methods as a defining characteristic, placing webometrics as a purely information science field. Informetrics is a term used within information science to refer to quantitative research centered on measuring information. This includes citation analysis, for example. The definition thus excludes non-information science research based on web measuring, such as computer science attempts to measure the size of the web (Lawrence & Giles, 1999) and statistical physics searches for mathematical laws of linking (Barabási & Albert, 1999), although in both these cases, similarities could be drawn with prior informetric research (e.g., Ding & Marchionini, 1996; Rousseau, 1997, sited in Mike Thelwall. 2009)

Scientometric study – theoretical aspects :

In the India, Scientometric methods are used at regular intervals for the Research Assessment, exercise to determine the allocation of funding to research institutions. The methods used for measurements in Scientometric contexts range from authorship productivity of individual authors, measuring impact factor, keyword analysis, overlap in databases (Stern, 1977; Jacso, 1997) and, increasingly, the Internet (Aguillo, Granadino, Ortega, & Prieto,

2005;Scharnhorst & Wouters, 2006; Onyancha & Ocholla 2007). The idea of this study is similar to citation analysis, where the general assumption is that the number of times an article is cited is used to distinguish articles with a greater impact on the academic community than those that are rarely cited (Nicolaisen, 2007:617; Wilson, 1999a:126). In the same way as Authorship pattern, Author productivity, in depth analysis of article on basic of key word to understand the depth of subject area,country wise distribution of articles, these are some of the important factors which can be used to distinguish journal of greater importance to scholars.

Aim of Scientometrics :

Scientometrics is to provide quantitative characterizations of scientific activity. Because of the particular importance of publication in scientific communities, it largely overlaps with bibliometrics, which is quantitative analysis of media in any written form. In addition to disciplines of measurement (infometrics/ data-mining, statistics and mathematical modelling), scientometrics has strong connections with economics and sociology of science as well as science policy. The 1970s saw the development of scientometrics as an operational activity— a response to the pressing demand for the 'measuring of science', especially in Russia and the USA. Amongst the founding fathers of the discipline were de Solla Price (1963), Garfield (1955) and Narin (1976) in the US, Nalimov & Mulczenko (1969) in Russia and Braun & Bujdoso (1975) in Hungary. Applying bibliometricmethods to their own field, scientometricians confirm that their own domain, standing at an intersection of disciplines,evolved as a heterogeneous field, both in topicsand practices (Schoepflin & Glänzel 2001) cited in Michel Zitt1 and Elise Bassecoulard,(2008).

Functions of Scientometrics

- To provide quantitative analysis of publication pattern in different subjects fields at macro and micro levels;
- To Study the use of various document sources;
- To Indicate the citation pattern of literature;
- To provide the information about the structure of knowledge, and the way it is communicated;
- To provide evaluative measures to indicate individual countries output;

Significance of Scientometric :

Scientometrics use for quantitative studies of scientific activities, includingamong other publications and so overlap bibliometrics to some extent. Price (1963)summarizes the essence of scientometrics in the introduction to "Little science, big science" as follows, Science is a measurable substance, and consequently them anpower engaged in science, the scientific literature, talent and expenses afforded toscience could be measured by properly selected statistical methods. Scientometricsincludes all quantitative aspects science of science, communication in science andscience policy (Sarala, 2005).

Conclusion :

Scientometrics is becoming a more powerful instrument of science policy, determining to a great extent the way of a project and institutional funding by assessment of priorities, perspectives, and capacity. As a whole, scientometrics becomes a very perspective research field in the general studies of science, providing powerful and effective instruments for analyses and evaluations in the sphere of science as a significant accelerator of the economic growth and social prosperity, helping to realize the Lisbon strategy for establishing a knowledge-based society

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SOCIAL MEDIA AND LIBRARY SERVICES

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Abstract

Social media play an important role to provide library services to their users. Advanced technologies have impact on library services in India as well as in the world. The use of social media sites such as MySpace, Facebook, YouTube and library things have gradually increased in the library profession. Social media creates an effective platform to make people access and share their information with other people with far distance.

Keyword: Social Networking, Libraries, Library services.

Introduction

Social media creates an effective platform to make people access and share their information with other people with far distance. Social media helps the library professionals to make things easy for them and for their readers to increase their capacity to build good relationships among library staff and library users. Social connections have become important which helped in improvement of library services in India. Social media emerged in India for the purpose of socializing. The Facebook initially used only for social discussion and gradually number of social media emerged as social sites such as Facebook, MySpace, YouTube, library thing and become evident that library services will need change to meet the growing needs of end users.

Social media is becoming increasingly popular among librarians, with a majority who feel that it is an important communication tool. Use our top tips to learn about the use of social media in library services, from strategic planning to best practice. Read through our ideas for how you can start utilizing social media today.

Definition and concept of Social media

Social media are forms of electronic communications through which user create online communities to share information, ideas, personal messages and other contents as videos.

In other words social media are websites and applications that enable users to create and share content or to participate in social networking. Social media refers to the means of interactions among people in which they create, share and exchange information and ideas in virtual communities and networks.

Social media tools

Facebook: It is a social networking site that makes it easy for you to connect and share with family and friends online. Facebook is the world's largest social network, with more than 1 billion users worldwide. Users create a personal profile, add other users as friends and exchange messages including status updates.

WhatsApp: It is a free messaging app available for Android and other smart phones. WhatsApp uses your phone's internet connection to let you message and call friends and family. Switch from SMS to WhatsApp to send and receive messages, calls, photos, videos, documents and voice messages.

Twitter: It is a social networking platform that allows groups and individuals to stay connected through the exchange of short status messages (140 character limit).

YouTube: Video hosting and watching websites.

Instagram: A free photo and video sharping app that allows users to apply digital filters, frames and special effects to their photos and then share them on a variety of social networking sites.

LinkedIn: Librarians can get patrons connected with specialists in their particular field of interest via LinkedIn. Librarian can use this platform to render specialized services such as Selective Dissemination of Information (SDI).

Wikis: It is a free online encyclopedia that gives a background knowledge and definition of concepts. It offers a platform for users to access, edit and contribute to content. This is a collaborative web page for developing web content.

Blogs: Librarians can periodically post messages, share information on a particular subject or issue and allow users to contribute to content. They can write articles, news on topical issues and expect an instant reaction from their users.

MySpace: In Academic institutions, MySpace has had helped library as well as students. This site gives us the advantage to post, calendar, custom catalogue search tools and blog features to improve their presence.

Library thing: A tool that enriches the library OPAC. Once an account is created a list of books with ISBNs is sent to Library Thing which sends back a piece of code which is pasted into the footer of the library OPAC. Librarian can utilize this to send a list of current publications to users.

Social media marketing tips for libraries

1. Improve usage

Social media platforms are useful for promoting books and collections to your patrons. Improve usage by making users more aware of what is on offer.

2. Measure impact

You can use Google Analytics or Facebook statistics to measure the impact of your social media activities. See what works well and gets the most engagement. You can then look to do more of this in your planned activities.

3. Choose the right platform

Identify your target audience and conduct research to see which channels they spend their time on. You can research online to see which channels are most used by different demographics. For example, over half of Instagram users are under 34.

4. Market research

Use your channels to obtain information on what collections are popular or unpopular with users, or any other area where you could benefit from gaining some insight.

5. Follow a policy

Adopt a social media policy to ensure ethical use by all staff across accounts. See this library social media policy example.

6. Management platform

Make your job easier with a social media management platform. A number of social media management platforms are available that are free and easy to use, with Hootsuite being the most popular with librarians, followed by TweetDeck and Feedly.

7. Plan ahead

Plan your content with a social media calendar, it will save you time in the long run and help to ensure your content is varied. It may work well to have various activities planned around the academic year. For example, around exam season you could share relevant resources you have to help students.

8. Be interactive

As well as posting your own content, interact with the content of other users. Have conversations and see what else is out there. Be present in the online community.

9. Customer service

Students tend to be very active on social media, and librarians have embraced popular platforms as a way of communicating with users to provide customer service, as well as networking with other libraries for this purpose.

10. Teaching & learning

Websites such as YouTube are great for gathering new information, to educate yourself as well as educating users. Libraries services can use social media platforms to post insights into specific materials and collections, to educate as well as promote what is available.

11. Outreach

Sharing pictures and other content is a good way of letting users know what the library is up to. This can be for specific events, new developments or simply for the purpose of showing users what it can be used for.

12. Social media strategy

Develop a library social media strategy to follow. This will help to keep your channels focused on activities that fit with your aims. If you want to get more users through the door, then your posts should aim to increase awareness of the library and to get engagement from users.

13. Training

If various members of library staff will be posting on the social media accounts, make sure to offer training in best practice. Make sure all staff are following the same calendar and strategy. Tips developed from our research on 'Use of social media by the library'. This provides a global overview of library social media use, against which individual institutions can benchmark their own, and be inspired to try new approaches. Download your copy today.

Library social media ideas

Promote your content: Use social media images available through our Promote Your Content tool to increase awareness of the Taylor & Francis products you offer.

Live chats: Indian libraries have implemented an 'ask the librarian' initiative where students can live chat with a librarian who can answer their query. Librarians are networked between multiple libraries to all be available to answer student queries.

Use imagery: several US libraries described using pictures online as a way to entice users to the physical library. "Being able to show what we're doing, whether it's adding more this summer, more outlets, or bringing in more chairs and taking pictures, and showing that we have these spaces… that's gotten a really good response."

Instagram: use Instagram to post pictures relating to collections. For example, a US university posted a picture of an old phrenology map related to their collection on the history of psychiatry.

Audience polling: use audience polls to elicit responses from multiple students rather than just hearing from one individual in a physical class environment.

Goodreads: Using Goodreads to highlight new books, inviting reviews from the user group and using that feedback for collection development. "It's a useful platform for hearing from faculty and students about books they love which we don't yet have and should order, that weren't even on my radar."

Ideas taken from our research on 'Use of social media by the library'. This provides a global overview of library social media use, against which individual institutions can benchmark their own, and be inspired to try new approaches. Download your copy today.

Purpose of Using the Social Media in Libraries

To attract Potential users of the library by making announcements, providing reference service, networking with other libraries, promoting general library services, providing quick updates to users and their query and to develop communities.

Advantages of using Social Media

- The promotion of library holdings via social media can help increase usage of content.
- It enhances communication both within the library and with other departments.
- It can be used for outreach activities through onward sharing, well beyond the institution itself, helping build connections and reputation more broadly.
- Financially the costs of using social media are perceived to be low.
- It requires little training.
- It promotes library services and disseminates news quickly, delivering this information more directly to library users.
- It increases engagement and interactions with library users.
- It helps gather feedback to enhance user services.

Conclusion

The study was conducted to determine the use of social media platforms to promote library services. Social media creates an effective platform to make users access and share their information with other users with far distance. Social media helps the library professionals to make things easy for them and for their readers to increase their capacity to build good relationships among library staff and library users. The study showed that blogs and WhatsApp are the widely used social media platforms for promoting library services in libraries. Providing E-books to students via social media has benefitted them to read while travelling. Various inspirational speeches of well-known personalities, current affairs, notes for examination and

doubt solving sites are easily available on social media. All these things have influenced the users. The students who do not get opportunities or hesitate, they can express their opinion on social media platform which provide equal opportunity to all users.

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SOURCES AND SERVICE IN DIGITAL LIBRARY

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Abstact
The library has, since long, been considered to be the so urge and power of knowledge and also the knowledge base. In higher education and research, the library has specific functions to facilitate the extensive use of learning resources by students, teachers, and researchers. With the growth of literature in large numbers even in the same field, these groups of library users have faced problems in identifying the appropriate literature for their use and consultation in a desired timeframe.
Kwyword:- Information Technology, Library Services, Digital Library, Software.

Introduction

Information and communications technology (ICT), particularly during the last two decades, has significantly contributed to open the door of accessing, hidden, knowledge in a highly efficient manner. Initially, the ICT was used in the library environment for developing databases of in-formation resources mainly, aiming at strong and retrieving information on various types of publication resources and also to organize various types of information services. The ICT has put us in the electronic environment to help identify, assess, acquire, record, store, organize, and disseminate information and information resources according to the need of specific requirements and/or of an organization or an individual requirement. The use of IT in libraries has enhanced efficiency in all aspects of information acquisition, storage, and transfer. Its magical opportunities have dramatically changed the operations of the library and its information services. With the new facilities, the traditional libraries have been modernized to make these as well-equipped and inter-connected electronic resource e centers.

According to Wikipedia' Digital library is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. The digital content may be stored locally, o r accessed remotely via computer networks'. A digital library is a type of information retrieval system. The first of the term digital library in print may have been in a 1988 report to the Corporation for National Research Initiatives The term digital libraries was first popularized by the NSF/DARPA/NASA Digital Libraries Initiative in 1994.

The older names electronic library or virtual library are also occasionally used, though electronic library nowadays more often refers to portals, often provided by g government agencies, as in the case of the Florida Electronic Library. The DELOS Digital Library Reference Model defines a digital library as: As organization, which might be virtual, that comprehensively collects, manages and preserves for the long term ri ch digital content, and offers to its user

communities specialized functionality on that content, of measurable quality and according to codified policies

Advantage of Digital Library :

Digital library has certain characteristics, which make them different from traditional library. It has expansive and accurate system of searching with large volumes of text, image and audio-video resources. Digital libraries do not need physical space to build collection and it can be accessed from anywhere, any time. Different people can access same source at the same time. The advantages of digital libraries are mentioned herein below :

- Preserve the valuable documents, rare and special collections of libraries, archives and museums.
- Provide faster access to the hold in g of libraries world wide through automated catalogues.
- Help to locate both physical and digitized versions of scholarly articles and books through single interface.
- Search optimization, simultaneous searches of the Internet make possible, preparing commercial databases and library collections.
- Offering online learning environment.
- Making short the chain from author to user.
- Save preparation/ conservation cost, space and money.

Digital technology affords multiple, simultaneous user from a single original which are not possible for materials stored in any other forms

Limitations, and constraints in development, of digital library

Digital libraries cannot possibly replace the environment of a physical library, as we still like to see and browse reading mater ials physically and get attracted more to read these. Lack of skills in handling computer viruses and lack of standardization for digitized materials are important limitations. While there are obvious benefits of digitization for digitized materials are important limitations. While there are obvious benefits of digitization, the major problem is, however, ensuring the quality of digitized materials. The other problems are access management, determination of authenticity of materials, and control of unauthorized access and use. Access being open, through the Internet, many people may be indulged in browsing vulgar resources. Sometimes, it may take a long time to access literatures that are immediately needed. It may happen that computers and other related facilities remain paralyzed in absence of regular maintenance and replacements of necessary equipment.

The development of the digital library system at least involves

1) digitization (data conversion, data organization, etc.) and 2) establishment of linkages to digitized publications. Development of databases only does not mean digital library. Digitiza tion also involves hardware and software costs, staff cost, outsourcing cost, cost of various related activities before and after digitization, such as movement of physical items, copyright clearance, creation of records, indexes, and so on. The development of a digital library system demands incurring of "large costs for the conversion of maintaining online

access (i.e. servers, bandwidth costs, et c.)." Data from the old system to the new system would also need additional costs. The initial cost (cost of hardware, software, ground stations or leasing communication circuit, etc.) is rather high. For fast access and transmit files, the system needs hi gh bandwidth. In the Internet environment, it is difficult to monitor and keep track of information resources used for subsequent use. Users face the problem of 'information overload', receive unwanted information, data, or resources, and provision of se rvices may be disrupted unless access or facilities are ensured.

Digital library software

Dspace Digital Library System

The Dspace is a joint project of the MIT Libraries HP labs. Dspace is a digital asset management system. It helps create, index and retrieve various forms digital content. Dspace is adaptable to different community needs. Interoperability between systems is built-in and it adheres to international standards for metadata format. There is various reasons to choose this software: Dspace is an open source techn ology platform which can be customized or extend its capabilities.

Greenstone Digital Library Software

The Greenstone Digital Library Software from the New Zealand Digital Library project provides a new way of organizing information and making it availab le over the Internet. Collections of information comprise large numbers of documents (typically several thousand to several million), and a uniform interface is provided to them. Libraries include many collections, individually organized—though bearing a strong family resemblance. A configuration file determines the structure the structure of a collection.

Existing collections range from newspaper articles to technical documents, from educational journals to oral history, from visual art to videos, from MIDI pop music collections to ethnic folksongs. (1)

Eprints

Eprints is free software developed by the University of Southampton, England. Eprints@llsc repository collects preserves and disseminates in digital format the research output created by the llSc research comm unity. It enables the Institute community to deposit their preprints; post prints and other scholarly publications using a web interface, and organises

Fedora

Fedora is a center for innovation in free and open source software, and creates a community where developers and open source enthusiasts come together to advance free and open source software. The fedora community contributes everything it builds back to the free and open source software. The Fedora community contributes everything it builds back to the free and open source world and continues to make advances of significance to the broader community. Fedora is a by Linux based operating system that provides users with access to the latest free and open source software, in a stable, secure and easy to manage form members of its community for the managemant and dissemination of digital material created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of the digital

materials including long term preservation. An effective digital preservation and institutional repository of necessit y represents collaboration among libraries, information technologies, archives and record managers, faculty and University administrators and policy makers (2).

Initiatives of Digital Preservation System and Digital Repositories in India

A digital preservation is a digital archive of the intellectual output of an organization/institution. It makes the quality and breath of scholarship produces at the organisation accessible to others world wide over the Internet. It is a set of services that a University/Organization offers to the term preservation of this wealth of knowledge through digitization projects and digital preservation initiatives. Diverse multi cultural and multilingual contents are now being documented, preserved with the adoption of Open Source Software System and made available through the internationally acclaimed Digital Preservation and Repository initiatives such as members of its community for the management and dissemination of digital material created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of the digital materials including long term preservation. An effective digital preservation and institutional repository of necessity represents collaboration among libraries, information technologies, archives and record managers, faculty and University administrators and policy makers

Diverse multi-cultural and multilingual contents are now being documented, preserved with the adoption of Open Source Software System a nd made available through the internationally acclaimed Digital Preservation and Repository initiatives such as

Software Used: Dspace

Electronic Theses and Dissertations of Indian

Software Used: Eprints

Librarians Digital Library (LDL) https://

Software Used Dspace

Digital Repository of IIT Bombay http://

Software Used: Dspace

OpenMED@NIC http://openmed nic.in/

Software Used: Dspace

Dspace at National Centre for Radio

Software Used: Eprints

IDRC Digital Library http://idl.

Software Used: DSpace

Open

Software Used: Eprints

Digita

National Level Digital Preservations Repositories:

Institutional Repositories:

I Archive of National Institute of Technology Rourkela http:// dspace. Nc.in/dspace/

Institute of Science (ETD@llSc) http://

Etd. Ncsi. Iisc.ernet.in

Access Repository of llSc Research Publications (ePrints@llSc) http://eprints.iis c.ernet.in/

http://dspace.ncl.res.in/dspace/

Software Used: DSpace

Dspace@INFLIBNET http://

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Software Used: Dspace

University of Delhi Eprint Archive http://

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Software Used: Eprints

Raman Research Institute Dig ital Repository http://dspace.rri.res.in:8080/dspace/

Software Used: DSpace

One World South Asia Open Archive

Initiative http://open.ekduniya.net/Software

Used: Eprints

Digital Library:

Archives of Indian Labour: Integrated

Labour History Research Pr ogramme

www.indialabourarchives. org

Software Used: Greenstone Digital Library

Software

India Education Digital Library

www.edudl.gov.in

Software Used: Greenstone Digital Library

Software

Vidyanidhi www.vidyanidhi.org.in

Software Used: Dspace

National Mission of manuscript Digitisaton

India has one of the oldest and largest collections of manuscripts in the world. These are in different Ianguages and scripts, and written on materials such as birch bark, palm leaf, cloth, paper, etc. They are in l ibraries, museums, monasteries, and in the collections of individuals. A significant portion is not archaically preserved. Experts estimate that most palm leaf manuscripts will perish due to wear and tear over the next 50 to 100 years. The National Mission for Manuscripts has taken a significant step. The Department of Culture, and Ministry of Tourism and Culture, Government of India, launched the National Mission for Manuscripts in Febbruary 2003. The objectives of the mission are to facilitate conservation and preservation of manuscripts through training, awareness, and financial support; to document, catalogue, the Central

Secretariat Library (CSL), in the Department of Culture, has undertaken the massive task of digitizing government document resources. Expected benefits are the creation of a National Directory of Custodial Institutions and Individuals and Subject Directories; a National Manuscript Library to provide central access; raising awareness of the rich intellectual heritage of India; providing policy inputs to conserve, preserve, digitized, improve access, and save manuscripts for posterity; creation interest among scholars and institutions to for trai ning in traditional Indian languages and subjects; and improving accessibility to all the stakeholders.(5)

ETD and Institutional Repository

Theses and dissertations are the bedrock of graduate education. Thesis and dissertation research is guided by experts in the field and frequently funded by highly competitive scholarships and grants. Theses and dissertations are useful sources of secondary information, particularly in the humanities, university libraries and archives. Electronically publishing of theses and dissertations brings this valuable material more prominence. An Institutional Repository (IR) is a digital archive of the intellectual output of a university. Theses and dissertations are one basic category of material for an IR.

Vidyanidhi Projects

Vidyanidhi (which means "treasure of knowledge" in Sanskrit) is a digital archive of Dissertations, as well as s set of resources for doctoral research I n India. Vidyanidhi is being developed as a national repository and a consortium for electronic dissertations, through participation and partnership with universities, academic institutions, and other stakeholders. Vidyanidhi began as a pilot project in 20 00 with governmental support, well as support from the Ford Foundation and Microsoft India. The Ford Foundation support is for focusing on Support and Human Sciences. The Microsoft support is for the

Implementation of Unicode for Indian Languages.Vidyanidh I is a member of the Networked Digital Library of Theses and Dissertations (NDLTD), and UNESCO and other efforts in this direction. UNESCO supports ETD initiatives worldwide

Electronic Theses and Dissertation Project of INFLIBNET Centre

INLIBNET hosts bibliographic database 200,000 dissertations from about two hundred Indian universities going back to 1905. The Repository uses DSpace, 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.

Various Institute also created Intuitional Repository like:

Indian Institute of Astrophysics, Raman Research Institute, National Chemical Laboratory, National Institute of Oceanography, Indian Institute of Technology, New Delhi, Indian Institute of Technology, Kharagpur, Indian Institute of Science, Bangalore, Indian Institute of Technology, Bombay, Indian Institute of Management, kozikode, National Institute of Technology, Bombay, Institute of Tec hnology, Rourkela, etc.

Need for Collaboration and Sustainability

Among the initiatives described above, only a few government institutes have shown their interest. Out of three hundred universities in India, only two, the University of Hyderabad

and the University of Mysore, have taken up digitization initiatives. The remaining institutions need funds, manpower, and guidelines from the UGC and their state governments. The vision should be an Indian information infrastructure linking education, research, government, and business. Questions of funding and governance, as well as technical issues, require the participation of state and national governments.

Conclusion

Although the library world is moving towards digitization of information resources and provision of electronic-based information-support services, it is believed and likely that the future library world will be the combination of traditional library, electronic, digital or virtual library. A digital library association with interested library professionals may be formed to create aware-ness among policy-makers,

Professionals and users of information resources,including those who need in formation but are located at the village level and to achieve the goal of developing the digital library system for Indi

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SWAYAM NEW EDUCATION HUB FOR All

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Abstract

Information explosion and the information revolution have occurred in the last decades. But the advent of information and communication technologies, the Internet and particularly the World Wide Web has revolutionized literally every-think in Information Management. A number of new products and services have been develop in the present day with the help of Information and Communication Technology (ICT).SWAYAM is web & mobile based interactive platform hasting courses from High School to University level. This programme gives high quality learning modules using multimedia on anytime and anywhere basis. This paper has been studied by the researcher to identify different subject domain and enrollment of learners in those subjects to assess their interest in SWAYAM. The scope of this study has been limited to Humanities streams. How Many Subject courses are conducted in the Humanities and Social Science streams, and to explain how this mode of open education can bring opportunities to society.
Keywords: SWAYAM, LIS Education courses, ICT based learning, MOOCs

Introduction:

Education institutions play a prime role in enhancing the quality of academic and research environment education in India. Information is vital resource for national development. Increasing realization of the role of information has resulted in the establishment of information system to provide a variety of information service and products. Now a day's India enhancing their commitments to various models of e-learning. SWAYAM platform are leading to the adoption of corporate-wide e-learning system, and accompanying change in structure, processes, and infrastructure requirements. The professed ideal is to identify narrowly defined corporate IT solutions this can deliver the full range of educational, administrative and students support feature to meet the organizational need to expand e-learning activities globally. This Platform may also be defined as a "learn for yourself".

About SWAYAM:

Under the "Digital India" initiative of Government of India, one of the confident leads is 'Massive Online Open Courses (MOOCs)'. Ministry of Human Resource Development, Government of India has embarked on a major initiative called (SWAYAM). The full form of (SWAYAM) is 'Study Webs of Active Learning for Young Aspiring Minds', to provide an integrated platform and portal for online course, covering all higher education, High School and skill sector courses. SWAYAM is an indigenous (Made in India) IT platform for hosting the massive Open Online Courses (MOOCs).Co-ordination with MHRD and All India Council for Technical Education (AICTE), Government of India with the help of Microsoft SWAYAM is designed to accomplish the three most primary principal of education policy like access, equity and quality. SWAYAM initiated with the NPTEL (National Programme on Technology Enhanced Learning), a joint programme of IIT & IIS. That is the first major attempt for e-learning in the India, through online Web and Video courses in Engineering, Science and

Humanities streams. National Mission on Education through ICT (NMEICT) takes an initiative catering to all disciplines in the higher education sector.

SWAYAM has Four quadrant approaches, the four Quadrant approach means E-Learning system that has following components:-
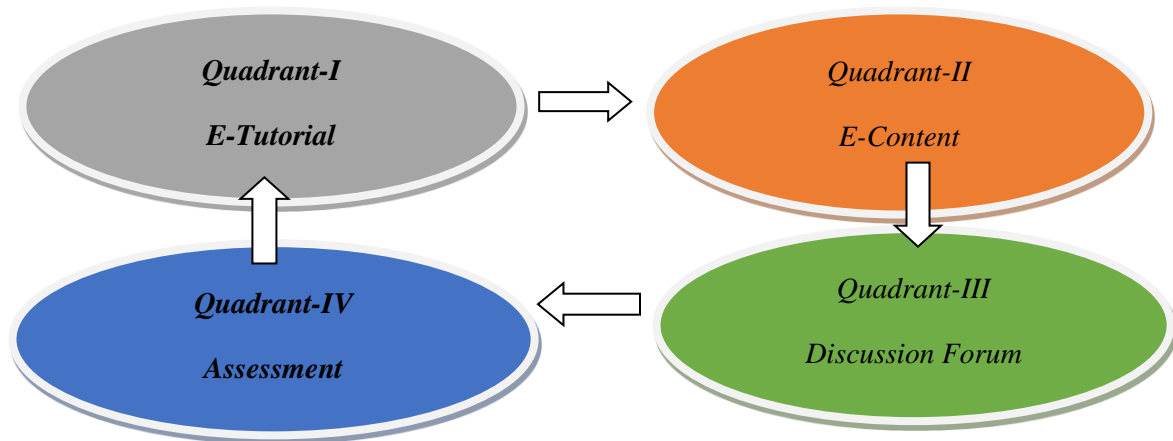
Figure 1:- Four Quadrant Approach Cycle in SWAYAM

Table 1:- Four Quadrant Approach Cycle in SWAYAM

Quadrant-I	E-Tutorial	Video and Audio Content in an Organized from, Animation, Simulations, Video demonstration, Virtual labs.
Quadrant-II	E-Content	PDF, Text, E-Books, illustration, Video demonstration, documents and interactive simulation. self instructional material, e-books, illustration, case studies, presentation etc ,and Related Links, Wikipedia Development of Course, Open source Content on Internet, Case Studies, books including e-books, research papers& journals, Anecdotal information, Historical development of the subject, Articles.
Quadrant-III	Discussion Forum	Raising of doubts any clarifying them on near real time basis by Course Coordinator or his team
Quadrant-IV	Assessment	Problems and Solutions, which could be in the form of multiple choice Questions, Fill in the Blanks, Matching Questions, Short Answer Question, Long Answer Question, Quizzes, Assignments and solutions, Discussion forum topics and setting up the FAQs, Clarifications on general misconceptions.

Table 2:- Nine Coordinators of SWAYAM

SWAYAM Nine National Coordinators play a very important role to manage the Courses.

AICTE	(All India Council for Technical Education) for Self-paced and international Courses
NPTEL	(National Programme on technology Enhanced Learning) for Engineering
UGC	(University Grant Commission) for non technical post –graduation education
CEC	(Consortium for Educational Communication) for under- graduation education
NCERT	(National Council of Education Research and Training) for School education
NIOS	(National Institute of Open Schooling) for School education
IGNOU	(Indira Gandhi National Open University)for out of school students
IIMB	(Indian Institute of Management, Bangalore) for Management Studies
NITTTR	(National Institute of Technical Teacher Training and Research) for teacher Training programme

Enrollment Process of SWAYAM:-
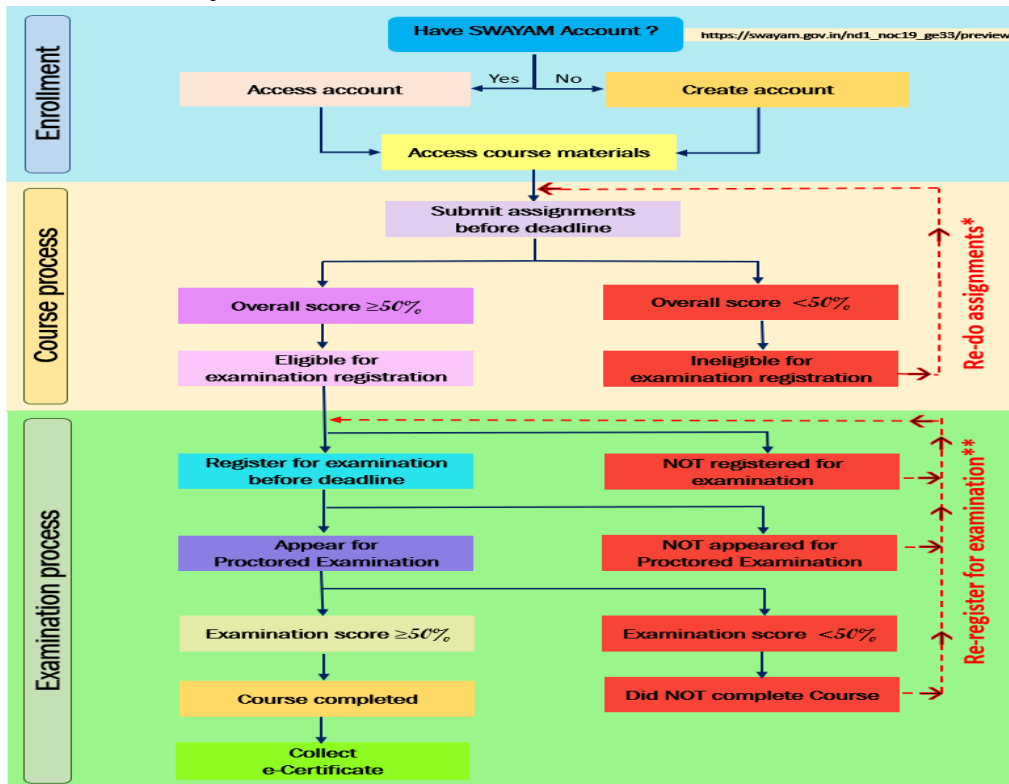
Figure 3:- Enrollment Process of SWAYAM (http://swayam.gov.in)

Objectives of Studies:

1 to find out the gross enrollment in LIS courses SWAYAM

2 to find out the enrollment in learning paths

Table 3:- Number of Enrollment in LIS Courses of SWAYAM Library and Information Science: From 2016-2020 In this Category 18 courses completed 3 courses were stated in 2019 and completed in 2020.

Sr. No	Title of Courses	Number of Enrollment	Duration of Courses	Year	Courses Type
1	MANAGEMENT OF LIBRARIES AND INFORMATION CENTRE'S AND KNOWLEDGE CENTRES	00	4 Month	2016-2017	PG
2	DIGITAL LIBRARIES	680	4 Month	2016-2017	PG
3	LIBRARY AUTOMATION AND DIGITISATION	2821	3 Month	2017-2018	Certificate
4	ADVERTISING AND PUBLIC RELATION	4870	3 Month	2017-2018	UG
5	INFORMATION SOURCES AND LIBRARY SERVICES	1424	4 Month	2017-2018	Certificate
6	DIGITAL LIBRARY	2122	4 Month	2017-2018	PG
7	SCIENTOMETRICS	298	2 Month	2017-2018	PG
8	INFORMATION STORAGE AND RETRIEVAL	339	3 Month	2017-2018	PG
9	KNOWLEDGE SOCIETY	331	3 Month	2017-2018	PG
10	INFORMATION ANDCOMMUNICATION TECHNOLOGY FOR LIBRARIEAS	710	4 Month	2017-2018	PG
11	INFORMATION SOURCES SYSTEM AND SERVICES	547	4 Month	2017-2018	PG
12	MANAGEMENT OF LIBRARIES AND INFORMATION CENTER & KNOWLEDGE CENTRES	640	4 Month	2017-2018	PG
13	DIGITAL LIBRARY	1462	15 weeks	2018-2019	PG/UG
14	INFORMATION AND COMMUNICATION TECHNOLOGY FOR LIBRARIES	765	15 weeks	2018-2019	PG/UG
15	KNOWLEDGE SOCIETY	896	15 weeks	2018-2019	PG/UG
16	DATABASE AND CONTENT ORIGINATION	789	12 weeks	2018	Certificate
17	DOUMENT PROCESSING AND ORIGINATION	893	12 weeks	2018	Certificate
18	INFORMATION SOURCES AND LIBRARY SERVICES	1137	12 weeks	2019-2020	Certificate
19	LIBRARY AUTOMATION AND DIGITISATION	1709	12 weeks	2019-2020	Certificate
20	LIBRARY AND INFORMATION SCIENCE	1727	24 weeks	2019-2020	Certificate

Interpretation of Data:-

1) *In the year 2016-2017 Library and Information Science in this category 2 subject courses are started.* MANAGEMENT OF LIBRARIES AND INFORMATION CENTRE'S AND KNOWLEDGE CENTRE'S, no student are enrolling for these courses. For DIGITAL LIBRARIES course, 680 students are enrolling for this.

2) *For the year 2017-2018 SWAYAM launch 10 courses for Library and information Science stream.*

> - LIBRARY AUTOMATION AND DIGITISATION: No. of 2821 students are enroll for this course; it is certificate courses for all.
> - ADVERTISING AND PUBLIC RELATION: it was UG course. 4870 students are enrolling for this course.
> - INFORMATION SOURCES AND LIBRARY SERVICES: 1424 students are enrolling for this course. It was certificate course.
> - DIGITAL LIBRARY: it was PG course.2122 students are enroll in the course.
> - SCIENTOMETRICS: 298 students are enrolling for this programme. It was PG course.
> - INFORMATION STORAGE AND RETRIEVAL: It was PG level programme arrange by SWAYAM. 339 students are enrolling for this programme.
> - KNOWLEDGE SOCIETY: 331 students are enrolling for this course. It was PG course.
> - INFORMATION ANDCOMMUNICATION TECHNOLOGY FOR LIBRARIEAS: it was PG course. 710 students are enrolling for this programme.
> - INFORMATION SOURCES SYSTEM AND SERVICES: 547 students are enrolled for this PG programme.
> - MANAGEMENT OF LIBRARIES AND INFORMATION CENTER & KNOWLEDGE CENTRE'S: it was PG programme and 640 students are enrolling for this programme.

3) *For the year 2018-2019 SWAYAM organized 05 courses for Library and information Science stream.*

> - DIGITAL LIBRARY:1462 students are enroll for this course
> - INFORMATION AND COMMUNICATION TECHNOLOGY FOR LIBRARIES: 765 students are register for the course.
> - KNOWLEDGE SOCIETY: 896 students are enrolling for this course. This course duration is 15 weeks.
> - DATABASE AND CONTENT ORIGINATION: this certificate course is for UG &PG students. 789 students are enroll for course.
> - DOUMENT PROCESSING AND ORIGINATION: 893 students are enroll for the course. It was certificate course.

4) *For the year 2019-2020 SWAYAM organized 03 courses for Library and information Science stream.*

 ➢ INFORMATION SOURCES AND LIBRARY SERVICES: 1137 students enroll for this programme. It was certificate course.
 ➢ LIBRARY AUTOMATION AND DIGITISATION: it was certificate course.1709 students are enroll for the course.
 ➢ LIBRARY AND INFORMATION SCIENCE: 1727 students are enroll for this programme.
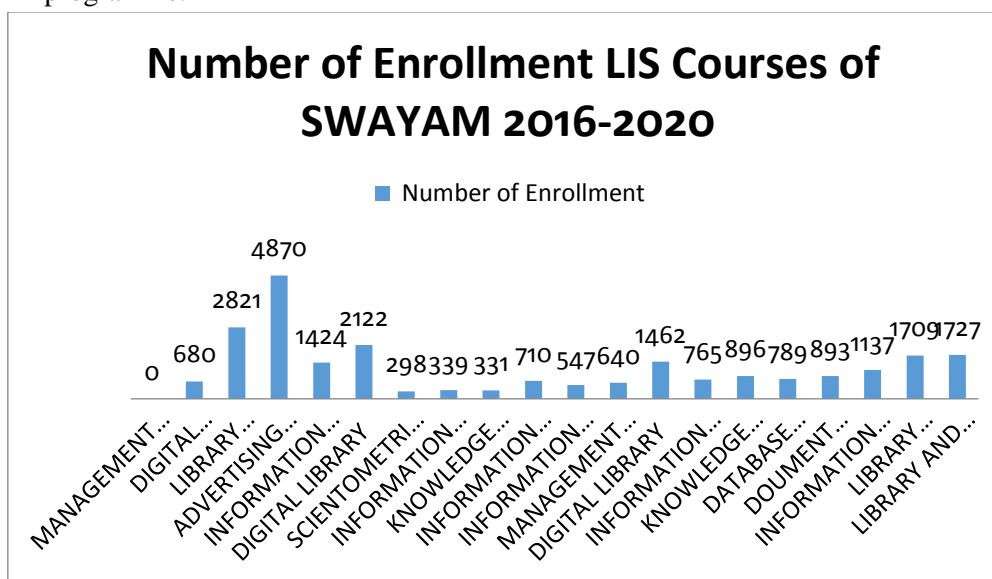
Figure 3:- Number of Enrollment in LIS Courses of SWAYAM

Conclusion:-

SWAYAM Courses are free to all. From above data 2 PG Library and information Science Courses organized by SWAYAM and 680 participants are enroll to related courses in the year 2016-2017. 2017-2018 in this year SWAYAM organized 10 Library and information Science programmes. In 2 certificate programme, 4245 participants are enroll to related courses, For UG 1 programme organized,4870 participants are enroll to course.7 PG programme organized**,**4987 participants are enroll to courses.2018-2019 in this year SWAYAM organized 05 courses for Library and information Science stream. 2 certificate programme organized in this courses 1682 participants are enroll. 3 UG/PG courses organized 3123 participants are enroll to programme. In the year 2019-2020 SWAYAM organized 03 certificate courses for Library and information Science, 4573participant are enroll for these courses.

SWAYAM is new education mode for UG/PG students in India. So many different stream courses are available on SWAYAM. The success of SWAYAM all credit goes to Government of India, National Agencies like AICTE, NPTEL,UGC,CEC, NCERT, NIOS,

IGNOU, IIMB, NITTTR. This study helps to find out overall enrollment statics courses for Library and information Science in SWAYAM.

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4)   http://ugcmoocs.inflibnet.ac.in/ugcmoocs/view_module_pg.php/208

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TECHNOLOGY AND THE CONTEMPORARY LIBRARY

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Abstract

There are many challenges provided by contemporary higher education (HE) that impact all aspects and services provided. This article considers some of the challenges and developments in HE that might be reflected in, and impact upon, the library service. New challenges have been created by developments in technology. Massive open online courses (MOOCs) have shone a spotlight onto the university, leading it to open up access to content and resources. The buildings that maintain very traditional ideologies are evolving, as are the services they provide. As today's students meander through their university life, we seek to understand them and their motives in greater detail. The author discusses these issues and focuses on people, on technology

Introduction

Predicting the future can be a near impossible task. Add in to the mix the rapid developments in technology, and the future of higher education (HE) really is anybody's guess. This article expands upon an earlier editorial in UKSG E-News entitled: 'The Libraries of Tomorrow'1 and discusses a range of issues that are impacting on and shaping the face of the libraries – both the libraries of today and of tomorrow. In particular, this article will consider trends in HE – such as innovations in pedagogy (massive open online courses [MOOCs]), technology (e-books), and how we understand the nature of students today – in order to draw conclusions as to how the library service can not only keep up with the changing nature of HE, but also serve as a pioneer in driving it and on partnership.

An increasingly open education

In 2008 a group of scholars experimented by offering an online course to anybody who wanted to participate, and few people would have predicted the impact. CCK08, as it was known, recruited thousands of participants to work collaboratively in forming new ideas and understanding around 'connectivism', a theory which emphasizes the connections between people in the learning network2 . The success of the course – largely measured by the number of recruits and an innovative approach to teaching and learning – saw the birth of the MOOC. Ivy League professors experimented, saw similar results in terms of recruitment, and ultimately spurred the formation of a number of Silicon Valley start-ups, such as Coursera and Udacity. The New York Times declared 2012 the 'Year of the MOOC' and, according to some commentators, it was set to revolutionize (or even destroy) traditional higher education as we knew it .

As the start-ups began offering their free courses from the best of what Ivy League institutions had to offer, huge enrolments were common across the board. However, there were associated challenges, as Kolowich notes: 'Massive open online courses have gained renown among academics for their impressive enrollment figures and, conversely, their unimpressive completion rates'4 . With this in mind, a systematic review of MOOCs suggests the majority had completion rates of less than 10%5 . Katie Jordan's live feed has become the goAs the debates around the importance of completion/drop-out rates have raged on, some proponents have begun to make comparisons with newspapers – 'pick it up and read what you want', even though in reality they are nothing like a newspaper7 . Commentators began to question the very innovation of the pedagogy behind the MOOC. The earlier innovation of connectivism (often referred to as a cMOOC) encompassed an extremely social approach, encouraging learners to explore, reflect and make connections. With this approach, knowledge resided in the connections rather than just in the mind of an all-knowing professor. This appeared to give way to a model whereby video lectures delivered materials to learners and communication was a supplementary activity (termed xMOOCs) – a stark contrast. Thus the future of the MOOC is evermore unclear. As time has passed, the criticisms have lessened, as has the hype machine provided by Silicon Valley and the educational media, but this does not imply MOOCs themselves are giving up and going away. There is increasing realization that, for all of their shortcomings, they have caused educators to question existing approaches to the delivery of online learning. What will their impact be on education in, say, another ten years? The interest amongst Vice Chancellors to pilot MOOCs has been piqued – will sustainable investment follow? How will publishers respond? How will libraries evolve as education is becoming a more open and online experience than ever before, and what of their responsibility, civic or otherwise?

The library as hub

In discussing the Library of Celsus, Pickles et al discuss the pilgrimages scholars would make to study: 'The Library of Celsus was built in 135AD in honor of a Roman senator. It stored 12,000 scrolls and those who wished to read them would travel long distances to visit. They would stay until their work was complete, sometimes for weeks at a time, and were given a place to eat, sleep and do some sort of athletic activity.'

Today library facilities are much more common than in these foundational years, and staff and students come and go with much greater ease and frequency. Nevertheless, the library's focus on its civic responsibilities continues to grow and adapt to the varying needs of its users. It seems apparent that the library must not only be responsive, but also proactive, in order to realize these needs.

Examples of library buildings continue to amaze from an architectural perspective as much as a practical one. Oxford University has recently blogged the story of their Bodleian and Weston Libraries, and Glasgow Caledonian has long been heralded as creating innovative, technology-rich learning spaces. So whilst these buildings will have some similarities to Celsus in terms of dedicated spaces for study and research, there is a new emphasis on socializing, social learning and on partnership.

Whilst it can be easy to think things continue to tick along in our daily roles, huge strides have already been made in transforming the traditional and silent library. The place where students go to not only access the many printed artifacts that line the shelves in collections, but also to use the facilities that have become an integral part of their university life: the computing facilities; the flexible group and social learning spaces, and so much more. A different picture of students can be seen today compared to yesteryear – perched on comfortable sofas, gadgets and coffee in hand whilst discussing coursework. And it is in these dynamic environments where the library space becomes the hub of the university.

The staffs, too, have evolved. No longer is library staff pigeon-holed into just ordering new books to stock the shelves. They have become central in the shift to an innovative and learner-centric institution, be it through leading on digital literacies or engaging with the open content movement

Take, for example, the Digital Commons area at the Martin Luther King Jr Memorial Library in Washington DC, which, as well as the 3D printers and collaborative meeting spaces, boasts a 'digital bar' where students can test various tablet devices and learn about accessing library resources. It also provides a range of training opportunities to some 500- 700 library users per month, including introductions to blogging, 3D printing and computer programming10, to enhance their digital skills and literacies.

This notion of 'the hub' of interaction also extends beyond the physical. Pickles11 shares how the library service at Oxford is using Twitter to engage with staff and students by tweeting photographs – linking digitization with open access to specific collections. Achieving the right balance on such platforms is a tough but achievable challenge that many institutions are getting to grips with. The tone taken by the Library at the University of Liverpool on Twitter (@LivUniLibrary) returns us to the point of partnership. The collective 'we' – the staff and the students – are 'The University', and this tone is perfectly met.

These various acts tell us more about the evolution of the library service than one of just bricks and mortar. They tell of a much richer evolution of people and partnerships, and of understanding the complex relationships between both. Just as the physical spaces encourage rich communication and collaboration, so too does our engagement with technology. Gone are the days where tools such as MSN Messenger are blocked from library computers, or social media use is frowned upon. The likes of Facebook and Twitter are increasingly proven to be viable and valuable platforms to support and enhance learning and teaching, and libraries are beginning to realize this potential for themselves.

Electronic books and the digital native

Whilst being positive about the pace of change in technology, it is also important to avoid techno determinism and utopian prophecies. Further to the earlier MOOC predictions, another example could be seen to be the transition from print to e-books: an innovation many predicted would completely replace their printed predecessors. In considering what the information environment might be like in 2017, Nicholas et al. foresaw 'the inexorable rise of the e-book', where print sales would diminish sharply and e-books would become the established

primary format for textbooks15. However, the reality has once again been shown to be rather different as universities are beginning to share their insight from e-book projects. A collaborative study between Hewlett Packard and San Jose State University in 2014 investigated the experiences and attitudes towards print and e-books amongst 527 students, primarily from the US. Of respondents, 51% preferred the printed version with only 21% in favor of the electronic counterpart. The preference for print was even higher in the 18-35 age brackets.

Whilst this study is based in the US, the data accurately reflects the experiences within the School of Life Sciences at the University of Liverpool. Undergraduate students were bought an e-book by the School as a partnership with McGraw Hill. However, due to student preferences, many went on to purchase the (discounted) printed version of the book with their own money. Not only does this data and anecdotal evidence run counter to digital-only approaches, it also further fuels the case against Penske's Digital Native argument. This argument suggested younger students of today, born in the digital age, are 'fluent in its language' and, remarkably, their 'brains have physically changed – and are different from ours'. They think and process information differently to 'us', and so it would be natural to presume such a student would relish the e-book-only route. Selwyn attempts to rein in such discussion and encourages us to instead 'concentrate on enhancing our understandings of the realities of technology use in contemporary society'.

White and Le Cornu have emphasized a similar message, and offered the notion of 'digital visitors and residents' – a friendlier suggestion for the way in which learners engages with digital technologies. Their continuum builds upon Penske's work but moves away from harsh categories based on age and suggestions of brain mutations, and proposes that residents see the web as a space where they can be seen, whereas visitors engage with specific tools to carry out specific tasks: 'Visitors understand the Web as akin to an untidy garden tool shed. They have defined a goal or task and go into the shed to select an appropriate tool which they use to attain their goal. Task over, the tool is returned to the shed. It may not have been perfect for the task, but they are happy to make do so long as some progress is made.'

Discussion

In taking the viewpoint or presumption that White and Le Cornu's visitors and residents model is more relevant and accurate to students of today/tomorrow, what does this say about the future of learners' engagement with the library space, be it physical or digital? Well, it tells us those suggestions of an all tech-savvy student demographic may not be quite so clear-cut, but this may not be too surprising given the previous insight into search strategies amongst the so-called 'Google Generation'.

The CIBER Briefing Paper was a result of their study: 'Information Behavior of the Researcher of the Future', commissioned by the British Library and Jisc to identify how young people are likely to access and interact with digital resources in the future. Amongst their findings and suggestions was identification of significant age-related difference in article discovery methods, with young people more likely to capitalize on personal recommendations

and Google Scholar. This compares to older generations who were more likely to visit libraries in person to seek out information and resources.

The publication also emphasizes skill gaps between generations, suggesting young people skim-read websites, will move about the web via hyperlinks rather than reading sequentially, and also lack skills in evaluating information from electronic sources. So how does a greater understanding of libraries, staff and students equip us to better respond to the challenges we face? Without doubt, a key challenge for the library is in the actual realization of what its role should be going forward. As alluded to throughout this paper, this will be one focusing on people and partnerships. Along the lines of the notions proposed by the Connectives MOOC, libraries certainly must understand that knowledge does not just live in the books and collections in their stacks, but in the connections people make. These connections need to be not only with content but with each other because, ultimately, universities are about people. This, then, is where our challenges lie.

The CIBER report suggests students will continue to see access to information guarded by the gateway of Google, and for many, their search strategies will begin and end there. Thus the resolution is twofold: not only will the education of students' searching and evaluation skills (or as writer and critic Howard Rheingold eloquently puts it, 'crap detection') continue, the systems we expect students to engage with must also become as easy to use as Google Scholar. Furthermore, we must overcome concerns of an under-skilled digital academic workforce so we can match student expectations in relation to the use of technology in all aspects of learning, teaching and assessment. The CIBER briefing suggests one of the key challenges in looking to the future is in becoming more 'e-consumer-friendly' and 'less stodgy and intellectual'. It offers proven models such as Amazon as beacons of success for finding new content based on personal and social recommendations. There are many other questions that can be, and are being, asked about technology in education. If MOOCs are to truly introduce learners to university life, for example, they must open the doors slightly wider – and it is the doors to the library that will probably have the biggest impact. Once again, dealing with issues of access returns us to discussions of civic responsibility: responsibility to people, between people, in partnership. Competing interests: The author has declared no competing interests. 'Knowledge does not just live in the books and collections in their stacks, but in the connections people make'

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THE COVID PANDEMIC AND ROLE OF ACADEMIC LIBRARIES IN E-LEARNING ENVIRONMENT

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Abstract

Today, the education system is moving towards from traditional based to online platform system. Information and communication technology is playing important role with various aspects. In this Covid-19 pandemic situation, no one can stop their learning because due to the availability of tremendous resources hosted on web platform such as National digital Library of India, N-List, Swayam, E-PG Pathashala and so on. These Open educational learning platforms are becoming boon to academic community for e-learning in this critical situation also.
Keywords: The Covid pandemic, E-Learning, ICT, web-based learning platform etc.

Introduction:

learning is a natural process by which one can gain knowledge and information. Since last year, we all are living under the pressure of covid-19 pandemic situation and we are moving speedy towards an e learning platform for getting knowledge through various teaching learning Resources. Information and Communication Technology is playing a significant role in fulfilment of academic needs in various ways. In any type of education system, teaching and learning are the fundamental components and learning part of education is concerned with academic libraries. The basic function of any library is to acquire, Store, organize and disseminate knowledge towards the learning community. Since many decades, academic libraries have changed their conventional nature and function of their services and moved towards automated libraries, digital libraries, virtual libraries and hybrid libraries. In fact, this changing nature of academic libraries is becoming a boon to the academic community in the pandemic situation. Today, in this critical situation of Covid-19, academic as well as any type of libraries are playing a important role in e-learning environment by providing various resources through their web based platform.

Objectives of research paper:

1. To explore the various types of digital libraries and online platform among the e-learner community.
2. To highlight the treasure of knowledge through various platforms to e-learners.

Data collection & Research Methodology:

Researcher has used observation method and it is observed that there is a lot of resources around us at web environment with free of cost and as well as paid basis for getting education via online mode and these resources and platforms are really scholarly based which will be useful and beneficial to entire e-learner community for fulfilment of their academic needs and teaching learning requirements. In keeping view of this approach, author has collected data from various sources for present the valuable resources before e-learner community and attempts to make

aware and explore the treasure of knowledge through various platforms which will be beneficial in anytime and anywhere as well as in in this pandemic situation also..

Introduction to some valuable e-learning resources platforms:

1. **National digital Library:** This large number of e-learning resources platforms is made available to global community with the great effort of Government of India with collaboration of NMEICT. The aim of this digital library platform is to make available to the learner's community learning resources through a single-window, National Mission on Education through Information and Communication Technology (NMEIC T) has sponsored the National Digital Library of India (NDLI) project and arranged funding through Ministry of Education. Level project is developed by Indian Institute of Technology with the support of NMEICT.

A. Nature and feature of e-learning resources under the umbrella of NDL

1. At present, as on today (5th May, 2021) , there are more than 71,002,171 e-resources are available.

2. All these resources are freely available to entire community.

3. From school level to research level learner community will be benefitted by this treasure of resources.

4. Resources are in nature of textual, tutorial, projects, theses, audio, video etc.

5. Under the title of study of home, there is seven types of disciplines are categorised such as school, CBSE Examination Preparatory, Engineering, Science, Humanities, Literature, Law & Management.

6. In the second part entitled Covid-19 Research Repository, there is made available valuable information and knowledge regarding scholarly communication, data sets, documents and videos, journals and conferences, Ideas and funding, Challenges and start-up

7. The last part of this digital library is featured collection which is consist of Birth Centenary of Satyajit Ray, On this day, R.K. Narayan, Ancient Indian Art and Architecture and talks and webinar

In Short, The National digital library of India platforms has made available various types of e-learning resources including books, reference books, notes, tutorials, PowerPoint presentations, assignments and so on. In fact, it is multifaceted e-learning platform where from school level learning community to research level scholars can get different types of e-resources for their various purposes. This large number availability of e-learning resources becomes to boon to entire e-learner community even in this pandemic situation.

National Digital Library (Sources: https://ndl.iitkgp.ac.in/)

2. N-List platform:

   The Project entitled "National Library and Information Services Infrastructure for Scholarly Content (N-LIST)", being jointly executed by the e-Shod Sindhu Consortium, INFLIBNET Centre and the INDEST-AICTE Consortium, IIT Delhi and through this platforms, there is made available e-resources in nature of e-journals and e-books from various renowned National and International publishers namely as American Institute of Physics, Oxford University Press, Cambridge University Press, Royal Society of Chemistry, H.W. Wilson, E-bray, Hindustan Book agency, Springer, Sage, Taylor & Francis and so on.

A. Nature and feature of N-List Platform:

1. This facility is made available under the umbrella of INFLIBNET which is situated at Gandhinagar in Gujrat State.
2. From Year 2014, N-LIST programme is subsumed under e-Shod Sindhu Consortium as college component.
3. Excluding the Agriculture, Engineering, Management, Medical, Pharmacy, Dentistry and Nursing educational institutions are eligible to subscribe the e-learning resources by paying subscription annual amount towards the INFLIBNET.
4. Those higher institutions come under the 12(b) & 2 (f) have to pay 5900/- subscription amount for per Annum and those could not come under this UGC act have to pay 34500/- per Annum.
5. E-learning resources under this platform are useful to various streams such as Arts, Science, Commerce, Humanities, Social Sciences and Interdisciplinary studies.
6. E-resources availability service is made available through authenticate ID & Password basis.
7. N-List based resources is nothing but a single window platform of various discipline resources.

(N-List Collection: Source-https://iproxy.inflibnet.ac.in:2443/menu)
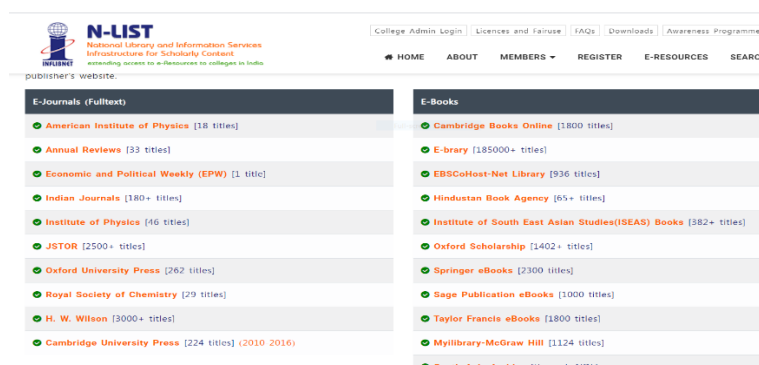
3. E-PG Pathshala:

This Online platform is designed for e-self paced e-learning community and specially regarding Post Graduate students from all disciplines who can get the audio video and textual learning resources with free of cost. E-PG Pathshala programme is initiative and executed by under the MHRD & UGC its National Mission on Education through ICT programme. It is a really scholarly multifaceted content platform where Arts, Commerce & Science stream related e-contents are made available. The following picture indicate the present situation of e-learning resources.

E-PG Pathshala e-learning collection. Source: http://epgp.inflibnet.ac.in/)

4. SWAYAM Platform: It is one the best online learning programme which is initiated by Govt. of India.

Nature and feature of SWAYAM online learning platform:

1. The various discipline related courses are designed and made available to learner community from 9th class to postgraduate level.

2. It is free platform of learning but when need the authentic certificate then have to give the examination and these credits marks will be transferred in to their academic performance.

3. Three cardinal principal of education policy viz, access, equity and quality are the core aim of this platform.

4. Each course is designed on the basis of four quadrants that is video lecture, textual learning material, assessment process and discussion forum.

5. Nine National level coordinating agencies have appointed for ensure the quality that is   All India Council for Technical Education (AICTE), National Programme on Technology Enhanced Learning (NPTEL), University Grants Commission (UGC), Consortium for Educational Communication (CEC), (National Council of Educational Research and Training (NCERT), National Institute of Open Schooling (NIOS), Indira Gandhi National Open University (IGNOU), IIMB (Indian Institute of Management, Bangalore), (National Institute of Tech nical Teachers Training and Research (NITTR).
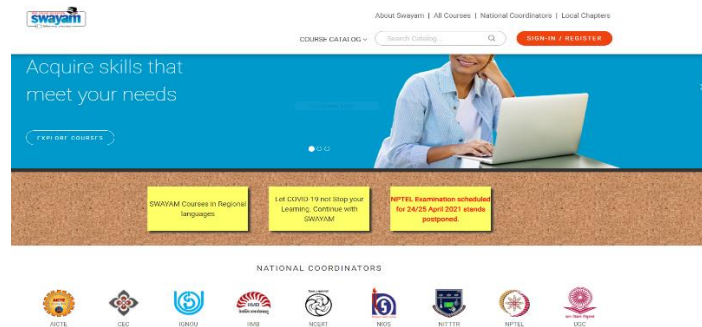
(Image of Swayam platform: Source-https://swayam.gov.in/)

6. http://cec.nic.in/cec/

    It is a one of the best online learning platform wherein rich, scholarly contents are available to e-learner community. Apart form it, there is several websites and online platforms are now in this virtual worlds which will be beneficial with various aspects to learner community.

7. https://swayamprabha.gov.in/
8. https://m.youtube.com/user/cecedusat
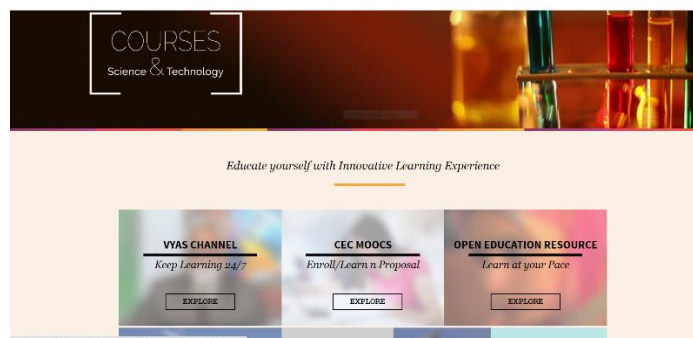
9. http://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php
10. https://ycmou.ac.in/ebooks
11. http://www.unishivaji.ac.in/distedu/Course-Material-(SIM)
12. http://www.ignouhelp.in/ignou-study-material/
13. http://eclm.unipune.ac.in/

In this way, Besides it, there are lot of e-learning platform are many more such as project Gutenberg, khan academy and so on. All are these e-learning resources are made available with free of cost. Many universities and higher educational institutions have created their institutional repository and are made available in public domain. In such a way, traditional based education system is gradually moving towards the online mode education and it is the need to hour for competition with global environment.

The role of academic libraries in e-learning environment:

Since last on and half year, all the people from global counterpart are facing with Corona pandemic situation and many of the services and sectors have been impacted on their products as well as their functions. But in this even critical situation, Information and communication technology is becoming beneficial for providing various services via online mode. Education are of at entire level has realised the importance of ICT and integrate with various level and gradually moving towards by adopting this technology in keeping view of large number of benefits in teaching learning domain and at present also imparting knowledge and information via online way that is work from home mode by using Zoom, WebEx, Google meet, Blue Jeans and so on online platform. The basic function of libraries is to acquire the knowledge resources, store, organise and disseminate towards the learner community. But due to this pandemic situation, it is not possible to provide the resources and services at physical level but it is surely possible to discriminate the e-learning resources by using various activities via online web-based platforms. There is need to change the traditional based approach and need to adopt new that is virtual or online or hybrid librarianship professional ship. In fact, libraries have already moved and providing lot of virtual based services but todays situation is an opportunity to enhance their ICT based capabilities in guiding and making available to lot of resources at the place of figure via online tools such as designing subject or discipline-oriented portals, websites, gateways as well as by creating specific streams and class-oriented WhatsApp, telegram, Facebook or by using various types of social media group platform. The present situation is become opportunity to library domain professional for providing various resources to their learner community through various e-learning platforms which resources will be beneficial to e-learner community and in this regard, there should be take initiatives in making awareness about the treasure of knowledge through NDL, N-List and many more platforms. Library professional can conduct various e-resources awareness programme, gives talk on each platform through online platform, by conducting various program and activities, e-learner community could not loss their academic carrier in this pandemic situation also. In this way, Academic libraries as well as online learning platform can play vital role in this pandemic situation also.

Conclusion:

The arrival of suddenly Covid pandemic situation has impacted on entire spare of human being and changed the natural ways of living and today each one is taking precaution from this disease and doing work from ways and many ways. Even education functions like teaching and learning are also changing their ways via online mode and providing their education via virtual mode. Since, many decades, already Information and Communication Technology is influenced traditional based teaching and learning method and now it has embedded in each and every level of educational activities. Govt. and Non- Government organization has moved forward and made available various e-learning web-based platforms for gaining knowledge and education with self-study mode. Under the open educational counterpart, now there are many more platforms are available such as NDL, SWYAM, E-PG Pathshala and so on. These platforms are really boon to academic community to fulfilment of their academic carrier. Only there is need to enhance the awareness and information literacy among e-learner community and in this regards, academic libraries can play significant role by conducting various programme and activities in keeping view of broad approach and these initiatives will helpful and beneficial to e-learner community for their betterment as well as providing quality-based education in this global competitive environment.

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USE AND ACCESSIBILITY OF INFORMATION SOURCES IN LIBRARIES: AN OVERVIEW

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Abstract

ICT has changed the traditional methods of library activities and services providing new dimensions for teaching, learning and research in higher educational institutions. With the help of ICT tools, it is possible to store, retrieve, disseminate and organize information by creating websites and databases. Information is now published both electronically and in print making it accessible to users according to their demands. It is important to assess the ICT applications in library and information centres in the context of changing user needs. This section includes studies related to the application of ICT in libraries both in India and abroad. Accessibility of information sources is an important recurring theme in the libraries. According to Aguolu and Aguolu, resources may be available in the library and even identified bibliographically as relevant to one's subject of interest, but the user may not be able to lay hands on them. One may identify citations in indexes, but may not have access to the sources containing the relevant articles. The more accessible information sources are, the more likely they are to be used. Readers tend to use information sources that require the least effort to access.

Keywords: Accessibility of information sources, Use of information sources in Libraries.

Introduction

ICT has changed the traditional methods of library activities and services providing new dimensions for teaching, learning and research in higher educational institutions. With the help of ICT tools, it is possible to store, retrieve, disseminate and organize information by creating websites and databases. Information is now published both electronically and in print making it accessible to users according to their demands. It is important to assess the ICT applications in library and information centres in the context of changing user needs. This section includes studies related to the application of ICT in libraries both in India and abroad. Accessibility of information sources is an important recurring theme in the libraries. According to Aguolu and Aguolu, resources may be available in the library and even identified bibliographically as relevant to one's subject of interest, but the user may not be able to lay hands on them. One may identify citations in indexes, but may not have access to the sources containing the relevant articles. The more accessible information sources are, the more likely they are to be used. Readers tend to use information sources that require the least effort to access. The user may encounter many possible types of inaccessibility. Therefore I choose this topic for research paper.

Objectives of research:

4. To study of use of Information Technology in libraries.
5. To study use of information sources in Libraries..
6. **To** overview on Accessibility of information sources in library**.**

Research Methodology:

For the purpose of this study used social science research methodology. to study the research topic Used scientifically analysis. In this method used secondary data tools. In this secondary data tool used reference books. Research articles, newspapers, journals, published and unpublished materials and also taken help of internet facilities. In the modern period academic Libraries are consists of many types of Academic materials therefore, to provide actual and fast service use of information technology and E-Resources is necessary in the academic Library.

Significance of information technology in Library Services

In order to put knowledge to work, one has to understand not only the characteristics of knowledge but also to know how knowledge is observed & assimilated, the motivation it induces & how it must be channelized for most efficient & effective utilization. Thus utilization of information is basically a communication process. Due to information explosion it is very difficult to handle large information with traditional library tools like manual catalogue, bibliographies, etc. In today's library environment, to provide the right way, is not possible without information technology application. Information technology has become necessity and need.

Web based Resources

Use of Web based Resources researchers are explored key issues involved with opportunities, challenges, and future developing trends of delivering dynamic and distributed web-based academic library information resources, services, and instructions for library users in the digital age with respect to leverage quality library user services in the digital age. Web contents management and knowledge base; assessment and evaluation and Librarians.

Open access and open source software

Open access and open source software for Libraries Open access, open source software, and open standards are three concepts that have been receiving increased attention lately in the library world. Open access is seen by some as a possible solution to the increasing price of serials and as a way for governmental funding agencies to receive a better return on investment. Open source software can benefit libraries by lowering initial and ongoing costs, eliminating vendor lock-in, and allowing for greater flexibility. Open standards allow for interoperability to exist between diverse library resources and eases data migration between systems.

Internet Access

The Internet plays a crucial role in the access of information resources. "Sources of information and other opportunities available via the Internet are increasing exponentially. This comes with the steady increase in Internet use for education" and research. Also, with the growth of information on the Internet and the development of more sophisticated searching tools, there is now the more likely possibility of finding information and answers to real questions.

E-BOOKS

In many libraries E-books are available in this academic library:E-book is the content of the book made available to the reader in electronic form. According to Encyclopedia of Library and Information Science, electronic book is "a term used to describe a text analogous to a book

that is in digital form to be displayed on the computer screen". Electronic books, or e-books, are books in computer tile format and read on all types of computers, including handheld devices, designed specifically for reading e-books.

E-resources/ E-Journals:

E-journals or Electronic Journals are gaining more importance with the emergence of internet. The publishing world is undergoing a revolutionary change as more and more publications are becoming WEB centric. Online journals, whose full-text articles are available in the web for viewing and downloading free of charge, called open access journals. Open access to articles can be achieved in two ways- by publishing as article in open access journals and/or depositing the same in open access archives or institutional repositories. The latter is often referred to as self-archiving. Open archiving or self-archiving initiative is an ambitious effort.

Conclusion

The implementation of information technology in the libraries has demanded new forms of library services to get more user satisfaction. Digital library service has evolved after the implementation of Information technology in the library and information centers. Information technology has had a significant impact and has successfully changed the characteristics of information services being generated in libraries. The technological advancement have made significant impact on the growth of knowledge and unlocking of human potential. In the modern era there is no doubt that the technology in particular computers and ICTs have made the most impact on libraries in areas that require the rapid and accurate storage and processing of structured data the ability to operate for 24 hours a day, seven days a week and world wide connectivity and communication. Accessibility of information sources is an important recurring theme in the libraries.

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USE OF ICT IN LIBRARY SERVICES DURING COVID-19 PANDEMIC

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Abstract

The study discusses the use of ICT in providing library services during the lockdown. Library and Information centre are using information and communication technology in library from a long period. Since the Covid-19 outbreak, all the educational institute including libraries are remain closed for the use Physical access to resource during covid-19 pandemic in library is restricted due to lockdown. Most of the libraries used ICT effectively during this pandemic. . The study also highlighted on the services which can be given through ICT in library. The main objective of the paper is to find out the information communication technology used in library.

Keyword: *Information Communication Technology (ICT); Covid-19, Pandemic, Library Service; Social Media; Digital Libraries*

Introduction

Covid-19 is a novel virus identified on December 31, 2019 in Wuhan, Hubei city of China. (WHO, 2020). From the month of January it was spread all over the world. In India first Covid-19 case was register in Kerala on 30 January 2020. In month of February 2020 some more cases were found in Kerala and rest part of India. In the month of March COVID-19 virus was spread all over the country. Covid-19 is a virus which spread due to human touch. due to avoid contact between people nationwide lockdown was implemented from 23 March 2020 in the country. All the academic institution like school, college, university, libraries, coaching center, and hostel were closed for use to stop the spread of virus. Covid-19 pandemic has changed every aspect of human's life. Not a signal person, institution, government are ready for this situations. People in India have witnessed the two deadly wave of this virus. From mid of March 2020 to present all the libraries restricted their access to physical resource.

Objective of the study

- To study the component of ICT.
- To study the use of ICT during lockdown.
- To study thread in implementation of ICT in library during pandemic.
- To study the impact of Covid-19 pandemic on libraries

Information and Communication Technology (ICT):

Information and Communication Technologies (ICTs) are often associated with the computer-based technologies. Basically, ICT is an information handling tools that include produce, store, and process, distribute and exchange information. Information and Communication Technology is a mixed collection of technological gear and resources which are made use of to communicate.

They used to generate, distribute, and collect information. According to Anyakoha (1991), information technology is "the use of manmade tools for the collection, generation, communication, recording, re-management and exploitation of information. It includes those applications and commodities, by which information is transferred, recorded, edited, stored, manipulated or disseminated". ICT is a mean that has changed many aspects of the way we live. Hawk ridge (1983) describes information technology as a revolution which has penetrated almost all fields of human activity, thus transforming economic and social life.

The Information communication technology is made from computer and communication technology. The computer is the device for storing and processing information in digital form while communication technology helps us to transfer and disseminate digital information. Additionally, ICT means a variety of technological applications in the process and dissemination of information. ICT is a combination of three words information, communication & technology. Information means knowledge or process data and technology means the use of computer & communication. The term Information Communication Technology can be defined as "the integration of computing, networking and information processing technologies and their applications".

Information Communications Technologies (ICT) – technologies that allow society to create, collect, consolidate, communicate, manage and process information in multimedia and various digital formats for different purposes i.e., computing and telecommunications technologies like the computer, CD-ROM, cable TV, mobile phones and the Internet.

Information Technology used in Libraries

Most of the librarian is successfully implementing information communication technology in libraries. From the beginning of computer technology, libraries have used it, and with the help of the development of communication technology, work in libraries is becoming easier and faster. Information technology is a term that includes all technology that's used to create, store, exchange and use information in different form. ICT is a very important tool in information management and knowledge management in libraries. Use of computer and IT applications has notable benefits to academic libraries. ICT tools and techniques, knowledge management systems, the internet, web resources, digital libraries have made an important change in the traditional library systems and services**.**

The academic libraries play an important role in providing information services in various forms to researchers, scientist, policy makers, planners etc. A well-organized academic library should have ICT to assist patrons. Today's library information systems are comprised of software systems capable of collection, transmitting, storing, retrieving, manipulating, and displaying of information, that support the personnel, organizations, or other software systems.

Impact of ICT in Libraries

After the Second World War, the world has seen the tremendous growth in information and knowledge. The growth in information results in the huge publication in books and journal. There was a information exploration. Libraries found it hard to maintain such vast amount of information in library. With the help of ICT libraries can easily handle this

huge amount. Libraries are change to old traditional libraries to new digital libraries with the help of ICT.

ICT replaces the old services and function to new one. ICT has changed the acquisition, technical processing, periodical subscription, and circulation activities and many more library activities. With the help of ICT user can get desired information and services effectively in shortest time with less man power involvement. In the information age information technology growth fatly. Role of libraries is changing the digital era. To satisfy the information need of user, it is necessary to use ICT in Library. Without ICT services cannot be given to user. Website technology, Social media, RFID, communication technology is the backbone of new library system

Components of ICT

Information Communication Technology came about as a result of the digital convergence of computer technologies and other media communication technologies. We may categorized the components of Information Technology (IT), which are frequently used in library and information center are as follows

- Computer Technology;
- Communication Technology;
- Software
- Reprographic, micrographic and printing technology.

Areas of ICT application in library

Information communication technology is being used in library form many years in library but still ICT has not gain a important space in the heart of Indian librarian. Most of the libraries and librarian are still stuck on the traditional way of librarianship. but the Covid-19 pandemic has thought us that the future of education system and librarianship is shifting towards the digital mode. Following are the areas in which ICT has been implementing in libraries.

- **Library Management**

  Library management involves classification, cataloguing, indexing, database creation work. This is the routine work of library which can be performed on regular basis. this is the primary section in which ICT can be utilised.

- **Collection Development**

  Collection development is important task of any library. The utilisation of any library is mostly depending on its collection. With the help of computer, internet and various consortia library can develop a well develop collection for its users.

- **Circulation section**

  This section includes data processing of books, issue –return of books and other materials. Use of ICT in library increases the efficiency work.

- **Library services**

  With the use of ICT many library services can be given effectively and quickly than the traditional mode

ICT base Library services in library

There is difference in every library in terms of providing library services to its users. With use of ICT, Library management system nature of library services is changed. Library began to provide new state of the art services which were not provided before. Following are the services which can be provided with help of ICT in library

- Lending and reading service
- reference service
- current awareness service
- selective dissemination of Information
- Library Orientation and Bibliographic service
- Interlibrary Loan
- User Education
- newspaper Clipping
- book display
- preparing various database
- Digital Library

Use of ICT during Covid-19 pandemic in Library

World has been witnessing a deadly virus science January 2020. This virus spread quickly than other virus. To stop the transmission of virus and avoid contact between each other most of country implemented a nationwide lockdown during this time. In India on 23rd March 2020 Prime Minister of India announced a complete lockdown in the country. During the lockdown all the activity in the country has been stopped except the essential service. The entire educational institute including library has physical closed for the access. With limited resource many libraries has provided effective library service during this pandemic. Information communication technology has played a vital role in this time. Now a day's many libraries are dependent on ICT. ICT has been utilising in every part of the library. Following services are provided during the Covid-19 pandemic outbreak.

1) E Resource

During this covid-19 pandemic physical access to resource is prohibited due to lockdown. It was hard for the student, teachers and researcher to continue their study and research. Journals and books are the main the main resource of any library. After the lockdown many libraries started providing access to e resource for user. E resources means journals or books or any other library resource which provided in electronic form called as e resource. Many college libraries in India subscribe the various e resources between these times and allow the access of e resource to their users.

2) SDI and CAS Service

Current awareness service and selective dissemination service is the essential for researcher to keep up-to-date themselves in their field. During covid-19 pandemic CAS and SDI are one of

those services which were provided to user with the help of ICT. CAS and SDI can be provided as an alert service by the e mails or whatsapp.

3) User Education and Orientation

It is almost one and half year we are facing this deadly virus. In this pandemic class are shift to online with use of meeting apps. Library turns their services from traditional to online mode. Many libraries arrange online user education and orientation programme for users. Libraries provided online user education and orientation programme on various e resource, database.

4) Digital Library service

Before the Covid-19 pandemic there was no such a talk on digital library. During this pandemic digital library has been gaining the space in the educational sector. With the limited resource many library started providing digital library service to user.

5) Institutional Repository Service

Institutional repository and digital library is different in term of scope. Institutional repository represents all information of that institute. It is the collection of archives of that institute. During this pandemic many libraries start their Institutional repository.

6) Electronic document delivery service

During the pandemic to satisfy the user needs many Library used ICT based Inter-LibraryLoan (ILL) to distribute copies of journal papers and other multimedia materials such as PDF (Portable Paper Format) to the desktop of the users. It helps the users to access information which is not available in their respective libraries. It is one of the most useful resources for users, particularly remote research scholars.

7) E reference service and readers advisory service

With help of ICT and Mobile technology many library provide the e reference service and reader advisory service to user during this pandemic. Ask a Librarian is a online reference service which was provided by the university libraries. It is an internet base service.

8) Online book display and online book exhibition

In this pandemic many libraries arrange book display service and new arrival service over the internet with help of various app. Many libraries arrange the online books exhibition. Online essay writing and speech competition was also arranged by the libraries.

9) Use of whatsapp and other social media

During the pandemic whatsapp and other social media platform is widely used for the library service. Whatsapp and other media were used for CAS and SDI service.

10)   Library Portal service

Library portal is the best medium for user to interact with libraries. During the pandemic Library portals are the signal entry point for access of the e resource in the library. The library portal works as a getaway for e-resources in any library. During this pandemic, most of the library service is provided by the library portals.   Most of the libraries in India don't have their own library website. After this pandemic, the librarian should work on the active library website.

11)   Library Network Service

During the pandemic to satisfy the user need many library joined the library networks. Networks allow many users to share and communicate with each other through common pathway. In library housekeeping and resource sharing, the networks include the Local Area Network (LAN) and Wide Area Network (WAN) serving a wide geographical area such as a nation or state, covering small geographical area such as a campus or building such as DELNET, ADINET, INDONET, INFLIBNET, MALIBNET, NICNET ADINET etc.

Challenges in Utilising ICT in Library during pandemic

- Poor funding of ICT infrastructures
- Constant change of software and hardware
- Erratic power supply
- Insufficient bandwidth
- Lack of technical IT knowledge by library staff
- Copyright and intellectual property rights management

Conclusion

The whole world is affected due to the Covid-19 pandemic science one and half year. Many countries are facing various wave of this pandemic. Many educational institute and libraries closed due to the pandemic. Physical access of library is prohibited in this time so library used information communication technology to satisfy the user needs. From a long time libraries are using ICT technology in library. Many libraries successfully provided online library services in this time to users. With the help of mobile technology, internet and computer technology libraries overcome this pandemic situation. Libraries convert their traditional service to online services in this pandemic. Access to e-resource, digital library, CAS-SDI, institutional repository, this are the main services provided by library during this pandemic. E mail, whatsapp and other social media used to provide service to user. Library Portal is the key in providing online library services. Beside this there are some threads which faced by the many libraries during this pandemic like technical skills of library staff, funding problem and ICT infrastructure. Overall ICT has played a important role in library to provide library service during this pandemic time.

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USE OF ICT TOOLS - SOCIAL MEDIA TO PROMOTE LIBRARY SERVICES

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Abstract

Social media is becoming increasingly popular among librarians, with a majority who feel that it is an important communication tool. It is noted that 21st century librarianship witnesses huge changes in the field of Library and Information science. As a result of which many changes in the LIS domain have altered the forms of information and nature of services but the basic role of the libraries - to cater the information according to need and demand of the users- is the same. Digital library along with the internet helps the library users to access their necessary resources without physically visiting the library. Libraries are adapting their services to support online communication tools and promote this new relationship. Goal of social media is to provide timely and useful information about services, resources, and community outreach events and projects. The aim of the academic library using social media is to create a stronger community and a better informed learning community. Social Media such as Facebook, Twitter, Reference Service, YouTube, Flickr, Blog are more popular among the users and librarians. This paper will try to examine the concept of social networking and its application to promote library services in the digital era..

Keywords :- - Twitter, Face Book, Library, Social Networking, Reference Service, YouTube, Flickr, Blog, Digital Library.

Introduction :-

In the twenty first century Social media is a computer and Internet based mostly assortment of tools, may be a platform wherever individuals will build social relations among those who share their interests, activities, concern, etc. Social media may be a social organization that lets the user act and work collaboratively with alternative users, as well as the power to browse, search, invite friends to attach and act with internet world. Social code within the internet a pair of.0 world not solely enhances the sensible usability within the library however conjointly helps the decreasing librarians add worth to their profession, given the worth or potential of professional being questioned within the data landscape. during this paper the potential implications of social media technologies within the field of library and data services within the internet a pair of.0 environment area unit represented. additionally, an endeavor has been created maybe totally different social code tools and their effective utilization within the social media surroundings.

Why Social Media in Libraries?

There is an excellent deal of potential inherent in social media softwares for skilled development and skilled media functions. this can be notably true for the library and data trade that is already clutches net a pair of.0 technologies across several of its core activities. However, at identical time, there's a major level of confusion, skepticism, resistance and even concern close the employment of those technologies among the work by several librarians, and not simply the baby boomers. an acceptable arrange and robust analysis must be look whereas pioneering social networks in library. User needed to aware and sufficient coaching ought to be

imparted to staffs to accomplish the task of coming up with social package in library. Last however not the smallest amount massive encouragement and user authorisation on technologies employed in net a pair of.0 ought to given the prime priority so thinking on implementing social package in library is also doable. The doable implication of social media is productive by conducting most analysis and experiment on social media from completely different purpose of read on library. Professional person is that the sole steward to accomplishment the task of coming up with, organizing and implementing social networks in library and data centre. during this context sufficient coaching associated additional experience ought to be gain by him to furnish an absolute form to social networks within the library.

Social Media Platforms Librarians can use to Promote Library Services :-

I.   **MySpace:** MySpace (http://www.myspace.com) and Facebook (http://www.facebook.com) are extremely popular social media sites which primarily have a social function allowing people to make friends, talk online and share resources.

II. **Facebook:** Another social media site frequented by students, Facebook is librarian friendly. Group communication among patrons can be possible in web 2.0.

III. **Ning:** Librarian can use this tool to get connected with students, library associations, and more. You can also use it to share information with many people at a time.

IV. **Blog:** By creating a blog, you'll be able to disemminate information to lots of people at one time. Whether you're updating students on new collections, or just conversing with library staff, blogs are a powerful tool, especially when combined with RSS.

V. **Meebo:** Network and assist students on Meebo, no matter what IM client they use. Online chatting or virtual reference service in library can impacted by professionals to clients.

VI. **LinkedIn:** This social media site for professionals is a great way to get library patrons connected with the people that can help them find information. Whether that's you, faculty, authors, historians, or other sources, they can find them in your LinkedIn network.

VII. **Twitter:** Use Twitter, a microblogging application, to keep staff and patrons updated on daily activities, like frequently updated collections, new arrival, current content services of library.

Application of Facebook in Library :-

Facebook (http://www.facebook.com) Facebook is a social network service and website launched in February 2004, owned by Facebook Inc. Facebook had 650 + million active users. Facebook was founded by Mark Zuckerberg with his college roommates and fellow computer science students Eduardo Saverin, Dustin Moskovitz and Chris Hughes (Carlson, 2005) at Harvard University. On September 26, 2006, Facebook was opened to everyone of age 13 and older with a valid e-mail address. Facebook is equipped with facilities to share the user profile, photo, personal information, contact information.

Facebook can help the user to :-

- to share the public or private messages

- to chat
- to create groups
- to express opinion on the content placed or posted
- to send files as attachments
- to provide news
- to tag the content (both image and text)
- to create blogs (allow the user to import data or posting from other blogs
- like Xanga, Blogger, LiveJournal, etc.) to send virtual gifts
- to provide personal name connected to Facebook

Instant Messaging System – to answer user queries over chat. This will

• help to attend to reference queries. Further, this will help to attend to users beyond desk hours. The feature to indicate the 'status' (available, busy, online) will help to inform the users about the availability of library staff for providing services. Developing user database – using the feature to create groups, libraries

• may have the students' profiles under different categories like undergraduate students, postgraduate students, faculty, staff, alumni, guests, (or as appropriate to the concerned library), etc. Event posting- libraries can conduct online events in which users can

• share their thoughts. The World Book Day, Librarian's Day, Copyright Day, Social Media Day, Science Day, Father's Day, Teacher's Day, Mother's Day, Friends Day, etc., celebrations of birth and death anniversaries of prominent authors, Institute foundation day, alerting the user about the upcoming institute events, etc., can be conducted virtually using this tool. Posting photographs – posting the photographs relevant to the events,

• photographs captured during the institute events, student achievements, faculty achievements, memorable photographs of the yester years of the institute, etc., will attract the student community and help the library to archive the information over the time-line. Providing news – libraries can create alert system using Google Alert by

• giving Keywords related to Institute, subject domain the user community is interested, the hot topic in the news, etc. Selected alerts from these can be shared with the community. This will enhance the visibility of the library Facebook page. Blog – we can use the blog features in Facebook to inform the users about

• the new arrivals, most borrowed books, collection available in relation to an online event, core reference books for a course, most cited article in an area of research, statistics on the use of database, open access resources, etc., this will help the users to know about the collection and to comment on the postings made. Sending virtual gifts–Facebook alerts us about the birthday, anniversary,

• and special occasion or about the student or faculty achievement. Libraries may send virtual gifts to these community members which make them to be part of library family. Such initiatives will bring librarians close to the community.

Conclusion :-

There is a great deal of potential inherent in social media software for professional development and professional media purposes. This is particularly true for the library and information industry which is already embracing web 2.0 technologies across many of its core activities. However, at the same time, there is a significant level of confusion, skepticism, resistance and even fear surrounding the use of these technologies within the workplace by many librarians, and not just the baby boomers. A suitable plan and strong evaluation needs to be look while pioneering social networks in library. User required to aware and sufficient training should be imparted to staffs to accomplish the task of planning social software in library. Last but not the least large encouragement and user empowerment on technologies used in web 2.0 should given the prime priority so that thinking on implementing social software in library may be possible. The possible implication of social media can be successful by conducting maximum research and experiment on social media from different point of view on library. Librarian is the sole custodian to accomplishment the task of planning, organizing and implementing social networks in library and information centre. In this context sufficient training and more expertise need to be gain by him to furnish an absolute shape to social networks in the librar

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USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN THE LIBRARY SERVICES

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Abstracts

The basic aim of present study is to highlights how much libraries have been exaggerated with the advantages of information and communication technology (ICT). In the era of information explosion, the tremendous amount of information is being generated and transmitted from every corner of the world in the form of print materials, research articles, lectures, presentations video conferencing, technical reports, standards and patents etc. In the early stages of 20 th century, libraries were facing the problems. The solution was to adopt the ICT based products & services.

Keywords: Information Communication technologies, Library automation, Library services

Inroduction :

ICT (information and communications technology) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education or libraries. ICT covers all forms of computer and communication equipment and software used to create, design, store, transmit, interpret and manipulate information in its various formats. Personal computers, laptops, tablets, mobile phones, transport systems, televisions, and network technologies are just some examples of the diverse array of ICT tools.

Definition :

Information and communications technology (ICT) is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

Benefits of ICT- Based information Services:

Some library users are adopting electronic habits, making increasing use of the new ICT including computers, the Internet, the Web, Intranet, Extranet and other technologies. As a result, library users are placing new demands on their libraries. They require access to the latest information, updated information resources and access to ICT facilities that they could use in their work. Use of ICT in libraries enhances user's satisfaction. It provides numerous benefits to library users.

Some of the benefits are:

1. Provide speedy and easy access to information

2. Provides remote access to users

3. Provides round the clock access to users

4. Provides access to unlimited information from different sources

5. Provides information flexibility to be used by any individual according to his/her requirements

6. Provides increased flexibility

7. Facilitates the reformatting and combining of data from different sources.

Application of ICT for library Information services:

ICT 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, CUSAT community easily shares the information. Telephone and another devices play important.

Use of Information Communication Technology in Library services :

1. Library management software - Libraries utilize software designed to manage different library routines and processes. Most of these software are integrated and have modules for the different activities or tasks carried out in the library like cataloguing, statistics , acquisition processes, serials control etc. Some examples of such software are SOUL,E-Granthalaya, Librarian, Libsuit, Libsys, Libware and some open source software such as Koha, New-Genlib etc.

2. OPAC - This means Online Public Access Catalogue and is the computerized version of the library catalogue or a database of the library holdings. The advantage of the OPAC over manual methods is ease of use and the fact that it saves space. It provides access to the catalogues of a library on the local intranet, extranet or even the internet.

3. Office Operations - Word processing, accounting,, database management and communication through e-mail are all enabled in the library through ICT.

4. Networking - Library users can access information of various types such as online databases, e-journals, e- books, government publications digitally through networked systems. Access may be allowed online remotely through the internet or intranets.

5. Electronic Document Delivery - Libraries may not rely anymore on postal services to send documents to users or carry out interlibrary lending. Libraries send documents through electronic networks that can deliver documents in various formats e.g PDF straight to users' desktops.

6. Online user education or tutorials - Libraries can use the internet or CD –ROMS to educate their users or carry out information literacy programs. Virtual tours can be offered online making user education more convenient for all.

7. E-reference services - Some services such as SDI (Selective dissemination of information) or Current Awareness Services (CAS) and virtual reference desks, announcements of new

acquisitions and other reader advisory services can be made easier through the internet. Users can have online interaction with the reference staff.

8. Library cooperation and resource sharing - A central union catalogue can be better managed through ICT, thus libraries can create and share bibliographic records and other information resources in digital format.

9. Institutional Repositories - Institutional repositories are publications that originate locally from within the university community such as theses, dissertations, reports, conference papers and seminar papers. ICT has made it possible not only to provide better access to these resources but also to ensure the preservation of the resources.

10. E- libraries- Digital libraries depend on information recorded on digital formats like CD-ROMS. Virtual libraries are libraries that do not exist in physical space or structure but can be accessed via networks. E.g. The Nigerian Virtual Library.

11. Social Media Networks - Social media networks like twitter, Facebook and LinkedIn, are some interactive internet services that are presently serving as communication forum for librarians and their uses. These networks can be deployed for educational uses. Discussion groups, list serves and communities also assist library services.

12. E- mails - This is a means of communication between the library and the users. New arrival books and library services should inform to users.

13. Library websites - A medium of communication for libraries to their users. It is also used to promote the library and publicise it.

14. Online searching - searching of of online databases like EBISCO,DOAJ,ERIC. Browsing and surfing the internet through search engines, metasearch engines and subject directories to supplement library sources

Conclusion :

The modern libraries are using ICT based products and services for their enhancement of services such as library automation, digital archives, library 2.0 and library services on mobile phones etc. As the above discussions to use of ICT based products and services by the libraries

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USE OF INFORMATION TECHNOLOGY IN LIBRARY SCIENCE IN THE PRESENT ERA

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Abstract

Information Technology has been playing an important role in developing the libraries. Use of Information Technology has improved the quality of library services and made the library work easier. Information Technology has also changed the functions of library. Information Technology refers to anything which is related to computing technology. Technology has made its place in all respect of day to day life. For example, one can see majority of people are using mobile phones, watching television, listening to the radio, using computer etc. This can be seen in all areas like medical, agriculture, robotics etc. In the present era, the vast numbers of libraries are using the technique of Information Technology. Libraries have converted their printed materials into digital format. Libraries are using barcode and RFID Technology for stock verification and automatic circulation of reading materials.

Keywords: Information Technology, IT infrastructure in library, IT Services, Library Services

Introduction:

Information Technology refers to anything related to computing technology such as networking, hardware, software, internet or the people that work with these technologies. Libraries are expected to use various types of technologies to provide information more quickly and in greater level in all areas. In libraries, Information Technology plays an important role. It has changed the functions of libraries. It has increased the efficiency of work and service. The function of acquisition, cataloguing, classification comes in technical services.

Uses of Information Technologies in Libraries:

The application of information technology in Library and Information Centres has developed in the Western countries since the 1940s. In the 1960s, the use of Information Technology has been started in the developing countries. The concept of virtual libraries OPAC, Hypertext, Stock Verification, Automatic circulation of reading materials for the purposes of Library and Information services have become common now days. Due to this impact of information technologies, it has created challenges and opportunities for the information professionals around the world. The impact of information technology is very huge from the library and information work. Libraries are using rapid technology in place of slow and old technology.

Information technology has changed the functions of the library. Libraries are using the information technology to increase the efficiency of library services day by day. Acquisition, cataloguing, circulation are the work connected with the library services. These types of services can be managed with the help of library automation software.

Library Services with Information Technologies:

1. OPAC (Online Public Access Catalogue): It is a computerized catalogue of library resource available to the public to search data online. Earlier OPAC was developed as

standalone online catalogue which users searched on the computer terminal available in the library, with the arrival of the internet.

2. Library Website: The presence of a web is very important for the library to reach its users. On the library websites, users can search library resources through online public access catalogues from anywhere and at any time using internet without personally visiting the library. Users can preserve a book, makes suggestions to purchase a book and renew online the book borrowed from the library. Many libraries provide online access of catalogues of books, thesis etc.

3. Virtual Reference Service: Many libraries offer reference service in an online mode where the user can communicate with the librarians from a remote location face to face as they normally do in traditional reference service. Many libraries provide a list of frequently asked questions (FAQ) and their answers are available on the websites which users can access anytime and anywhere using internet.

4. Computerized Circulation Service: In manual circulation service, the circulation section issues books to the readers by using the card systems or the register system and maintains users' cards. On the other hand, in a computerized system, there is no need for the library to issue and maintains borrowers' cards of tickets. Every member requires a single card with unique identification number (such as library membership number) to be used by the software to access the member database.

5. E-Publication: Library can provide e-publication such as full texts e-journals, e-database. These days, most of the reference books are available on the internet for online searching.

6. Electronic Document Delivery Service: It can provide variety of options such as creating, editing, storing, retrieving, transmitting and receiving the stored information when needed.
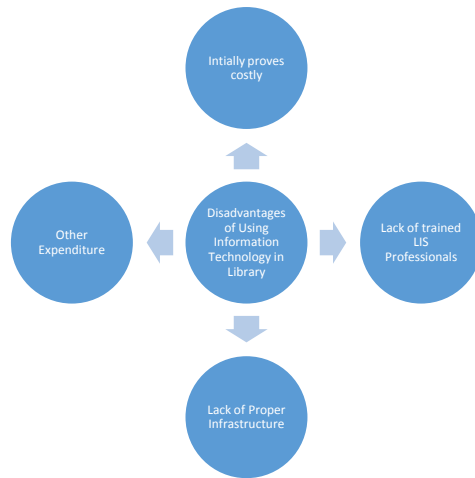
Information Technology Services:

1. Infrastructure: The Basic infrastructure of Information Technology is hardware, software, networks and facilities upon which IT services of an organization are built. For example: Network Equipment, Tele communication services, computing, electricity power backup, IT services, communication services.

2. Computing: Computing Resources such as a cloud computing platform that includes management of data centres and self service tools for deploying scaling and monitoring computing.

3. Software: software application are fully operated, managed and supported by the provider.

4. Networks: Network Services such as a wi-fi service at an office or public location which is fully supported and managed by telecom companies.

5. Database: Storage of data such a cloud data base service.
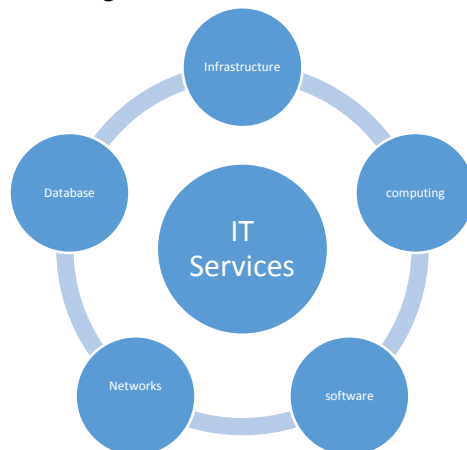
Conclusion:

The information technology industry is an important engine of growth of any country. People are enjoying by using information technologies. In library department, the use of Information Technologies is on the increase. It has increased the efficiency of work and services. Mostly functions of the library departments are useless without the information technology. The requirement of the proper infrastructure is the basic requirement in using information technology.

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USE OF INFORMATION TECHNOLOGY IN LIBRARY SERVICES

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Introduction:

Twenty first century is the information and knowledge area characterized with the use of ICT to promote teaching, research and learning. The field of library and information science are changing and growing rapidly. Today libraries bring together people and all forms of information libraries make information content from various sources available online as well as in print. At the same time, librarians and information professionals are providing value ICT help to change the shape, environment and activities of libraries which needs electronic medium to make services better and this paper focuses on the development of libraries.

New technology development:

New technologies have always been interest for libraries, both for potential of increasing the quality of service and for improving efficiency of operations. RFID is an identification technology it does the same job as bar codes but offers potentially a lot more. It can therefore be fruitful to look back at bar code technology and see what we can learn from its application in library operations. In applications at the circulation desk bar code technology has been proven to be robust, reliable and efficient. In the effort to extend bar code technology to self -service stations, which is one major direction for achieving better efficiency in operations, the experiences have been less than satisfactory. The cost for the self-service station should also be mentioned. The stations consist basically of the following components. A window PC, A metal cabinet a bar code reader and special software. It also has the capability to deactivate the anti-theft device, provided the item is put in the correct position.

Needs of Information Services:

The information technology has affected significantly the rendering of library and information services Men professionals of e-world need to have not only knowledge and skill in the areas of information technology but also matching will to carry out the services in the new media and means.

1. Computerization with media Services
2. Circulation services
3. References and information Services
4. Inter-Library Loan Services
5. Reprographic Services
6. Current awareness Services
7. Online Services
8. Book Searching
9. Selective Dissemination of Information (SDI)

Access to Web-based Resources:

Many types of library materials such as

1. E-journals
2. E-book
3. Electronic theses and Dissertations
4. Patents
5. Course material

Role of ICTs in Library and Information Science:

Academic and research libraries are now being challenged by the rapidly growing new information and communication technologies like Internet, WWW, Content Management system and other virtual computer technologies. The goal of this papers is to provide the basic and the necessary information user expectation regarding the current trends and technique in ICT and knowledge management which demands information handling and provision of information services to the users.

Conclusion:

ICT can play an important role in the process by opening access to a wealth of information by facilitating the process and by engaging the interest and attention of the users. The primary aim of any library is to provide timely and quality services to the users. ICT capabilities vary widely from the sophistication of major development.

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USE OF THE HYBRID APP IN THE LIBRARY

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Abstract

The paper succinctly describes the behavior of library users regarding accessing information through various sources, the role of apps in view of the library and their users, advantages of mobile technology. The survey of the library users of the affiliated college libraries of Gondwana University, Gadchiroli was carried out and it was found that 91.66 % of users are interested to seek information through a various mobile app, 54.44% computer application, and 44.55% manually. At present there are various own apps are available on the Google play store and users have to seek information from various places which takes a much time. In view of this Integrated Library App system proposed in this article in the interest of users to access information at any time anywhere within a click to save the time of users.
Keywords: Users of Library, Hybrid Mobile App, Integrated Library App System in India, QR code system

Introduction

In the modern age, data and information beyond the food, clothing, and shelter of every human being in the world have become an urgent need and property for a living. That is why today's era is considered the age of information because the information is the key to success. In the age of technology, there is a number of information tools are used and out of which mobile are one of the most effective information tools. From birth to death, common man to the rich, to the young, mobiles are used to obtain information. In short, mobile has become an integral part of human life. The smartphone users in India during the current year 2021 are 760 million and the same will take place of 1.1 billion in 2024. In fact, without mobile, no one will be able to find it in this world because mobile has reached home in everyone's pocket and became the part and parcel of human life. It is now easier to view information through the Internet with the help of mobile because cell phones, low-cost connectivity, and faster data transmission have taken the place of communication, and libraries are not an exception to this.

"Information on the go" considering this, Libraries can provide a variety of information services to their users by taking advantage of the growing capabilities of mobile technologies. The mobile app has provided the opportunity to provide twenty-four-hour information services to the readers of the library. Information services through Mobile Apps are quite useful to the persons who are working and studying and other professions and have been covered in this article.

2. Objectives

- ➢ To identify the various tools of finding of information by the library users
- ➢ To know the concept of hybrid app in library and for users
- ➢ To know the mobile library applications and services
- ➢ To propose need of integrated library app
- ➢ To know the concept of QR code system

3. Library users and ways to seeking information

In changing, scenario users are seeking information with the help of various sources like mobile app, computer applications and also manually. A survey of 180 users of arts, science, commerce, and law library users of college libraries affiliated to Gondwana University, Gadchiroli (MS) (Chandrapur & Gadchiroli District) was carried out to identify the sources used by the users for seeking information and given in the table 3.1.

Table 3.1: Interest of users in tools to find out information

Tools	Library Users			Users' opinion
	Total Nos.	Response	percentage	
Mobile App	180	165	91.66	Easy to search and access information anywhere, anytime through various library app, information is in hand, save the time and money. Helpful for users
Computer Application	180	98	54.44	Users have to access information from particular place, time consumable
Manually	180	82	45.55	Information which is not available on the app/website, time consume, authentic nature of information

Source: Questionnaire

3.2 Observations

Table 3.1 shows that 91.66 users have given preference to search information through mobile app and 54.44 computer application and 45.55 manually. The most of the users are interested to search information through mobile app any time anywhere for saving their time.

4. Mobile applications, apps

 Mobile applications, apps for short, are standalone, dedicated pieces of software or web applications/sites that enhance our mobile devices' capabilities and access information in elegant, consistent ways, and are the means for creating new services for our mobile patrons. Likewise, library apps are software applications developed and coded with a specific operating system. Users have to download them prior to use. Through an app, users are still able to access networked information that is linked by the app. Library mobile applications (apps) can allow users to search, bookmark, annotate, link, and highlight content from scripture, general conference talks, lesson manuals, and another curriculum on mobile devices. Recently, much large public and academic libraries have also developed their own apps.[1]

5. Mobile library applications and services

In library arena a variety of mobile web applications have been developed, including mobile library websites and MOPACs (Mobile OPACs).

Website & OPAC
Collections
Instruction
Databases
Learning
SMS notifications
Library circulation
QR codes
E-Books, Serials & Other Reading Material
Venders App

5.1 Mobile Library Website

Tim Berners-Lee, a British physicist scientist, invented the World Wide Web (WWW) in 1989, while working at CERN and announced on 30 April 1993 that the Web would be free to use for anyone in the world. Websites have different functions and are used in different formats. The main purpose of the website is to meet the need of person-to-person through information sharing around the world. Accordingly, a number of websites have been developed and a Mobile website is no exception to this. A mobile website is an important component of mobile library services. It is basically a short version of a large website that is designed and optimized for viewing on mobile devices. Presently the users required information on various topics anywhere, any time and therefore mobile library website has got importance in view of users and library.

It is very easy to create, publish, and maintain Mobile websites and also easy to use. It forms the foundation of the app or application and most common mobile websites are built simply by using HTML. The mobile libraries services commonly include on the mobile websites are;

- Library hours
- Location and contact
- E-books
- Links to the catalog and databases book renewal
- Access to the patron account
- Library videos,
- Websites
- Encyclopedia Britannica mobile: http://i.eb.com
- Medline plus mobile: http://m.medlineplus.gov
- Mobile Catalogue
- SMS Reference Service
- Quick Response Code (QR Code)

Table: 5.2 Developers of Mobile Websites, OPACs and Applications

Developer of Website	Website	Nature
Android Developers.	http://developer.android.com	Developer's guide, tutorials, and videos.
AirPac(Innovative Interfaces)	http://www.iii.com/products	Library catalog. cover images, integrated library locations with Google Maps software, request and renew items,
Boopsie	http://www.boopsie2.com/.	Public, Academic & University Libraries can deliver mobile applications that are compatible with all Web enabled phones
iPhone Optimized Website using JQTouch.	http://www.tuttoaster.com	Coding examples are included in this tutorial
Library Anywhere	http://www.librarything.com/	Mobile catalogue for any library. Includes mobile Web and apps for iPhone, Blackberry, and Android.
MobileTuts+	http://mobile.tutsplus.com/	Tutorials for all mobile developers, regardless of platform. Topics include techniques for building mobile apps and mobile Web sites.
MobiSiteGalore	http://www.mobisitegalore.com.	Build a mobile Web site in less than 60 minutes. No technical or programming knowledge required

Source: http://www.ripublication.com

6. Library Apps (Mobile Device)

In changing scenario, numbers of different libraries have developed their own app or software with a unique goal to extend the information to the every user as per their needs. Library users are accessing various types of information without computer with the help of mobile device.

LibAnywhere: www.libanywhere.com
Catch: https://catch.com)
EverNote: http://evernote.com
Inspiration Maps: https://itunes.apple.com/us/app/inspiration-
EasyBib: www.easybib.com
Trello: https://trello.com
AccessMyLibrary: www.gale.cengage.com/apps/aml/College Library
ArticleSearch: https://itunes.apple.com/us/app/articlesearch

6.1 Reference Manager Mobile Apps

Reference management, citation, personal bibliographic management software, are useful to the scholars and authors to use for recording and utilizing bibliographic citations (references). Citation software helps import citations from favorite databases and websites build and organize bibliographies, format citations for papers, lake notes on articles and save them in collection of citations, save and organize PDFs, screenshots, graphs, images, and another research. At present number of mobile app for bibliographic management software are available in the form of mobile application some of the listed as under;

Zotero: zotero.org
Mendeley: mendeley.com
Redcube: https://www.readcube.com
EndNote: http://endnote.com

6.2 E-Resource Publisher App

The publishers have changed their policies having seen the development and use of e-resources and developed the mobile applications.

ACS Journals   http://pubs.acs.org/page/tools/acsmobile/index.html
(The American Chemical Society)
RSC Journals   http://www.rsc.org/Publishing
The Royal Society of Chemistry
ScienceDirect   http://www.info.sciverse.com

7. Advantages of Mobile technology to the Library and Users

- ➢ Save the time and money of user
- ➢ User friendly service
- ➢ No limit for access of information
- ➢ Anytime anywhere service
- ➢ Free to access campus information
- ➢ To develop connectivity and scope in teaching, learning and reading
- ➢ Personalized service
- ➢ Direct communication
- ➢ Develop group work
- ➢ Easy to operate and access information
- ➢ Extend scope of the services of library
- ➢ Mobile is the only solution in the future

8. Integrated Library App.

In the age of computers, information on various subjects is available on the internet and users are accessing from various web and apps through computer and mobile technology. The users have to go on various apps and have to login and also register their name in different places and

it takes time. In view of this, it is suppose proposed to develop one integrated library app in India so as users will get information about various libraries within one click.

In the process of circulation and acquisition, if we are using a QR code system to increase the speed of library services and save the time of users the QR code system is a very easy and quick response system as well as an instant and handy system that's provide library services quickly to users.

9. Conclusion

It was concluded that at present the users are of mobile oriented and desires to access information from various sources at anywhere, any time through mobile app to save their time and also money. In   view of this Integrated Library App system proposed in this article in the interest of professionals to access information at any time anywhere within click.

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WEB CONTENT ANALYSIS OF C.P.E. COLLEGE LIBRARY WEBSITES OF MARATHWADA REGION: A COMPARATIVE STUDY

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Abstract

College library website played a vital role for effective user services. In this digital age all data is available on websites. Library website is a source of information for users. Present study based on C.P.E. (Colleges with Potential for Excellence) College library websites. All websites are comparatively analysed by using checklist. All data is systematically analysed and represent in percentile form.

Keywords: *Web content, content analysis, Web 2.0, Library 2.0, CPE colleges, library websites.*

Introduction:

In this digital age all information easily available on internet. Internet is best mediator between user and information. Website is one of the best informative sources. In the education sector most of institutions are developed their own web portals and display the relevant educational information. Students are searched and visit to various institutions website before admission. Students are collected information about institutional infrastructure and their facilities. Institutional website is the digital mirror of institution. University Grants Commission (UGC) has provided Colleges with Potential for Excellence (CPE) status, which has maintained teaching and research standard. UGC provide additional funds to selected CPE colleges for improvement of infrastructure, teaching, research and outreach programmes that would be comparable to global standards.

Web 2.0:

Tim O'Reilly said web 2.0 is revolution in the computer industry and gives the platform to internet. Web 2.0 websites are good to use, user to create, share, collaborate and communicate their work with others. Web 2.0 is provided various services such as Google maps, Google Docs, YouTube, Wikipedia, Blogs, Facebook, Twitter, etc.

College libraries are used web 2.0 technology, they are developed their own library websites and gives current and speedy information to their users. Maximum e-resources are available on college library website for example, e-books, e-journals, e-databases, consortiums, etc. Such kinds of requirement of library users are fulfilled by librarian on library website. Web 2.0 is very huge gift for communicate the information.

Library 2.0:

Computerized library maintain their data in electronic form in computer. Web 2.0 helps to transfer and share the data to their users. Web 2.0 tools and application are useful in library. Library 2.0 provided the information to users with help of web 2.0 tools and application. Users

are accessed proper information within few minutes. Library 2.0 is played vital role for user participation in generation of both physical and virtual service on the web.

Scope and limitation of the study:

The present study covers CPE (Colleges with Potential for Excellence) colleges in Marathwada region of Maharashtra State and record published on UGC website as on 01-04-2017.

As per UGC website there are ten colleges who got CPE status from UGC. But this study is limited to eight colleges because two college library websites are not constructed till 31/03/2021.

Objectives of the present study:

- To evaluate the content of CPE college library websites.
- To know the resource information on library web page.
- To identify the contact related query.
- To suggest some points for improvement of websites.

Literature Review:

- **Manjunatha, K. S. (2016):**

This paper was based on eight special library websites located in Bengaluru, Karnataka. In this study researcher was used few good quality articles for literature review and prepare checklist for analyses of special library websites. End of the conclusion most of library websites were moderately developed.

- **Gayan, M. A. and Das Saumen (2017):**

The study was investigated web content analysis of National library websites of south Asian region. This study consists of eight national library websites of south Asian region. Total 64 items checklist were designed for data collection on library websites. National library websites were thoroughly scanned, scrutinized, analysed and evaluated based on checklist design. Most of libraries were not updated latest web technologies for providing better user oriented services.

- **Das, Susmita and Das, Sumita (2018):**

The study was examined web content analysis of IISER (Indian Institute of Science Education and Research) library websites in India. Total seven IISER centres were consisted in India to facilitate education and research. Total 62 items checklist were designed for examine the web content. All IISER library websites were more informative and eye-catching for users.

- **Devi, Krishna and Verma, M. K. (2018):**

In this study researcher was analysed web content of Indian Institutes of Technology (IIT) and National Institutes of Technology (NIT) library website or web page. Total 172 parameters were used to analyse the web contents. This study was limited to 19 IITs and 29 NITs library websites.

- **Hugar, J. G. (2019):**

This study was concerned Goa university affiliated engineering college library websites in Goa. Checklist was designed for analyse the data; researcher was given the rank of library websites. It is useful to librarian for develop their library website. This study was covered one Government engineering college and four private engineering colleges. Total five college library websites were analysed.

Methodology:

In the present study data is collected from CPE college library websites. Total 61items Checklist are designed for data collection. Qualitative research papers are used for review of related literature and design to checklist. CPE college library websites are scanned thoroughly for web content analysis during December 2020. Analysed data is present in tabular form.

Data analysis:

Table no. 1 List of sample population

Sr. No.	Name of College	Web Address
01	Balbhim College, Beed	www.mspmbeed.com
02	Deogiri College, Aurangabad	www.deogiricollege.org
03	Dnyanopasak College, Parbhani	www.dnyanopasak.org.in
04	RajarshiShahu College, Latur	www.shahucollegelatur.org.in
05	RamkrishnaParamhansa College, Osmanabad	www.rpmahavidyalaya.org
06	Shri. Chhatrapati Shivaji College, Omerga	www.scsco.org.in
07	VinayakraoPatil College, Vaijapur	www.vpcollege.org
08	Vivekanand College, Aurangabad	www.vivekanandcollege.edu.in

Data was collected from 8 CPE college library websites for present research. Data was collected from December 8, 2020 to March 31, 2021.

Table No. 2 General Library Information

Sr. No.	Aspects	Yes	No	Percentage of Yes
01	About Statement	4	4	50%
02	Working Hours	4	4	50%
03	Membership Information	0	8	0%
04	Library Rules	4	4	50%
05	Library Sections	2	6	25%
06	Facilities/Services	6	2	75%

Table no. 2 shows that out of 8 CPE college libraries, (50%) library websites are given 'about statement', 'working hour' and 'library rules'. (75%) library websites has given 'facilities/services', and only (25%) of library websites has given library section on their websites.

Table No. 3 Authority

Sr. No.	Aspects	Yes	No	Percentage of Yes
01	Website Updating Date	0	8	0%
02	Maintained Without Any Internal / External Advertisement	7	1	87.5%
03	Links to Mobile Site	0	8	0%
04	Page Under Construction	1	7	12.5%

05	Page Title Appears in the Top	8	0	100%
06	Are There Dead Link	2	6	25%
07	Home Link in Every Page	8	0	100%
08	Website Index	0	8	0%
09	Site is Larger (more than 4 pages)	8	0	100%
10	Multilingual Information	0	8	0%

Table no. 3 indicates that (100%) of libraries website has 'page title appear in the top', 'home link in every page' and 'site is larger (more than 4 pages)'. (87.5%) of library websites has maintained without any internal/external advertisement. (25%) of libraries website has dead link. Libraries website has not maintained their 'website updating date', 'links to mobile site', 'website index' and 'multilingual information'

Table No. 4 Resource Information

Sr. No.	Type	Yes	No	Percentage of Yes
01	Books	6	2	75%
02	Print Journals	5	3	62.5%
03	Electronic Journals	5	3	62.5%
04	Book Bank	4	4	50%
05	Back Volumes of Journals	5	3	62.5%
06	Non-Print Media	4	4	50%
07	Full Text e-journals	4	4	50%
08	Bibliographic Database	2	6	25%
09	Open Access Journals	1	7	12.5%
10	Links to e-books	2	6	25%
11	Licensing Information	7	1	87.5%
12	Copyright Issue	7	1	87.5%

Table no. 4 reveals that library resource information, (87.5%) of libraries website has given 'licensing information' and 'copyright issue'. (75%) of libraries website has displayed detail about books. (62.5%) of libraries website has represented the details about 'print journals', 'electronic journals' and 'back volumes of journals. (50%) of libraries website has displayed 'book bank', 'non-print media' and 'full text e-journals'. (25%) of libraries website has given detail about 'bibliographic database' and 'links to e-books'. Only (12.5%) of libraries website has provided 'open access journals'

Table No. 5 Current Awareness Services

Sr. No.	Type	Yes	No	Percentage of Yes
01	New Arrivals	4	4	50%
02	News Alert	0	8	0%
03	RSS Feed	0	8	0%
04	Link to SNS	5	3	62.5%

Table no. 5 shows that current awareness services, (62.5%) of libraries website has 'link to SNS'. (50%) of libraries website has displayed 'new arrivals'. Libraries website has not provided 'news alert' and 'RSS feed'.

Table No. 6 Website Classification by Design Matter

Sr. No.	Design	Yes	No	Percentage of Yes
01	Graphic in Site	8	0	100%
02	Animations	2	6	25%
03	Site Map	3	5	37.5%
04	BG & Font Colour Combination	8	0	100%
05	Download Option	1	7	12.5%
06	Hit Counter	4	4	50%
07	Photo Gallery	3	5	37.5%
08	Text-only Version	0	8	0%
09	Site Designer	7	1	87.5%

Table no. 6 indicated that (100%) of libraries website have 'graphic in site' and 'BG & font color combination', (87.5%) have 'site designer name', (50%) have 'hit counter', (37.5%) have 'site map' & 'photo gallery', (25%) have 'animation' and (12.5%) have 'download option'

Table No. 7 Contact Related Query

Sr. No.	Aspects	Yes	No	Percentage of Yes
01	Contact Number of Staff	2	6	25%
02	Postal Address	0	8	0%
03	Email ID Contact	1	7	12.5%
04	Suggestion Box	1	7	12.5%
05	Feedback	2	6	25%
06	User Education/Help	2	6	25%
07	FAQs	0	8	0%
08	Job Vacancy	0	8	0%
09	Events	4	4	50%
10	Login Page	2	6	25%

Table no. 7 shows that (50%) of libraries website provides 'event information', while (25%) websites provides 'contact numbers of staff', 'feedback', 'user education/help' and 'login page'. (12.5%) websites provides 'email id contacts' and 'suggestion box'. Websites are not provided 'postal address', 'FAQs' and 'job vacancy' information.

Table No. 8 Search Criteria

Sr. No.	Aspects	Yes	No	Percentage of Yes
01	Search Facility	1	7	12.5%
02	Links to External Search Engine	0	8	0%
03	No. of external Links (More than 5)	3	5	37.5%
04	Web OPAC	5	3	62.5%
05	A-Z Title List	0	8	0%
06	Publisher Wise List	0	8	0%
07	Subject Wise List	0	8	0%

Above table no. 8 shows that (62.5%) websites provides 'web OPAC' service. (37.5%) websites provides 'number of external links (more than 5)'. Only (12.5%) of websites are provided

'search facility'. Library website are not provided 'links to external search engine', 'A-Z title list', 'publisher wise list' and 'subject wise list'.

Table No. 9 Search Engine Retrieval Ranking

Sr. No.	Rank	Yes	No	Percentage of Yes
01	1st Rank on Google Search	8	0	100%
02	1st Rank on Yahoo Search	8	0	100%

From the above table it is observed that all websites in Google and Yahoo search engines provide 1st rank with key word search.

Table No. 10 Website Domain Type

Sr. No.		.com	.org	.org.in	.edu.in
01	Number	1	3	3	1
02	Percentage	12.5%	37.5%	37.5%	12.5%

It is observed from the above table that (37.5%) websites have domain type '.org' and '.org.in'. (12.5%) websites have domain type '.com' and '.edu.in'.

Conclusion:

In the digital era library website is played an important role for spread qualitative information to their users. Present research is examined the eight CPE college library websites in Marathwada region in Maharashtra State by using 61 checklist items. Checklist is important for deeply examine the websites. In this research found that there are many areas to improve and fulfil the information needs of their users. Most of library websites are used web 2.0 tool for design their website. It is useful to providing e-books, e-journals, online database and other e-resources link.

Suggestions:

In the I.C.T. age everything is fast developed, such as library websites are not a different part. After analyse the data some useful suggestions are given below for develop the CPE college library websites.

1. Library website should update time to time.
2. Provide the mobile version websites.
3. Remove the dead links available on library websites.
4. Library website should provide website index.
5. All students are not aware with English language that's why make your website multilingual and use regional/local language.
6. Quantity of library collection should display on website in the form of books, e-books, printed journals, e-journals and other reading materials.
7. Open access journal system should improve to the library websites.
8. Library websites has not connected to RSS feed service.
9. New arrivals information should mandatory to display on library websites.
10. Download option, Hit counter and site map should available on library websites.

11. Library staff's contact numbers, postal address, e-mail should also update on websites.
12. Suggestion box and feedback should essential for develop your institutions.
13. Publisher wise list and subject wise list should maintain on library websites.

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ग्रंथालयात हरित माहिती संप्रेषण तंत्रज्ञानाचा वापर

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सार

आज आपली पृथ्वी जंगलतोड, प्रजाती नामशेष होणे, मातीची विटंबना आणि जास्त लोकसंख्या, वायू प्रदूषण आणि हवामान बदलांमुळे मोठ्या धोक्याच्या मार्गावर आहे. पृथ्वीची अस्वास्थ्यकर स्थिती किंवा धोकादायक परिस्थितीमागील ही कारणे मानवाची आहेत. मानवाची चतुराई, शोध आणि उपक्रमाचा प्रत्येक जागतिक समस्येवर खोल परिणाम होतो. मानवी लोकसंख्या लवकरच १० अब्जच्या आकड्यांना स्पर्श करेल आणि या प्रत्येक समस्या तीव्र होत चालल्या आहेत. या प्रचंड लोकसंख्येच्या विविध आवश्यकता पूर्ण करण्यासाठी मानवांनी त्यांचे आयुष्य तंत्रज्ञानाचा भाग बनविला आहे. परंतु एका बाजूला तंत्रज्ञान वरदान आणि दुसरीकडे ते शाप ठरले आहे. मनुष्याचे जीवन सुलभ आणि आरामदायक बनविण्यासाठी हे वरदान आहे. परंतु प्रदूषण, किरणोत्सर्गाचे धोके आणि नैसर्गिक शोषणाच्या बाबतीत पृथ्वीच्या निरोगी अस्तित्वासाठी ती संसाधने शाप ठरले आहेत. पृथ्वीच्या अस्तित्वासाठी हा एक मोठा धोका आहे. या निर्णायक वेळी जागतिक धोरण निर्मिती या गंभीर विषयावर चिंतन करीत आहेत आणि हरित होण्याच्या प्रयत्नात आहेत. एक व्यवहार्य भविष्य म्हणजे मानवासाठी हिरवा निसर्ग संरक्षण, आर्थिक,सामाजिक उत्कर्ष, मानसिक आणि शारीरीक कल्याण करणारा असतो. या संदर्भात, ग्रंथालय महत्त्वपूर्ण भूमिका बजावू शकते.

हरित ग्रंथालय ही नवीन संकल्पना ग्रंथालय व्यवसायामध्ये मोठ्या प्रमाणावर प्रचलित होण्यास सुरुवात झाली आहे. जागतिक पातळीवर पर्यावरणाचा ह्रास वैश्विक उष्णतामान पृथ्वीचे संरक्षण या व अशा पर्यावरणाशी संबंधित अनेक गोष्टींवर वेगवेगळे उपक्रम हाती घेतले आहेत. नैसर्गिक संपत्तीचे संरक्षण करून निसर्गातील विविध गोष्टींचा वापर करून हा पर्यावरणाचा ह्रास थांबवण्यासाठी केला जात आहे. सदरच्या शोधनिबंधामध्ये पर्यावरणाच्या सद्यस्थितीचा समाजावर होणारा परिणाम, वेगवेगळ्या संस्थांनी त्यासाठी केलेले प्रयत्न, त्यासाठी विकसित केलेली प्रमाणके, ग्रंथपालांची भूमिका, हरित ग्रंथालयांचे हरित माहिती संप्रेषण तंत्रज्ञानामध्ये रुपांतर या बाबींचा अभ्यास करण्यात आला आहे.

***शोध संज्ञा** : हरित ग्रंथालय, प्रमाणके, हरित माहिती संप्रेषण तंत्रज्ञान (Green Information Communication Technology).*

प्रस्तावना:

एकविसाव्या शतककाडे वाटचाल करताना नवीन तंत्रज्ञानाचा प्रसार विस्तारत आहे आणि नैसर्गिक साधन संपत्ती संपुष्टात येत आहे. त्यामुळे हरित क्रांतीची मोहीम राबविणे आवश्यक ठरत आहे. यासाठी सर्व क्षेत्रातून सर्व स्तरावर प्रयत्न होणे गरजेचे आहे. लोकसंख्येमुळे जागेची टंचाई ही समस्या फार मोठ्या प्रमाणावर निर्माण झालेली आहे. या समस्येवर मात करून पर्यावरण जोपासणाऱ्या इमारती कशा बांधायच्या हा प्रश्न पडत आहे. निसर्गात उपलब्ध असलेल्या नैसर्गिक साधनसंपत्तीचा उपयोग करून पर्यावरणपूरक इमारती बांधताना त्यामध्ये ग्रंथालय इमारतीचा ही समावेश होतो आहे, कारण ग्रंथालय ही एक सामाजिक संस्था आहे. समाजासाठी कार्य करणारी व सतत वाढत जाणारी ही संस्था समाजसेवी संस्था आहे, यासाठी हरितक्रांतीच्या या चळवळींमध्ये ग्रंथालयांचा वाटा खूप मोठा आहे. सन 1990 पासून ग्रंथालय आणि माहितीशास्त्र व्यवसायात हरित ग्रंथालय चळवळ वाढीस लागण्यास सुरुवात झाली.

हरित ग्रंथालयाची निश्चित अशी व्याख्या नाही, Wikepedia मध्ये खालीलप्रमाणे विवेचन दिलेले आहे ,

• " Green libraries are a part of the larger green building movement. Also known as sustainable libraries. Green libraries are being built all over the world with many high profile projects bringing the concept into mainstream along with library, green design is an emerging trend defining the library of the 21st century."

• हरित ग्रंथालयाचा अर्थ, ' अस्तित्वात असलेल्या किंवा स्थायी स्वरूपातील कोणत्याही वास्तूची पर्यावरणानुकूल रचना बदल करणे होय'.

• According to the Online Dictionary for Library and Information Science (ODLIS), green libraries are "designed to minimize negative impact on the natural environment and maximize indoor environmental quality by means of careful site selection, use of natural construction materials and biodegradable products, conservation of resources (water, energy, paper), and responsible waste disposal (recycling, etc.)"

वरील विवेचनावरून असे लक्षात येते कि, हरित ग्रंथालय म्हणजे नैसर्गिक वातावरणावर नकारात्मक प्रभाव कमी करण्यासाठी आणि अंतर्गत वातावरणात जास्तीत जास्त गुणवत्ता वाढविण्यासाठी डिझाइन केलेले म्हणजे काळजीपूर्वक साइट निवड, नैसर्गिक बांधकाम साहित्य आणि बायोडेग्रेडेबल उत्पादनांचे, संसाधनांचे संरक्षण (पाणी, उर्जा, कागद) आणि जबाबदार कचरा विल्हेवाट लावणे (पुनर्वापर इ.) पर्यावरणीय देखभाल करण्यासाठी हातभार लावणे हे ग्रंथालयांचे सामाजिक कर्तव्य आहे. ग्रंथालये ही समाजासाठी काम करीत असतात त्यामुळे हरित ग्रंथालयाच्या किंवा इमारतींच्या चळवळींचा ते एक मोठा हिस्सा ठरू शकतात ग्रंथालये ही हरित ग्रंथालयांमध्ये परावर्तीत होत असून त्यासाठी काही प्रमाणके निश्चित होत आहे या पार्श्वभूमीवर असे वाटते एकविसाव्या शतकातील ग्रंथालये हरित या संकल्पनेवर आधारलेली असतील.

अमेरिकेमध्ये घरे इमारती बांधताना खालील घटकांची पूर्तता केली असेल तर त्यांना हरित इमारती असे संबोधावे असे सुचविले आहे.

जागेची निवड: पर्यावरण पूरक अशा जागेची निवड करून त्यानुसार बांधकामाचा आराखडा तयार करून बांधकाम साहित्याची निवड करावी. उदा. इमारतीचा आराखडा तयार करताना नैसर्गिक प्रकाश, हवा आणि छतावर पारदर्शक काचेचा वापर करावा. लाकडाचा वापर कमीत कमी करून दगड विटा बांबूचा वापर करणे.

जलव्यवस्थापन: पाण्याची बचत करणे ही आताच्या काळाची महत्त्वाची गरज आहे, यासाठी पाण्याची निर्मिती, साठवण व वापर या गोष्टींची काळजी घेणे. यासाठी पावसाचे पाणी साठवून ठेवण्यासाठी मोठ्या टाक्याचे बांधकाम करणे व त्याचा वापर परिसरातील बागेसाठी, झाडांसाठी ठिबक सिंचन योजनेद्वारे करावा.

ऊर्जेचे व्यवस्थापन: इमारतीमधील जुने झालेले बल्ब, पंखे, वातानुकूलन यंत्रे ही काढून टाकून त्याऐवजी विजेची बचत करणारी उपकरणे बसविण्यात यावी. नैसर्गिक प्रकाशाचा जास्तीत जास्त वापर करून घेणे. सौर ऊर्जा तयार करणारी यंत्रणा बसवून त्याचा वापर ऊर्जेची गरज पूर्ण करण्यासाठी करावा. परिसरातील हवा खेळती राहील याची काळजी घ्यावी. बांधकाम करण्यात येणाऱ्या इमारतीं, कार्यालय, ग्रंथालय,

सदनिका यांचे वातावरण पर्यावरण पूरक असावे. यासाठी कमी वीज लागणारे बल्ब, रेफ्रिजरेटर, वातानुकूलित यंत्र यांचा विचार करावा आजूबाजूला जास्तीत जास्त झाडे लावावीत.

कचरा प्लास्टिकचा वापर पूर्णपणे टाळवा.

वरील मुद्द्यांवरून असे लक्षात येते एकविसाव्या शतकामध्ये नवीन तंत्रज्ञानाचा प्रसार होत आहे. आज वृक्षतोड वीज आणि पाणी यांची समस्या मोठ्या प्रमाणावर जाणवत आहे. या पार्श्वभूमीवर जागतिक पातळीवर पर्यावरणाचा ऱ्हास, वैश्विक उष्णतामान, पृथ्वीचे संरक्षण यासंदर्भात चर्चा, कार्यशाळा, शिखर परिषदा घेतल्या जात आहेत. वाढत्या लोकसंख्येमुळे जागेची टंचाई जाणवत आहे, तेव्हा पर्यावरण पूरक घरे बांधावयाची कशी याचाही विचार करण्याची वेळ आली आहे.

हरित चळवळीत ग्रंथालयांचा सहभाग:

ग्रंथालयाची इमारत बांधताना नैसर्गिक प्रकाश व हवा यांचा विचार केला पाहिजे. ज्यामुळे मोकळी हवा व उजेड जास्त प्रमाणात ग्रंथालयात येईल आणि विजेचा वापर कमी करता येईल. त्यामुळे पैशाची आणि विजेची बचत होईल. नैसर्गिक प्रकाश मिळत नसेल तर, विजेचा वापर कमीत कमी व्हावा यासाठी CFL Bulb बसवावे. स्वच्छतागृह मंद प्रकाशाचे दिवे बसवावेत. वातानुकूलन यंत्रे आवश्यकतेपेक्षा जास्त मोठी असू नयेत. विजेची उपकरणे वेळोवेळी बंद करण्याची काळजी घ्यावी. वाचन कक्ष जास्तीत जास्त प्रकाश मिळेल अशा ठिकाणी असावा. ग्रंथालयाची विजेची गरज भागविण्यासाठी सौरऊर्जेचा वापर करावा. पाणी बचतीसाठी नळ नेहमी सुस्थितीत ठेवावेत. पाण्याचा प्रवाह कमी असलेले नळ बसवावेत. सांड पाण्याचा वापर ग्रंथालयातील झाडाच्या कुंड्या, आजूबाजूची झाडे, लॉन यासाठी करावा. स्वच्छतागृहामध्ये फ्लॉश एक ते दीड लिटर पाण्याच्या क्षमतेचे ठेवावेत. फ्लॉशमध्ये sensor चा वापर करावा. धुळीपासून संरक्षण मिळवण्यासाठी ग्रंथालयाच्या आजूबाजूने झाडे लावावीत म्हणजे नैसर्गिक थंडावा मिळवून ग्रंथालयाचे धुळीपासून संरक्षण होईल.

हरित ग्रंथालयासाठी ची प्रमाणके:

ग्रंथालय इमारती ही नवीन संकल्पना असल्याने यासाठी काही प्रमाणके निश्चित केलेली आहे ती पुढील प्रमाणे:

- Chicago Illinois Standards: शिकागो हे पहिले शहर आहे, ज्यांनी पर्यावरण पूरक इमारतींसाठी स्वतःची अशी प्रमाणके विकसित केली आहेत. हे मोठ्या प्रमाणावर LEED Green Building Rating System ने प्रभावित आहे.
- Brown Green Standard
- IGBC Indian Green Building Council Standard
- Green Rating for Integrated Habitat Assessment (GRIHA)

हरित ग्रंथालयासाठी ची मार्गदर्शक तत्त्वे :

विद्यमान ग्रंथालयाचे हरित ग्रंथालयात रूपांतर करण्यासाठी खालील मार्गदर्शक तत्त्वांचा वापर ग्रंथालय व्यवसायिक करू शकतात.

हरित समितीची स्थापना:

- ग्रंथालयाचा वाचक वर्ग आणि सेवकवर्ग यांच्यामध्ये पर्यावरणासंबंधी स्व स्थायी स्वरूपात जागृकता निर्माण निर्माण करणे.

- ग्रंथालयाचे हरित उपक्रमाचे उद्दिष्टे ठरवून त्यानुसार हरित समितीची स्थापना करणे.
- या समितीमध्ये ग्रंथपाल समिती सभासद शासनाच्या हरित चळवळी कार्यक्रमामध्ये काम करणारे ज्यांना पर्यावरण विषयक काम करण्याची आवड आहे अशा समाजातील व्यक्ती आणि वाचक वर्ग यांचा समावेश करावा.
- हरित योजना आणि कार्यक्रम विकसित करणे:
- हरित समितीमार्फत हरित ग्रंथालय या संबंधीची धोरणे निश्चित करणे.
- या योजनेद्वारे ग्रंथालयाच्या वेगवेगळ्या घटकांवर प्रकाश टाकता आला पाहिजे. जसे; इमारत, पुस्तके आणि नियतकालिके, वीज, पाणी, माहिती तंत्रज्ञान आधारित देण्यात येणाऱ्या सेवा सुविधा इत्यादी.
- गुणवत्ता सुधारण्याची संधी ओळखणे:
- यासाठी ग्रंथालयातील सेवक वर्ग व वाचक यांच्याकडून प्रत्येक घटकांची विद्यमान माहिती गोळा करणे.
- पर्यावरण विषयक कोणत्या ठिकाणी सुधारण्याच्या संधी आहेत ते ओळखणे जसे पाणी आणि वीज बिल विजेचे दिवे पाण्याचे नळ पुनर्वापरासाठीचे डब्बे खरेदी करणे.
- महत्त्वाच्या सेवा आणि कार्यरत क्षेत्राचा आढावा घेणे.
- कार्यक्रमाची अंमलबजावणी व जाहिरात करणे:
- "Don't Waste Water", " Minimize the Paper Use", Use More E-Books and E-Journals या प्रकारचे घोषणा फलक लावणे.
- वरील वेगवेगळ्या उपक्रमांची जाहिरात ग्रंथालयात आणि परिसरात करणे.
- या सर्व गोष्टींची माहिती सूचना फलक बैठका यांच्या माध्यमातून सेवक वर्ग व वाचक वर्ग यांच्यापर्यंत पोहोचवाव्यात.

समितीच्या कार्याचे विश्लेषण करणे:

- हरित समितीने राबविलेल्या प्रत्यक्ष आणि प्रत्येक उपक्रमाचे अहवाल तयार करावेत.
- अधिकाधिक चांगले कार्य करण्यासाठी प्रोत्साहन प्रोत्साहित करून त्यासाठी त्यांना पुरस्कार देणे.
- आपण केलेल्या कार्यासंबंधी समाजातून जो प्रतिसाद मिळतो त्यातून अधिक आधी योजना आणि कार्यक्रम तयार तयार करावेत.

हरित माहिती संप्रेषण तंत्रज्ञान (Green Information Communication Technology).

सध्या शैक्षणिक ग्रंथालये सुलभ कार्य करण्यासाठी माहिती संप्रेषण तंत्रज्ञान सेवा (आयसीटी)मोठ्या प्रमाणात वापरतात. कारण ती केवळ एक सेवा नसून त्या प्रक्रियेत शैक्षणिक भागीदार बनण्यासाठी त्याचा उपयोग होतो. आयसीटी च्या वापरामुळे जो हरितगृह वायू उत्सर्जित होतो तो हरित ग्रंथालयाच्या प्रगतीत बाधा निर्माण करतो. यासाठी शैक्षणिक ग्रंथालयांनी आयसीटीचे ग्रीन आयसीटी (जीआयसीटी) मध्ये हरित माहिती संप्रेषण तंत्रज्ञान रूपांतर करण्याचा विचार करणे.

ग्रंथालयामध्ये पर्यावरणीय गुणवत्ता वाढवायची असेल तर ग्रंथालय इमारतीची रचना करताना उर्जा संवर्धन, कचरा व्यवस्थापन, आणि हरित ग्रंथालय सेवांची अंमलबजावणी करता यावी, अशाप्रकारची हरित ग्रंथालयाची रचना असावी. हरित ग्रंथालयापुढे माहिती संप्रेषण तंत्रज्ञानाचे रूपांतर हरित माहिती संप्रेषण

करणे हे आव्हानात्मक कार्य आहे. कारण या प्रक्रियेत माहिती संपादन करणे, संग्रहित करणे, प्रसारित करणे, पुनर्प्राप्त करणे आणि प्रक्रिया करणे अशा प्रकारे आयसीटीचा समावेश आहे. हरित ग्रंथालयामध्ये इलेक्ट्रॉनिक्स, संगणन आणि दूरसंचार यासारख्या तंत्रज्ञानाची विविधता असते. जसे: संगणक तंत्रज्ञान, दळणवळण तंत्रज्ञान, मल्टीमीडिया तंत्रज्ञान, ऑप्टिकल तंत्रज्ञान, नेटवर्किंग तंत्रज्ञान, बारकोड आणि आरएफआयडी तंत्रज्ञान आणि फोटोकॉपी, स्कॅनिंग आणि मुद्रणतंत्रज्ञान इ. आयसीटीचा वापर केल्याने जी उर्जा वापरली जाते ती मुख्यतः जीवाश्म इंधनातून येते. ज्यामुळे हरितगृह वायू तयार होतात हे वायू वाचनालयाचे अंतर्गत वातावरण तसेच पर्यावरण प्रदूषित करतात. म्हणून आयसीटीला हरित माहिती म्हणून रूपांतरित करणे म्हणजे ग्रंथालयाला हिरवेगार बनविणे होय.

हरित माहिती संप्रेषण तंत्रज्ञान (जीआयसीटी):

जीआयसीटी धोरणे आणि डिझाइन करण्याच्या पद्धतींमध्ये पर्यावरणाला सामोरे जाण्यासाठी कार्यक्षम आणि प्रभावीपणे आयसीटीची निर्मिती, वापर आणि विल्हेवाट लावणे यांचा समावेश होतो. नैसर्गिक संसाधनांचे संरक्षण, कार्बन फूट प्रिंट, आयसीटी   e-waste ची विल्हेवाट आणि उर्जेचा वापर कमी करून, आयसीटीची आर्थिक व्यवहार्यता मिळविण्याचा प्रयत्न करणे. सामाजिक आणि नैतिक जबाबदार्‍या विचारात घेत हरित ग्रंथालयात हरित माहिती संप्रेषण तंत्रज्ञान लागू करणे म्हणजे आयटी साधनांचे परिष्करण आणि अंमलबजावणी कमी करतात. नैसर्गिक वातावरण आणि संसाधने ग्रंथालयाच्या कामकाजावरील मानवी उपक्रमावर होणारा प्रतिकूल प्रभाव कमी करतात.

हरित माहिती संप्रेषण तंत्रज्ञान ग्रंथालयात खालील निकषांचे समाधान करते:

१. यामुळे वातावरणाचा र्‍हास कमी होतो.

२. घातक हरितगृह वायूंचे उत्सर्जन कमी करते , (जीएचजी) यामुळे आयसीटीचा वापर कमी होतो.

३. सर्वांसाठीच लायब्ररी सुरक्षित आणि आरोग्यदायी होते.

४. नैसर्गिक संसाधने व ऊर्जा वाचविण्यात मदत होते.

५. पूर्णपणे पुनर्प्राप्त केलेली किंवा पुन्हा वापरली जाणारी उत्पादने तयार करण्यात मदत करते.

शैक्षणिक ग्रंथालयात पर्यावरणावर विपरित परिणाम सामान्यतः तीन प्रकारचे वापरकर्ते करतात ते म्हणजे, विद्यार्थी, संशोधक आणि सेवकवर्ग होय. यासाठी ग्रंथपालांना सकारात्मक पुढाकार घेऊन जसे की ग्रंथालयात विद्यार्थी आणि शिक्षकांसाठी जागरूकता कार्यक्रम, आयसीटीचा वापर कसा करावा यासाठी विशेष अभिमुखता कार्यक्रम, हरित आयसीटी आणि ई-स्त्रोतांचा वापर या विषयावर परिसंवादाचे आयोजन करणे. हरित ग्रंथालय निर्माण करण्यासाठी ग्रंथालयाच्या कर्मचार्‍यांमध्ये जागरूकता निर्माण झाली पाहिजे तरच संस्थेतील वापरकर्ते त्याचे अनुसरण करतील.

ग्रंथालयात आयसीटी वापरण्याचे तंत्र:

१. संगणक, प्रिंटर, स्कॅनर, फोटोकॉपी मशीन आणि इतर विद्युत उपकरणे ते वापरात नसताना पूर्णपणे बंद करावीत.

२. Search वेब शोध मजकूर, ऑडिओ आणि व्हिडिओचे विशिष्ट आणि अनावश्यक डाउनलोड टाळले पाहिजे.

३.• छपाई आणि छायाप्रती कागदाच्या दोन्ही बाजूला करावी.

४. वापरकर्त्यांना त्यांच्या मोबाइलमध्ये कागदपत्रांचे फोटो घेण्यास परवानगी असावी.

५. विद्यार्थ्यांनी त्यांच्या मोबाइलद्वारे लायब्ररी वायफाय कनेक्टिव्हिटीचा गैरवापर थांबविण्यासाठी फायरवॉल सारख्या सिस्टमचा प्रभावीपणे वापर केला पाहिजे.

६. ग्रंथालयाच्या कर्मचारयांना जीआयसीटी हाताळण्यासाठी योग्य प्रशिक्षण दिले पाहिजे.

७. शैक्षणिक लायब्ररीच्या आर्किटेक्चरल डिझाइनमध्ये अशा प्रकारच्या आयसीटीमध्ये इलेक्ट्रोमॅग्नेटिक रेडिएशन उत्सर्जन करणारी मशीन्स सुरक्षितपणे राहण्याची काळजी घ्यावी.

८.ग्रंथालयाकरिता जीआयसीटी निवडणे आणि खरेदी करण्यासाठी धोरण तयार केले पाहिजे. व्यवस्थापनाने ग्रंथालयाला

योग्य महत्व देत ग्रीन बजेट देखील तयार केले पाहिजे.

निष्कर्ष:

शैक्षणिक लायब्ररीचे हरित शैक्षणिक ग्रंथालय म्हणून रूपांतरित करण्यासाठी जीआयसीटीवर लक्ष देण्यात आले आहे. इतर हिरव्या पद्धतींचे अनुसरण करणे आवश्यक असले तरी, बहुतेक हिरव्यागार म्हणून जीआयसीटी एक निर्णायक भूमिका बजावते. जीआयसीटीच्या सराव केंद्र निवडण्यासाठी ग्रंथालय आणि व्यवस्थापनास प्रभावी भूमिका बजावावी लागेल.ग्रंथालयात सर्वसमावेशक अनुसरण जीआयसीटी लागू करा. शासनाने सर्व हिरव्या पद्धतींचा समावेश करणारा सर्वसमावेशक ग्रीन कोड जीआयसीटीसह तपशीलांसह विकसित केले पाहिजे. ग्रंथालय संघटना आणि एलआयएस च्या मदतीने सरकारच्या वतीने एक सर्वसमावेशक ग्रीन लायब्ररी कोड देखील विकसित केला जाणे आवश्यक आहे. या प्रकारचा ग्रीन लायब्ररी कोड एलआयएसला एक मानक मार्गदर्शक सूचना प्रदान करेल. आयसीटीचे जीआयसीटीत रूपांतर केल्याने शैक्षणिक ग्रंथालयाचे हिरवेगार रूपांतर होण्यास मदत होईल.

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इलेक्ट्रॉनिक ग्रंथालयातील वाचन साहित्याचे व्यवस्थापन

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सार

प्रस्तुत शोध निंबधामध्ये ई—वाचन साहित्य संग्रहाचा विकास आणि त्याचे व्यवस्थापन,   इलेक्ट्रॉनिक संसाधने,तसेच ई—संसाधनाची ग्रंथालयातील गरज,ई—संसाधनाबाबत धोरण ठतवताना लक्षात घ्यावयाच्या बाबी,ग्रंथालयातील इलेक्ट्रॉनिक संसाधनांचे व्यवस्थापन आणि इलेक्ट्रॉनिक ग्रंथालयाच्या व्यवस्थापनाचे घटक इ.बाबत विवेचन करण्यात आले आहे.

शोध संज्ञा   वाचन साहित्य संग्रह विकास,वाचन साहित्य संग्रहाचे व्यवस्थापन, इलेक्ट्रॉनिक माहिती,ई—संसाधने,ई—ग्रंथालय ई—जर्नल्स.

प्रस्तावना तंत्रज्ञानाच्या क्षेत्रातील विकासाचा ग्रंथालयाच्या एकुण अस्तित्वावर सेवावर परीणाम होत आहे. आज ग्रंथालयामध्ये संगणकाच्या सहाय्याने माहितीचे संग्रहण वितरण आणि प्रथ:करण अतिशय वेगाने केले जात आहे.ज्ञान व माहितीच्या परिस्फोटाच्या या युगामध्ये काळानुरूप चालविण्यासाठी ग्रंथालयामध्ये संगणकाचा वापर अपरिहार्य ठरत आहे. इलेक्ट्रॉनिक माध्यमाचा उपयोग संगणकामुळे फारच झपटयाने वाढत आहे. त्यातच जागेची समस्याही जागतिक बनत चालली आहे.माहितीचे प्रसारणही वेगाने होणे व ती माहिती वाचकांना, संशोधकांना त्वरित उपलब्ध करुन देणे ही हया वेगवान जगामध्ये गरजेचे ठरले आहे. हया सर्वावर उपाय म्हणुन इलेक्ट्रॉनिक व डिजिटल तंत्रज्ञानाचा प्रंसार झपाटयाने होत आहे. त्वरीत उपलब्ध होणारी सेवा,क्षणभरात आंतरराष्ट्रीय स्तरावरुन मिळणारे ज्ञान व माहिती,अल्पावधीत साधता येणारा संपर्क,झटपट खरेदीची उपलब्धता अशा अनेक सोयीमुळे ग्रंथालयातील इलेक्ट्रॉनिक तंत्रज्ञानाची वाढती मागणी आहे.

पुस्तके आणि वाचक हे मुलत: ग्रंथालयाचे दोन घटक आहेत.आणि माहितीसाठी हा त्या ग्रंथालयाचा गाभा असतो. आधुनिक काळात ई— पुस्तके,ई —जर्नल्स इत्यादीच्या रुपातुन माहिती आधुनिक ग्रंथालयातुन मिळते.आजच्या बहुतांश ग्रंथालय सेवा या संगणकामार्फत दिल्या जातात.यामुळे जगामध्ये कोणत्याही कानाकोपन्यात उपलब्ध असलेली माहिती आपल्याला काही सेंकदात मिळु शकते.

वाचन साहित्य संग्रह विकास

इलेक्ट्रॉनिक ग्रंथालयातील सर्व वाचन साहित्या हे संगणकीय स्वरुपात असते.तसेच ग्रंथालयातील सर्व व्यवहार हे इलेक्ट्रॉनिक माध्यमाद्वारे केले जातात.सर्व वाचन साहित्य हे अभासी स्वरुपात असतात.

इलेक्ट्रॉनिक ग्रंथालयासाठी ई—वाचनसाहित्याची निवड करुन ते उपार्जित करण्याची प्रक्रिया म्हणजे वाचन साहित्य संग्रहाचा विकास करणे होय.

वाचन साहित्य,संग्रह विकासासाठी धोरण ठरविणे,आर्थिक नियोजन करणे या कार्याचाही वाचन साहित्य संग्रह विकास कार्यक्रमामध्ये समावेश होतो.

वाचन साहित्य संग्रहाचे व्यवस्थापन इलेक्ट्रॉनिक ग्रंथालयामध्ये असलेल्या ई— वाचन साहित्याचे प्रभावी संग्रहण मांडणी करणे म्हणजे वाचन साहित्य संग्रहाच व्यवस्थापन होय.प्रत्येक वाचन साहित्याला त्याचा वाचक मिळवुन देण्यासाठी आणि प्रत्येक वाचकाला त्याचे वाचन साहित्य मिळवुन देण्यासाठी वाचन साहित्याचे परिणामकारक व्यवस्थापन करणे आवश्यक असते.

इलेक्ट्रॉनिक माहिती

ई—टेक्स्ट, ई—जर्नल्स, ई—मेल,बुलेटिन बोर्ड,सी.डी.रॉम, इंटरनेट इत्यादी माध्यमामध्ये संग्रहीत केलेल्या तसेच या माध्यमांद्वारे शोध घेता येणाऱ्या, प्रतिप्राप्त करता येणाऱ्या माहितीला इलेक्ट्रॉनिक माहिती असे म्हणतात.ई माहितीद्वारे ई— माहिती सेवा पुरविता येतात.

ई —संसाधनांची ग्रंथालयातील गरज

१) वाचकाची वाढती मागणी वाचकांच्या माहिती विषयक वाढलेल्या गरजा आणि कमीत कमी वेळेमध्ये जास्तीत जास्त चांगल्या प्रकारे सुविधा देण्यासाठी ई—संसाधने ग्रंथालयामध्ये असणे गरजेचे आहे. तसेच विद्यापीठ आणि महाविद्यालयामध्ये संशोधनास प्रोत्साहन दिले जात असल्याने आता विद्यापीठीय आणि महाविद्यालयीन ग्रंथालयामध्ये ई—संसाधने वापरणे आवश्यक बनले आहे.

२) जागेची कमतरता छपाई माध्यमातील संसाधनाच्या संग्रहासाठी जास्त जागा लागते.त्यामानाने इलेक्ट्रॉनिक संसाधनाच्या सहाय्याने खुप मोठी माहिती अत्यंत कमी जागेमध्ये संग्रह करणे शक्य होते.

३) वापरातील बहुविधता एकाच दस्तऐवज,परिशिष्ट इत्यादी कागदपत्र एकाच वेळेस अनेक ठिकाणी किंवा केव्हाही वापरु शकतो.

४) शोध पध्दत इंटरनेटवर सर्च वारच्या माध्यमातुन हवी ती माहिती तातडीने सहजरीत्या शोधता येते.

५) आशय छपाई केलेल्या ग्रंथामध्ये समाविष्ट ज्ञानास मर्यादा पडतात.मात्र सी.डी.मध्ये अथवा इंटरनेटवर भरपुर माहिती मल्टीमीडीया इफेक्टसह उपलब्ध आहे.

६) पुन:वापर ई—संसाधनाच्या वापरामार्फत सहजरीत्या माहिती पाहिजे त्यावेळी पुन:प्राप्ती होऊ शकते.

७) जागतीक जोडणी इंटरनेटच्या माध्यमातुन जागतीक स्तरावरील माहिती आपल्या वाचकांना ग्रंथालये पुरवु शकतात. त्यामुळे वाचकांची माहिती विषयक गरज भासते.

वरील सर्व कारणासाठी ई संसाधनाचा ग्रंथालयामध्ये समावेश असणे गरजेचे आहे.

इलेक्ट्रॉनिक ग्रंथालयातील माहितीचे स्रोत

१) प्रत्यक्ष ग्रंथालयातील आणि बाजारामध्ये उपलब्ध असणारे इलेक्ट्रॉनिक

२) स्वरुपातील प्रकाशित सी.डी.,व्ही.सी.डी.ई.स्वरुपातील साहित्य.

३) इंटरनेटच्या आधारे डाऊनलोड केलेले सी.डी.स्वरुपातील वाचन साहित्य.

४) इंटरनेटवरील ऑनलाईन उपलब्ध साहित्य.

५) इलेक्ट्रॉनिक माध्यमातुन प्रकाशित होणारे पुढील ई—संसाधने आहेत.

६) ई —पुस्तके, ई —जर्नल्स, ऑनलाईन इंटरनेट ॲक्सेस,सी.डी.रॉम डेटाबेस.

७) कनसोर्सियाच्या माध्यमातुन मिळणारे ई—बुक्स,ई—जर्नल्स अथवा इतर साहित्य.

८) माहिती सहकार समान उदिष्टये असणाऱ्या संस्थानी एकत्र येऊन आपआपसात केलेली माहिती बाबतची भागीदारी.

ई—पुस्तके (e-books) इलेक्ट्रॉनिक माध्यमातुन प्रकाशित होणाऱ्या साहित्यामध्ये आणि जास्तीत जास्त वापर होणारे साधन म्हणजे ई—पुस्तक आहे.आज संगणक तंत्रज्ञानात अभियांत्रीकी इत्यादी बऱ्याच विषयावरील ई—पुस्तक वाचकासाठी इलेक्ट्रॉनिक स्वरुपामध्ये उपलब्ध आहेत.तसेच या पुस्तकांचा मोठया प्रमाणवरील संग्रह सी.डी. स्वरुपामध्ये अथवा संगणकीय जाळयामार्फत संपुर्ण जगामध्ये प्रसारीत करणयात आली आहे.

ई—जर्नल आजकाल बहुतांशी आंतरराष्ट्रीय दर्जाची नियतकालिकेच्या स्वरुपात उपलब्ध होत आहेत.छापील नियतकालिकांच्या अंकाना 'हार्डकॉपी' व त्याचेच इलेक्ट्रॉनिक स्वरुप म्हणजे ' सॉफ्टकॉपी' अशा संज्ञा प्रचलित आहेत.ई— जर्नल्सच्या प्रकाशनाने नियतकालिका प्रकाशनात क्रांती घडवून आणली.त्यामुळे नियतकालिका प्रकाशन व त्यांच्या उपलब्धतेमध्ये आमुलाग्र बदल झाला.ई —जर्नल्स प्रकाशन हे इंटरनेटच्या माध्यमातून प्रकाशीत झाल्यावर तात्काळ उपलब्ध होते.हे या क्रांतीमधले मोठे यश म्हणावे लागेल.नियतकालिकांची सॉफ्टकॉपी उपलब्ध होत असेल तर ती ग्रंथालयात उपलब्ध करण्यासाठी वाचकांची मोठी मागणी असते. किंबहुना छापील,तसेच इलेक्ट्रॉनिक या दोन्ही स्वरुपात ते उपलब्ध व्हावे अशीही त्यांची इच्छा असते.

जागेट हे केवळ ई—जर्नल्स संबंधी उपयुक्त पोर्टल असुन या पोर्टलद्वारे जगातील आंतरराष्ट्रीय दर्जाच्या ५४१५ प्रकाशकाची प्रकाशित केलेल्या १५७८२ ई—जर्नल्स मधील ८६३११३७ एवढया प्रलेखाची माहिती ऑनलाईन दिली जाते.या जेगेटचाही ग्रंथालयाने आपल्या वाचकांना माहिती देण्यासाठी उपयोग करुन घेतला पाहिजे.

ई—जर्नल्सच्या वापरावर मालकी हक्काच्या कायद्याचे नियंत्रण असते.या कायद्याच्या चौकटीत ई—स्त्रोत ग्रंथालयात वापरण्यासंबंधीची माहिती ग्रंथालयान आपल्या कर्मचाऱ्याना, तसेच वाचकांना करुन देणे अत्यंत आवश्यक आहे.

सी.डी.रॉम सी.डी.रॉमचे पुर्ण नांव कॉम्पॅक्ट डिस्क रिड ओन्ली मेमरी असे होय. सी.डी.रॉम पध्दतीच्या डिस्कमध्ये सी.डी. ऑडीओ,सी.डी. व्हीडीओ तसेच सी.डी. इंटरॲक्टीव म्हणजेच सी.डी.आय.असे प्रकार आहेत. माहिती साठवणूकीच्या दऱ्ष्टीने व ग्रंथालयात सध्या बराच प्रचलीत असा प्रकार म्हणजे सी.डी.आय.,सी.डी.रॉमची साठवण क्षमता ६६० मेगा बाईट इतकी असते.सी.डी.माध्यमाद्वारे नियतकालिकामधुन वेगवेगळया विषयावर प्रसिध्द होणाऱ्या लेखांची सूचीबध्द माहिती डाटाबेस स्वरुपात ग्रंथालयात उपलब्ध होत आहे.

ओपॅक (संगणकीकऺत तालिका) वर्गीकरण व तालिकीकरण विभागाच्या अंतिम टप्पा म्हणजे संगणकीकऺत तालिका बनवणे हा आहे. ज्यास व्दसपदम चऺइसपब बबमे बंजंसवहनम किंवा संक्षीप्तपणे व्ऌ असे म्हटले जाते. तालिकीकरणाच्या प्रक्रियेमध्ये ग्रंथसंग्रहाचा माहिती संग्रह तयार असतो. वाचकांना ग्रंथा संबंधी माहिती शोधण्याचे साधन व्ऌ च्या सहाय्याने उपलब्ध करून देणे आवश्यक असते. संगणकाच्या सहाय्याने शोधप्रक्रिया सोयीची व वाचकांच्या आवडीची होते.किंबहूना प्रतिप्राप्तीचा दर्जा उंचावतो.शिवाय विविध प्रकारे शोध सोयी उपलब्ध होतात.

इलेक्ट्रॉनिक वाचनसाहित्य घेताना घ्यावयाची काळजी

ग्रंथालयात पारंपारिक मुद्रित साहित्याबरोबरच मुद्रित वाचनसाहित्याचा समावेश असतो. तर इलेक्ट्रॉनिक ग्रंथालयात फक्त इलेक्ट्रॉनिक स्वरूपातील वाचनसाहित्य असते. त्यामुळे इलेक्ट्रॉनिक वाचनसाहित्य विकासाचे धोरण ठरवताना खालीलप्रमाणे काळजी घेणे आवश्यक आहे.

१. इलेक्ट्रॉनिक संसाधनाच्या विश्वसार्हतेची पडताळणी योग्य रितीने करावी
२. सर्व समावेशकता असावी.
३. इंटरनेट आवृत्ती ही परिपूर्ण असावी. वाचकांच्या गरजा भागवणारी असावी.
४. वाचकांना उपयुक्त विषयांशी सुसंगत असावी.
५. हाताळण्यास अत्यंत सोपी असावी.
६. किंमत आणि स्वामित्वाचा हक्क अबाधित राखला जावा.
७. संगणकाच्या हार्डवेअर आणि सॉफटवेअर मध्ये जास्त बदल न करता माहिती मिळावी.
८. सी.डी.च्या खरेदीबाबत धोरण ठरवीणे.
९. सी.डी. ग्रंथालयाच्या बाहेर द्यावयाच्या असतील तर त्यांची पध्दती ठरविणे.
१०.इंटरनेटवरील ऑनलाईन उपलब्ध साहित्य डाऊनलोड करून घेण्याबाबत धोरण ठरवणे.
११.ई—साहित्याद्वारे माहिती सेवा,बिब्लिओग्राफिकल सेवा कशा द्याव्यात या बाबत धोरण ठरवणे.

ग्रंथालयातील इलेक्ट्रॉनिक संसाधनांचे व्यवस्थापन

इलेक्ट्रॉनिक संसाधने जरी इतर छापील संसाधनापेक्षा हाताळण्यास,अद्यायावत करण्यास व जतन करण्यास सोपे असले तरी अशा प्रकारच्या संसाधनांचे व्यवस्थापन करणे ही त्यामानाने फारच महत्वाची बाब आहे. त्यासाठी ग्रंथपालानी खालील बाबीवर लक्ष केंद्रीत करणे आवश्यक आहे.

१. आर्थिक अंदाजपत्रक

कोणतेही ग्रंथालय असो वाचनसाहित्य संग्रह खरेदी करण्यासाठी ग्रंथालयाच्या अंदाजपत्रकात तशी आर्थिक तरतुद करून घेणे आवश्यक असते. ग्रंथालयात ग्रंथाबरोबर ई॑—साहित्याचा समावेश असतो तर इलेक्ट्रॉनिक ग्रंथालयात फक्त इलेक्ट्रॉनिक साहित्य असते.

इलेक्ट्रॉनिक संसाधनांची केवळ एकदा खरेदी करून भागेल असे नाही तर ती माहिती वापरण्यासाठी, पाहण्यासाठी लागणारे उपयुक्त तंत्रज्ञान तसेच ती माहिती विशिष्ट कालावधीनंतर अद्यावत करून घेणे गरजेचे असते. त्यासाठी ग्रंथपालांना आर्थिक अंदाजपत्रक वेळोवेळी बदलून योग्य तरतुद करावी लागते.

२. उत्पादनाचा दर्जा

ग्रंथालयात ग्रंथ व अमुद्रीत ग्रंथेत्तर साहित्य खरेदी करतांना त्या साहित्याचा दर्जा पाहणे गरजेचे असते. तसेच इलेक्ट्रॉनिक संसाधनांचा खरेदी करतांना त्यांच्या दर्जा पाहुणच खरेदी केले पाहिजे. आजकाल सर्वानाच अतिशय जलद माहिती हवी असते. आणि इंटरनेट सर्वात वेगवान माध्यम असल्यामुळे त्याकडे सर्वांचा ओढा असतो. बच्यात इंटरनेटववर उपलब्ध असणारी माहिती सुद्धा तंतोतंत खरी आहे त्याबाबत कोणीही खात्री देऊ शकत नाही.

३. तंत्रज्ञानाची कालबाह्यता

तंत्रज्ञानातील उत्क्रांतीचा हा एक परिणाम आहे की ज्यामुळे नवीन तंत्रज्ञान विकसित झाल्यावर जुन तंत्रज्ञान फारसे हार्डवेअर मध्ये वेळोवेळी बदल होत आहेत. नवनविन आज्ञावली अस्तीत्वात येत आहेत त्यामुळे आपला संगणक सतत अद्यावत करणे गरजेचे आहे.

४. अधिकार करार

बरेचसे प्रकाशक इलेक्ट्रॉनिक स्वरूपात असलेली माहिती देताना काही करार करतात. ते पाळणे गरजेचे असते. असे उत्पादन खरेदी करण्यापूर्वी त्या करारविषयी अभ्यास करणे आवश्यक आहे.

५. स्वामित्व हक्क

आंतरराष्ट्रीय ठरावानुसार बौध्दिक हक्कामध्ये कॉपीराईट व महत्वाचा असुन लेखकाने प्रकाशित केलेल्या तारखेपासून व हयैतीनंतर ६० वर्ष अशा अधिकारांचा अंत असतो. या कालावधीनंतर असे पुस्तक सार्वजनिक वापरासाठी मुक्त होते. अंकीय रूपांतरासाठी अशी ग्रंथसंपदाच फक्त विचारात घेता येते किंवा पूर्वपरवानगीसह ग्रंथाचा विचार करता येतो. इलेक्ट्रॉनिक प्रकाशनामध्ये दिवसेंदिवस अतिशय वेगाने बदल होत आहेत. सध्या अस्तित्वात असलेल्या स्वामित्व हक्क कायद्यांच्या चौकटीत कसे बसवता येतील हे अद्याप अस्पष्ट आहे. शैक्षणिक व संशेधनात्मक कार्यासी काही माहिती वापरली जाण्यास हरकत नाही परंतु काही ग्रंथालये विनाकरण यावर बंधने घालतात.

६. मानवी संसाधन

ग्रंथालयातील कर्मचा—यांना अद्यावत तंत्रज्ञानाचे प्रशिक्षण देणे तसेच नवनविन कौशल्यांचा स्वत:मध्ये विकास करून घेण्यासाठी प्रवृत्त करणे गरजेचे आहे.

७. माहितीचे स्थलांनंतर

तंत्रज्ञानाच्या कालबाह्यतेमुळे एखाद्या जुन्या प्रणालीवरील असलेली माहिती काही वेळा नष्ट होण्याचा धोका असतो. त्यावर उपाय म्हणून सतत काही विशिष्ट कालावधीनंतर माहितीचे स्थलांतर अद्यावत अशा तांत्रिक प्रणालीमध्ये करून घेणे गरजेचे असते.

८. मालकी

इलेक्ट्रॉनिक माहितीचे प्रकाशक बऱ्याचदा ग्रंथालयांना ती माहिती जतन करून ठेवण्याचे किंवा उतरवुन घेण्याचे हक्क देत नाहीत. त्यामुळे इलेक्ट्रॉनिक माध्यमातील मालकीपासून ग्रंथालये वंचित राहतात.

९. इलेक्ट्रॉनिक संसाधनांमध्ये माहितीचे जतन

इलेक्ट्रॉनिक माहितीचे जतन करणे अत्यंत सोपे आहे तसेच यामधील हवी ती माहिती केव्हाही प्रतीप्राप्त करणे शक्य होते. मात्र संगणकामध्ये कोणताही विषाणु प्रवेश केल्यास साठवलेली माहिती निरूपयोगी होण्याचा धोका संभावतो.

इलेक्ट्रॉनिक वाचन साहित्य संसाधनाच्या व्यवस्थापन प्रक्रियेतील घटक

इलेक्ट्रॉनिक ग्रंथालयातील वाचन साहित्य संसाधनाच्या व्यवस्थापन प्रक्रियेत पुढील चार घटकांचा समावेश होतो.

DIRM (Degital Information Resources Management)

Collection	Processing	Storage	Dissemination
संकलन	प्रक्रिया	संग्रहण	माहिती प्रसार
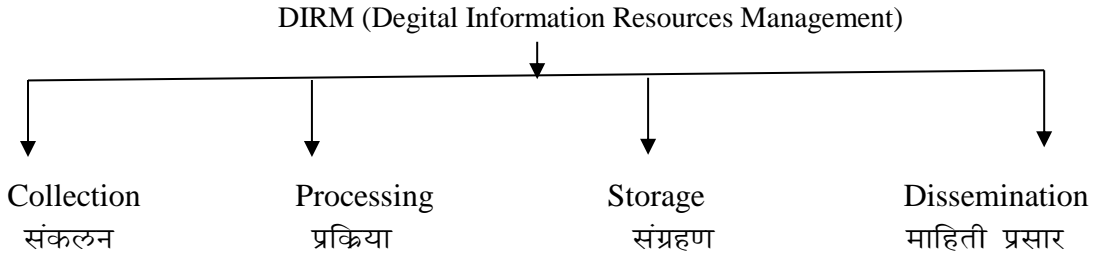
१. संकलन

अंकीय माहिती संसाधनाचे प्रभाव स्वरूपामध्ये संकलन हे शिक्षण संशोधन आणि निर्णय प्रक्रियेसाठी माहिती पुरविण्यामध्ये अत्यंत उपयुक्त ठरते. आंकीय स्वरूपातील माहिती सेवा देण्यासाठी अंकीय संसाधनाचे संकलनही एक प्राथमिक पायरी आहे. माहिती तातडीने उपलब्ध होण्याच्या दृष्टीकोनातून करण्यात येणा—या इतर प्रक्रिया म्हणजे अंकीय स्वरूपातील माहिती सेवा देण्यातील दुसरा टप्पा होय. माहिती प्रतीप्राप्तीसाठी इलेक्ट्रॉनिक संसाधनांचा उपयोग करणा—या लोकांसाठी आंकीय स्वरूपातील माहिती संकलन करणे ही एक सर्वसमावेशक अशी प्रक्रिया असल्याचे अशा संसाधनांचा विकास करणे आवश्यक आहे.

२. प्रक्रिया

हे एक तांत्रिक कार्य असुन प्रत्येक ग्रंथालयाने वाचकांचा वेळ वाचविण्यासाठी उपलब्ध असलेल्या संसाधनां विषयी माहिती मिळविणे सोपे जाते. संसाधनांच्या विषयानुसार प्रकारानुसार त्यातील समाविष्ट घटकानुसार त्यांचे वर्गीकरण केले जाते. तसेच या प्रक्रियेमुळे बिब्लीओग्राफीक डाटा तयार करणे शक्य आहे. तसेच वाचकांना ताबडतोब माहिती मिळण्यासाठी कोणत्या वेबसाईटवर (संकेत स्थळावर) कोणत्या प्रकारची माहिती उपलब्ध आहे. या बाबतही माहितीची नोंद ठेवल्यास सोईचे होईल.

३. संग्रहण

अंकीय स्वरूपातील माहिती संसाधने ही प्रक्रिया तसेच सतत उपयोगात आणले जाणारे साहित्य असल्यामुळे त्यांचे संग्रहण अतिशय काळजीपुर्वक करणे आवश्यक असते जर असे नाही झाले, तर त्या संसाधनाचा ही वाचन साहित्य संसाधन वेळोवेळी अद्यावत करून घेणे आवश्यक आहे. तसेच ही संसाधने नियमितपणे वापरली गेली पाहिजेत तसेच सीडी यान वापरल्या गेल्यास साडेतीन वर्षाच्या कालावधीनंतर त्यावरील समाविष्ट माहिती नष्ट होण्याची भिती असते.

४. माहिती प्रसार आणि पुनःप्राप्ती

माहिती ही छापील किंवा अंकीय स्वरूपामध्ये उपलब्ध आहे. आंकीय स्वरूपातील माहिती संसाधनातील माहिती ही इलेक्ट्रॉनिक उपकरणांद्वारे इच्छित स्थळी पोहचविली जाते. या पध्दतीमध्ये माध्यमे व त्यांना जोडणारे दुवे अतिशय महत्वाचे ठरतात. माहिती पुनःप्राप्ती पध्दती ही वाचक व उपलब्ध माहिती साधने यामधील दुवा म्हणुन कार्य करते. अनिश्चितता टाळण्यासाठी ज्ञान व ज्ञानासाठी माहिती मिळविणे आवश्यक आहे. म्हणुन सैध्दांतिक स्वरूपातील माहिती प्रसारीत होणे गरजेचे आहे. कोणत्याही संकिय माहिती केंद्राचे कार्य पुढील दोन गोष्टींवर अवलंबुन असते.

१. विषयमुल्यांनुसार माहितीची रचना करणे.

२. वाचकांना अद्ययावत प्रकाशित साहित्याविषयी माहिती देणे माहितीच्या प्रसारणामुळे वाचकांना त्यांच्याशी संबंधित विषयामध्ये अद्यावत माहिती मिळणे.

सारांश

अशाप्रकारे ग्रंथालयातील वाचन साहित्य संग्रहाचा विकास ही एक संस्थेची ध्येय, व्याप्ती, उद्दिष्टे आणि कार्यक्रम यांच्या आधारावर नियोजीत केलेली निर्णय प्रक्रिया असुन इलेक्ट्रॉनिक ग्रंथालयातील वाचन साहित्य व्यवस्थापन करताना भविष्य काळातील तंत्रज्ञानाच्या विकासाचा वेध घेणे अत्यंत आवश्यक आहे. आपण असमर्थ ठरलो तर त्या ग्रंथालयाचा विकास खुंटला असेच म्हणावे लागेल. कारण इलेक्ट्रॉनिक माध्यमे,इंटरनेट सेवा ई.माध्यमातून आपण माहितीच्या महाजालात प्रवेश करीत असतो.त्यातील आवश्यक माहिती डाऊनलोड करुन साठवून ठेवली जाते व आवश्यक तेव्हा ती वापरली जाते.वाचकांना अधिक चांगल्याप्रकारे सेवा देता यावी यासाठी इलेक्ट्रॉनिक ग्रंथालयातील वाचनसाहित्य अधिक उपयोगी पडते. म्हणूनच इलेक्ट्रॉनिक वाचनसाहित्य संग्रह विकासाकडे गांभीर्यान पाहिले पाहिजे.तरच ग्रंथालयाचा विकास होतो व विद्यार्थ्यांना माहिती तंत्रज्ञानाच्या माध्यमातुन मिळणारी माहिती ही अतीशय उपयुक्त ठरेल.

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COVID-19 आणि माहिती तंत्रज्ञान आधारित ग्रंथालय सेवा

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सारांश

गेले वर्षभर सर्वजन COVID-19 मुळे उद्भवलेल्या परिस्थितीला सामोरे जात आहेत. यामुळे सर्वच घटकांवर परिणाम झालेला दिसून येत आहे. यातून शिक्षण सुद्धा सुटलेले नाही. शैक्षणिक संस्था बरोबरच ग्रंथालयांवर या परिस्थितिचा परिणाम झालेला आहे. या परिस्थितीमध्येही ग्रंथालये सेवा देत आहेत व शिक्षणामध्ये खंड पडू नये यासाठी प्रयत्नशील आहे. या पेपर मध्ये माहिती तंत्रज्ञानाचा ग्रंथालातील उपयोग व ग्रंथालयांनी माहिती तंत्रज्ञानाच्या सहाय्याने देत असलेल्या सेवांची माहिती देण्यात आली आहे.

शोध शब्द – COVID-19, माहिती तंत्रज्ञान, ग्रंथालय सेवा

प्रस्तावना –

ग्रंथालय हि एक सामाजिक संस्था आहे. समाजाच्या हितासाठी तिचे संवर्धन करणे आवश्यक असते. स्वाभाविकपणेच समाजातील आर्थिक, शैक्षणिक, सामाजिक व तत्सम घटनांचा, आचारविचारांचा व आवडीनिवडीचा परिणाम ग्रंथालयावर होत असतो. ग्रंथालय हे त्या संस्थेचा आत्मा असते. ग्रंथालयाचा वापर जेवढा जास्त तेवढे ज्ञान हे वाढतच असते. ज्या प्रमाणात वाचकांच्या गरजा वाढत अथवा बदलत जातात, निरनिराळे शोध लागतात आणि साधने उपलब्ध होतात त्या प्रमाणात ग्रंथपालनाच्या कक्षा वाढत जातात. ज्या साधनांद्वारे ज्ञानाचा संग्रह व प्रसार केला जातो, त्यामध्ये होणाऱ्या सुधारणांचा वाढीव ग्रंथपालनावर फार मोठ्या प्रमाणात परिणाम होत असतो. सध्या सर्व जगच कोरोना विषाणूमुळे निर्माण झालेल्या महामारीच्या संकटातून जात आहे. ग्रंथालायेही समाजाचा एक महत्त्वाचा घटक असल्याने याचा परिणाम त्यांच्यावरही झालेला आहे पण त्यातूनही माहिती तंत्रज्ञानाच्या सहाय्याने ग्रंथालयांनी वाटचाल सुरु ठेवली आहे व अनेक सेवा देत आहेत त्या सेवांची माहिती देण्याचा प्रयत्न या पेपर मधून करण्यात आला आहे.

माहिती तंत्रज्ञान आणि ग्रंथालये –

माहिती तंत्रज्ञानाच्या प्रगतीमुळे मानवी जीवन व समाजामध्ये क्रांतिकारक बदल झाले आहेत. माहिती तंत्रज्ञानाच्या प्रभावामुळे संशोधकांची कार्यक्षमता वाढीस लागली व त्यामुळे कृषी, औद्योगिक, शैक्षणिक, राजकीय, सांस्कृतिक, व मानवी विकासाला चालना मिळून राष्ट्रीय विकासाचा वेग वाढला. ज्ञानाचा स्फोट झालेला असला तरी माहिती तंत्रज्ञानामुळे ज्ञानाच्या कक्षा मोठ्या गतीने विस्तारत गेल्या आहेत. माहिती तंत्रज्ञानामुळे शिक्षण समाजाभिमुख होऊन तंत्रज्ञान व व्यावसायिक शिक्षण वाढीस लागले आहे. ग्रंथालयांवरही माहिती तंत्रज्ञानाचा प्रभाव पडलेला दिसून येतो.

सध्याचे युग हे माहितीचे युग समजले जाऊ लागले आहे. जगाच्या कानाकोपऱ्यात प्रत्येक क्षेत्रामध्ये नवनवीन माहितीची निर्मिती होत आहे. काल परवापर्यंत नवीन वाटणारी माहिती आज जुनी वाटून आज त्या माहितीमध्ये नवीनच भर पडून नवनवीन विद्याशाखा उगम पावत आहेत. विज्ञानाच्या प्रगतीमुळे नवनवीन

तंत्रज्ञान विकसित होत आहे. या तंत्रज्ञाने माहिती क्षेत्रामध्येही अमुलाग्र बदल घडवून आणला आहे. पूर्वी फक्त प्रिंट स्वरुपात उपलब्ध होणारी माहिती आज इलेक्ट्रॉनिक स्वरूपातही उपलब्ध होत आहे.

ग्रंथालयात माहिती तंत्रज्ञानाचा वापर अनिवार्य झालेला आहे. वाढत्या वाचकांच्या वाढल्या व बदललेल्या गरजा किवा मागण्या पुरविण्यासाठी ग्रंथालयांना अपडेट राहणे गरजेचे झाले आहे. ग्रंथालयांच्या पारंपारिक कार्यांमध्ये बदल घडत आलेला आहे. शैक्षणिक ग्रंथालये शिक्षण प्रक्रियेमध्ये आज महत्वाची भूमिका बजाविताना दिसतात.

माहिती तंत्रज्ञान क्षेत्रात होत असलेल्या प्रगतीमुळे आज जी अत्याधुनिक इलेक्ट्रॉनिक साधने, माध्यमे अस्तित्वात आली आहेत त्यामुळे ग्रंथालयांपुढे या माध्यमांचा वापर करण्याचे आव्हान होते. या आव्हानावर मत करून आता ग्रंथालयांनी या माध्यमांच्या मदतीने ग्रंथालयीन सेवा या आणखी प्रभावीपणे देण्यास सुरुवात केली आहे. म्हणजेच या आव्हानाला संकट न समजता संधी समजल्याने नवनवीन ग्रंथालय सेवा देण्यास ग्रंथालये सक्षम झाली आहेत.

COVID-19 आणि समाज –

गेले एक वर्ष आपण सर्वजन या कोरोना विषाणूमुळे निर्माण झालेल्या परिस्थितीत राहत आहोत. कोरोना विषाणूमुळे ही साथ अथवा महामारी आपल्या देशातच काय तर सर्व जगावर संकट ठरली आहे. एका सूक्ष्म विषाणूने आपल्या प्रतापांनी सगळे जग वेठीला धरले आहे. एकाच वेळी जवळपास सगळ्या जगातले व्यवहार ठप्प होण्यासारखा अभूतपूर्व प्रकार बहुतेकांच्या आठवणीत पहिल्यांदाच घडला आहे. आरोग्याच्या तसेच आर्थिक पातळीवर हाहाकार माजला आहे. कोरोनाच्या महामारीमुळे वैयक्तिक, कौटुंबिक, व्यावसायिक, सामाजिक अशा सगळ्याच पातव्यांवर त्याचे परिणाम झाले आहेत. गेले वर्षभर हे सगळं होत असताना नुकसानीचा सतत हिशोब मांडला गेला. होणाऱ्या गोष्टी आपण थोपवू शकत नाही, आपण काहीही करू शकत नाही, ही हतबलताही सगळ्यांनी अनुभवली आहे.

या सगळ्यामधून शिक्षणही सुटले नाही. आपल्याकडील शिक्षण व्यवस्थेमध्ये विद्यार्थी व शिक्षक या बरोबरच इतरही घटकांचा थेट संबंध असतो. यामध्ये ग्रंथालय हेही येते. विद्यार्थी व माहिती यांना जोडण्याचे काम ग्रंथालये करीत असतात. सध्याच्या काळात शाळा, महाविद्यालये व इतर शिक्षण संस्था या बऱ्याच कालावधीसाठी बंद आहेत. विद्यार्थ्यांच्या शिक्षणावरही याचा परिणाम होताना दिसून येत आहे. विद्यार्थ्यांना आताच्या परिस्थितीमध्ये होणाऱ्या अभ्यासक्रमासाठी लागणारे साहित्य किवा माहिती देण्याची जबाबदारी ग्रंथालायांवर आली आहे. आता परीक्षेचेही स्वरूप बदलले असून पूर्वीच्या परीक्षा पद्धत आता राहिली नाही तर online पद्धतीने परीक्षा घेतली जाते व त्यामध्ये बहुपर्यायी प्रश्नच विचारले जातात. या परीक्षेसाठी विद्यार्थ्यांना अचूक माहितीची गरज लागते. ही माहितीही देण्याचा प्रयत्न ग्रंथालये करीत आहेत. माहिती तंत्रज्ञान हे ग्रंथालयाने स्वीकारले आहे व त्यामुळेच विद्यार्थ्यांना व इतर वाचकांनाही सेवा देण्यामध्ये ग्रंथालये नेहमीच अग्रेसर राहिली आहेत. कोणत्याही अघटिताच्या वेदनांच ओझं हलक करण्याचा त्यातल्या त्यात सोपा उपाय म्हणजे वाईटातूनही चांगल काही तरी शोधण्याचा प्रयत्न करणे, आपणही तेच करीत आहोत.

माहिती तंत्रज्ञान आधारित ग्रंथालय सेवा (COVID-19)

ग्रंथालय ओळख व ग्रंथालय सभासदत्त्व - विद्यार्थ्यांनी नवीन प्रवेश घेतल्यानंतर त्यांना या lockdown मध्ये ग्रंथालयाची ओळख हि झूम अथवा Google Meet या App द्वारे करून देण्यास मदत होत आहे तसेच

विद्यार्थ्यांना ग्रंथालातील ग्रंथसंपदा, ग्रंथालयाचे नियम, ग्रंथालय वेळ याबानात माहित दिली जाते. तसेच त्याचे ग्रंथालय नोंदणी फॉर्म हे सुद्धा Google Form च्या माध्यमातून भरून घेवून त्यांना ग्रंथालयाचे सभासदत्व दिले जाते. त्यासाठी विद्यार्थ्यांनी या कालावधीमध्ये प्रत्यक्ष ग्रंथालयात येण्याची गरज भासत नाही

माहिती साक्षरता – आजच्या स्पर्धेच्या युगात इंटरनेटवर एका क्लिकवर प्रचंड स्वरुपात माहिती मिळते परंतु त्या माहितीच्या स्वरुपात नेमकी कोणती माहिती घ्यावी हे वाचकांना समजत नाही. येथे ग्रंथालयाची भूमिका महत्त्वाची ठरते. ग्रंथपालानी माहिती साक्षरतेची कल्पना देऊन माहितीचा शोध घेणे, मार्ग दाखविणे व नेमकी हवी असणारी तीच माहिती शोधणे, तिचे मूल्यमापन व विश्लेषण कसे करायचे व ती कशी वापरायची याचे प्रशिक्षण वाचकांना देणे आवश्यक ठरत आहे व आजच्या परिस्थितीत वाचकांना हे प्रशिक्षण खूपच उपयोगी ठरत आहे.

जलद मेसेज सेवा (Instant Messeging Service) – मोबाईल अथवा काही मेसेज साईट चा वापर करून हि सेवा देण्यात येते. यामध्ये एखाद्या वापरकर्त्याने मागणी केलेले पुस्तक ग्रंथालयातून घेवून जाण्यासाठी, एखादे पुस्तक परत करण्यासाठी, ग्रंथालयाची बदलेली वेळ अथवा सुट्टीचे दिवस यांची माहिती वापरकर्त्याला देण्यासाठी या सेवेचा वापर करता येतो.

ई मेल सेवा – ई मेल हे ग्रंथपालांसाठी संप्रेषण साधनांप्रमाणेच वापरले जाऊ शकते. दैनंदिन जीवनात ई-मेल संवादाचा सर्वात सामान्य प्रकार झाला आहे. ग्रंथालय इतर लायब्ररी कर्मचारी आणि वापरकर्त्यांशी संपर्क साधण्यासाठी याचा वापर करतात. थकीत पुस्तके, नवीन पुस्तकांच्या आगमनाची माहिती, प्रदर्शनाच्या नोटिसा आणि प्रोग्राम इत्यादींबद्दल स्मरणपत्रे पाठवण्यासाठी ई मेलचा उपयोग केला जाऊ शकतो.

WhatsApp – या अतिशय लोकप्रिय aap द्वारे आपल्याला आपल्या उपयोगकर्त्यांचे वेगवेगळे ग्रुप करता येतात व त्यांना उपयोगी असणारी माहिती आपणास या ग्रुप वर पाठवीत येते. हे सध्याच्या COVID-19 मध्ये खूपच उपयुक्त ठरत आहे. यामध्ये आपण मागणीनुसार काही pdf किवा मागील वर्षाच्या प्रश्नपत्रिका विद्यार्थ्यांपर्यंत थेट पोहचवू शकतो.

आभासी सहल (Virtual Tour) – माहिती तंत्रज्ञानाच्या सहाय्याने आभासी सहल आयोजित करता येते. त्या द्वारे विद्यार्थ्यांना आताच्या या परिस्थितीमध्ये विविध ठिकाणी प्रत्यक्ष भेट देवून माहिती घेतल्याचा अनुभव घेता येतो व हे द्वकश्राव्य माध्यमाद्वारे माहिती मिळाल्याने विद्यार्थ्यांना सहज आकलन होण्यास मदत होते.

ग्रंथप्रदर्शन / नवीन आलेली पुस्तके यांचे प्रदर्शन - सध्याचा या परिस्थितीमध्ये विविध दिन साजरे करताना त्या त्या दिवसाचे महत्त्व असणारी ग्रंथालयात असणारी पुस्तके यांचे प्रदर्शन करणे शक्य नाही त्यामुळे बऱ्याच ठिकाणी आभासी ग्रंथप्रदर्शन करण्यात आले त्यामुळे ग्रंथालयात असणारी पुस्तके विद्यार्थ्यांना कळण्यास मदतच झाली आहे. नवीन आलेली पुस्तके हि सुद्धा प्रदर्शनाद्वारे विद्यार्थ्यांना माहिती झाली.

CAS आणि SDI सेवा – माहिती तंत्रज्ञानाच्या सहाय्याने ग्रंथालयात नवीन आलेली ग्रंथसंपदा ची माहिती हि जलदगतीने विद्यार्थ्यांपर्यंत पोहचविण्यात येत आहे. SDI सेवेअंतर्गत ठराविक वापरकर्त्यांना सेवा देणे सहज व जलद शक्य होत आहे.

OPAC – ग्रंथालयात कोणती पुस्तके अथवा ग्रंथेतर साहित्य आहे याची माहिती वापरकर्त्याला कोणत्याही ठिकाणावरून कोणत्याही वेळेला मिळविणे शक्य झाले आहे. त्यासाठी ग्रंथालयात येण्याची अथवा वेळेची मर्यादा राहिली नाही.

संदर्भ सेवा – ग्रंथालय वापरकर्ता हा ग्रंथपालाला कोणत्याही वेळेला त्याच्या माहितीसंदर्भात विचारणा करू शकतो व त्याला ग्रंथपाल हि त्याला हवी असणारी माहिती कोठे मिळेल ते पुस्तक त्याला देवू शकतो.

Institutional Repository – आता बहुतांश ग्रंथालयांनी Institutional Repository तयार केलेली आहे. यामध्ये संस्थेची माहिती पत्रक, वार्षिक अंक याची माहिती दिलेली असते. यामध्ये महाविद्यालयातील प्राध्यापकांनी तयार केलेल्या नोट्स तसेच अभ्यासक्रमाशी उपयुक्त असणारे व्हिडीओ पाहायला मिळतात. तसेच विद्यार्थ्यांसाठी जुन्या प्रश्नपत्रिका उपलब्ध करून दिल्या जातात. या सर्व माहितीमुळे विद्यार्थ्यांना कोणत्याही वेळी माहिती मिळविणे शक्य झाले आहे व त्याचा वापर करून अभ्यास करणे शक्य झाले आहे.

E Document Delivery Service – या सेवेअंतर्गत वाचकाला हवी असणारी माहिती हि PDF अथवा अन्य ई format मध्ये ई मेल द्वारे पाठविणे सहज शक्य झाले आहे या सेवेमुळे वाचकांचा वेळ वाचणे शक्य झाले आहे. हि सेवा देत असताना कॉपीराईट चा विचार करून शैक्षणिक गरजांकरिता काही माहिती आपण आपल्या वाचकांसाठी देवू शकतो.

याबरोबरच ग्रंथालयांनी काही वर्गणी भरून ई resources घेतलेले आहेत त्याची माहितीही आपल्या वाचकांपर्यंत पोहचविली आहे व त्याच्या योग्य वापरासाठी मार्गदर्शन करून व त्यांना password देवून त्या माहितीचा वापर करता येवू शकतो.

QR Code – याचा वापर करून आपण आपल्या वाचकांना खपू कमी वेळामध्ये एखाद्या website ची लिंक देवू शकतो. तसेच याच्या द्वारे पुस्तकाची माहितीही आपण वाचकांना देवू शकतो.

ग्रंथालय वेबसाईट – आता बहुतांशी संस्थांनी ग्रंथालयाच्या वेबसाईट तयार केलेल्या आहेत. त्या द्वारे अनेक प्रकारची माहिती वाचकांपर्यंत पोहचविणे सहज शक्य झाले आहे. यामध्ये ग्रंथालयाची माहिती दिली जाते. ग्रंथालयाची वेळ, ग्रंथालयातून दिल्या जाणाऱ्या सेवा, ग्रंथालात काम करणारे कर्मचारी यांचीही माहिती यामध्ये दिली जाते. बऱ्याच ग्रंथालयांनी सध्याच्या lockdown कालावधीमध्ये अनेक ठिकाणी विविध कोर्स सुरु आहेत तसेच विविध अभ्यासक्रमासाठी उपयुक्त असणारी माहिती आपल्या वेबसाईटवर टाकली आहे. यामध्ये SWAYAM online courses, UG/PG MOOCs, e-PG Pathshala, e-Content courseware in UG subjects, SWAYAMPRABHA, CEC-UGC YouTube channel, National Digital Library, Shodhganga, e-Shodh Sindhu याचा प्रामुख्याने उल्लेख करता येईल. Ask Librarian या मध्ये हव्या असणाऱ्या माहितीविषयी वाचक विचारू शकतात व त्यांना हवी असणारी माहिती त्यांना देणे शक्य होते.

याबरोबरच काही नियतकालिके व वर्तमानपत्रे हि online पद्धतीने उपलब्ध होत आहेत त्याचि लिंक आपल्या वेब साईट वर देवून वाचकांना केव्हाही त्याचा वापर करता येवू शकतो.

समारोप –

सध्याच्या या काळामध्ये प्रत्येकजण आपल्यापरीने चांगले काम करण्याचा प्रयत्न करीत आहे. ग्रंथालायेही यामध्ये मागे नाहीत. ग्रंथालयांनी माहिती तंत्रज्ञानाच्या साथीने अनेक चांगल्या सेवा दिल्या आहेत त्यामुळे विद्यार्थी ज्ञान मिळविण्याच्या प्रक्रियेपासून वंचित राहूच शकत नाही.

संदर्भ –

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माहिती तंत्रज्ञान आणि महाविद्यालय ग्रंथालयात आधुनिक माहितीसेवांची उपयुक्तता

डॉ. रेखा ताराचंद झलके
ग्रंथपाल, अनिकेत समाजकार्य महाविद्यालय वडसा (देसाईगंज), जि. गडचिरोली

प्रस्तावना :—

सध्याचे युग हे माहिती तंत्रज्ञानाचे युग असून या तंत्रज्ञानाचा विकास झपाटयाने होत आहे. ग्रंथालय व माहितीशास्त्र हे माहितीतंत्रज्ञानाच्या जवळचे क्षेत्र असल्याने जास्तीत जास्त प्रगत माहिती तंत्रज्ञानाचा वापर या क्षेत्रात होत आहे. परिणामी ग्रंथालय व माहितीशास्त्र क्षेत्राची प्रगती ही तितक्यात प्रचंड वेगाने होत असून 'डिजीटल ग्रंथालय' संकल्पनेचा विकास हा एक त्यातील प्रगतीचा टप्पा आहे. आधुनिकतेमध्ये संगणक, तंत्रज्ञान, माहिती प्रसारण तंत्रज्ञान तसेच नेटवर्कींग इ. प्रगत तंत्रज्ञानाचा समावेश होतो. संगणकीकरणाला ग्रंथालयामध्ये महत्वाचे स्थान प्राप्त झाले असून संगणकीकरण व संगणकाचे प्रगत ज्ञान अवगत नसेल तर याबाबतीत यंत्रणा निरक्षर समजल्या जाईल. आधुनिक काळात ग्रंथालयामध्ये विविध प्रकारच्या सेवा संगणकीकरणाव्दारे देण्यात येत असल्यामुळे आधुनिक माहिती सेवांचे महत्व अत्यंत मोलाचे असून वाढले आहे.

१.१. आधुनिक माहिती सेवांचा विकास

माहितीसेवा उपयोजकांच्या यशाची गुरूकिल्ली आहे. ग्रंथालय वाचकांना विविध प्रकारच्या जास्तीत जास्त सेवा प्रदान करून ग्रंथालयाच्या तसेच संस्थेच्या उदिष्ट पुर्तीसाठी सातत्याने प्रयत्नशिल असतात. कोणत्याही महाविद्यालयाचे शिक्षण संशोधन आणि विस्तार तसेच उपयोजकांचा सर्वांगिण विकास हे महत्वाचे ध्येय असल्याने विद्यापीठ तसेच महाविद्यालयामध्ये ग्रंथालयांना अतिशय महत्वाचे स्थान असून ती केंद्रस्थानी आहेत.

महाविद्यालय ग्रंथालय वाचकांना विविध प्रकारच्या वाचन विषयक सेवा देण्याचे महत्वाचे कार्य करीत असतात. सद्यस्थितीत माहितीसेवा देण्याचे स्वरूप बदलले असून ते आधुनिक झालेले आहे. त्याच अनुषंगाने सद्यस्थितीत आधुनिक कामामध्ये नेटवर्क हि संकल्पना सर्वांच्या दैनंदिन जिवनाचा अविभाज्य भागच झाले आहे. प्रत्येक व्यक्ती कळत—नकळत कोणत्याही कारणास्तव कुठल्याना कुठल्या नेटवर्क सेवेचा लाभ होतच असतो. नेटवर्कचे माहिती आणि दळणवळण संबंधीच्या गरजांनाही यामध्ये महत्वाचे स्थान आहे. त्यामध्ये इंटरनेट, इ—मेल यासारख्या सेवा उपलब्ध असून ग्रंथालय व माहितीचे नेटवर्क या दळणवळणातील प्रगत तंत्रज्ञानावर आधारित सेवांचा ग्रंथालयामध्ये समावेश होतो. नेटवर्कचा उपयोग डेटाट्रान्स मिशनसाठी होत असून आवश्यक माहिती इंटरनेटव्दारे पाहिजे त्यावेळी मिळते. सद्यस्थितीत इंटरनेट, युजनेट, बीटनेट, जॅनेट इ. खाजगी व सरकारी पब्लिक को—ऑपरेटिव्ह नेटवर्क अस्तित्वात आले आहेत.

उपयोजकांना आवश्यक असलेली माहिती संगणकाव्दारे छपाईच्या माध्यमातून सुध्दा त्वरीत प्राप्त होते. त्याचबरोबर प्रतीरूपलेखन सेवेचाही लाभ घेता येतो. ग्रंथालयाचे संगणकीकरण करण्यासाठी वाचकांना त्वरीत सेवा मिळाल्या या उद्देशाने विविध प्रकारच्या आज्ञावली (Software) विकसीत झाल्या आहेत. त्याचबरोबर बारकोड, मल्टीमिडीया, सी.डी, इ. तंत्रज्ञान विकसीत झाले आहे. ग्रंथालयामध्ये कमी श्रमात, कमी वेळेत आवश्यक ती सेवा या साधनाव्दारे वाचकांना दिली जाते. विविध प्रकारचे डेटा विकसीत झाले असून त्यामध्ये डेटाबेस संवर्धन या अनुषंगाने मायनिंग, मेटाडेटा, याचबरोबर इंग्रजी डेटा मराठी भाषेत लिपी इतर प्रादेशिक भाषेत उपलब्ध होण्याच्या दृष्टिने युनिकोड निर्मीती झाल्या. अशाप्रकारच्या आज्ञावली ग्रंथालयात आधुनिकतेच्या दृष्टिकोनातून माहिती समक्षपणे देण्यासाठी उपलब्ध आहेत.

पुर्वीच्या काळी ग्रंथनिर्मीती मोठया प्रमाणावर होत नव्हती. माहितीच्या विस्फोटाच्या काळामध्ये ग्रंथनिर्मीती झपाटयाने लागली. त्यामुळे ग्रंथनिवड, यांचे मुल्यांकन व खरेदी या कामाचा आवाका वाढल्याने ग्रंथालयातील उपार्जन प्रकिया कार्यक्षम हाताळणे परंपरागत पध्दतीने कठीण झाले. त्यासाठी संगणकाचा वापर केल्यानंतर कामाच्या वेगामध्ये वाढ झाली. कामाचा दर्जा वाढला व वाचकांना पुर्वीपेक्षा चांगली व तत्पर सेवा देणे शक्य झाले असून हे सिध्द झाले.

सद्यस्थितीत इंटरनेट आणि डिजीटल तंत्रज्ञानाच्या विकासामुळे या स्वरूपात माहिती प्रकाशित करणे शक्य झाले. इलेक्ट्रानिक स्वरूपात साहित्यप्रकारचा वेग वाढला आहे. ग्रंथालयात विविध इलेक्ट्रानिक स्वरूपातील साहित्याच्या उपलब्धतेची आवश्यकता हळुहळु वाढली आहे. त्यामध्ये इ—जर्नल, इ—बुक्स, संदर्भ डेटाबेस, सांख्यिकी माहितीचे डेटाबेस, भौगोलिक माहिती संदर्भ डेटा बेस इत्यादी प्रकारच्या साहित्यात वाढ झाली आहे. इ—स्रोत साहित्य ऑफलाईन व ऑनलाईन पध्दतीने उपलब्ध आहे. सद्यस्थितीत ग्रंथालय खालील प्रमाणे आधुनिक पध्दतीने सेवा देत असल्याचे दिसते.

१) इंटरनेट व इ—मेल
२) संदर्भ सेव
३) प्रचलित जागरूकता सेवा
४) निवडक प्रसारण सेवा
५) जालीका सेवा (ओपॅक)
६) वर्तमानपत्र कात्रण सेवा
७) भाषांतर सेवा
८) निर्देशन आणि सारलेखन सेवा

अशा विविध प्रकारच्या सेवा संगणाव्दारे दिल्या जातात.

शैक्षणिक ग्रंथालयाच्या अडचणी ओळखून ग्रंथालय भागीदारीतून संसाधन माहिती व इ—गव्हर्नन्स, ग्रंथालय सुरक्षा, माहिती साक्षरता, डिजीटायजेशन करीता आज्ञावली, वायफाय तंत्रज्ञान, कन्सोर्सीया अशा प्रकारच्या विविध सोयी निर्माण झाल्या असून ग्रंथालयात त्याचा उत्तमरित्या सेवा देण्याच्या दृष्टिने ग्रंथालयात त्याचा महत्वपूर्ण उपयोग आहे. इंटरनेट, इन्ट्रानेट, एक्स्ट्रानेट, पुल आणि पुश तंत्रज्ञान सद्यस्थितीत माहितीसेवांच्या दृष्टिने विकसीत झालेले आहे.

१.२. ग्रंथालयात उपयोजकांच्या स्वरूपानुसार आधुनिक माहितीसेवांची उपयुक्तता

महाविद्यालय ग्रंथालय उपयोजकांना उत्तमोत्तम गुणवत्ताप्राप्त माहितीसेवा देवून शिक्षण, संशोधन व विस्तार याविषयी संस्थेच्या व उपयोजकांच्या सर्वांगिण विकासासाठी कार्य करीत असल्याने आधुनिक माहिती सेवांची उपयुक्तता ग्रंथालय व उपयोजकांच्या दृष्टिने अत्यंत महत्वाची आहे. महाविद्यालय ग्रंथालयाचा विचार केल्यास त्यामध्ये प्रामुख्याने अध्यापक, विद्यार्थी, इतर वाचक तसेच ग्रंथालय यांच्या दृष्टिने आधुनिक माहितीसेवा अत्यंत उपयुक्त आहेत.

१.२.१. अध्यापक (Lecture)

१) अध्यापनाच्या दृष्टिने प्रचलीत माहिती उपलब्ध होते.

२) दुर्मिळ माहितीची उपलब्धता

३) ग्रंथालयात ग्रंथ उपलब्ध नसला तरी इंटनेटव्दारे माहिती मिळू शकते.

४) माहिती पाठविण्याची इ—मेल व्दारे त्वरीत सोय होते.

५) माहिती साठवून ठेवता येते.

६) वेबसाईट माहित नसल्यास सर्च इंजिन व्दारे शोधता येते. व माहिती शोधने सोपे जाते.

७) जागतीक स्तरावरची माहिती उपलब्ध होते.

८) विविध प्रकारची माहिती, चित्र, तक्ते, आलेख याव्दारे उपलब्ध होत असल्यामुळे आकलनास सोपी जाते.

९) वेळेची बचत होते.

१०) अध्यापन व संशोधन, शिक्षण व विस्तारासाठी उपयुक्त माहिती प्राप्त होते.

११) इ—जर्नल्स व इ—बुक्स व्दारे हवी तेवढीच माहिती पाहता येते.

१२) संगणकीय ग्रंथालयातील व साधीक तालीकेव्दारे उपयुक्त माहिती कोणत्या ठिकाणी आहे याचा शोध लागतो.

१३) सहकारीतेव्दारे माहिती विना विलंब उपलब्ध होते. व गरज भागते.

१४) आवश्यक असलेली माहिती प्रतीरूपलेखनाव्दारे संदर्भासाठी दस्तऐवज म्हणून जवळ ठेवता येते.

१५) रंगीत प्रतीरूपलेखन संयत्राव्दारे छायाचित्र अभ्यासासाठी जवळ ठेवता येतात. लहान—मोठी पण करण्याची सुविध उपलब्ध

असल्याने त्याचा अध्ययनात फायदा होतो.

१६) संगणकीकरणामुळे प्रलेखन सेवा, सारसेवा, निवडक प्रसारण माहितीसेवा, प्रचलित जागरूकता सेवा, आंतरग्रंथालयीन

देवाणघेवाण सेवा, संपर्कसेवा, इत्यादी प्रकारच्या विविध सेवा मिळत असल्याने अध्यापन सोपे जाते व मदत होते.

१७) अभ्यासक्रम बदलल्यानंतरही किंवा अभ्यासक्रमात सुधारणा झाल्यानंतरही अडचणी येत नाही कारण आधुनिक माहिती

सेवेव्दारे वेबसाईट व इतर साधनाव्दारे माहिती त्वरीत प्राप्त होते.

१८) दृकश्राव्य माध्यमांचा वापर होत असल्याने माहिती जाणून घेणे सोपे होते.

१९) आधुनिक परिस्थितीत विद्यार्थ्यांना लॅपटॉप व एनसीडी व्दारे अध्यापन करावयाचे असल्यास ग्रंथसदर्भासाठी ग्रंथालयातील

मटेरियल उपयुक्त ठरते. ज्ञानकोष (विश्वकोष), शब्दकोष अशाप्रकारचे संगणकावर उपलब्ध असल्याने शब्दांचे अर्थ

पाहण्यासाठी अडचण येत नाही.

२०) आधुनिक माहिती सेवामध्ये वेळेची व पैशाची बचत होते.

२१) तालिका पाहणे सोपे जाते.

१.२.२. विद्यार्थी (Student)

१) विद्यार्थ्यांना विविध प्रकारची माहिती शोधण्याकरीता इंटरनेटचा बहुमूल्य उपयोग होतो.

२) माहिती पाठविण्यासाठी इ—मेलचा उपयोग उपयुक्त ठरतो.

३) विद्यार्थ्यांनी संदर्भासाठी आवश्यक असलेली माहिती छापील स्वरूपात कमी वेळात प्राप्त होते.

४) विद्यार्थ्यांना संदर्भ शोधने इंटरनेटच्या सुविधेमुळे सोपे जाते.

५) इंटरनेटव्दारे विद्यार्थ्यांना विविध प्रकारची माहिती मिळत असल्याने या सेवेची उपयुक्तता विद्यार्थ्यांसाठी अति महत्वाची

आहे.

६) विद्यार्थ्यांना संदर्भासाठी पुस्तकातून सत्यप्रत, प्रतीरूपलेखन, संयत्राव्दारे मिळत असल्याने विद्यार्थ्यांचा वेळ वाचतो.

७) पदव्युत्तर व संशोधन करणाऱ्या विविध प्रकल्पाची माहिती आधुनिक माहिती सेवाव्दारे प्राप्त होते.

८) इ—जर्नल, इ—बुक्स व इ—स्रोताव्दारे विना विलंब माहिती शिक्षण व संशोधनासाठी प्राप्त होते.

९) ओपॅक चा वापर करता येतो.

१.२.३. ग्रंथालय कामकाज (Library Work)

१) आज्ञावलीचा वापर

२) संगणकीय तालिका

३) यंत्राव्दारे पुस्तकाची देवाणघेवाण

४) दंड आकारणे

५) अंदाजपत्रक

६) खर्च व जमा

७) पुस्तक खरेदी, विक्री प्रक्रिया

८) संगणकामध्ये ग्रंथसाठा

९) नियतकालीकांची साठवणूक

१०) स्मरणपत्रे देणे

११) देयके मंजुर करणे

१२) वाचकांचे रेकार्ड ठेवणे

१३) वाचकांच्या गरजा

१४) विविध सेवा— इंटरनेट, इ—मेल, प्रचलित जागरूकता सेवा, ओपॅक, संयुक्त तालीका, वार्षिक अहवाल, नोट (नस्ती)

   तयार करणे.

१.२.४. इतर उपयोजक (Other User)

१) आवडीची माहिती आधुनिक माहिती सेवाव्दारे त्वरीत प्राप्त होते.

२) त्यांचा ग्रंथालयाशी संपर्क वाढतो.

३) ग्रंथालयाचा उपयोग होतो व उपयोजकांमध्ये वाढ होते.

१.२.५. इतर उपयुक्तता (Other Utility)

१) ग्रंथालयातील वाचन साहित्याचा उपयोग होतो.

२) वाचकांना ग्रंथ व माहिती मिळते.

३) वाचकांची गरज पूर्ण होते.

४) वाचक ग्रंथालयात येत असल्याने त्यांचे निकट समजते.

१.३. ग्रंथालयात आधुनिक माहिती सेवांची प्रत्यक्ष उपयुक्तता

इंटरनेट :—

इंटरनेटमुळे कोणत्याही विषयाची विविध प्रकारची माहिती संकलीत करता येते यामुळे शिक्षण, संशोधन व विस्तारकार्यात महत्वाची मदत होत असून उपयोजकांचा विकास होतो. नियोजीत उदेश साध्य करता येतात. संशोधनाच्या दृष्टिने विविध प्रकारचे संदर्भ घेता येतात. शिक्षणाची पुनरावृत्ती टाळता येते. व अशा विविध प्रकारच्या उपयोगामुळे इंटरनेटला माहितीचा खजिनाच उपयोजकांनी म्हटले आहे. त्यामुळे ते ग्रंथालयात उपलब असणे अत्यंत गरजेचे असते.

ई—मेल :—

ई—मेलव्दारे पाठविलेले संदेश एकाक्षणात जगाच्या कुठल्याही स्थळी पोहचविता येतात. इ—मेल, पी—मेल, पॉईन किंवा माईम नावाने इ—मेल पाठविण्याच्या पध्दती आहेत. आलेल्या संदेशाचे वर्गीकरण करून ते ठराविक फोल्डर मध्ये साठवून ठेवता येतात. इ—मेलव्दारे फाईल पण पाठविता येते.

प्रतिरूप लेखन :—

या सेवेमुळे पाठ्यपुस्तकातील जसे च्या तसे सत्यप्रत मिळत असल्यामुळे अध्यापक वर्गला विद्यार्थ्यांना शिकवायला व समजावून सांगायला सोयीस्कर जाते. कार्यालय कामासाठी लागणारी प्रलेखणीय पत्रांची सत्यप्रत मिळत असल्यामुळे वेळ व श्रम वाचतो.

ओपॅक :—

वर्गीकरण व तालीकीकरण विभागाच्या संगणकीकरणाचा अंतिम टप्पा म्हणजे संगणकीकृत तालिका बणविणे हा आहे. ज्यास ओपॅक असे म्हणतात. तालीकीकरणाच्या प्रक्रियेमध्ये ग्रंथसग्रहाच्या माहिती संग्रह तयार असतोच. वाचकांना ग्रंथासंबंधी माहिती शोधण्याचे साधन ओपॅक च्या मदतीने उपलब्ध करूण देणे आवश्यक असते. एकदा का संगणकीकृत तालिका उपलब्ध झाली की, वाचक क्वचितच कार्ड कॅटलॉग कडे वळतो. संगणकीकृत तालिका बघतांना त्रास खुपच कमी होतो. संगणकाच्या मदतीने शोधप्रक्रिया सोयीची व वाचकांच्या आवडीची होते. किंबहूना प्रतीप्राप्तीचा दर्जा उच्च होतो. शिवाय विविध प्रकारे शोध सोयी उपलब्ध होतात. त्यामुळे उपयोजकांना ही सेवा अत्यंत उपयुक्त वाटते.

डिजिटायजेशन :—

यामुळे ग्रंथालयातील आवश्यक छापील साहित्याचे डिजीटल माध्यमात परिवर्तन करता येते. यामध्ये स्कॅनिंग, ओ.सी.आर. इत्यादी प्रक्रिया पार पाडल्या जातात.

इ—बुक्स:—

इ—बुक म्हणजे इलेक्ट्रानिक माध्यमातून संपुर्ण पुस्तकांची माहिती पाहता येत असून ती वाचता येते याबाबतच्या सीडी उपलब्ध असतात. अशाप्रकारच्या सीडी ग्रंथालयात उपलब्ध असल्यास त्याव्दारे माहिती प्राप्त होईल व वाचकांचा वेळ वाचेल.

इ—जर्नल:—

ही इलेक्ट्रॉनिक्स आधुनिक सेवा असून यामध्ये नियतकालीकांचे प्रकाशन होते. इ—जर्नलची उपलब्धता ही ग्रंथालयाच्या वेब पेजवर इ—जर्नलच्या संकेत स्थळाच्या लिंकव्दारे साध्य होते. त्या लिंकवर क्लिक केल्याने इंटरनेटच्याव्दारे वाचक इ—जर्नलच्या संकेत स्थळावर पोहचतो. व नियतकालीकांच्या अंकातील लेखांचे वाचन करते.

आर.एफ.आय.डी :—

या सेवेमुळे एकाच वेळी अनेक पुस्तकांची एकत्रीत पणे देवाणघेवाण करणे शक्य होते. ग्रंथ मोजणी केवळ स्कनरच्या आधारे फारच कमी वेळात करणे शक्य होते. त्यासाठी पुस्तकांची हालचाल अपेक्षित नाही केवळ शेल्फवर स्कॅनर फिरविल्याने ग्रंथमोजणीचे काम सोपे होते. चुकीच्या ठिकाणी बसविलेले पुस्तक नेव्हिगेटरच्या मदतीने हुडकणे शक्य होते पुस्तकाच्या टॅगशी सुसंगत वेव्हलेग्नथ सिग्नंल पुरविल्यास नेव्हिगेटरने पुस्तके शोधतांना पुस्तक शेल्फवर असल्यास नेव्हिगेटर बिब आवाज करू लागतो. व हरविलेले पुस्तक शोधणे त्यामुळे सहज शक्य होते. पुस्तके ग्रंथालयाबाहेर जातांना कुठली पुस्तके कोणता वाचक नेतो आहे याचा तपास करणे शक्य होते. या संबंधीत माहिती साठवून ती संकलीत करणे शक्य होते.

वायफाय तंत्रज्ञानः—

या सेवेमुळे जलद व प्रगत टेलिफोन सेवेबरोबरचं डेटांचे स्वरूपांतील प्रसारण व देवाणघेवाण आता जलद व सुलभ झाली आहे. तसेच आपल्या लॅपटॉप संगणकामधून काही फाईलचा वापर करून त्यावर काम करण्यासाठी आपल्या सहकाऱ्याशी संवाद साधण्यासाठी त्यांना सुचना देण्यासाठी या सेवेची उपयुक्तता अधिक आहे.

नेटवर्कींग :—

यामुळे एखाद्या लेखाची किंवा पुस्तकाच्या भागाची तातडीची गरज असते साधारणतः त्यांची झेरॉक्स प्रत पाठविली जाते. फॅक्सने ही प्रत पाठविली जाते किंवा स्कॅन करून संगणकाव्दारे उपलब्ध करून दिली जाते. वाचन साहित्याचा एकत्रीत उपयोग करण्यासाठी नेटवर्कव्दारे खालील गोष्टी पार पाडल्या जातात.

१) ग्रंथ व इतर साहित्याची सुचिबध्द संघतालीका

२) नियतकालीकांची संघतालीका

३) संदर्भ साहित्याची संघतालीका

४) इ—मेलची सुविधा, ग्रंथ देवाणघेवाण, माहिती मिळविणक व प्रति मिळविणक सोपे जाते. तसेच ग्रंथालय सहकार्याकरीता जसे उपार्जन व तालीकीकरण, मनुष्य बळ, माहिती सेवा व डेटाबेस निर्मीती, भाषांतर सेवा, विशेष ग्रंथसग्रह निर्मीती, सहकारी तत्वावर साठवण, आंतर ग्रंथालय देवाणघेवाण तसेच, वाचन साहित्याच्या एकत्रित उपयोग एकत्रित उपयोगाचे स्तर एकत्रित उपयोगाची साधणे, एकत्रित उपयोग आणि कॉपीराईट एकत्रित फाये एकत्रित उपयोगाचे भविष्यातील उपक्रम इ. सोयी या सेवेमुळे अगदी कमी वेळ व श्रमात पार पाडल्या जातात.

सी.सी.टिव्ही :—

याची ग्रंथालयातील उपयुक्तता म्हणजे ग्रंथालयाचे निर्गमन व्दार, कॉरिडॉर, जिने, ग्रंथसग्रह क्षेत्र, कपाटामधील गल्ला, देवघेव विभागातील संदर्भ विभाग व बाउंड व्हॉल्युम विभाग व तत्संबंधी वाचन कक्ष अशा ठिकाणी जिथे जिथे काही घटना घडण्याची शक्यता असते अशा ठिकाणी सी.सी.टिव्ही. च्या मदतीने परिस्थितीवर नजर ठेवणे आवश्यक असते. वरील उदाहरणांशी तुलना केली तर यंत्रणा मुख्य ठिकाणी अशी जाहिर पणे सुचना लिहीलेली असते की, या ग्रंथालयात सुरक्षितेच्या दृष्टिकोनातून सतत चित्रीकरण करण्यात येत आहे. याचा परिणाम असा होतो की, ज्या व्यक्ती पाने फाडणे, ग्रंथ चोरी किंवा अन्य गुन्हे करण्याच्या विचारात असतील तर आपले चित्रीकरण होत आहे. व आपण सापडले जावून या भितीने त्या त्यांच्या उदेशापासून परावृत्त होण्यास मदत होते. परिणामे अशा घटना घडण्याचे प्रमाण कमी होते. हे प्रस्तुत तंत्रज्ञान वापरण्यातील यश म्हणावे लागेल.

Inflibnet शी संपर्क :—

यामुळे देशातील सर्व विद्यापीठ, महाविद्यालये, संशोधन व विकास व इतर महत्वाच्या संस्थांची ग्रंथालये एकमेकांना जोडण्याचा एक महत्वकांक्षी प्रकल्प युजीसी संस्थेने घेतला आहे.

त्याला Inflibnet म्हणतात. यांची उपयुक्तता म्हणजे, देशांतर्गत ग्रंथालये आणि माहिती केंद्राचे जाळे प्रस्थापीत करण्यासाठी, माहिती हाताळण्याच्या क्षमतेत वाढ करण्यासाठी, संघतालीकांच्या माध्यमाने पुस्तके मिळविणे, विस्तृत ग्रंथसंग्रह तयार करणे, आंतरराष्ट्रीय स्तरावरील डेटाबेस ऑनलाईन तत्वावर उपलब्ध करूण देणे, विविध विषयावर त्यात काम करणाऱ्या समृध्द संस्थेच्या मदतीने विस्तृत ग्रंथसंग्रह तयार करणे, तालीकीकरण सहकार्य व आंतर ग्रंथालयीन देवाणघेवाणीस प्रात्साहन देणे, ग्रंथालय संगणकीकरण करणे, मानके तयार करणे, शास्त्रज्ञ, तंत्रज्ञ, संशोधक, शास्त्रज्ञ, प्राध्यापक व विद्यार्थी यांच्यात परस्पर सुसंवाद सेवा देणे, ऑनलाईन पध्दतीवर माहिती सेवा देणे, ग्रंथालय अंतर्गत सहकार्य वाढविणे, ग्रंथालयाच्या संगणकीकरणात उपयुक्त अशी एकात्मिक संगणक प्रणाली बणविणे इत्यादी कामे पार पाडल्या जातात.

ओ.सी.एल.सी. :—

या आधुनिक सेवेला सुध्दा उपयोजकांनी महत्वपूर्ण स्थान दर्शविले आहे. यामुळे एकत्रीत तालीकीकरणाचा कार्यक्रम राबविला जातो. या कार्यक्रमातर्गत सदस्य ग्रंथालयात नवीन घेतलेल्या पुस्तकांचे तालीकीकरण संपूर्ण नेटवर्कमध्ये एकदाच केले जाते याचा अर्थ सर्वप्रथम जे ग्रंथालय नवीन पुस्तके घेईल त्यांचे तालीकीकरण करूण नेटवर्क मधील अन्य सदस्य ग्रंथालयात विकत घेतल्यास उपलब्ध तालीकीकरणाचा उपयोग केला जात असे या प्रक्रियेमुळे एकंदरीत नेटवर्कमध्ये ग्रंथ तालीकीकरणासाठी लागणारा मनुष्यबळ, स्टेशनरी तसेच पैसा वाचविण्यास खुप उपयोग होत असे. आता ओ.सी.एल.सी. च्या कामामध्ये माहिती तंत्रज्ञानाच्या विकासाबरोबर आधुनिकीकरण करण्यात आले तसेच तालीकीकरण आणि मेटाडेटा निर्मीती, कलेक्शन मॅनेजमेंट, डिजीटल साहित्य संग्रह निर्मीती आणि जतन, इ—कंटेट, संदर्भ सेव, रिसोर्स शेअरींग इत्यादी नवनवीन सेवा ओसीएलसी मुळे ग्रंथालयात उपलब्ध करण्यात आल्या व त्यांची ग्रंथालयात उपयुक्तता महत्वाची ठरलेली आहे.

इंटरनेटव्दारे आंतरग्रंथालयीन सेवा :—

यासेवेमुळे १) प्रत्यक्ष वाचन पत्र घेवून दुसऱ्या ग्रंथालयात जावून ग्रंथ घेवून येतो. व हव्या असणाऱ्या लेखाची झेरॉक्स प्रत घेवून येतो. २) ग्रंथ देवाणघेवाण अंतर्गत विनंती पत्र पोष्टाने पाठविणे व ग्रंथ पोष्टाने मागविणे. ३) ग्रंथ किंवा नियतकालिकांचे युनियन कॅटलागमधून ग्रंथालयात येत नसलेले नियतकालीक किंवा पुस्तक हे कुठल्या ग्रंथालयात येते हे प्रथम शोधून जवळच्या ग्रंथालयाकडे त्यासंबंधी मागणी करते. ४) आंतरग्रंथालय देवाणघेवाणीची विनंती इ—मेलने पाठविणे व पलिकडच्या ग्रंथालयाने इ—मेलला प्रतिसाद म्हणून त्यावर कारवाही करणे. ५) हवे असणारे साहित्य किंवा लेख जर संगणकात मशीन रिडेबल स्वरूपात असेल तर त्यासंबंधीची फाईल एका ग्रंथाच्या संगणकाकडून दुसऱ्या ग्रंथालयाच्या संगणकाकडे पाठविणे व त्यावरून आवश्यक वाटल्यास छापील प्रत मिळविणे अशी या सेवेची उपयुक्तता

ग्रंथालयात असते परंतू त्यासाठी खर्च, ग्रंथालय कर्मचाऱ्याच्या कामात वाढ, दुसऱ्या ग्रंथालयाच्या ग्रंथविनंतीला प्रतिसाद देणे यावर ही सेवा ग्रंथालयात साध्य करता येते.

आज्ञावली :—

यामुळे सुचिबध्द डेटाबेसची माहिती प्राप्त होते. डेटाबेस परिवर्तन करता येते, तंत्रज्ञानाचे मनुष्यबळ टिकविता येते, संगणकीकरण प्रक्रिया केंद्रित होवू शकते, ग्रंथपालास तांत्रिक पार्श्वभुमिची माहिती मिळते.

इतर सोयी :—

यामध्ये सुसज्ज इमारत, प्रशिक्षित कर्मचारी, अद्यावत उपकरणे इत्यादी सोयींचा समावेश होतो. या सोयींची सुध्दा ग्रंथालयात उपयुक्तता तातडीने भासते.

निष्कर्ष :—

अशाप्रकारे निरीक्षणाअंती असे स्पष्ट होते की, उपयोजकांच्या आधुनिक गरजा खुप असून त्यांची उपयुक्तता अतिशय महत्वाची आहे. ग्रंथालयाची वाढ जरी समाधानकारक असली तरी संसाधनाचा मात्र अभाव असल्यामुळे आधुनिक माहिती सेवा देण्याच्या दृष्टिने संसाधनाची ग्रंथालयात उपलब्धता महत्वाची आहे. परंतू या आधुनिक माहिती सेवा मात्र ग्रंथालयाकडून पुरविल्या जात नाही. अर्थात याबाबतची अनेक कारणे असू शकतात.

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मोबाईल तंत्रज्ञान व क्लाऊड कम्प्युटींगचे वाढते महत्व

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सार

माहिती तंत्रज्ञानामुळे ग्रंथालय व माहिती प्रणाली सेवांमध्ये सकारात्मक परिणाम घडून आलेले दिसून येत आहे. ग्रंथालय स्वयंचलीकरण आणि त्यांच्या परस्पर ग्रंथालय सहकारी जोडणीमुळे आज कागदविरहीत तसेच आभासी ग्रंथालयाकडे वाटचाल करित आहे. माहिती हाताळतांना काटकसर करतांना तसेच व्यावसायातील आव्हान स्विकारतांना ग्रंथपाल, ग्रंथालय शास्त्रातील विविध तंत्राचा वापर करतो. याच आव्हानांना तोंड देण्यासाठी नविन तंत्रज्ञान म्हणून **Cloud Computing** *चा वापर हा ग्रंथालयात होत आहे.*

बिज संज्ञा : Mobile Technology, Cloud Computing, Internet

प्रस्तावना

माहिती तंत्रज्ञानात विविध तंत्रज्ञानाचा एकत्रीत परिणाम होय. माहिती तंत्रज्ञानाचा विकास व वाटचाल प्रचंड वेगाने झाला आहे. तंत्रज्ञान हे सतत बदलत असते व आणखी प्रगत होत आहे. माहिती तंत्रज्ञान म्हणजे संगणक, टेलिकम्युनिकेशन व इंटरनेट या तीन्ही तंत्रज्ञानाचा एकत्रित परिणाम आहे. माहिती तंत्रज्ञानाचा माहीतीचे नियोजनात मोठ्या प्रमाणात उपयोग होतो. माहितीचे तंत्रज्ञानाद्वारे नियोजन करतांना : १) माहीतीचा डेटाबेस तयार केला जातो. २) आज्ञावलीच्या आधारे माहिती हाताळली जाते. ३) माहिती उपभोक्त्या पर्यंत पोहचविण्याचे प्रयत्न केले जाते.

माहिती तंत्रज्ञान हे दैनंदीन जिवनाचे अविभाज्य घटक आहे. माहिती तंत्रज्ञानाचा सर्वात जास्त वापर हा इंटरनेटद्वारे केला जातो. इंटरनेटच्या वापरात सर्वात प्रथम संदेश देवाण—घेवाणीसाठी ई—मेलची सोय मोठ्या प्रमाणात वापरली जाते. त्यानंतर इलेक्ट्रॉनीक व्यापार किंवा E-Commerce तसेच E-Business स्वरुपातही मोठ्या प्रमाणावर वापरले जाते.

ग्रंथालय हा समाजाचा अविभाज्य घटक आहे. समाजात होणाऱ्या प्रत्येक बदलांचा परिणाम हा ग्रंथालयात होत असतो. माहीती तंत्रज्ञानाचा शिरकाव हा समाजाप्रमाणे ग्रंथालयातही झालेला आहे. माहिती तंत्रज्ञानाचा ग्रंथालयात वापराचा सर्वात महत्वाचे उदा. म्हणजे इंटरनेट ग्रंथालयात इंटरनेटच्या वापरामुळे नेटवर्कींग, E-Publishing, Web-OPAC, Consortia या सगळ्या नवीन संकल्पनांचा उदय झाला. सोबतच याच्या वापराने सुध्दा ग्रंथालयातील वाचकाला मोठ्या प्रमाणात फायदा झाला. ग्रंथालयात नवीन संकल्पनेचा उदय झाला, ती म्हणजे Cloud Computing याचा मुख्य उद्देश ग्रंथालयात कमी खर्चात जास्त सेवा पुरवीने हा आहे.

इंटरनेटचा इतिहास :— अर्पानेट हा इंटरनेटचा पूर्वज म्हणावा लागतो. १९५७ साली अमेरिकन सरकारच्या संरक्षण विभागाने Advance Research एजन्सी नावाच्या संरक्षणासाठी विज्ञान व तंत्रज्ञानाचा वापर करण्यासाठी

विभाग स्थापन केले. पुढे १९६९ मध्ये अर्पानेट अस्तीत्वात आले. अर्पानेटच्या अंतर्गत कॅलिफोर्निया युनिव्हर्सिटीचे सर्व संगणक एकमेकांशी जोडले गेले. मूलत: आण्विक हल्ल्याचा सामना करण्यासाठी अर्पानेट अस्तीत्वात आले. पण पुढे ते शैक्षणिक व संशोधनासाठी वापरले गेले. १९९१ सालीच वर्ल्ड वाईड वेब अस्तीत्वात आले. त्याचे जनक टीम बर्नसली हे होते. टॉम बर्नसली त्याच्या सहकाऱ्यांच्या युरोपियन पार्टिकल फिजिक्सच्या प्रयोग शाळेतील संशोधनाचा तो विजय होता. N ह्या संस्थेने हाइपर टेक्स्ट संबंधित माहितीच्या देवाण—घेवाणीचे (HTTP) अंतर्गत नियम तयार केले. या पध्दतीने हळूहळू इंटरनेटचा विकास होऊन World Wild Web www ही संकल्पना उदयास आली. Cloud Computing म्हणजे काय ?

"Means using web service for our computing needs which could include using software application storing data, accessing Computing Power or using platform to build applications"

Computer, Smart phone, Tablet मध्ये File सेवा करण्यासाठी विशिष्ट स्थान असते. ज्याला मेमोरी म्हटल्या जाते. परंतु Social Sides, Networking side मध्ये जेथे Photo upload केल्या जाते. तेथे जास्त प्रमाणात माहिती upload करतो परंतु आपल्या computer च्या मेमरी मध्ये त्याचे स्थान नसते तर सगळी माहीती ही नेमकी असते कुठे? हा प्रश्न निर्माण होतो. ही माहीती Clouds मध्ये असते हे Cloud साधारण Clouds पेक्षा वेगळ असतात. यात Digital प्रकारात माहीती साठविलेली असते. ती मोठ्या संगणकामध्ये सेव असते आपण जेव्हा E-mail सेवेचा वापर करतो. तेव्हा त्यातील माहीती आपण आपल्या संगणकामध्ये सेव करत नाही ती तशीच नेटवर ठेवली जाते. ही सगळी माहिती Cloud वरच सेव असते.

आज जगात अनेक ग्रंथालय Cloud Computing चा वापर करत आहे. उपभोक्ता आवश्यक असलेली माहिती तो Cloud Computing च्या माध्यमानी जोडून प्राप्त करु शकतो. त्याचा खर्चाचा अतीरीक्त भार हा ग्रंथालयावर पडत नाही.

Computing Model

१) **Desktop Computing :–** याला सिंगल पीसी म्हटल्या जाते. यात इंटरनेटची आवश्यकता नसते. कोणताही व्यक्ती आपल्या स्वतःच्या कामाकरिता याचा वापर करित असतो.

२) **Client Server Computing :–** यात संगणक हे एकमेकांशी जोडलेले असतात. डेटाबेस हा मुख्य सर्व्हेरवर ठेवला जातो आणि या Server द्वारे दुसरे Client Computer जोडले जातात. Client वर Application टाकल्या जातात. या प्रकारे ही प्रणाली चालत असते. यात Computer हे एका इमारतीत एकमेकांशी जोडले जाते.

३) **Cluster Computing :–** जेव्हा सर्व्हेरवर Client Computer चा भार मोठ्यस प्रमाणात पडू लागतो तेव्हा ते भार कमी करण्यासाठी दुसरे सर्व्हेरवर त्याच ताकतचे जोडले जाते आणि सर्व्हेरवर येणार अतिरिक्त भार कमी केल्या जातो आणि वर मिळून टिम Work प्रमाणे कार्य करतात.

Grid Computing रू— ग्रीड Computer है Cluster प्रमाणेच कार्य करते परंतु यात Server हे विविध लोकेशनमध्ये स्थित असते. ते एका विशिष्ट ठिकाणी ठेवले न जाता वेगवेगळया शहर, राज्यामध्ये किंवा देशामध्ये या पध्दतीने विभीन्न लोकेशन स्थितीमध्ये असते यालाच ग्रीड Computing म्हणतात.

Cloud Computing :– Cloud Computing है Cluster आणि Grid चे एकत्रीत रुप आहे. यात लोकेशन स्थिती गाव, शहर, देश या पध्दतीने बदलत जाते.

एखादी कंपनी ही आपले एक सर्व्हेरवर तयार करुन इंटरनेटद्वारे आपल्या सेवा व कार्य करते. पण प्रत्येक संस्थेला हा खर्च परवडणार नसतो. ज्याप्रमाणे प्रत्येक व्यक्तीला कार ही हवी असते. परंतु प्रत्येक कार घेऊ शकत नाही पण तो ती कार किरायाने घेऊन आपल्या आवश्यक कार्य पूर्ण करत असतो. त्या पध्दतीने Cloud Computing आहे. यात तंत्रज्ञानाला लागणारा खर्च त्या संस्थेला करावा लागत नाही तर काही दिवसांसाठी ते तंत्रज्ञान किरायाने घेतले जाते आणि आवश्यक कार्य पार पाडल्या जाते. मोठ्या संस्था आपले Server हे Internet शी जोडतात. पण प्रत्येक ग्रंथालय असे करत नाही. त्यासाठी Internet काही दिवसांसाठी आपल्या सुवीधा हे ग्रंथालयाला किरायाने देतात. यात एक फायदा असा असतो की, उपभोक्ता, ग्रंथालयाला त्याचा खर्च हा कमी होता कमी खर्चात ग्रंथालयाच्या सुविधा वाचकांपर्यंत पोहचविता येते.

Types of Computing Model

1) Saas   2)Paas. 3) Iaas.

१) **Working of the cloud Computing** :– Cloud Computing प्रणाली ही दोन भागात जोडली जाऊ शकते. पहीला शेवट आणि दुसरा शेवट (The Front end – Back end) ही भाग एकमेकाला Internet या महाजाळ्याद्वारे जोडली जातात. पहील्यातला शेवटचा भाग ही उपभोक्ता किंवा Client शी जोडतात. Back end हा प्रणालीचा Cloud विभाग असतो. आणि विभागाव्दारे Computer, Service आणि माहिती संगठीत करून Cloud Computing Service तयार केल्या जाते. Cloud Computing मधील मध्यस्थ प्रणालीव्दारे प्रत्येक कार्य सुरळीत पार पडल्या जाते. प्रणाली व्यवस्थित चालविण्यासाठी काही नियम ठरवून दिल्या जातात. त्यालाच नियमावली म्हणजे Protocol म्हटल्या जाते.

२) **ग्रंथालयात Cloud Computing चा वापर** :– Cloud Computing मुळे ग्रंथालयाला नवी दिशा प्राप्त झाली आहे. ग्रंथालयात होणार तंत्रज्ञानाचा खर्च हा Cloud Computing च्या वापरामुळे कमी होऊ शकतो यात तंत्रज्ञानाचा खर्च कमी होऊन नवीन प्रकारचे स्वयंचलीत उपक्रम राबविता येते. Cloud Computing नवी Commercial विभागात आपली जोरदार (Strong) अशी छाप मारली आहे. याव्दारे Hardware ला लागणारा खर्च हा कमी झालेला आहे आणि प्रणालीचा वापर करुन Computer या साध्या स्पर्शा नी सुद्दा माहिती प्राप्त करू शकतो.

३) **ग्रंथालयात Cloud Computing ची भूमिका** – Cloud Computing हे एक नवीन तंत्रज्ञान आहे. यात Cluster आणि Grid तंत्रज्ञानाचा एकत्रीत वापर केला जातो.

- Cloud Computing मध्ये ग्रंथालयाला सामर्थ्यशाली बनविण्याचे सामर्थ्य आहे.

- Cloud Computing चा वापर करून DVD,CD व्दारे उपभोक्त्याला माहिती प्राप्त करता येते.

- दुर्मीळ अशा माहीत्याचे Scanning करून त्याला दुसरीकडे पाठविता येते. संशोधकाला आवश्यक असे दुर्मीळ साहीत्य कमी वेळात आणि कमी खर्चात प्राप्त करता येतो.

४) Advantages of could computing in library-

➤ खर्चाची बचत (Cost Saving)

➤ लवचीकत आणि नवनिर्मितीचे सामर्थ (Flexibility & innovation)

➤ उपभोक्ता केंद्रीत User Centric Openess मुक्तद्वार

➤ Transparency पारदर्शी

➤ Interoperability

➤ पुन्हा प्रस्तुतीकरण Representation

➤ कुठेही काही उपलब्ध Availability anytime any where.

➤ Open axec मुक्तद्वार

निष्कर्ष —

१) उपभोक्ताउन्मुख, वितरणीय अद्यावत माहीती सेवामधील दशकाच्या संशोधनावर Cloud Computing आधारीत आहे.

२) यामध्ये सेवाभिमुख आराखडा, उपभोकात्यावरिल माहिती तंत्रज्ञानाचा भार कमी करणे, खर्च वाचविणे, मागणीनुसार सेवा देणे इतर गोष्टींचा समावेश आहे.

३) Cloud Application बदल घडवून आणण्यासाठी किंवा तिथपर्यंत पोहचण्यासाठी कोणतेही Software Install करायची गरज नसते.

४) नाविण्याचा स्विकार एक साधन म्हणून संसाधन वापरातील सुधारणेमुळे लाभवीण्यासाठी Cloud Computing कारणीभूत ठरते.

५) ग्रंथालयातील त्यांचे माहिती व तंत्रज्ञान Hardware o Software मधील गुंतवणुकीसाठी अधीक कार्यक्षमता प्राप्त करून देण्यास cloud Computing कारणीभूत ठरते.

संदर्भ

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डिजिटल ग्रंथालय : आजची गरज

हिना आ. बावस्कर

यषवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ अभ्यास केंद्र, विवेकांनंद महाविद्यालय, औरंगाबाद
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प्रस्तावना :—

         आपण संगणकांच्या विकासाच्या महत्वाच्या उंबरठ्यावर उभे आहोत. दिवसेंदिवस वेगवेगळे तंत्रज्ञान विकसित होत आहे. संगणक तंत्राचा विकास होताना त्यात आलेले बदल त्याचप्रमाणे संगणकीकरणात आधी वापरलेले तंत्रज्ञान बदलून नवीन तंत्रज्ञानासह ते वापरात आणले गेले इलेक्ट्रॉनीक माध्यमांच्या प्रभावाचा ग्रंथालयाला अलीकडच्या काळात झालेल्या विकासावर खुप परिणाम झालेला दिसतो त्याचा परिपाक म्हणून इलेक्ट्रॉनिक ग्रंथालय (१९७० च्या दशकात), क्षितीजाविना ग्रंथालय तंत्रज्ञानासह जवळजवळ पूर्ण इलेक्ट्रॉनीक ग्रंथालयाचा आभास निर्माण करणारी ग्रंथालय. अशा नव—नविन तांत्रिक संकल्पना उदयास आल्या आणि सरते शेवटी डिजिटल ग्रंथालय या नविन तंत्रज्ञानाच्या संकल्पनेचा उदय झाला. आजच्या घडीस आपण डिजिटल ग्रंथालयाच्या उंभरटयावर उभे आहोत. आधुनीक माहितीच्या क्रांतीमुळे व माहिती तंत्रज्ञानाच्या विकासमुळे माहितीच्या हाताळणीस तांत्रिक अश्वशक्ती उपलब्ध झाली आहे. प्रस्तुत लेखामध्ये डिजिटल ग्रंथालय म्हणजे काय? डिजिटल ग्रंथालयाची व्याख्या, उद्दिष्ट्रे, वैशिष्ट्रे, डिजिटल ग्रंथालयाद्वारे देण्यात येणाऱ्या सेवा तसेच डिजिटल ग्रंथालयाची आवश्यकता इ. चा परिचय दिला आहे.

डिजिटल ग्रंथालय म्हणजे :—

         आर्म्स यांचे मते "डिजिटल ग्रंथालययाच्या ठिकाणी साहित्य संग्रह हा डिजिटल स्वरुपात साठविलेला असतो व नेटवर्कंच्या माध्यमातुन तो वापरता येतो"

         आर.आर. लार्सन यांचे मते "डिजिटल ग्रंथालय म्हणजे विश्वव्यापी किंवा जागतीक व्हर्च्वल ग्रंथालय, हजारो नेटवर्क्स असणाऱ्या इलेक्ट्रॉनीक ग्रंथालयाचे ग्रंथालय होय"

         भारताचे माजी राष्ट्रपति मा.ए.पी.जे. अब्दुल कलाम यांनी डिजिटल लायब्ररी ऑफ इंडिया या प्रोजेक्टचे उद्घाटन करताना अगदी मोजक्या शब्दात व अर्थपूर्ण शब्दात डिजिटल ग्रंथालयाची व्याख्या कथन केली ते म्हणतात — क्पहपजंस स्पइतंतल पे ॄमतम जीम चेंज उममजे चतमेमदजे ंदक बतमंजमे थ्रजनतमण

         पारंपरिक ग्रंथालयातील सर्व प्रकारच्या सेवा संगणकाद्वारे आधुनिक तंत्रज्ञानाचा वापर करून कार्यक्षमतेने व प्रभावीपणे दिल्या जातात. ग्रंथ स्वरूपातील माहिती मल्टिमिडिया स्वरूपात रूपांतरित करून ज्ञानाच्या विशाल संग्रहातून माहिती कमी वेळात पुरविणारी प्रणाली म्हणजे डिजिटल ग्रंथालय होय.

डिजिटल ग्रंथालय व पारंपरिक ग्रंथालयातील फरक :

पारंपरिक ग्रंथालय	डिजिटल ग्रंथालय
१. प्रत्यक्ष साहित्याशी संबंधीत (चीलेपबंस व्हरमबज)	१. माहिती वापरण्यातल्या अडचणी व गैरसाई काढून टाकल्या जातात ज्यामध्ये आयामी शोध, सादरीकरण व डिजिटल परिवर्तनाच्या सोई उपलब्ध
२. ग्रंथालय तांत्रिक प्रत्यक्ष आपणास साहित्याच्या स्थानाकडे घेउन जातात	२. डिजिटल ग्रंथालयात तांत्रिकदृष्ट्र थोडी गुंतागुंतीची परिस्थिती असू शकते.
३. वाचन साहित्य शोधताना दोन गोष्टींची शक्यता प्रत्यक्ष वाचन साहित्य जागेवर आहे किंवा त्यासाठी परत येण्याची वाट पहावी लागणार आहे.	३. डिजिटल ग्रंथालयातील वाचन साहित्य हे माध्यमाशिवाय वाचता येत नाही. (संगणक)

डिजिटल ग्रंथालयाची सेवा :

पारंपरिक ग्रंथालयामध्ये प्रामुख्याने संदर्भ सेवा, तालिकीकरण, वर्गीकरण, संघतालिका, आंतर ग्रंथालयीन सेवा, रेफरल सेवा, प्रचलित जागरूकता सेवा, माहितीचे निवडक प्रसारण सेवा, ग्रंथसूची सेवा अशा विविध प्रकारच्या सेवा देण्यात येत होत्या. दिवसेंदिवस पारंपरिक ग्रंथालयाची डिजिटल स्वरूप धारण करण्यास सुरूवात केली आहे. त्यामुळे त्याच्या सेवामध्येही बदल होताना दिसत आहे. डिजिटल ग्रंथालयामध्ये मुख्यत्वे करून पुढील सेवा देण्यात येतात.

१. इलेक्ट्रॉनिक मेल (E-Mail) —

ई—मेल ही एक महत्त्वाची सेवा आहे. त्यामुळे जाळयातील (नेटवर्क्स) भागीदाराना ते सदस्य असणाऱ्या डेटा नेटवर्क्सचा वापर करून जगातील कोणत्याही भागामध्ये संदेशाची देवाण घेवाण करणे शक्य होते.

२. वेब—ओपॅक (Web-online Public Access Catalogue) —

या सेवेचा उपयोग करून विविध ग्रंथालये आणि माहिती केंद्राची यंत्ररूप तासिका इंटरनेट वेबच्या माध्यमातून उपलब्ध केली जाऊ शकते.

३. फाईल ट्रान्सफर प्रोटोकॉल (File Transfer Protocol) —

फाईल एका ठिकाणाहून दुसऱ्या ठिकाणी पाठविणे हे इंटरनेटची प्राथमिक सेवा आहे. दोन संगणकामध्ये अशा फाईल्सच्या प्रती एकमेकांकडे पाठविण्याकरीता इंटरनेट फाईल्स ट्रान्सफर प्रोटोकॉल या प्रमाणित साधनाचा वापर करते.

४. जागतिक व्यापक जाळे (World Wide Web) —

या सेवेचा उपयोग सर्व्हिस प्रोव्हायडरमार्फत प्रत्येक्ष महाजाळयाशी जोडणी करण्यासाठी होतो. ही सेवा खुप लोकप्रिय आहे.

५. शोध इंजिन (Search Engines) —

अनेक संकेतस्थळापासून आपणास आवश्यक असणारी माहिती शोधून इंटरनेटद्वारे मिळविण्याकरीता हव्या त्या संकेतस्थळावर पत्यांशिवाय पोहोचणे शक्यच नसते. हा पत्ता मिळवून देण्याचे कार्य सर्च इंजिन करते.

डिजिटल ग्रंथालयाची गरज :

भविष्यकाळात ग्रंथालयांना व पर्यायाने ग्रंथांना डिजिटल स्वरूपात माहिती निर्मिती तसेच ग्रंथालयाकडे असलेल्या विविध छापील साहित्याचे डिजिटल स्वरूपात परिवर्तन व डिजिटल स्वरूपातल्या माहितीस्रोतांचे जतन व संरक्षण या बाबींकडे विशेष लक्ष देणे आवश्यक आहे. डिजिटल ग्रंथालयाची निर्मिती ही भविष्याकाळाची गरज आहे. डिजिटलग्रंथालयाच्या निर्मितीची कारणे व डिजिटल ग्रंथालयाची गरज पुढील मुद्द्यांवरून स्पष्ट होईल.

१. छापील माध्यमाची मर्यादा —

ग्रंथालय साहित्य संग्रहामध्ये छापील स्वरूपातील साहित्याचा भरणा आजही आपल्याला आढळतो. ग्रंथालये छापील स्वरूपातील साहित्य टिकविण्याचा प्रयत्न करतात. परंतू असे साहित्य टिकविण्यात कागदाच्या मर्यादित आयुष्यामुळे अडचणी येतत. कालांतराने हे साहित्य नष्ट होण्याची भीती असते. अशा संग्रहामध्ये अमूल्य स्वरूपाचे तसेच प्रकाशकाकडून किंवा इतर कोणत्या मार्गाने उपलब्ध न शकरणारे दूर्मिळ ग्रंथ असू शकतात. असे छापील साहित्य नष्ट होण्यापूर्वीच योग्य त्या माध्यमात परावर्तित करणे आवश्यक आहे.

२. वेगवेगळ्या स्वरूपातील साहित्य जतन —

ग्रंथालय संग्रहात ग्रंथ, नियतकालिके, संदर्भग्रंथ, छापील ग्रंथेत्तर साहित्य या व्यतिरिक्त अनेक साहित्यप्रकार वस्तू संग्रहित असतात. ज्यामध्ये अमुद्रित ग्रंथत्तर साहित्यप्रकार, पेंटिंग्ज, वस्तुसंग्रहातील वस्तू, दप्तरखान्यातील दस्तावेज, खेळणी, प्रतिकृती, छायाचित्रे इ. गोष्टी समाविष्ट असतात. अशा सर्व वस्तूंबद्दलची माहिती विशिष्ट माध्यमात परावर्तित करूनती कायम स्वरूपी टिकविणे आणि संशोधकास सुलभापणे उपलब्ध करून देणे हे ग्रंथालयाचे कर्तव्य आहे. डिजिटल ग्रंथालय निर्मितीच्या प्रक्रियेत अशी माहिती साठविणे शक्य आहे.

३. विविध भाषेतील माहिती वापरण्याची एकत्र सोय —

भारतासारख्या विविध भाषिक संघराज्यात विविध भाषांमध्ये साहित्यनिर्मिती होत असते. एका ग्रंथालयातही विविध भाषेतील साहित्य उपलब्ध असू शकते. अशा विविध भाषांतील उपलब्ध साहित्याचे जतन करताना डिजिटायझेशनसारखे तंत्रज्ञान वापरता येते. असे परावर्तित साहित्य वाचकांना वापरण्याची एकत्रित सोय डिजिटल ग्रंथालयाच्या माध्यमाने होऊ शकते.

४. ग्रंथालयतालिकेची व्याप्ती वाढविणे —

ग्रंथालय तालिकेचा उपयोग नेमके स्थान शोधण्यासाठी केला जातो. तालिकेमध्ये सुचिबध्द माहितीचे वर्णन असते परंतू या व्यतिरिक्त ग्रंथाबद्दल कोणतीही अतिरिक्त माहिती तालिकेमध्ये नसते. उदा. ग्रंथाचे प्रत्येक्ष चित्र, अनुक्रमनिका, प्रस्तावना, विषयसूची इ. माहिती तालिकेत समाविष्ट केली तर त्याची व्याप्ती वाढेल. अशा माहिती उपयोग वाचक ग्रंथ निवडीसाठी किंवा ग्रंथाची उपलब्धता नसतानाही आत्मसात करू शकतील.

५. इंटरनेट माध्यमातील प्रसारीत माहिती वारण्यातील तांत्रिक अडचणी —

इंटरनेटच्या माध्यमातून विविध प्रकारची डिजिटल स्वरूपाची माहिती उपलब्ध होत असते. उदा. ई—जर्नल्स, ई—डेटाबेसेस, ई—बुक्स इ. वरील सर्व प्रकार मुख्यत्वेकरून व्यापारी तत्वावर उपलब्ध होत असतात. नेटवर्किंग सारख्या तंत्रज्ञानातील छोट्याशा बिघाडाने अशा माहितीचे प्रसारण कधीही बंद होऊ शकते. ही अडचण लक्षात घेता डिजिटल माध्यमातून उपलब्ध होणाऱ्या माहितीचे स्थानिक पातळीवर जतन करण्याची, संरक्षण, प्रसारण उपलब्धतेची सोय या सर्व बाबी डिजिटल ग्रंथालय निर्मिती अंतर्गत येतात.

डिजिटल ग्रंथालयाची वैशिष्टे :

➢ पारंपरिक ग्रंथालयापेक्षा डिजिटल ग्रंथालयातील सेवा अचुक, स्पष्ट व प्रभावी असतात.

➢ माहितीचा वेग जास्त असतो.

➢ डिजिटल ग्रंथालयात विविध प्रकारचे डिजिटल माहितीचे स्रोत उपलब्ध असतात, त्यात टेक्स्ट, इमेज आणि दृकश्राव्य प्रकारच्या स्रोतांचा समावेश असतो.

➢ विविध प्रकारचे उपभोक्ते एकाच प्रकारच्या माहितीच्या स्रोताचा उपयोग एकाच वेळी करू शकतात.

➢ डिजिटल ग्रंथालयामुळे एकमेकांशी जोडलेल्या माहितीच्या स्रोतांशी तत्परतेने व प्रभावीपणे संपर्क साधने सुलभ होते.

➢ डिजिटल स्वरूपातील माहितीचा वापर उपभोक्ता त्याच्या गरजेनुसार कधीही करू शकतो.

डिजिटल ग्रंथालयाचे फायदे :—

१. जागतीक स्तरावर माहितीची उपलब्धता व वापर

२. दुर्मिळ वाचन साहित्याचे संरक्षण व संवर्धन

३. माहिती तंत्रज्ञानाचा परिपूर्ण वापर व गतीमान माहिती प्रतिप्राप्ती.

४. अंतिम वापरकर्त्यांचे समाधान आणि संख्यामधे वाढ.

५. कोणतीही शारिरीक सिमा नाही.

६. चोवीस तास उपलब्धता

७. संरचित दृष्टीकोन

८. नेटवर्किंग

डिजिटल ग्रंथालयाच्या मर्यादा :—

१. गुणवत्ता नियंत्रनाचा आभाव

२. पारंपारीक प्रकाशक आणि ग्रंथपाल यांच्याकरिता कामाचे नुकसान

३. डिजिटलाझेशन करिता खर्चाचे प्रमाण अधिक.

४. इलेक्ट्रॉनीक स्वरुपातील माहितीचे जतन व रक्षण हे आव्हानात्मक कार्य.

५. डिजिटल स्वरुपातील माहितीची किंमत निर्धारण हे गुंतागुंतीचे कार्य

६. हार्डवेअर किंवा सॉफ्टवेअर चे अपयश संपूर्ण डिजिटल ग्रंथालयाच्या कार्यक्षमतेवर विपरित परिणाम.

निष्कर्ष :

२१व्या शतकामध्ये पारंपरिक ग्रंथालयाचे डिजिटल ग्रंथालयात रूपांतरण करण्याची प्रक्रिया सुरू झाली असून ग्रंथालयातील ग्रंथ, दुर्मिळ वाचनसाहित्याचे तसेच इतर छापील साहित्याचे डिजीटल स्वरूपात परिवर्तन करून त्याचे जतन व संरक्षण करणे आवश्यक ठरत आहे. डिजिटल ग्रंथालयाद्वारे दुर्मिळ ग्रंथ, हस्तलिखित आणि असे ग्रंथ कि ज्याचे पाने ठिसूळ झाली आहेत. त्याचे डिजीटायझेशन केल्याने ती संशोधकांना प्राप्त करता येउ शकते. दुर्मिळ वाचनसाहित्याचे कायमस्वरूपी संग्रह करून ठेवता येते. अशा विविध सेवा या कमी वेळेमध्ये डिजिटल ग्रंथालयाद्वारे वाचकांपर्यंत पोहोचवण्याचे काम केले जाते.डिजिटल ग्रंथालयामुळे माहिती तंत्रज्ञान जगतात एक प्रकारे क्रांती झाली आहे.

संदर्भ सूची :—

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मुक्त आणि मुक्त स्त्रोत ग्रंथालय व्यवस्थापन सॉफ्टवेअरची निवड

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सार

शोध पेपरध्ये मुक्त स्त्रोत ग्रंथालय व्यावस्थापन सॉफ्टवेअर ची तोडओळख असून त्यांची वैशिष्ट्ये प्रामुख्याने स्पष्ट केले आहेत सोबत मुक्त ग्रंथालय व्यवस्थापन सॉफ्टवेअरमध्ये गुंतवणूक का करावी या बरोबरच पारंपारिक ग्रंथालयाचे कार्य मुक्त ग्रंथालय व्यवस्थापन सॉफ्टवेअर वापरण्याची फायदे प्रकार मुक्त ग्रंथालय व्यवस्थापन सॉफ्टवेअरची वैशिष्ट्ये मुक्त ग्रंथालय व्यवस्थापन सॉफ्टवेअरचे ८ प्रकार याचा अभ्यास केलेला आहे.

शब्दसंज्ञा— ग्रंथालय, मुक्त ग्रंथालय व्यवस्थापन सॉफ्टवेअर, मुक्त ग्रंथालय व्यवस्थापन, सॉफ्टवेअरचे प्रकार

आपल्यामधील बरेच लोक पुस्तक वाचतातच हॅरी पॉटर या कथेचे लेखक जे. के. रोलिंग यांनी म्हटले की,जेव्हा कधी आपणास शंका निर्माण झाली तर वाचनालयात जावे कारण ग्रंथालय हे माहितीचा विश्वासार्ह स्त्रोत आहेतजुन्या काळात एखादे पुस्तक घेण्यासाठी ग्रंथालयात जाने फार मजेशीर होते. आज तंत्रज्ञानामुळे ग्रंथालयामध्ये महत्वपुर्ण बदल झालेले आहेत आजकाल ग्रंथालय डिजीटल झाल्यामुळे त्याची कार्यपध्दती हि वेगळी झालेली आहे त्यामुळे वाचोंचा वेळ वाचला आहे. डिजीटल पिढीच्या मागण्या पुर्ण करण्यासाठीप्रत्येक ग्रंथालयांना कार्यक्षम व्हावे लागत आहे.त्याचेच समाधान म्हणून ग्रंथालय व्यवस्थापन सॉफ्टवेअर चा अवलंब करणे गरजेचे झाले आहे.

ग्रंथालय व्यवस्थापन सॉफ्टवेअर प्रणालीत गुंतवणूक का करावी.?

पुस्तके शुध्द बंद स्टॅक पासून ते उघ्डया स्टॅक पर्यत डिजीटल पासून ते ई संग्रहापर्यत ग्रंथालयाची संकल्पना इतकी विकसीत झाली की, आज कुठेही व्हर्च्युअल वापरकर्ते आहेत आपल्या गरजेनुसार सेवा वापरत आहेत या अचानक झालेल्या बदलामुळे प्रत्येक ग्रंथालयामध्ये डीजीटल लायब्ररी सिस्टीम मध्ये डेटा व स्वयंचालीत देवघेव करण्याची गरज झालेली आहे तसेच ग्रंथालयाच्या नेटवर्कसह मशीन रिडेबल कॅटलॉग सोबत इतर कॅटलॉग जोडने महत्वाचे झाले आहे. ग्रंथालयातील स्त्रोताव्यातीरीक्त ग्रंथालयाच्या क्रिया हाताळण्यास सक्षम असणे गरजेचे झाले आहे. जसे. संपादन, वित्त नियोजन, अंदाजपत्रक, सांख्याकीय अहवाल आदी. एनालॉग पासुन डीजीटल पर्यत, ग्रंथालये ब—याच पुढे गेलेले आहेत ग्रंथ हे फक्त सेल्फपुरते मर्यादित राहीले नाहीत तर ते सार्वत्रीक झाले आहेत.

पारंपारीक ग्रंथालयाचे कार्य खालील प्रमाणे समाविष्ट आहेत

- मॅन्युअली लेबलींग किंवा ग्रंथ चिठ्या बुक कार्ड

- स्वहस्ते प्रवेश करत आहे

- स्वहस्ते क्रमवाली लावावे लागते

- कर्मचारीच्या हाताने ग्रंथठेवणे

- वैयक्तीक ग्रंथ शोध

- कर्मचारीच्या हस्ते इतर तांत्रीक कामे

जास्तीत जास्त व्यावस्थापनावे कामे स्वतःच्या हाताने केले जात असल्यामुळे संग्रह व दस्ताऐवज व्यवस्थापनात त्रुटी व चुकण्याची शक्यता जास्त होती.

आजची ग्रंथालये

आज तंत्रज्ञानामुळे ग्रंथालये कार्यक्षमतेने व्यवस्थापित करण्यास मदत होते आहे, हे दोन्ही वापरकर्त्यांसाठी आणि ग्रंथपालांना सोपे झाले आहे.आज ग्रंथालय व्यवस्थापनासाठी ग्रंथालय ऑटोमेशन सॉफ्टवेअर आज मोठया प्रमाणात वापरले जातात.

ग्रंथालय व्यावस्थापन सॉफ्टवेअर वापरण्याचे फायदे

महाविद्यालय किंवा विद्यापीठ ग्रंथालयासाठी व्यवस्थपीत एक चांगले ग्रंथालय मॅनेजमेंट सिस्टीम यात योग्य गुंतवणुक असल्याचे सिध्द करते व हे सॉफ्टवेअर संपुर्णपणे ग्रंथालय व्यावस्थापन प्रक्रिया सुलभ करण्यात मदत करते.

- कार्यप्रवाह स्वयंचलित करण्यासाठी

- हाताळणी खर्च कमी करण्यासाठी

- त्रुटी कमी करण्यासाठी

- आपल्यासेवांच्या सतत दृश्यमानतेचे समर्थन करण्यासाठी

- मुल्य जोडण्यासाठी

- अंतर्ज्ञानी उपयोगीता टिकवुन ठेवण्यासाठी प्रवेश सोईस्कर करण्यासाठी

- संबंधीत सामग्रीपर्यंत पाहोचण्यासाठी

- डेटाबेस राखण्यासाठी

- कार्यक्षमतेचा लाभ घेण्यासाठी

- महिती सामायिकरण सक्षम करण्यासाठी

- आपले पोर्टल कार्यक्षमतेने व्यावस्थापीत करण्यासाठी

- वाढ व नाविन्यास समर्थन देण्यासाठी

- निसंत्रण घेणे आणि विसंगती दूर करण्यासाठी

- विद्यामान वाचकांना टिकवुन ठेवण्यासाठी

- नविन वाचक निर्माण करण्यासाठी

वापसण्यास सुलभ सोप्या आणि परस्परसंवादी इंटरफेसद्वारे काही लायब्ररी ऑटोमेशन सॉफ्टवेअर संपुर्ण लायब्ररी वर्कफ्लोचे व्यवस्थापन करण्यास सक्षम करते हे सॉफ्टवेअर वापरुन ग्रंथपालावर ग्रंथसंग्रह नियंत्रित होईपर्यंत ग्रंथालयातील ग्रंथालयाच्या मुलभुत गुंताग्रंतीचे कार्य

हाताळु शकते एकुणच ग्रंथालयाचे कामे सुलभ होवुन या सॉफ्टवेअरचा वापर करुन पुस्तकांचा मागोवा घेणे खुप सोपे जाते.

ग्रंथालय व्यावस्थापन सॉफ्टवेअरचे विविध प्रकार

ग्रंथालय व्यवस्थापन येत्रणेची भरभराट उद्योगात व्यापली आहे. ब—याच वर्षामध्ये सॉफ्टवेअरची कार्यक्षमता आणि उपयोगीता परीपक्व झालेली आहे तरजेमुहे कार्यक्षमतेने अनुकुल केले आहे. त्यामुळे आपणास योग्य असणारा सॉफ्टवेअर आपण निवडू शकता.

अ. व्यवसायिक

आ. शेअर वेअर

इ. क्लाउड आधारीत किंवा सदस्यता आधारीत

ई .फ्रिमीयम किंवा काही काळासाठी मोफत

उ. मुक्त स्त्रोत

        ओपन सोर्स लायब्ररी मॅनेजमेंट सॉफ्टवेअर सिस्टीम म्हणजेच ज्यांचे कोड वापरण्यासाठी कॉपी करण्यासाठी सुधारीत करण्यासाठी आणि वितरीत करण्यासाठी उपलब्ध आहेत कोडचा व प्रोग्रामचा विकास झालेला आहे शिवाय त्रुटी सुधरण्यास याची मदत होते आणि या सॉफ्टवेअरचा फायदा असा की वापरकर्ते विनामुल्य मिहवु शकतात आणि डाउनलोड करु शकतातकोणीही वितरकावर दावा ठोकु शकत नाही व अमर्यादीत वेळेसाठी विनामुल्य असू शकतात हे सॉफ्टवेअर बाजारातील विकासासाठी फायदयाच्या संधी निर्मान करतात.

 ## मुक्त आणि मुक्त स्त्रोत

लहान आणि मध्यम ग्रंथालयात अर्थसंकल्प किचकट असुन व्यवसायीक ग्रंथालयात ग्रंथालय व्यावस्थापन प्रणालीसाठी गुंतवणूक करणे खुप अवघड असते त्यामुहे उक विनामुल्य ग्रंथालय व्यावस्थापन सॉफ्टवेअर त्यांना ग्रंथालयांना प्रभावी करण्यासाठी सक्षम असते.

सर्वोत्तम ग्रंथालय व्यवस्थापन सॉफ्टवेअर कसे निवडावे ?

➢ सॉफ्टवेअर आहे कीवा नाही हे तपासा

➢ सुरक्षीतता व विश्वासार्हता पहाणे

➢ वापरण्यास सोपे

➢ कार्यात्मक वैशिष्टये/ पॅक केलेले

ग्रंथालय व्यवस्थापन सॉफ्टवेअरची वैशिष्टये

● Acquisition Management   संपादन व्यवस्थापन

● Catalogue Management कॅटलॉग व्यवस्थापन

● Barcode Management बारकोड व्यावस्थापन

● Search Facility शोध सुविधा

● Online Access ऑनलाईन प्रवेश

- Inventory यादी
- Patron Management संरक्षक व्यवस्थापन
- Subscription Management सदस्यता व्यावस्थापन
- Report अहवाल

उत्तम ग्रंथालस व्यावस्थापन सॉफ्टवेअर पुढील प्रमाणे आहेत

१ कोहा Koha

कोहा सर्वात प्रगत, मुक्त आणि मुक्त स्रोत एकात्मीक ग्रंथालय ग्रंथालय व्यवस्थापन सॉफ्टवेअर आहे १९९९ च्या माहितीनुसार कोहा जगभरातील हजारो ग्रंथालयांनी वापरला आहे. या सॉफ्टवेअरमुळे त्याच्या वैशिष्ट्यामुळेच वापरकर्ते प्रभावीत झाले त्याचा एक आदर्श बाकिच्या ग्रंथालयासाठी आहे

कोहाची वैशिष्ट्ये

- हा सॉफ्टवेअर आपल्या वापरकर्त्यांना अंतर्गत नविन ज्ञान प्रदान करणारा आहे.
- हे सॉफ्टवेअर उत्तम व्यास्थापनास समर्थन देते
- स्वयंचालीत ईमेल सुचना देते.
- शक्तीशाली शोध सुविधेस समर्थन देते.
- विक्रेता नाही लॉक
- स्वतःची चेकआउट इंटरफेस तयार करते.
- दूरस्त डेटाबेस प्रवेशासाठी ड्युअल प्रमाणिकरण
- एका क्लिकवर कॅटलॉगमधून अॅज आयात करण्याची सूविधा
- प्रगत जुळणी

कोहा मॉड्यूलमध्ये समाविष्ट आहे कॅटलॉग, ओपॅक देवाण घेवाण कर्मचारी व्यावस्थापन साठी उपयुक्त असून लहान व मोठया ग्रंथालयासाठी लोकप्रिय आहे.

२ एव्हरग्रीन Evergreen

जगभरातील सूमारे २००० ग्रंथालयाद्वारे वापरलेले ओपन सोर्स आणि विनामुल्य ग्रंथालय व्यवस्थापन सॉफ्टवेअर होय कि यामध्ये कॅटलॉग इंटीफेस आहे आणि हा वर्कफ्लो कामासाठी मदत करते हे सॉफ्टवेअर २००६ मध्ये जार्जीया सार्वजनीक वाचनालयात विकसीत केले गेले. आज हा सॉफ्टवेअर वापरकर्त्यांच्या गरजा पुर्ण करित असल्यामुळे विकसीत होत आहे.

महत्वाची वैशिष्ट्ये

- स्केलेबल फ्रेमवर्क ओपन असते.
- अभिसरण मॉड्यूल
- लवचीक अनुक्रमणिका, स्पष्टीकरण आणि संग्रह सुविधांसह मॉड्यूलची सूची तयार करणे

o कॅटलॉगींग अनुकुलीत करण्याची सूविधा
o ऑनलाईन कॅटलॉगींग सार्वजनीक करण्याची सूविधा
o एकाधिक देय पर्याय
o देवाण घेवान डेटा टिकवून ठेवण्याची सुविधा
o स्वयंची नोंदणी आणि स्वयं चकआउट पर्याय
o शोध सुविधा
o खरेदी केलेल्या पुस्तके व नोदनीचा पुर्ण मागोवा
o सांख्यािकिय व अहवाल निर्मीतीसाठी अनुकुल

एव्हरग्रीन हे एक उच्च कोटीचे तयार केलेले ग्रंथालय व्यवस्थापन सॉफ्टवेअर आहे कारण ते लहान व मोठया ग्रंथालयांना सेटअप करण्यासाठी चांगले असते व वापरण्यास मुक्त आहे.

३ बिब्लिओटेक BiblioteQ

बिब्लिओटेक ही एक व्यावसायीक लायब्ररी व्यवस्थापन सॉफ्टवेअर आणि कॅटलॉग प्रणाली आहे जी सर्व प्रकारच्या ग्रंथालयासाठी स्वीकारली जाते हे सॉफ्टवेअर ब—याच प्रमाणात चागल्या सॉफ्टवेअरशी सुसंगत आहे.हे सॉफ्टवेअर विनामुल्य व मुक्त स्त्रोत ग्रंथालय व्यवस्थापन सॉफ्टवेअर प्रणाली आहे.

महत्वाची वैशिष्टये

o वापरकर्ता अनुकुल असतें.
o नवीन तंत्रज्ञानाच्या आराखडयास समर्थन करते
o कव्हर प्रतिमांसाठी ड्रग आणि ड्रॉपसाठी उपयुक्त
o प्रदर्शन सुविधासाठी अनुकुल
o डेटा साठवणुकीस उपयुक्त
o राष्ट्रीय व आंतराष्ट्रीय शोध सुविधा
o फाईल पाठवण्यास उपयुक्त
o पुनरप्राप्तीकरण्याची करण्याची सोय
o भाषांतर
o सुची
o डेटा विश्लेषण
o एकापेक्षा अनेक संकेतस्थळा सूचना देते

क्युटी कॅम्प कंपाइलरचा वापर करुन विकसीत केलेला हा लायब्ररी व्यवस्थापन सॉफ्टवेअर आहे तर पुस्तके, मासिके, संशोधनपत्रे, जर्नल्स, व्हिडीओ इ.ची सूची तयार करते उक उपयुक्त साधन म्हणून काम करते.

४. ओपल्स OPALS

ही वैशिष्ट्यपुर्ण समृध्द मुक्त स्त्रोत लायब्ररी ऑटोमेशन सिस्टीम या पिढीतील ग्रंथालयांनाकार्यक्षमतेन कार्य करण्यास आणि ग्रंथालय संसाधांचे व्यावस्थापन करण्यासाठी सर्वात ास्त शोधले जाणारे एक साधन आहे हे सॉफ्टवेअर अमलात आणणे व वापरण्यास सोपे आहे.

महत्वाची वैशिष्ट्ये

- ब्राउझर व्हर्च्युअल
- व्हिडीओ संसाधांचे कॅटलॉग समाविष्ट करते
- शोध सुविधा
- नवीन मिळालेल्या साधनांसाठी प्रदर्शन गॅलरी
- कार्य स्मरणपत्र सुविधा
- आयात निर्यात करण्यास सुलभ
- केव्हाही फिल्ड जोडने व संपादीत करणे व हटविण्याची सुविधा
- वस्तु संपादन अहवाल करता येते
- बारकोड वाचकांचा वापर
- की वर्ड शोध सुविधा
- आय एलएल परवानगी
- सांख्याकीय अहवाल तयार करणे
- ई मेल सूचना
- कॅलेंडरमध्ये प्रवेश
- डिजीटल संग्रहामध्ये प्रवेश करता येते
- स्त्रोत साधनांचे व्यवस्थापन सोईचे

वापरकर्त्यांच्या ओपल्स सर्व प्रकारच्या तांत्रिक प्रश्नांसाठी उपयुक्त आहे.

५ ओपन बिब्लीओ व्यमदठपइसपव

ओपन बिब्लीओ ही वापरण्यास सुलभ लायब्ररी ऑटोमेशन सिस्टीम आहे जे वापरण्यास सुलभ व मुक्तस्त्रोत तंज्ञानात ग्रंथाची कार्य पध्दती व ससधने व्यवस्थापीत करुन वापरली जाउ शकते.

महत्वाची वैशिष्ट्ये

- वापरकर्त्यांसाठी उपयुक्त ओपॅक
- वापरकर्त्यांचे खाते आणि बुकींग करण्यास सोईचे
- बुकींग व्यवस्थापन करता येते
- कीवर्ड शोध
- देवाण घेवान करणे सुलभ

- o इमेजेसाठी उपयुक्त
- o ग्रंथसुची पाहण्याची व संपादीत करण्याची सुविधा
- o कॅटलॉग मुद्रीत करण्याची सुविधा
- o इतर सुविधा

६ इन्व्हिनिओ प्द्अमदपव

उपलब्ध असलेल्या सुरक्षीत, स्केलेबल, मुक्त आणि मुक्त स्त्रोत ग्रंथालय ऑटोमेशन सॉफ्टवेअर पैकी एक आहे.लाखो रेकार्ड व्यवस्थापीत करण्यासाठी डीझाईन केलेले हे सॉफ्टवेअर आधुनिक तंत्रज्ञानासह येते. हे सॉफ्टवेअर वापरकर्त्यांना पुस्तके, संबंधीत डेंटा व माहिती १०० अक्के सुरक्षा देण्यास सक्षम आहे.

महत्वाची वैशिष्टये

- o लवचिक डेटा मॉडल
- o अनेक प्रकारचे रेकार्ड हाताळण्यास सक्षम
- o आधुनिक चौकट
- o अत्याधुनिक फाईल व्यवस्थापन
- o शोध इंजिन सुविधा
- o इंडेक्सिंग व्यवस्थापीत करणे
- o उच्चातम एपीआय सहकार्य
- o रिपोझेटरी सोय उपलब्ध
- o अत्यंत वेगवान, विश्वासार्ह आणि उपयुक्त कार्य

इन्व्हिनिओ एक फ्रेमवर्क आहे या द्वारे रिपॅझीटरी तयार करतार येते स्केलेबिलीटी आणि सुरक्षा या दोन प्रमुख शक्ती या सॉफ्टवेअरच्या आहेत.

७. पी एम बी PMB

पी एम बी एक विनामुल्य ग्रंथालय व्यवस्थापन सॉफ्टवेअर आहे या सॉफ्टवेअरचे २००० चया वर ग्राहक आहेत त्यामुळे ही आवृत्ती वापरकर्त्यांनां यशस्वी प्रक्रीया चालविण्यास उपयुक्त आहे. ग्रंथालयांनी बहुकार्यासाठी हे सॉफ्टवेअर व्यापकपणे स्वीकारले आहे. याची २००४ मध्ये निर्मीती करण्यात आली.

महत्वाची वैशिष्टये

- o न्छप्ड ाळ चे समर्थन करते
- o श्रृखला व्यवस्थापन
- o प्राधिकरणाचे व्यवस्थापन विभाग
- o आधुनिक तंत्राज्ञानाचा अवलंब
- o वापरकर्त्यास अनुकुल
- o ग्रंथसूची दस्ताऐवज आयातीची सूविधा

- ओपॅक एकत्रीकरण
- ॲनॅलॉग व डीजीटल व्यावस्थापीत करण्याची सुविधा
- क्रिया देखरेख सुविधा
- पुर्ण कॅटलॉग
- सांुख्याकिय साधने
- निर्देशिका समावेश

दस्ताऐवज व्यावस्थापन करण्याचे एक साधन आहे जे सर्व प्रकारच्या नोंदी सुलभ करते एका आवृत्तीमधुन दुस—या आवृत्तीत दस्ताऐवज निर्यात करण्याची क्षमता देखील आहे. यात सुचनांची यादी निर्यात करण्यास अनुमती देते.

८ न्युजेन लिब NewGen Lib

सर्व प्रकारच्या ग्रंथालयासाठी एक आदर्श लायब्ररी मॅनेजमेंट सॉफ्टवेअर आहे जे वापरकर्त्यांना मध्यभागी ठेवुन याची निर्मीती करण्यात आली आहे. हे सॉफ्टवेअर खुप कार्यक्षम असून याला व्यवस्थापीत करणे सोपे आहे.

महत्वाची वैशिष्टये

- वापरण्यास सुलभ
- मेटाडेटाचे समर्थन करते.
- पुस्तके दस्ताऐवज व व्हिडीओ सामतग्रीचे व्यवस्थपन करते.
- देवघेव व्यवस्थापन
- कॅटलॉगींग
- संस्थात्मक डेटा
- स्वयंचलीत संप्रेषण
- ईमेल सूचना
- आरएफआयडी एकत्रीकरण

तपासणी, संरक्षण करण्यासाठी न्युजेनलीब सॉफ्टवेअर अधिक सोईस्कर आहे. या सॉफ्टवेअरचे सर्व मॉडयूल वेब आधारित आहेत. सॉफ्टवेअर आंतराष्ट्रीय मानकाचे पालन करते. संरक्षकाच्या विशेष अधिकारामुळे हे सॉफ्टवेअर लोकप्रिय आहे.

निष्कर्ष

आज आपल डीजीटल युगात वावरत आहोत त्यामुळे उद्योगाप्रमाणेच ग्रंथालय देखील सुध्दा या प्रवेगात संचार करीत आहे आणि व्यावस्थापनावर प्रभूत्व दाखविण्याचे काम करीत आहे व ग्रंथालय प्रणालीला अधिक मजबुत व सोईस्कर बनवरयचे आहे त्यामुळे वेळेची बचत होते आणि वापरकर्त्यांसाठी व ग्रंथपालासाठी माहिती गोळा करणे व प्रसार करण्यासाठी सक्षम करते या कार्यक्षम ग्रंथालय व्यवस्थापन सॉफ्टवेअर प्रणाली वाचकांना प्रवेश सुलभ करण्यापर्यंत मदत करेल.

संसाधन सामायीकीकरण , एकत्रित खरेदी आणि सहयोगी संग्रहात वाढ दिसून येत असतांना स्वहस्ते देखभाल करण्याची जुनी पध्दत आजच्या परीस्थितीत बसु शकत नाही वारंवार बदल त्यामळे वर्कफलोचे डीझाइन करणे आर्थीकदृष्टया परवडणारे नाही. म्हणुन वरील कुठलीही एक मुक्त ग्रंथालय व्यवस्थापन सॉफ्टवेअर प्रणाली अवलंबविल्याणे ग्रंथालय सक्षम, सुलभ व उपयुक्त ठरेल यात काही शरंका नाही.

संदर्भ

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आर एफ आय डी लायब्ररीची सुरक्षा आणि ग्रंथालयाची भुमिका

डॉ. प्रशांत बी. चहारे

ग्रंथपाल, जनता महाविद्यालय, चंद्रपूर

सार

आजच्या या आधुनिक युगात ग्रंथालयाने बरीच प्रगती केलेली आपल्याला दिसुन येते. हया प्रगती सोबतच आरएफआयडी (RFID) हया तत्रंप्रणालीचाचा उपयोग जर ग्रंथालयाने केला तर ग्रंथ चोरी होण्याचे प्रमाणावर नक्कीच नियत्रण आणले जाईल व ग्रंथालयाच्या सुरक्षेच्या दृष्टीकोणातुन RFID प्रणाली अत्यंत मोलाचे काम करते.

सज्ञा : आर एफ आय डी(RFID) तंत्रज्ञान ग्रंथालय प्रणाली

प्रस्तावना

ग्रंथालयाचे संगणकीकरण म्हणजे आधुनिकीकरण असे समजले जाते. परंतु ग्रंथालयाची सुरक्षा करणे अत्यंत महत्वाचे आहे. आज आधुनिक तंत्रज्ञानाने बरीच प्रगती केलेली आपल्याला दिसुन येते. ग्रंथालयाचे संगणकीकरण करणे , ग्रंथालयाचे नेटवर्क , ग्रंथालयाची संकेतस्थळाची निर्मिती करणे , डिजिटल ग्रंथालय अस्थीत्वात आणणे व वाचकांना आधुनिक सेवा पुरविणे हया सेवा ग्रंथालयाच्या दृष्टीकोनातुन अत्यंत महत्वाच्या आहे. आधुनिकीकरणात वरील सर्व गोष्टी . असल्यातरी ग्रंथालय सुरक्षितता साध्य होणे हे देखील तितकेच महत्वाचे आहे. ग्रंथसंग्रहाची सुरक्षितता , दुर्मिळ ग्रंथाचे जतन , ग्रंथालयात संगणकीकरणासाठी लागणारा हार्डवेअर व सॉफटवेअर साठी लागणारी यंत्र सामग्री हे देखील ग्रंथालयाच्या विकासात व सुरक्षेच्या दुष्टीकोणतुन महत्वाचे आहे. आजची ग्रंथालय खरोखरच सुरक्षित नाही. ग्रंथालयाच्या सुरक्षिततेसाठी विशेष करून फार थोड्या गोष्टी केल्या जातात. त्यामुळे ग्रंथालया मध्ये ग्रंथ चोरी होण्याचे प्रमाण वाढलेले आपल्याला दिसुन येते. हयासाठी ग्रंथालयात आर एफ आय डी ही तंत्रज्ञान प्रणाली ग्रंथालयात अस्तीत्वात आली तर ग्रंथालयाच्या सुरक्षितेचा पुर्ण विचार केला आहे. असे म्हणण्यास काही हरकत नाही. ग्रंथालयाच्या सुरक्षेतेच्या दृष्टीकोणतुन माहिती तंत्रज्ञानाची साधने वेगवेगळया स्वरूपातील साहित्य साभांळण्याची मोठी जवाबदारी ही ग्रंथालय कर्मचारी व पर्यायाने ग्रंथालय प्रमुख म्हणुन ग्रंथपालावर होते. ग्रंथालयाची अगोदरची परिस्थीती ही वेगळी होती परंतु आजची परिस्थीती ही बदललेली आहे. तुलनेत पूर्वीपेक्षा ही जवाबदारी कीतीतरी पटीने वाढलेली आहे. ग्रंथालयास सुरक्षितता ही बाब ग्रंथालयाचे आधुनिकीकरणाचे महत्वाचे अंग बनले आहे. यात काही शंका नाही. ग्रंथालय सुरक्षिता प्रदान करण्यासाठी सुरक्षितेचे अनेक आज उपाय उपलब्ध आहे. परंतु काही तंत्रज्ञान स्वीकारण्याची वेळ आली तर थोडा आणखी खर्च केला तर काही हरकत असण्याचे कारण नाही. रेडिओ फ्रिकेन्सी आयडीटीफीकेशन सिस्टम किंवा RFID हे तंत्रज्ञान स्मार्ट काम करीत आहे. यास पुस्तकाचे आयडीटीटी कार्ड म्हटले जाते. RFID टॅग पुस्तकाच्या कव्हरच्या आतील बाजुस विशिष्ट

मशिनच्या आधारे तयार केले जाते तेव्हा RFID व्हीटेक्शन दरवाजातुन जाते तेव्हा गेटशी जोडलेल्या संगणकावर अमुक एक पुस्तक एक वाचक रीतसर घेऊन जातो. ही माहिती संगणकावर दाखवली जाते. म्हणजेच ग्रंथालयातील ग्रंथाची सुरक्षितता केली जाते. तेच पुस्तक परत ग्रंथालयात येत असतांना सुध्दा संगणकावर त्याच प्रमाणे माहिती दाखवली जाते. . ह्याचाच अर्थ ग्रंथालयातुन ग्रंथ चोरीला जाऊ नये RFID ही तंत्रज्ञान प्रणाली व्दारे ग्रंथालयाची सुरक्षितता केली जाते. त्यामुळे ग्रंथालयातील ग्रंथ चोरी होण्यास प्रमाण जवळपास नाहीशे होते सर्वच वाचक सारखे नसतात हा विषय एका विशिष्ट वाचक समुदयासाठी वागणुकीशी निगडीत आहे. ग्रंथालयातुन ग्रंथ चोरणे ही बाब काही व्यक्तीच्या प्रवृत्तीशी किंवा सवयीशी जोडलेली असते. परंतु अशा बाबीवर नियंत्रण आणता येते व ते तंत्रज्ञान प्रणाली म्हणजे RFID हे होय

ग्रंथालयात RFID तंजतज्ञानाची गरज

आजच्या या आधुनिक युगात ग्रंथालयाने बरीच प्रगती केलेली आपल्याला दिसुन येते. ग्रंथालयात ग्रथाची संख्या बरीच वाढलेली असल्यामुळे ग्रंथालयात ग्रंथचोरीचे प्रमाण पण वाढलेले आपल्याला दिसुन येते. ग्रंथालयात ग्रंथ सुरक्षेसाठी एक विशेष स्थान आहे. ज्या ग्रंथालयात मुक्तव्दार पध्दती अवलंबलेल्या ग्रंथालयात त्याचे महत्व जास्त आहे. एखादी गोष्ट चोरणे ही बाब काही व्यक्तीच्या प्रवृत्तीशी किंवा सवयशी जोडलेली आहे. या प्रकाराला नियंत्रण ठेवु शकणाया अनेक प्रकारच्या इलेक्ट्रानिक तसेच मेकॅनिकल साधनाचा उपयोग केला जातो आहे. ही साधने अधिक आधुनिक तसेच विकसनशिल होत आहे. शिवाय नवीन तंत्रज्ञानावर आधारीत नविन साधनाचा शोध लागतो आहे. ग्रंथालय सुरक्षेसाठी अशी खास साधने आज विविध स्वरूपात उपलब्ध आहेत. ज्या मध्ये पुढील साधनाचा समावेश होतो. इलेक्टोमॅग्नेटीक किंवा चुबंकीय तंत्रज्ञानावर आधारीत साधने व RFID तंत्रज्ञानावर आधारीत साधने होय. आता हे तंत्रज्ञान ग्रंथालय सुरक्षेसाठी ग्रंथालयात उपयोग आणले जोते. ग्रंथसंग्रह हाताळण्यासाठी व देवघेव प्रक्रीया सोपी व जलद गतीने व्हीवी यासाठी RFID चा उपयोग करण्यात येतो. म्हणुन हे तंत्रज्ञान ग्रंथालयात वापरले जाते. पांरपारीच्या तुलनेत अधिक सक्षम अशी RFID प्रणाली ही ग्रंथालयात उपयोगात आणली जाते.

RFID ग्रंथालयात वापरण्याचे फायदे

१. एकाचवेळी अनेक पुस्तकांची एकत्रितपणे देवघेव शक्य होते.

२. ग्रंथमोजणी केवळ स्कॅनरच्या सहाय्याने फारच कमी वेळात करणे शक्य होते. त्यासाठी पुस्तकांची हालचाल अपेक्षीत नाही केवळ शेल्फवर स्कॅनर फिरवल्याने ग्रंथमाजणीचे काम होते.

३. ग्रंथसंग्रह अचुक जागी लावण्यासाठी.

४. भविष्यात येणाया नवनवीन ग्रंथालयीन सेवा , कर्मचारी न वाढवता तितक्याच कर्मचायामध्ये देणे शक्य होते.

५. पुस्तके ग्रंथालयाबाहेर जातांना कुठली पुस्तके कोणता वाचक नेतो आहे याचा तपास करणे शक्य होते.

६. ग्रंथालय सुरक्षेच्या दृष्टीकोनातुन ग्रंथचोरीवर नियत्रंन आणता येते

3 M Security System 3M सुरक्षितता पध्दती

३ एम ही एक अमेरिकेतील सुरक्षितता पध्दतीचा विकास तसेच निर्मिती करणाया कंपन्यामध्ये मुख्य मानली जाणारी एक कंपनी आहे. ३एम या संक्षिप्त नावांनी ती प्रसिध्द आहे. डिपॉर्टमेंटल स्टोअरमध्ये वापरली जाणारी सुरक्षितता पध्दत ग्रंथालय सुरक्षिततेसाठी वापरण्याचा यशस्वी प्रयत्न या कंपनीने केला आहे.

१. टॉटल टेपस

ही एक धातुची पट्टी जी इलेक्टोमॅग्नेटिक चुबंकीय भारत अशी आहे. तिला टॉटलटेप किंवा सेक्युरीटी स्टीप म्हणतात. पुस्तकाच्या पानामध्ये खोल चिकटवण्यासाठी तसेच पुस्तकाच्या पाठीमागे बांधणीत चिकटवण्यासाठी अशा दोन प्रकारे हि उपलब्ध असते. एकदा चिकटवलेली पट्टी शोधुन काढणे सहजासहजी शक्य होत नाही.चुबंकीय पट्टी जेव्हा पुस्तकावर चिपकवली जाते तेव्हाच ते पुस्तक चुबंकभारीत होते. जेव्हा रीतसर पुस्तक वाचकास दिले जाते तेव्हा चुबंकीय परिणाम तात्पुरता नाहीसा केला जातो. त्यासाठी वेगळया यंत्रांची मदत घ्यावी लागते. असे चुबंकीय भारीत केलेल्या पुस्तकामुळे इलेक्टानिक गेट मधुन जातांना धोक्याची बझर वाजत नाही. जेव्हा पुस्तक परत येते तेव्हा ग्रंथालयातील देवघेव पध्दत पुस्तक परत केल्याची नोंद करून मशिनच्या आधारे पुस्तक पुन्हा चुंबकीय भारीत करून कपाटात ठेवले जाते.

२. ३ एम डिटेक्शन सिस्टिम

३एम डिटेक्शन सिस्टम म्हणजे एक इलेक्ट्रॉनिक गेट आहे. हया गेटचे मुख्य काम म्हणजे चोरून जात असलेला ग्रंथाचा संस्सरच्या मदतीने मागोवा घेणे व धोक्याची घंटा वाजवुन सुरक्षारक्षकास पुस्तक चोरले जात असल्याचा इशारा देणे या यंत्रांत सेन्सर व्दारे काउंटर इंडिकेटर लावले जाते. परंतु प्रत्येक वाचक ग्रंथालयात बाहेर जातांना त्या इलेक्टॉनिक गेट मधुनच बाहेर गेला की नाही हे पाहिले पाहिजे शिवाय या बाहेर जाण्याच्या मार्गाशिवाय इतर कुठल्याही मार्गानि बाहेर जाण्याची सोय बंद ेलेली असते. अशा पध्दतीने ग्रंथालय संग्रहाची सुरक्षितता होउ शकते. तसेच ग्रंथ चोरी होण्याचे प्रमाण हया प्रणाली व्दारे नियत्रण मिळवु शकतात.

३. ३ एम सेन्सिटायझिंग मशिन

एकदा का पुस्तकात टॉटल टेप बसविले की ते पुस्तक सेन्सिटायझिंड स्थितीत असते. पुस्तके जेव्हा ग्रंथालयातुन वाचकांना रीतसर दिली जातात तेव्हा ती डिसेन्सिटादझकडे बटण केल्यास पुस्तकाची स्थिती सेन्सिटाइझडमधुन डिसेन्सिटाइझकडे स्थितीत बदलते व असे पुस्तक डिटेक्टर गेटमधुन गेल्यास मशिन धोक्याची घंटा वाजवित नाही. पुस्तक जेव्हा ग्रंथालयात परत येते व ते आझवलीव्दारे ग्रंथालयात परत स्वीकारले जाते. तेव्हा पुस्तक शेल्फवर ठेवण्यापूर्वी त्याची स्थिती डिसेन्सिटाइझडमधुन बदलुन सेन्सिटाइझडमध्ये बदल करणे गरजेचे आहे. त्यासाठी सेन्सिटायझर मशिनचा उपयोग

होतो. परत आलेले पुस्तक मशिनवर ठेवुन त्याचे बटन सेन्सिटायझरकडे ठेवले की पुस्तक आपोआप पुन्हा सेन्सिटाइझड स्थितीत जाते.

४. ३ एम सेल्फ चेक आउट मशिन

३ एम मशिनच्या श्रेणीमधील सेल्फचेक आऊट नावाचे आणखी एक उपयुक्त मशिन म्हणावे लागेल. ज्या ग्रंथालयात पुस्तकाचे बारकोडींग झालेले आहे. व ज्या पुस्तकांमध्ये टॉटल टेपसही बसविले आहेत . अशी पुस्तके वरील मशिनच्या आधारे स्वता (काऊटंर सेवकाशिवाय) घरी नेण्याची सोय सेल्फचेकआऊट मशिनच्या वापराने ग्रंथालय सुरू करू शकते. साधारणता असे म्हणता येईल की ज्या प्रमाणे आपल्या बॅकेतुन आपल्या खात्यातुन आपण एटीएम व्दारे पैसे काढतो त्याच प्रमाण वरील तुत्रप्रणालीचा उपयोग करून ग्रंथालयातील ग्रंथाची देवाण— घेवाण कोणत्याही कर्मचान्याची मदत न घेता ग्रंथ ग्रंळालयातुन देवाण घेवाण करता येते.

निष्कर्ष रू. आधुनिक तंत्रज्ञानाच्या युगात आज ग्रंथालयानी बरीच प्रगती केलेली आपल्याला दिसुन येते. त्यामुळे ग्रंथालयाच्या सुरक्षेच्या दुष्टीकोनातुन विचार केला तर RFID हे तंत्रज्ञान प्रणाली जर ग्रंथालयात वापरली तर ग्रंथालयातील ग्रंथ चोरी होण्याच्या प्रकाराला नक्कीच नियत्रण मिळवता येईल.तसेच हयाचा परिणाम ग्रंथालयाचा कामकाजावर होईल. ग्रंथालय कर्मचारी कमी वेळात देवाण—घेवाण पध्दती सुरळीत चालेल आणि मुख्य म्हणजे ग्रंथालयातील ग्रंथ गहाळ होणार नाही.

संदर्भ :

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गडचिरोली जिल्ह्यातील शैक्षणिक महाविद्यालयाच्या ग्रंथालयातील माहिती व तंत्रज्ञान वापराचा चिकित्सक अभ्यास

विनोद प्रकाश पत्तीवार

भगवंतराव कला व विज्ञान महाविद्यालय, एटाप्ली. जिल्हा गडचिरोली

१.०   प्रस्तावना :

सर्व जगाप्रमाणे देखील झपाट्याने भारत बदलतोय. तंत्रज्ञान हे या बदलाचे प्रमुख कारण ठरले आहे. स्मार्ट तंत्रज्ञान आणि त्यासाठी आवश्यक साधनांची उपलब्धता, प्रभावी ऑप्स या सर्वांमुळे आरोग्य, शिक्षण, कृषी व उत्पादन क्षेत्रात अमूलाग्र बदल दिसून येताहेत. डेटा आधारित संशोधनात वाढ झाल्यामुळे यास अधिक बळ मिळते आहे. या सगळ्या पार्श्वभूमीवर तंत्रज्ञानाच्या शक्तीचा फायदा घेत लोकांचे जीवनमान उंचावण्यासाठी, उद्योगस्नेही वातावरण निर्माण करण्यासाठी व देशाच्या प्रगतीला चालना देण्यासाठी सध्या प्रचंड संधी आहेत. या सर्व बाबींमध्ये माहितीचे आदान प्रदान मुख्य भूमिका वढवणार आहे.

भारताची ओळख सध्या तंत्रज्ञानाचे शक्तिकेंद्र अशी बनली आहे. भारतातील डिजिटल ग्राहकांची बाजारपेठ वेगाने फोफावते आहे. ५० कोटींहून अधिक लोक इंटरनेटचा वापर करत आहेत. ४५ लाख प्रतिभावंत आयटी इंजिनीअर्सच्या पाठबळावर भारतातील आयटी उद्योग सुमारे १९१ अब्ज अमेरिकी डॉलरचा महसूल मिळवतो आहे. सर्व इंटरनेटचे वापरकर्ते निरनिराळ्या प्रकारच्या माहितीचे ग्रहण करीत आहे. तंत्रज्ञानाचा झपाट्याने अंगिकार करण्यासाठी भारताची प्रचंड लोकसंख्या हा एक मोठा प्रेरणास्रोत आहे. भारताच्या प्रचंड लोकसंख्येची डिजिटल सेवांची गरज ही टेक आधारित अर्थव्यवस्थेकडे वळण्यास प्रवृत्त करते. तसेच, अधिकाधिक क्षमतेचे, परवडणारे व मोबदला मिळवून देणारे तंत्रज्ञान निर्माण करण्यास चालना देते.

'कोविड १९' ची महामारी आणि नव्या भू—राजकीय परिस्थितीमुळे तंत्रज्ञानाकडे लोकांचा ओढा मोठ्या प्रमाणावर वाढला आहे. तसेच, या तंत्रज्ञानाचा प्रत्यक्ष वापराचा वेगही कमालीचा वाढला आहे. दूरस्थ आणि दुर्गम भागांना जोडणाऱ्या तंत्रज्ञानाची निर्मिती व विविध उद्योगांमध्ये डिजिटल सेवेच्या प्रवेशाचा अभूतपूर्व वेग सध्या आपल्याला अनुभवायला मिळतो आहे. काळाबरोबर राहता यावे व प्रवाहाबाहेर फेकले जाऊ नये म्हणून प्रत्येक क्षेत्र आणि विभाग डिजिटल होतो आहे. यात ग्रंथलय सेवांचा देखील समावेश होणे क्रमप्राप्त आहे. किंबहुना ग्रंथालयीन सेवा या तंत्रज्ञानाच्या बदलांचा अंगीकार करणारे पहिले क्षेत्र असण्याची सर्वात अधिक शक्यता आहे.

कोरोना साथीच्या सध्याच्या काळात टेलिमेडिसीन आणि दूरध्वनीवरून वैद्यकीय सल्ला घेण्याचे प्रमाण वाढले आहे. विशेषत: देशाच्या दुर्गम आणि ग्रामीण भागातील लोकांसाठी

वेळेवर, परवडणारी आणि दर्जेदार आरोग्यसेवा मिळू लागल्याचे दिसत आहे. त्याच धर्तीवर सर्व शाळा व महाविद्यालयांचे कार्य देखील इंटरनेटच्या माध्यमातुन होते आहे. या सर्व घडामोडीमध्ये शिकवणी वर्ग ऑनलाईन होत आहेत. परंतु, महाविद्यालयातील ग्रंथालयांमधील माहिती तंत्रज्ञानीचे स्वरूप याबाबत माहिती नसल्याचे आढळले.

शिक्षण क्षेत्र हे गेल्या काही काळापासून तंत्रज्ञानाचा सर्वाधिक वेगाने वापर करणारे क्षेत्र राहिले आहे. दूरस्थ शिक्षण, स्मार्ट क्लासरूम, नवनव्या पद्धतीने शिक्षण देणाऱ्या उपकरणांमध्ये मोठी वाढ झाली आहे. ई लर्निंग हा लवकरच शिक्षणाच्या मुख्य प्रवाहाचा भाग होईल आणि सर्वांना दर्जेदार शिक्षण व मार्गदर्शकांचा लाभ घेता येईल. गावखेड्यातील मुले शिक्षणापासून वंचित राहू नयेत म्हणून शिक्षण क्षेत्रातील एका टोकापासून दुसऱ्या टोकापर्यंतच्या यंत्रणा उभारणे गरजेचे आहे. या सर्व बाबींचा विचार करून प्रस्तुत संशोधन कार्य गोंडवाना विद्यापीठ गडचिरोलीशी संलग्नित शैक्षणिक महाविद्यालयातील माहिती व तंत्रज्ञान वापर व पर्याप्तता यांचा चिकित्सक अभ्यास करण्यात आला.

२.१ संशोधन पद्धती

संशोधन कार्यासाठी निर्दोष माहिती मिळण्यासाठी व संशोधनाची उद्देशपुर्ती होण्यासाठी खालील संशोधन पद्धतीचा वापर केला गेला. संशोधनाची उद्दिष्टे अभ्यासुन त्यानुसार संशोधन करण्याकरिता सर्वेक्षण व विश्लेषण पद्धतीचा उपयोग करण्यात आला. प्रस्तुत संशोधन अध्ययनामध्ये गुगल फॉर्मद्वारे सर्वेक्षण करून माहिती मिळविण्यात आली आहे.

२.२ संशोधनाचे कार्यक्षेत्र :

प्रस्तुत संशोधन करण्यासाठी संशोधन क्षेत्र म्हणुन विदर्भातील गडचिरोली जिल्ह्याची निवड केली.

२.३ अध्ययन विश्व व जनसंख्या :

प्रस्तूत अध्ययनात गडचिरोली जिल्हयातील गोंडवाना विद्यापीठ गडचिरोलीशी संलग्नित सर्व शैक्षणिक महाविद्यालयातील ग्रंथालयांचा अध्ययन विश्व म्हणून विचार करण्यात आला. तसेच, या शैक्षणिक महाविद्यालयात कार्यरत सर्व ग्रंथपालांचा विचार जनसंख्येत करण्यात आला.

२.४ नमुना निवड व न्यादर्श :

प्रस्तुत संशोधनकार्य अध्ययनाकरिता रॅन्डम सॅम्पलींग पद्धतीचा वापर करण्यात आला आहे. एकुण ४० ग्रंथपालांची माहिती संकलनासाठी न्यादर्श म्हणून निवड करण्यात आली.

२.५ संशोधन आराखडा

प्रस्तुत संशोधनात वर्णात्मक संशोधन आराखडयाची निवड करण्यात आली आहे.

२.६ तथ्य संकलन — संशोधनाची साधने :

प्रस्तुत अध्ययनात माहिती संकलित करण्याकरिता प्रमाणीकृत पद्धतीचा व प्रश्नावलीचा उपयोग करण्यात आला. अध्ययनाच्या उद्दिष्टांना अनुसरून व वापर करून प्रश्नावली तयार

करण्यात आली संशोधनकर्त्यांने ग्रंथपालांकडून प्रश्नावली गुगल फॉर्मच्या माध्यमातुन भरुन घेतली.

२.७ सांख्यकिय विश्लेषण

प्रस्तुत संशोधनकार्यात प्राप्त झालेल्या माहितीचे सांख्यकिय विश्लेषण करण्यात आले. प्राप्त माहितीवरुन वारंवारीता (Frequency) व बहुलक (Mode) काढण्यात आले व माहितीच्या पुढील विश्लेषणाकरीता काई वर्ग मुल्य चाचणीचा (Chi-Square test) वापर करण्यात आला. Significance Level 0.05 निर्धारीत ठेवण्यात आली.

३.० संकलीत माहितीचे विश्लेषण

३.१ ग्रंथालयाला मिळणाऱ्या निधीची पर्याप्तता

सारणी १: गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयांना ग्रंथालय विकासाकरीता प्राप्त होणाऱ्या निधीची पर्याप्तता याबाबत माहिती दर्शविणारी सारणी

प्रतिक्रिया	ग्रंथपालांची संख्या	प्रतिशत
पर्याप्त	४	१०.०
थोडया प्रमाणात पर्याप्त	११	२७.५
अपर्याप्त	२५	६२.५
एकूण	४०	१००.०
	काई—वर्गमूल्य: १७.१२९य स्वातंत्र्यांश **%** 2(p <0.05; तालिका मूल्य : ५.९९	

वरील सारणी क्रमांक १ मध्ये गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयांना ग्रंथालय विकासाकरीता प्राप्त होणाऱ्या निधीची पर्याप्तता याबाबत माहिती दर्शविण्यात आली आहे. सारणीत दर्शविलेल्या माहितीनुसार १० टक्के शैक्षणिक महाविद्यालयांना ग्रंथालय विकासाकरीता मिळणारा निधी पर्याप्त असल्याचे आढळले, तर २७.५ टक्के व ६२.५ टक्के महाविद्यालयांना मिळणारा निधी ग्रंथालय विकासाकरीता थोड्या प्रमाणात पर्याप्त व अपर्याप्त असल्याचे निदर्शनास आले.

३.२ ग्रंथालयातील माहिती व तंत्रज्ञान सेवा देणाऱ्या कर्मचाऱ्याची संख्या

सारणी २: गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयातील माहिती व तंत्रज्ञान सेवा देणाऱ्या कर्मचाऱ्याची संख्या दर्शविणारी सारणी

प्रतिक्रिया	ग्रंथालयांची संख्या	प्रतिशत
एक	२८	७०.०
छोन	९	२२.५
दोनपेक्षा जास्त	३	७.५
एकूण	४०	१००.०
	काई—वर्गमूल्य: २५.५६६, स्वातंत्र्यांश: २; चढ०prे।०५य तालिका मूल्य: ५.९९	

वरील सारणी क्रमांक २ मध्ये गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयातील माहिती व तंत्रज्ञान सेवा देणाऱ्या कर्मचाऱ्याची संख्या याबाबत माहिती दर्शविण्यात आली आहे. सारणीत दर्शविलेल्या माहितीनुसार ७० टक्के शैक्षणिक महाविद्यालयांतील माहिती व तंत्रज्ञान सेवा देण्याकरीता एक कर्मचारी असून २२.५ टक्के व ७.५ टक्के महाविद्यालयांतील माहिती व तंत्रज्ञान सेवा देणाऱ्या कर्मचाऱ्याची संख्या दोन व दोनपेक्षा पेक्षा जास्त असल्याचे निदर्शनास आले.

३.३ ग्रंथालयामध्ये उपलब्ध संगणकाची संख्या

सारणी ३: गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयातील ग्रंथालयात उपलब्ध संगणकाच्या संख्येसंबंधी माहिती दर्शविणारी सारणी

संगणकाची संख्या	ग्रंथपालांची संख्या	टक्केवारी
३ पेक्षा कमी	३०	७५.०
३ ते ५	७	१७.५
५ पेक्षा अधिक	३	७.५
एकूण	४०	१००.०
	काई—वर्गमूल्य: ३१.८६७, स्वातंत्र्यांश: 2 (P <0.05; तालिका मूल्य: ५.९९	

वरील सारणी क्रमांक ३ मध्ये गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयातील ग्रंथालयात उपलब्ध संगणकाच्या संख्येसंबंधी माहिती दर्शविण्यात आली आहे. सारणीत दर्शविलेल्या माहितीनुसार ७५ टक्के श्शैक्षणिक महाविद्यालयांतील ग्रंथालयात ३ पेक्षा कमी संगणक उपलब्ध असल्याचे आढळले. त्याचप्रमाणे १७.५ टक्के व ७.५ टक्के महाविद्यालयांतील ग्रंथालयात ३ ते ५ व ५ पेक्षा अधिक संगणक उपलब्ध असल्याचे निदर्शनास आले.

३.४ ग्रंथालयामध्ये उपलब्ध ई—रिर्सोसेस संख्या

सारणी ४: गोंडवाना विद्यापीठ संलग्नित शैक्षणिक महाविद्यालयातील ग्रंथालयात उपलब्ध ई—रिर्सोसेसची संख्या दर्शविणारी सारणी

ई—रिर्सोसेस	ग्रंथपालांची संख्या	टक्केवारी
५० पर्यंत	५	१२.५
५० ते १००	२३	५७.५
१०० पेक्षा जास्त	१२	३०.०
एकूण	४०	१००.०
	काई—वर्गमूल्य: १२.३५५, स्वातंत्र्यांश: 2 (P <0.05; तालिका मूल्य: ५.९९	

वरील सारणी क्रमांक ४ मध्ये गोंडवाना विद्यापीठ संलग्निन शैक्षणिक महाविद्यालयातील ग्रंथालयात उपलब्ध ई—रिर्सोसेसची संख्या याबाबत माहिती दर्शविण्यात आली आहे. सारणीत दर्शविलेल्या माहितीनुसार १२.५ टक्के व ५७.५ टक्के शैक्षणिक महाविद्यालयांतील ग्रंथालयात ५० पर्यंत व ५० ते १०० ई—रिर्सोसेस उपलब्ध असून ३० टक्के महाविद्यालयांतील ग्रंथालयात १०० पेक्षा जास्त ई—रिर्सोसेस उपलब्ध असल्याचे निदर्शनास आले.

३.५ ई—रिर्सोसेसचा वापर करण्याचे प्रमाण

सारणी क्र. ५: गोंडवाना विद्यापीठ संलग्निन शैक्षणिक महाविद्यालयात ई—रिर्सोसेसचा वापर करण्याचे प्रमाण याबाबत माहिती दर्शविणारी सारणी

ई—रिर्सोसेसचा वापर	ग्रंथपालांची संख्या	टक्केवारी
अत्यंत कमी	१३	३२.५
साधारण	२३	५७.५
साधारणपेक्षा अधिक	४	१०.०
एकूण	४०	१००.०
	काई—वर्गमूल्य: १३.५६२, स्वातंत्र्यांश: 2 (P <0.05; तालिका मूल्य: ५.९९	

वरील सारणी क्रमांक ५ मध्ये गोंडवाना विद्यापीठ संलग्निन शैक्षणिक महाविद्यालयात ई—रिर्सोसेसचा वापर करण्याचे प्रमाण याबाबत माहिती दर्शविण्यात आली आहे. सारणीत दर्शविलेल्या माहितीनुसार ३२.५ टक्के शैक्षणिक महाविद्यालयांत ई—रिर्सोसेसचा वापर करण्याचे प्रमाण अत्यंत कमी असल्याचे आढळले, तर ५७.५ टक्के व १० टक्के महाविद्यालयांत ई—रिर्सोसेसचा वापर करण्याचे प्रमाण साधारण व साधारणपेक्षा अधिक असल्याचे निदर्शनास आले.

३.६ ग्रंथालयातील ई—रिसोर्सेस संग्रहाबाबत समाधान

सारणी ६: गोंडवाना विद्यापीठ संलग्निन शैक्षणिक महाविद्यालयातील वाचकांचे ई—रिसोर्सेस संग्रहाबाबत समाधान याबाबत माहिती दर्शविणारी सारणी

प्रतिक्रिया	ग्रंथपालांची संख्या	प्रतिशत
समाधान	८०	७०.२
साधारण समाधान	२४	२१.१
असमाधानी	१०	८.८
एकूण	११४	१००.०
	काई—वर्गमूल्य: ७२.२११, स्वातंत्र्यांश: 2 (p<0.05; तालिका मूल्य:५.९९	

वरील सारणी क्रमांक ६ मध्ये गोंडवाना विद्यापीठ संलग्निन शैक्षणिक महाविद्यालयातील वाचकांचे ई—रिर्सोसेस संग्रहाबाबत समाधान याबाबत माहिती दर्शविण्यात आली आहे. सारणीत दर्शविलेल्या माहितीनुसार ७०.२ टक्के व २१.१ टक्के शैक्षणिक महाविद्यालयातील वाचक

ई—रिर्सोसेस संग्रहाबाबत समाधान व साधारण समाधान असल्याचे आढळले, तसेच ८.८ टक्के महाविद्यालयातील वाचक ई—रिर्सोसेस संग्रहाबाबत असमाधानी असल्याचे निदर्शनास आले.

४.० निष्कर्ष

४.१ ग्रंथालयाला मिळणाऱ्या निधीची पर्याप्तता

– प्राप्त माहितीच्या विश्लेाणाच्या आधारे असे निदर्शनास येते की, गोंडवाना विद्यापीठ संलग्नित बहुतांश शैक्षणिक महाविद्यालयांना ग्रंथालय विकासाकरीता मिळणारा निधी केवळ थोड्या प्रमाणात पर्याप्त आहे.

४.२ ग्रंथालयातील माहिती व तंत्रज्ञान सेवा देणाऱ्या कर्मचाऱ्याची संख्या

– प्राप्त माहितीच्या विश्लेषणाच्या आधारे असे निदर्शनास येते की, गोंडवाना विद्यापीठ संलग्नित बहुतांश शैक्षणिक महाविद्यालयांतील माहिती व तंत्रज्ञान सेवा देणाऱ्या कर्मचाऱ्याची संख्या दोन आहे.

४.३ ग्रंथालयामध्ये उपलब्ध संगणकाची संख्या

– प्राप्त माहितीच्या विश्लेषणाच्या आधारे असे निदर्शनास येते की, गोंडवाना विद्यापीठ संलग्नित बहुतांश शैक्षणिक महाविद्यालयांतील ग्रंथालयात ३पेक्षा कमी संगणक उपलब्ध आहे.

४.४ ग्रंथालयामध्ये उपलब्ध ई—रिर्सोसेस संख्या

– प्राप्त माहितीच्या विश्लेषणाच्या आधारे असे निदर्शनास येते की, गोंडवाना विद्यापीठ संलग्नित बहुतांश शैक्षणिक महाविद्यालयांतील ग्रंथालयात ५० ते १०० ई—रिर्सोसेस उपलब्ध आहे.

४.५ ई—रिर्सोसेसचा वापर करण्याचे प्रमाण

– प्राप्त माहितीच्या विश्लेषणाच्या आधारे असे निदर्शनास येते की, गोंडवाना विद्यापीठ संलग्नित बहुतांश शैक्षणिक महाविद्यालयांत ई—रिर्सोसेसचा वापर करण्याचे प्रमाण साधारण आहे.

४.६ ग्रंथालयातील ई—रिसोर्सेस संग्रहाबाबत समाधान

– प्राप्त माहितीच्या विश्लेषणाच्या आधारे असे निदर्शनास येते की, गोंडवाना विद्यापीठ संलग्नित बहुतांश शैक्षणिक महाविद्यालयातील वाचक ई—रिर्सोसेस संग्रहाबाबत समाधान आहे.

५.० आधारग्रंथ सुची

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ग्रंथालयीन सेवामध्ये माहिती तंत्रज्ञानाचा उपयोग

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सारांश

प्रस्तुत लेखात माहिती तंत्रज्ञानाच्या मदतीने जागतीक स्तरावर उपलब्ध असलेल्या माहितीचा शोध घेणे व ग्रंथालयीन सेवांच्या माध्यमातून कमीत कमी वेळात व कमीत कमी खर्चात ग्रंथालयातील वाचकांना उपलब्ध करुन देणे, माहिती तंत्रज्ञानाचा उपयोग करुन ग्रंथालयातील विविध कार्याची व ग्रंथालयीन सेवांची कार्यक्षमता वाढविण्यास मदत होते, ग्रंथालयातील पारंपारिक सेवांचे स्वरुप बदलून आधूनिक चेहरा निर्माण झाला आहे व ती आज काळाची गरज झालेली आहे.

संज्ञा:— माहिती तंत्रज्ञान, संगणक, भ्रमणध्वनी (मोबाईल) इंटरनेट, ईमेल, ग्रंथालयीन सेवा

प्रस्तावणा:—

ग्रंथालयाने आज परिवर्तनाचा उंबरठा ओलांडून माहिती तंत्रज्ञानाच्या नविन कक्षेमध्ये प्रवेश करुन ग्रंथालयीन सेवेमध्ये मोठी क्रांती घडवून आणलेली आहे. माहिती तंत्रज्ञानाच्या मदतीने ग्रंथालये अतिशय वेगाने माहिती प्रप्त करुणे, माहितीचे प्रक्रियाकरण करणे, माहितीची साठवणूक करणे व प्रसारण करणे शक्य झाले आहे. वाचकाने हातात पुस्तक घेऊन त्याच्या कागदाचा स्पर्श बांधणीचा येणारा सुगंध हूंगत वाचल्यावरच पुस्तक वाचल्यासारखे वाटत म्हणणारी एक पिढी आणि संगणकाच्या व अगदी मोबाईलच्या टच स्क्रीनवर बोट ठेवून वाचणारी दुसरी पिढी इतप्रत फरक माहिती तंत्रज्ञानाने आज ग्रंथालय सेवामध्ये निर्माण केलेला आहे.

आज पुस्तकांच्या जागेवर मेगा डेटा, क्लाऊड सर्व्हर, वायफाय, संदर्भ साहित्याचे डाऊन लोडींग, किंडल, ई बुक, विकिपिडीया, फसबुक, युट्युब चॅनल, व्हाट्सअॅप या गोष्टींनी आज वाचन साहित्याची जागा घेतली आहे. ग्रंथालय सेवांमध्ये संगणकिकरण आणि डिजिटलायजेशनच्या माध्यमातून अधिक गतिने सेवा वाचकांना देत आहेत. ग्रंथालयातील संगणीकरण आणि ई—बुक्सची निमिर्ती यातून पुस्तके, वर्तमान पत्रके, मासिक यांची जागा आज संगणकाची पडदे, माऊस आणि किबोर्ड यांनी घेतलेली आहे.

ग्रंथालयातील माहिती तंत्रज्ञानाच्या उपयोगामुळे संदर्भाचे स्वरुप बदलले आहे. आज सर्वत्र चर्चा सुरु आहे की युवा पिढीचे वाचन कमी झालेले आहे परंतु एक गोष्ट लक्षात घेतली पाहिजे की आजच्या युवापिढीची वाचन संस्कृती ही प्रिंट पुस्तकाकडून ई बुक कडे परावर्तीत झालेली आहे. सोशल मिडीयाच्या माध्यमातून वाचकांकरीता चांगल्या पोष्ट व लेख उपलब्ध होत असते. परंपरागत पध्दतीमध्ये पत्र, दुरध्वनी, दुरदर्शन, रेडिओ, वर्तमानपत्र, पुस्तके, मासिके ही माहिती साठविण्याचे व पाठविण्याची साधने होती परंतू कालांतराने ग्रंथालयातील माहिती व सेवांचे आदान प्रदान करण्यासाठी इंटरनेटच्या माध्यमातून क्रांतीकारी असा बदल घडून

आला व त्या माध्यमातून 'डिजीटल लायब्ररी, इलेक्ट्रानीक्स लायब्ररी, ई लायब्ररी यासारख्या संकल्पना अस्तित्वात आल्या व यातूनच पारंपारिक ग्रंथालयाचे रुपांतर आधुनिकतेकडे जाण्यासाठी माहिती तंत्रज्ञानाची आवश्यकता निर्माण झाली.

ग्रंथालयात माहिती तंत्रज्ञानाची गरज.:—

१)   माहिती तंत्रज्ञानाच्या उपयोगामुळे जागतिक पातळीवर अतिशय वेगाने नवनविन बदल घडत आहेत व या बदलाला सामोरे जाण्यासाठी ग्रंथालयात माहिती तंत्रज्ञानाची आवश्यकता आहे.

२)   संगणकिकरण व इंटरनेटच्या उपयोगामुळे प्रत्येक दिवशी अफाट अशी माहीती उपलब्ध होत असते, या माहितीचे साठवणुक करून उपयोगीतेसाठी माहिती तंत्रज्ञानाची गरज आहे.

३)   माहिती तंत्रज्ञानाच्या युगात तंत्रज्ञानाला दर्लक्षीत करणे शक्य नाही.

४)   ग्रंथालयातील वाचकांच्या बदलत्या गरजा लक्षात घेता त्या पूर्ण करण्यासाठी माहिती तंत्रज्ञानाची आवश्यकता आहे.

५)   आधुनिक काळातील ग्रंथालयाचा वाचक संपुर्णत: बदललेला आहे व त्याच्या वाचनाच्या गरजा सुध्दा अफाट आहे व त्या अफाट गरजा भागविण्यासाठी माहिती तंत्रज्ञानाची आवश्यकता आहे.

माहीती तंत्रज्ञानाचे महत्व:—

१)   कोविडच्या काळात विद्यार्थी संशोधक प्राध्यापक व सर्व प्रकारचा वाचक वर्ग यांना स्वयं अध्यनासाठी अतिशय उपयुक्त आहे.

२)   अफाट, विस्तृत व अचूक अशी माहीती प्राप्त करण्यास मदत होते.

३)   विविध आधुनिक सेवांचा उपयोग केल्यामूळे शिक्षणात होणारी परिणामकारकता अधिक जास्त प्रमाणात वाढली आहे.

४)   माहिती तंत्रज्ञानाच्या उपयोगीतेमुळे एकाचवेळी अनेक वाचकापर्यंत माहिती पोहचविण्यास मदत होते.

५)   माहितीचे कागदाविरहीत संग्रह करणे शक्य होते.

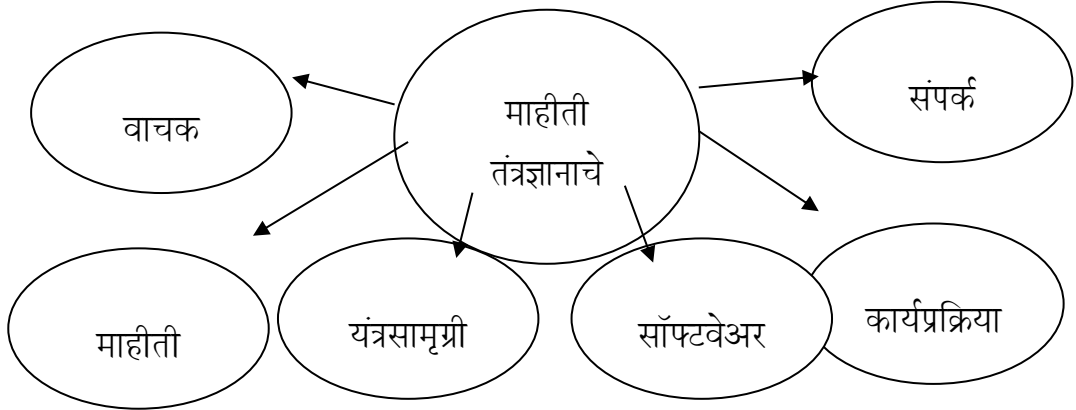## माहीती तंत्रज्ञानामुळे ग्रंथालयीन सेवांचे फायदे:—

१)   ग्रंथालयात येणाऱ्या वाचकांना वाचन साहित्य मिळविण्याकरीता मर्यादा निर्माण होते.

२)   ग्रंथालयातील सर्व वाचन साहित्य २४ ग ७ वेळेत वाचकांना उपलब्ध होऊ शकतात.

३)   इंटरनेट व संगणकाचया माध्यमातून एकच माहिती एकाच वेळेस अनेक ठिकाणाहून प्राप्त करु शकतात.

४)   ग्रंथालयातील दुर्मीळ स्वरुपाच्या साहित्याचे डिजीटल क्षेत्राच्या माध्यमातून जतन करता येते.

५) ग्रंथालयातील जागेच्या अभावी कमीत कमी जागेत जास्तीत जास्त माहितीची साठवणूक करणे शक्य होते.

६) हायपर लिंकच्या माध्यमातून एका ग्रंथालयातील माहिती दुसऱ्या ग्रंथालयातील वाचक वर्ग सहजरित्या मिळवू शकते.

७) पारंपारिक ग्रंथालयातील सेवांच्या तुलनेमध्ये आधुनिक ग्रंथालयातून माहिती तंत्रज्ञानाव्दारे दिल्या जाणाऱ्या सेवा कमीत कमी खर्चात उपलब्ध होत असतात.

माहिती तंत्रज्ञानामुळे ग्रंथालयीन सेवेमध्ये होणारे तोटे:—

१) ग्रंथालयाव्दारे वाचकांना माहिती देत असतांना कॉपीराईट कायद्याचे उल्लंघन होण्याची शक्यता असते.

२) विशिष्ट अशया कालावधिनंतर माहिती तंत्रज्ञानाच्या साधनात बदल होत असतो व झालेला बदल आत्मसात करण्यासाठी खर्चाची तरतुद करावी लागते.

३) माहिती तंत्रज्ञानाचा वापर करतांना अनेक तांत्रिक अडचणी निर्माण होत असतात.

४) ग्रंथालयात उपलब्ध असलेले सर्वच वाचन साहित्य डिजिटल स्वरुपात तयार करणे शक्य नसते.

महिती तंत्रज्ञानाचे प्रमुख घटक:—

माहिती तंत्रज्ञानाचा उपयोग करुन देण्यात येणाऱ्या ग्रंथालयीन सेवा:—

१) ग्रंथालयाचे संकेत स्थळ:—

ग्रंथालयाच्या संकेत स्थळाच्या माध्यमातून वाचकांना ग्रंथालया विषयी संपूर्ण माहिती उपलब्ध करुन दिल्या जाते.

२) ग्रंथालय पोर्टल:—

ग्रंथालय पोर्टलच्या माध्यमातून वेगवेगळया ठिकाणची माहिती एकाच ठिकाणी उपलब्ध करुन देण्यात येते. पोर्टलचे स्वरुप जरी संकेतस्थळासारखे असले तरी त्याचे कार्य वेगळे असते. पोर्टलच्या माध्यमातून अनेक संकेत स्थळांना एकाच ठिकाणी उपलब्ध करुन देता येते.

पोर्टलव्दारे प्रामुख्याने ई मेल, न्युज, विविध डेटाबेस, ई जनरल्स, ई—बुक, ऑडीयो, व्हिडीओ तसेच यांची संकेत स्थळे उपलब्ध करुन दिल्या जाते. उदा. MSN, Google India time, Rediffmail, Yahoo.

३) आर. एफ. आय. डी. तंत्रज्ञान (RFID):—

ग्रंथालयातील देव घेव विभागात या तंत्रज्ञानाचा उपयोग केला जात असतों. ग्रंथसाहीत्याचे देवघेव अती जलद व वाचन साहित्याच्या सुरक्षीततेच्या दृष्टीने या तंत्रज्ञानाचा उपयोग ग्रंथालयात केला जातो.

४) Big Screens in Libraries:-

ग्रंथालयात नविन आलेली पुस्तके वाचकांना कळवित म्हणून ग्रंथालयाच्या दर्शनी भागात लावत असते. अगदी त्याच प्रमाणे नविन पुस्तकांची माहिती मोठया डिजिटल स्क्रीनवर उपलब्ध करावी.

५) WhattsApp Group:- (व्हॉट्सऑप गृप)

व्हॉट्सऑप गृपच्या माध्यमातून कमीत कमी वेळात ग्रंथालयातील वाचकांसोबत संवाद साधण्यासाठी मदत होत असते. त्याच प्रमाणे ग्रंथालयात नविन उपलब्ध माहिती वाचकांना देता येते.

६) Facebook Page:-

ग्रंथालयाने स्वतःचे असे फेसबुक तयार करुन सोशल मिडीयाच्या माध्यमातून ग्रंथालयासबंधीत माहिती प्रसिध्द करावी.

७) Mobile Communication Services:-

या माध्यमातून एस.एम.एस., ई मेल, ट्युटर, (Twitter) Blogs, Linkedin या सर्व सोशलमिडीयाच्या साधनांचा सुध्दा ग्रंथालयीन सेवांसाठी उपयोग करता येतो.

८) ऑन लाईन माहीती संसाधन सेवा

९) ऑडिओ, व्हिजुअल सेवा

१०) ई बुक सेवा

११) डेटाबेस सेवा

१२) ऑनलाईन आरक्षण सेवा

१४) Print on demand of Books सेवा

१५) Virtual reality या मध्ये वाचकांना एकाच जागेवर बसून संपुर्ण ग्रंथालयाची माहीती दिली जाते.

१६) Rugmented Reality सेवा:—

निष्कर्ष:—

ग्रंथालयीन सेवामध्ये माहिती तंत्रज्ञानाचा उपयोग केल्या जात असल्यामुळे आज सर्वप्रकारची ग्रंथालये संगणकाच्या व मोबाईलच्या माध्यमातून इंटरनेटशी जोडल्या गेल्या आहेत

व सोशल मिडीयाच्या माध्यमातून सुध्दा वाचक वर्ग हा ग्रंथालयाशी जोडल्या गेला आहे व या माध्यमातूनच ग्रंथालयाला वाचकांशी संवाद साधून आवश्यक ती सेवा पुरविण्यास मदत होत आहे व ही माहीती तंत्रज्ञानाची ग्रंथालयाला व जगाला दिलेली देणगी आहे.

संदर्भ सुची:—

१)   ब्रिजवासी, हितेश (डिसेंबर २०१७ मे २०१८) श्रीमती शरदचंद्रिका सुरेश पाटील कॉलेज ऑफ फार्मसी चोपडा येथील ग्रंथालय पोर्टल ज्ञानगंगोत्री अंक ३ व ४ यशवंतराव चव्हान महाराष्ट्र मुक्त विद्यापीठ नाशिक (१.४)

२)   पंचधारा, अंक ४ जानेवारी ते मार्च २०१९ मराठी साहित्य परिषद तेलंगाणा

३)   माहीती संप्रेषण आणि शैक्षणिक तंत्रविज्ञानाची संकल्पना एम.ए. भाग—२ शिक्षणशास्त्र, मुंबई विद्यापीठ

४)   साखरे, राजेंद्र ग्रंथालय व माहितीशास्त्र ११ वी महाराष्ट्र राज्य पाठयपुस्तक निर्मिती व अभ्यासक्रम संशोधन मंडळ पुणे २०१५

५)   साखरे, राजेंद्र ग्रंथालय व माहितीशास्त्र १२ वी महाराष्ट्र राज्य पाठयपुस्तक निर्मिती व अभ्यासक्रम संशोधन मंडळ पुणे २०२०

६)   काळे, उदय इंटरनेट आणि वल्ड वाईल्ड वेब साईनाथ प्रकाशन नागपूर २०१०

इन्फॉरमेशन कॉम्युनिकेशन टेक्नॉलॉजिचा वाचन संस्कृतिवर पडणारा प्रभाव

सौ. माधुरी मार्तंड कुलकर्णी

ग्रंथपाल, श्री. सिद्धेश्वर वूमन्स कॉलेज ऑफ इंजिनीअरिंग, सोलापूर मो. ९९६०२९९७९२

प्रस्तावना :

तंत्रज्ञानाच्या युगात मनुष्य हा टेक्नॉलॉजिशिवाय जगतो या वाक्यावर विश्वास ठेवणे केवळ अशक्य आहे. तंत्रज्ञानाच्या प्रभावापासून कोणीही दूर राहिलेले नाहीत मग ग्रंथालये का बरे मागे राहतील?   या टेक्नॉलॉजिमुळे वाचक ग्रंथालयाच्या अधिक जवळ आला कि लांब गेला? वाचनसंस्कृति म्हणजे काय, तिचा विकास आणि इन्फॉरमेशन कॉम्युनिकेशन टेक्नॉलॉजिचा वाचन संस्कृतिवर पडणारा प्रभाव याविषयीचा आढावा या लेखात घेतला आहे.

कळ शब्द: इन्फॉरमेशन, कॉम्युनिकेशन, टेक्नॉलॉजि, तंत्रज्ञान, वाचन संस्कृति, वाचक इ.

वाचनाचे महत्त्व

"वाचन" म्हणजे नेमकी कोणती प्रक्रिया आहे हे समजणे आवश्यक आहे. कोणत्याही भाषेतील अक्षरे, शब्द, वाक्य यांच्यावरून फक्त नजर फिरविणे म्हणजे "वाचन" नसते तर, "नजरेसमोर दिसणाऱ्या अक्षरांच्या, शब्दांच्या व वाक्यांच्या अर्थाचे 'आकलन' होऊन त्यावर स्वतःची प्रतिक्रिया स्वतःशी नोंदविणे म्हणजे वाचन असते."

अक्षरओळखीनंतर ज्ञान मिळविण्यासाठी आपोआपच अशा वाचनाचा आधार घेतला जातो. कारण हे आत्मविकास करणारे आहे. 'स्व' ची ओळख करून देणारे आहे. पण वाचन हे 'साध्य' नसून 'साधन' आहे. लेखन, वाचन यांचा शोध लावून मानवाने निसर्गाची रहस्ये समजून घेतली आणि निसर्गावर बऱ्याच प्रमाणात नियंत्रण मिळविले. याशिवाय भूतकाळातील विचारवंतांचे विचार वाचनामुळेच ज्ञात होऊ शकले आणि त्या मार्गाने ज्ञात असलेल्या व्यक्तींच्या विचारांशी संपर्क साधता येऊ लागला. म्हणजे, वाचनामुळे माहितीच्या गरजांचे तर समाधान होतेच, पण ज्या व्यक्ती प्रयक्षात आपल्याशी बोलू शकत नाहीत, त्या ग्रंथाच्या वाचनामुळे ते इतरांपर्यंत पोहचू शकतात, त्यावरून नव्या ज्ञानाची किंवा माहितीची निर्मितीही होऊ शकते.

वाचनाची सवय

'वाचन' हे अनेक 'जीवनस्त्रोतां' पैकी एक झाले आहे. मात्र सामाजिक बदलांनुसार नेहमीच 'वाचन' व 'वाचनाची सवय' यावर परिणाम होतो असे दिसते. सामाजिक बदल अधिक वेगाने होतो तेव्हा वाचनाची सवयही वेगाने वाढते. वाचन ही एक अत्यावश्यक गरज बनते. कारण वेगाने बदलत्या सामाजिक परिस्थितीत ज्ञान व माहितीस अधिक मागणी येते. पूर्ण विकसित समाजाचा सभासद असणारा व्यक्ती हा वाचनाची सवय जाणीवपूर्वक जोपासतो. कारण त्याला स्वतःचा दर्जा वाढवायचा असतो. तो टिकवायचा असतो. म्हणूनच त्याला सतत वाचन करावे लागते व आजूबाजूच्या घटनांची व परिस्थितीची माहिती करून घ्यावी लागते. म्हणूनच विकसित समाजातील व्यक्तींना माहिती, करमणूक व समाधान देणाऱ्या वाचनसाहित्याची निवड करण्याचे स्वातंत्र्य असावे लागते. ग्रामीण भागापेक्षा नागरी जीवनात तणाव जास्त असतात. 'अति-आधुनिक' व 'गतिमान' समाजातील व्यक्तींना 'हलकं-फुलकं' वाचन करणे गरजेचे वाटते आणि शक्यही होते. त्यातून

ज्ञान व माहिती मिळविण्यापेक्षा तणाव कमी करणारा आनंद, मनोरंजन व समाधान मिळू शकते. म्हणूनच वाचनाची सवय असणे व त्यासाठी ग्रंथालयाची मदत असणे या गोष्टी फायद्याच्या असतात.

सतत बदलत राहणाऱ्या व अधिकच गुंतागुंतीच्या होणाऱ्या परिस्थितीत मानव, वाचनावाचून राहू शकणार नाही. कारण, अशा परिस्थिती टिकून राहण्यासाठी 'वाचन' हा उपयुक्त मार्ग आहे.

वाचनसवयींचा विकास

जगातील प्रत्येक राष्ट्रात साक्षरता अभियान चालू आहे. प्रत्येक मानवाला अक्षर ओळख व्हावी, ती टिकून राहण्यासाठी वाचनसाहित्य मिळावे आणि ते वाचण्यास मानवास उद्युक्त करावे असे प्रयत्न सर्व पातळ्यांवर होत असतात.

आंतरराष्ट्रीय पातळीवर UNO (युनायटेड नेशन्स ऑर्गनायझेशन) च्या जनरल असेम्बलीने इ स. १९९० हे वर्ष 'आंतरराष्ट्रीय साक्षरता वर्ष' म्हणून जाहीर केले. कारण प्रत्येक बालकाला लिहिणे, वाचणे याची आणि प्रौढांना वाचनाची संधी मिळावी याची ग्वाही मिळणे आवश्यक झाले आहे.

भारताच्या पंतप्रधानांनी इ.स.१९९० हे 'साक्षरता वर्ष' व त्यानंतरचे दशक हे 'साक्षरता-दशक' जाहीर केले. आता साक्षरतेसाठी प्रयत्न चालू असतानाच वाचनाची सवय वाढविणे, तिचे महत्त्व ठसविणे यासाठीही प्रयत्न होणे आवश्यक आहे, हे सर्वमान्य झाले आहे. तरीसुद्धा वाचनासाठी वेळ काढण्याऐवजी टी.व्ही. बघणे ही आधुनिक युगातील आवडीची गोष्ट आहे हे मान्य करावे लागते. जगभरातील घटनांची माहिती करून घेण्यासाठी टी.व्ही. बघणे उपयुक्त ठरते. मग शब्दांचे माध्यम असणारे लेखन-वाचन व इलेक्ट्रॉनिक्सचे माध्यम असणारा टी.व्ही. यात विरोध निर्माण होण्याचे कारण नाही. फक्त जेव्हा ग्रंथ हेच मनोरंजनाचे साधन होते, तेव्हा इतकी लोकप्रियता कदाचित आता राहणार नाही. पण ज्ञान व माहिती मिळविण्यासाठी ग्रंथांचेच वाचन करणे सोयीस्कर वाटत राहील. कारण ग्रंथांची पाने वाचून झाल्यावरही पुन्हा उलटून मागे जाऊन पाहता येते. इलेक्ट्रॉनिक माध्यमासाठी ते इतके सुलभ नसते. याशिवाय टी.व्ही. सारखे साधन आपले पूर्ण लक्ष वेधून घेऊच शकत नाहीत. वरील सर्व गोष्टींची नोंद मेंदूमध्ये होईलच असे नाही. याउलट, ग्रंथातील शब्दांचे आकलन होत असल्याने त्यांचे वाचन करताना आपले सारे लक्ष केंद्रित होते. त्यामुळे गोष्टी जास्त काळ लक्षात राहू शकतात. म्हणूनच पूर्वीच्या पिढीत वाचनाची सवय जास्त होती. ग्रंथ हे मनोरंजनाचे व नैतिक तत्त्वांचे शिक्षण मिळण्याचे, कमी खर्चाचे साधन होते, पण टी.व्ही. सारखी साधने मुबलक उपलब्ध झाल्यावर वाचनाकडे दुर्लक्ष झालेले दिसते. म्हणून जाणत्या नागरिकांनी, शासनानी व ग्रंथालयांनीही वाचनाची सवय लागावी, टिकावी व वाढावी यासाठी प्रयत्न केले पाहिजेत.

वाचनसंस्कृती

"ज्ञानसंपादनाचे आणि संवर्धनाचे सर्वात सुकर आणि प्रमुख माध्यम म्हणजे वाचन"

"मानवी इतिहासात व विकासात निर्णायक ठरलेला ज्ञान, साहित्य, कला आणि विज्ञानाचा महास्रोत कायम, अखंड प्रवाहित ठेवण्याचे महत्कार्य वाचनसंस्कृतीनेच साधले आहे. तसेच समाजप्रबोधनाच्या क्षेत्रातही वाचनपरंपरेचे स्थान निश्चितच मोलाचे राहिले आहे."

"पुस्तके अथवा ग्रंथ यासारखा दुसरा गुरु नाही". असे म्हटले जाते. वाचनाची आवड असणारे सर्व वाचक सर्व प्रकारची पुस्तके विकत घेऊन वाचू शकत नाहीत, अशा वेळी त्यांच्या मदतीला येते ते ग्रंथालय.

रेडिओ, टी. व्ही., मोबाईल, इंटरनेटच्या काळात नवी पिढी वाचनापासून दूर जात असल्याचे चित्र दिसते. त्यांच्यावर सुसंस्कार करण्यासाठी केवळ पाठ्यपुस्तके पुरेशी नाहीत. नव्या पिढीची मानसिकता ओळखून त्यांच्या सोयीने पुस्तके अथवा ग्रंथातील ज्ञान त्यांच्यापर्यंत पोहोचवावे लागेल. त्यासाठी आधुनिक माहिती व तंत्रज्ञानाची साधने वापरावी लागतील. असे केले तरच वाचनसंस्कृती वाढण्यास मदत होईल व वाचनचळवळीला खरी गतिमानता प्राप्त होईल".

वाचन संस्कृतीचा विकास

मानवी इतिहासाचे एक वैशिष्ट्य असे आहे की, मानव सतत आपल्या विचारांचे किंवा ज्ञानाचे संप्रेषण करीत असतो याचा अर्थ असा की, मानवी विचार किंवा ज्ञान हे नेहमीच एका व्यक्तीकडून दुसऱ्या व्यक्तीकडे व एका पिढीकडून दुसऱ्या पिढीकडे संप्रेषित होत राहते आणि विचारांच्या व ज्ञानाच्या या संप्रेषणामुळेच संस्कृती विकसित होत राहिली आहे. मानवाची नव्या ज्ञानाबद्दलची जिज्ञासा, ग्रंथालये आणि मानवाचा विकास या गोष्टी एकमेकींना पुरकही आहेत आणि एकमेकींवर अवलंबूनही आहेत. ज्ञानाबद्दलची जिज्ञासा पुरविण्यासाठी आणि ज्ञान संग्रहित करण्यासाठी मानवाकडे जे अनेक मार्ग आहेत, त्यापैकी "वाचन" हा एक मार्ग आहे.

वाचनाची आवड निर्माण झाली की, वाचनाची सवय वाढत राहते. वाचनाची गरज वाढत राहते. ती गरज भागविण्यास ग्रंथालये मदत करतात. एवढेच नव्हे तर, बालकांपासून प्रौढांपर्यंत सर्वांनाच वाचनाची सवय लागावी यासाठी ग्रंथालये प्रयत्नही करतात, कारण वाचनाच्या वाढल्या सवयींमुळेच ग्रंथालयांचा विकास खऱ्या अर्थाने पूर्ण होत असतो.

इन्फॉरमेशन कॅम्युनिकेशन टेक्नॉलॉजिचा वाचन संस्कृतिवर पडणारा प्रभाव

वाचनामुळे मानवाला एक नवीन दृष्टी आणि विचार करण्याचे स्वातंत्र्य मिळते. पण माहिती व दळणवळण तंत्रज्ञानाच्या प्रत्येक माध्यमामुळे अशी एक भीती निर्माण झाली आहे की, मनुष्याच्या वाचण्यातला रस दिवसेंदिवस कमी होत चालला आहे. रेडिओ, दूरदर्शन, सेल फोन, संगणक आणि इंटरनेट यांनी माणसाच्या वेळेचा एक मोठा भाग गिळंकृत करून वाचनाचा वेळ कमी केला आहे. पुस्तके आणि इतर वाचन सामग्रीच्या जगाशी लोकांचे संपर्क कमी झाले आहेत. विशेषत: मुले नवीन माध्यमांद्वारे वाहवत चालली आहेत. इंटरनेट वर एका क्लिकद्वारे आपल्याला हवी ती माहिती क्षणार्धात उपलब्ध होते. त्यासाठी पुस्तकं वाचण्याची गरज वाटत नाही. याचे मुख्य कारण म्हणजे वेळ. आजकालच्या अतिशय वेगवान आणि आधुनिक जगात वेळ ही अतिशय मौल्यवान गोष्ट बनली आहे. कमीत कमी वेळेमध्ये जास्तीतजास्त वाचन साहित्य वाचकांपर्यंत पोहोचवण्यासाठी आधुनिक तंत्रज्ञानाचा वापर हा वाचक आणि वाचन संस्कृती यांच्यामधील दुवा ठरेल.

इन्फॉरमेशन कॅम्युनिकेशन टेक्नॉलॉजि आणि ग्रंथालय

इन्फॉरमेशन कॅम्युनिकेशन टेक्नॉलॉजि हे ग्रंथालयासाठी एक वरदानच म्हणावे लागेल. पारंपरिक ग्रंथालयांना स्वतःमध्ये बदल करून घेऊन तंत्रज्ञानाच्या युगात ठामपणे उभे राहण्यासाठी इन्फॉरमेशन कॅम्युनिकेशन टेक्नॉलॉजि मैलाचा दगड ठरला आहे. वाचकांच्या वाढल्या मागण्या आणि त्या पुरविण्यासाठी लागणार वेळ यातील महत्त्वाचा दुवा म्हणजे तंत्रज्ञान. योग्य आणि अचूक माहिती कमीत कमी वेळेत जर वाचकांना दिली तरच वाचक समाधानी होतील आणि त्यांची पावले आपोआप ग्रंथालयाकडे वळतील.

त्याकरिता सिलेक्टिव्ह डिसिमिनेशन सर्व्हिस, करंट अवेअरनेस सर्व्हिस, प्रलेखन सेवा, संदर्भ सेवा यासारख्या सेवा दिल्या जातात. ग्रंथालय सेवा जलद बनविण्यासाठी तंत्रज्ञानाच्या नवनवीन संकल्पनांना ग्रंथालये स्वीकारत आहेत. ग्रंथालयचा प्रचंड संग्रह व्यवस्थापित करण्यासाठी तंत्रज्ञान वापरणे अपरिहार्य आहे.

समारोप :

सध्याच्या सामाजिक परिस्थितीमध्ये नवनवीन वाचक निर्माण होणे हे एक आव्हानच आहे. नवीन वाचकांच्या गरजा त्यांच्या अपेक्षा, त्यांची ज्ञानाची भूक समजून घेऊन आपण सर्वांनी प्रयत्न करायला हवेत. इलेक्ट्रॉनिक मिडीयाच्या माध्यमातून ई-बुक्स सहजरित्या वाचकांच्या हातात उपलब्ध होत आहेत, हि या युगाची एक जादूच आहे. असे असले तरी पारंपरिक वाचनपद्धती, ग्रंथ हाताळणी व ग्रंथ जतन करण्याच्या पद्धतीपासून हि पिढी दूर जाते कि काय अशी एक भीती वाटत आहे. पण एक समाधानाची बाब अशी सुद्धा आहे कि ई-बुक्सपेक्षा छपाई केलेल्या पुस्तकांनाच जास्त मागणी आहे. अशाप्रकारे आपण सर्वजण मिळून वाचन संस्कृती वृद्धिंगत होण्यासाठी सर्व पातळीवर प्रयत्न करूयात.

संदर्भ सूची:-

१) नरगुंदे, रेवती, ग्रंथालय आणि सामाजिक विकास, युनिव्हर्सल प्रकाशन, पुणे, २००२, पृ.३३.

२) ज्ञानगंगोत्री : सप्टेंबर-ऑक्टोबर-नोव्हेंबर, २०१७, पृ. ५२.

३) https://core.ac.uk/download/pdf/290492226.pdf

४) http://eprints.rclis.org

ई –सूचना स्त्रोत के प्रकार एवम् वर्तमान युग में पुस्तकालय में इसकी उपयोगिता

श्रीमती अंजनी सराफ
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सारांश

यह पेपर ई–सूचना स्त्रोत के विभिन्न पहलुओं पर केंद्रित है । डिजिटल तकनीकी ने इस संग्रहित ज्ञान को उपयोग करना अधिक आसान, शीघ्र अधिग्रहण करने योग्य तथा आरामदायक बना दिया हैं।यह संग्रहित सूचना अनुसंधानकर्ताओ द्वारा आगे के अनुसंधान तथा समाज के बेहतरी और समग्र विकास के लिए इस्तेमाल किया जा सकता हैं।सुदूर क्षेत्रों में इलेक्ट्रॉनिक– सूचना स्त्रोत आसानी से अधिग्रहित किए जा सकते है । ई–सूचना स्त्रोत भंडारण की समस्या को हल करते है और सूचना के विस्फोट को नियंत्रित करते हैं। आज के युग में निरंतर प्रलेखीय स्त्रोतो को डिजिटल किया जा रहा है । शैक्षणिक समुदाय(community) के लिए इलेक्ट्रॉनिक सूचना स्त्रोत बहुत अधिक महत्वपूर्ण होते जा रहे हैं। तकनीकी के विकास(advent) ने पुस्तकालयों को इसके संग्रह में नई चीजे जोड़ने के लिए प्रोत्साहित एवम् योग्य बनाया है । उनमें से सबसे अधिक महत्वपूर्ण ई–सूचना स्त्रोत है। यह पेपर इन ई–सूचना स्त्रोतों का एक अवलोकन प्रस्तुत करता है, तथा इनके कुछ लाभ एवम् हानि और कुछ वेब साइट्स का पता बता रहा है।
की वर्ड्स:*–ई- सूचना स्त्रोत, ई-बुक्स, ई-जर्नल्स, ई–न्यूजपेपर और ई- थीसिस।*

प्रस्तावना :– प्रिंट मीडिया में सूचना के डिजिटलीकरण ने मानव जीवन के सभी क्षेत्रों में एक नई अवधारणा को जन्म दिया है , इसने सूचना युग की शुरुआत को चिन्नित किया है । एक इलेक्ट्रॉनिक–सूचना स्त्रोत को एक ऐसे स्त्रोत के रूप में परिभाषित किया गया है जिसके लिए कंप्यूटर एक्सेस या किसी इलेक्ट्रॉनिक उत्पाद की आवश्यकता होती है । यह डेटा का एक संग्रह प्रदान करता है , यह पूर्ण पाठ आधारों, इलेक्ट्रॉनिक पत्रिकाओं , छवि संग्रह , अन्य मल्टी मीडिया उत्पाद और संख्यात्मक , चित्रमय या समय आधारित, व्यावसायिक रूप से उपलब्ध शीर्षक जिसे विपणन किए जाने के उद्देश्य से प्रकाशित किया गया है, का उल्लेख करता है। जिसे सीडी रोम पर, टेप पर , इंटरनेट के माध्यम से वितरित किया जा सकता हैं। इसके अधिक उपयोगी होने का कारण हेर फेर तथा खोज के लिए अंतर्निहित छमताए तथा सूचना पहुंच प्रदान करना सस्ता है । साथ ही सूचना स्त्रोतों को प्राप्त करने, भंडारण और रख रखाव आदि में बचत और कभी कभी इलेक्ट्रॉनिक रूप ही एक मात्र विकल्प होता है वैज्ञानिक प्रकाशन में विकास और प्रकाशकों की मूल्य निर्धारण नीतियों ने शैक्षणिक पुस्तकालयों के लिए अपने प्रतिबंधित बजट के भीतर धारावाहिकों को खरीदने और प्रबंधित करने में नई चुनौतियों और अवसरों को प्रस्तुत किया है।

21 वी सदी के पुस्तकालय और सूचना सेवाएं तेजी से बदल रही है तेजी से हो रहे इलेक्ट्रॉनिक प्रकाशन के विकास के कारण पुस्तकालय ना केवल पठन सामग्रियों जैसे मुद्रित पुस्तकों और पत्रिकाओं का अधिग्रहण कर रहा है बल्कि विभिन्न शिक्षण स्त्रोतों की इलेक्ट्रॉनिक रूप में पहुंच की व्यवस्था प्रदान कर रहा है वेब संसाधन और वेब का उपकरण के रूप में उपयोग ने उपयोगकर्ताओं के सीखने के तरीके

को बदल दिया है ।उपयोगकर्ता को सूचना और संसाधन प्रदान करने के लिए शुरुआती दौर में वर्ल्ड वाइड वेब का उपयोग मुख्य रूप से पुश टाइप एप्लीकेशन के लिए किया जाता था ।

वेब 2.0 और खुले स्त्रोतों एवं साझा उपयोग अवधारणा के प्रसार ने उपयोगकर्ता जनरेटेड सामग्री और एप्लीकेशन की ओर ध्यान केंद्रित किया है इसने इलेक्ट्रॉनिक संसाधनों की लोकप्रियता में तेजी से विकास किया है ई सूचना स्त्रोत वैश्विक साहित्य (global literature) के एक महत्वपूर्ण हिस्से पर कब्जा कर रहे है । ये इलेक्ट्रॉनिक रूप में सूचना स्त्रोतो का उल्लेख करते है । विभिन्न प्रकार के ई–सूचना स्त्रोत, ई –बुक्स, ई–जनरल्स, डेटाबेसेस, सीडीएस/डीवीडीएस, ई–कांफ्रेंस प्रोसिडिंग, ई–रिपोर्ट्स, ई–मैप्स, ई–पिक्चर्स/फोटोग्राफ्स , ई–मैनूस्क्रिप्ट, ई–थीसिस, ई–न्यूजपेपर, इंटरनेट/वेबसाइट्स लिस्टसर्वस, न्यूज ग्रुप्स, सब्जेक्ट्स गैटवेस, यूजनेट आदि है ।

ये सीडी रोम / डीवीडी, पर डिलीवर किए जा सकते है । ई–सूचना स्त्रोत पुस्तकालय उपयोगकर्ताओं को ई–डेटाबेस , ई–पत्रिका / ई–किताबे/ऑडियो/ ई–छवियो, डेटा / जीआईड , डिजिटल लाइब्रेरी प्रोजेक्ट्स , इलेक्ट्रॉनिक प्रदर्शनीय, ई–विषय गाइड, ई–समाचार पत्र , ई– सम्मेलन कार्यवाही आदि को खोजने में मदद करने के लिए एक सेवा है । और विषय की एक सीमा तक वेब खोज उपकरण तक पहुंच प्रदान करता है ।

इलेक्ट्रॉनिक पुस्तकें उनके आसान पोटेबिलिटी और एक हाथ से आयोजित डिवाइस में एक से अधिक किताब को एक्सेस करने की विशेषता के कारण सहायक होती है । ओपन एक्सेस प्लेटफार्म पर प्रकाशित सामग्री भी उपलब्ध है। इससे गरीबों को भी आवश्यक सूचना मुफ्त में प्राप्त करने में मदद मिलती है तथा यह डिजिटल अंतर को भरने में भी मदद करता है। उन्हें लाइसेंस और सूचना का उपयोग करने के लिए चिंता करने की आवश्यकता नहीं होती है । डॉ.रंगनाथन के पांचवे सूत्र के अनुसार, "पुस्तकालय एक वर्धनशील संस्था है।"पुस्तकालय पुस्तकों का भंडार गृह नही है, यह एक ज्ञान का केंद्र है । हर एक पाठक अपनी समस्या के समाधान के इरादे से पुस्तकालय का दौरा करता है । पुस्तकालय को उपयोगकर्ता समुदाय की जरूरतों को पूरा करना चाहिए ।

परिभाषा:-

"ई संसाधन शब्द सभी सूचना उत्पादों का वर्णन करने के लिए उपयोग किया जाता है जो एक पुस्तकालय एक कंप्यूटर नेटवर्क के माध्यम से प्रदान करता है ।"

पुस्तकालय एवं प्रोद्योगिकी शब्दावली के अनुसार

"एक इलेक्ट्रॉनिक संसाधन , सामग्री, डेटा या प्रोग्राम जिसे एक कंप्यूटरीकृत डिवाइस द्वारा हेर फेर के लिए एंकोड किया गया हो इस सामग्री के लिए एक पेरीफेरल जो सीधे एक कंप्यूटराइज्ड डिवाइस से जुड़ा हो की अव्यशक्ता होती है (eg.सीडी–रोम ड्राइव) या एक कंप्यूटर नेटवर्क (जैसे , इंटरनेट) से कनेक्शन। इलेक्ट्रॉनिक संसाधन जिन्हे कंप्यूटर के उपयोग की आव्यशक्ता नही है, इस परिभाषा में शामिल नहीं है । उदाहरण के लिए , संगीत कंपैक्ट डिस्क और वीडियोकोड।"

एएसीआर- 2 के अनुसार
साहित्य की समीक्षा :-

* जमाली, निकोलस और हैंटिंगटन (2005) ने कई अध्ययनो से निष्कर्ष प्रस्तुत किए की उन्होंने इलेक्ट्रॉनिक पत्रिकाओं के उपयोग और उपयोगकर्ताओं का अध्ययन करने के लिए लॉग विश्लेषण का उपयोग किया ,और उन्होंने इस बात पर ध्यान केंद्रित किया कि अंतिम उपयोगकर्ता द्वारा पसंद किया जाने वाला प्रारूप एचटीएमएल प्रारूप के बजाए पीडीएफ प्रारूप है।

* चिसेंगा (2004) ने दस अफ्रीकी सार्वजनिक पुस्तकालय सेवाओं में आई. सी. टी. की उपयोग की समीक्षा की है । समीक्षा में पाया गया ,की हालाकि अधिकांश पुस्तकालयों में इंटरनेट कनेक्टिविटी थी परंतु बहुत कम अपने उपयोगकर्ताओं को वेब आधारित सेवाएँ प्रदान करने में योगदान दे रहे थे। हालांकि अध्ययन, उन पुस्तकालय में इलेक्ट्रॉनिक संसाधन की उपयोगी सुविधा के लिए चार बाधाओं का उल्लेख करता है, अर्थात सुविचारित योजना की कमी, पर्याप्त या भरोसेमंद वित्तीय सहायता की कमी, उपयोगकर्ताओं को सूचना सेवाओ की आपूर्ति करने के लिए इंटरनेट के उपयोग की कमी, उपयोगकर्ताओं के लिए नई सूचना और संचार प्रौद्योगिकी सेवाएँ प्रदान करने में निरंतर तैयारी की कमी।

ई-सूचना स्त्रोतों की आवश्यकता:-

ई-संसाधन पुस्तकलयाध्यक्ष को उपयोक्ता समुदाय को बेहतर सेवा प्रदान करने में सक्षम बनाते है। कुछ महत्वपूर्ण बिंदु इस प्रकार है:-

• ई–सूचना स्त्रोत को शीघ्रता से खोजा जा सकता है।

• एक से अधिक उपयोगकर्ताओं द्वारा सूचना स्रोत तक पहुंच प्राप्त करना ।

• इन संसाधनों को वृहद मात्रा में संग्रहित किया जा सकता है।

• डिजिटल रूप में सूचना एकत्र करना, संग्रहित करना, तथा व्यवस्थित करना।

• सभी स्तर के उपयोगकर्ताओं को आर्थिक रूप से सूचना के कुशल वितरण को बढ़ावा देना।

• अनुसंधान संसाधनो एवम् कम्प्यूटिंग और संचार नेटवर्क में निवेश को बचाने और साझा करने के लिए सहकारी प्रयासों को प्रोत्साहित करने के लिए । आदि

ई–सूचना स्त्रोतों के प्रकार :–

• **ई–बुक्स**:–ई–किताबें प्राइम टाइम के लिए प्रतिस्पर्धा करनेवाले कई प्रारूप है, जिसमे एडोब पीडीएफ ,माइक्रोसॉफ्ट रीडर ,ई–रीडर, मोबी पॉकेट रीडर, ईपीयूबी, किंडल और आई पैड आदि शामिल है ।

• **ई–पत्रिकाएं**:–ई–पत्रिकाएं प्रत्येक पुस्तकालय संग्रह का एक बहुत महत्वपूर्ण हिस्सा है। ई–पत्रिकाएं सूचना प्रोद्योगिकी का एक अनुप्रयोग है।

• **ई–समाचार पत्र** :–एक ई–अखबार को ऑनलाइन समाचार या वेब समाचार पत्र के रूप में भी जाना जाता है।जो वर्ल्ड वाइड वेब या इंटरनेट पर मौजूद होता है ।

•**अनुक्रमणिकरण एवम् सारकरण डेटाबेस :**–यह संदर्भ स्त्रोत है जो जर्नल्स सहित लेखों के सार के बारे में ग्रंथ सूची प्रदान करते है।

• **पूर्ण पाठ डाटाबेस:**–आज नेटवर्क पर कई डेटाबेस उपलब्ध हैं वे या तो मुफ्त है या शुल्क के साथ होते है ।

• **ई–डेटाबेस:**–ई–डेटाबेस, एक संगठित संग्रह है, ई–डेटाबेस की भीतर किसी विषय विशेष या बहुविषयक विषय क्षेत्र के बारे में जानकारी को इलेक्ट्रॉनिक रूप से खोजा और पुनरप्राप्त किया जा सकता है।

• **संदर्भ डेटाबेस:**–ये कई शब्दकोश, पंचांग और विश्वकोश है जो इंटरनेट पर इलेक्ट्रॉनिक प्रारूप में उपलब्ध है।

• **सांख्यिकीय डेटाबेस:**–इस डेटाबसे में संख्यात्मक डेटा होता है जो मास कम्युनिटी के लिए उपयोगी होती हैं।

• **छवि–संग्रह:**–ई–इमेज सुविधा के रोमांच के कारण इस प्रकार के डेटाबेस विकसित किए जाते है ।

• मल्टीमीडिया उत्पादन:–इस प्रकार के डेटाबेस में इमेजेस वीडियोज , ऑडियोज और टेक्स्ट्स आदि सम्मिनित होते है।

•**ई-थीसिस:**–इस डेटाबेस में ई प्रारूप के माध्यम से प्रकाशित पीएचडी थीसिस एवम् शोध प्रबंध सम्मिलित है।

• **ई-क्लिपिंग:**–ई-क्लिपिंग का मुख्य उद्देश्य पूर्व व्यापी खोज और नई आइटम्स का व्यापक विश्लेषण करना है ।

• **ई-पेटेंट:**–ई-पेंटेड सरकार द्वारा एक विशिष्ट अवधि के लिए एक आविष्कार का उपयोग करने का विशेष अधिकार है।

ई–सूचना स्त्रोतों की उपयोगिता:-

आज की 21 वी सदी में सूचना के विभिन्न स्त्रोत प्रिंट माध्यम से इलेक्ट्रॉनिक माध्यम में बदल रहे है। कुछ ई–सूचना सेवाओ की संक्षिप्त विवरण इस प्रकार हैं:-

• सामायिक चेतना सेवा – सी ए एस (CAS)

• चयनित सूचना प्रसार सेवा– एसडीआई (SDI)

• ई–दस्तावेज वितरण सेवाए-
ईडीडीएस

• ऑनलाइन पब्लिक एक्सेस केटालॉग–ओपेक

• मोबाइल पुस्तकालय आदि

ई–सूचना स्रोत के चयन का आधार:-

ई–सूचना स्रोत का चयन उपयोगकर्ताओं की आवश्यकता एवम् मांग के आधार पर करना चाहिए ,एक पुस्तकालयाध्यक्ष को इनके चयन के समय निम्नलिखित चरणो पर विचार करना चाहिए :-

• उपयोगकर्ताओं की आवश्यकता को ध्यान रखना।

• ई-सूचन स्रोत एवम उसके कंटेंट के क्षेत्र को जानना।

• ई-सूचना स्रोत की गुणवत्ता और उनमें खोज सुविधा की जांच करना ।

• लागत प्रभावशीलता बनाए रखना।

• खरीदते समय यह ध्यान रखना कि यह सदस्यता आधारित है या वेब आधारित।

• लाईसेंस कॉपी की जांच करना।

• शैक्षणिक सहायता और प्रशिक्षण का मूल्यांकन करना।

• संगतता और तकनीकी सहायता की जाँच करना।

ई - सूचना स्रोत की विशेषताएँ:-

∗ पाठ को खोजना आसान।

∗ किसी भी उपयोगकर्ता द्वारा कही से भी किसी भी दस्तावेज तक पहुँच आसान ।

∗ ई–सूचना स्रोत की पुनर्प्राप्ति प्रिंट–सूचना स्रोत की तुलना में तेज।

∗ उपयोगकर्ता को एक लिंक प्रदान करके दस्तावेज के लिए निर्देशित किया जा सकता है।

∗ इलेक्ट्रॉनिक माध्यम में उपयोगकर्ता और पुस्तकालयाध्यक्ष के बीच बात चीत होती है ।

∗ किसी भी वर्ग या समूह का उपयोगकर्ता हो सकता है आदि ।

पुस्तकालय एवं सूचना सेवाओं पर ई-सूचना स्रोत का प्रभाव :—

सूचना प्रौद्योगिकी के विकास और वेब वातावरण के प्रसार ने सूचना के उपयोग एवम् उपयोगकर्ता के व्यवहार पर एक नाटकीय प्रभाव डाला है | इन्टरनेट एवम् ई-सूचना स्रोत ने पुस्तकालय प्रणाली तथा साथ ही सूचना स्रोत को देखने के हमारे नजरिए को बदल दिया है। इसने सूचना स्रोत की जैसे–किताबों ,जर्नल्स और इलेक्ट्रॉनिक पब्लिकेशन की खरीदी को सरल एवम् त्वरित बना दिया है। अनेक पब्लिशर्स के कैटलॉग टूल्स जैसे–"बुक्स इन प्रिंट"तथा साथ ही साथ दस्तावेजो को ऑर्डर करने के लिए फार्म इन्टरनेट पर उपलब्ध हैं । पुस्तकालयाध्यक्षो को पुस्तको, पत्रिकाओं और इलेक्ट्रानिक प्रकाशनों तक त्वरित पहुँच की आवश्यकता होती है। प्रलेखो तक पहुंचने तथा प्रलेखीकरण को अद्यतम करने और सभी पुस्तकालयो की सूचना के इंटरफेस तक पहुंचने के लिए इन्टरनेट सरल और कुशल विधि है।

इन्टरलाइब्रेरी लोन (आई एल एल) के लिए अनुरोध ई-मेल के माध्यम से भेजा जा सकता है और, दस्तावेजों को स्कैन करने के बाद फोटोकॉपी डाक फैक्स द्वारा, ई मेल के माध्यम से भेजी जा सकती है। जैसे-जैसे पुस्तकालय इलेक्ट्रॉनिक संसाधनों के वृहद संग्रह का निर्माण करते है, तो उनके कुशलतापूर्वक

प्रबंधन के तरीके खोजना एक बड़ी चुनौती बन जाती है।अधिकांश पुस्तकालय द्वारा रखे गए इलेक्ट्रॉनिक पत्रिकाओं की संख्या, उद्धरण डेटाबेस, और पूर्व पाठ एकत्रिकरण तेजी से बढ़े है हाल के दिनों में अधिकांश पुस्तकालय संसाधन जैसेकि , ई-जर्नल्स, ई–बुक्स डेटाबेस आदि इलेक्ट्रॉनिक प्रारूप में उपलब्ध कराए जा रहे है।

पुस्तकालय प्रिंट से ई की ओर बढ़ रहे हैं या तो व्यक्तिगत रूप से या कंसोटिया के माध्यम से सदस्यता लेकर इन संसाधनों को एक्सेस करना लाभ दायक होता है। हाल के अध्ययनों से पता चलता है कि उपयोगकर्ता प्रिंट की तुलना में ई–सूचना स्त्रोत पसंद करते हैं।

ई–सूचना स्त्रोत की उपयोगिता :–

* ई–प्रकाशन कागज की तुलना में कम खर्चीला होता है ।

* ई-सूचना स्त्रोत किसी भी फाइल प्रारूप में जैसे टैक्स,ऑडियो ,वीडियो और छवियों के रूप में बनाए जाते है।

* उपयोगकर्ता के अनुकूल इंटरफेस के कारण ई–संसाधन खोज आसान है ।

* ई सूचना स्त्रोत दिन के 24 घंटे उपलब्ध है और पुस्तकालय की जगह बचाते है।

* वे उपयोगकर्ताओं को तेज, अधिक सुविधाजनक और कभी भी घर से ,परिसर से या पुस्तकालय से पहुंच प्रदान करते है ।

* जिनके पास पुस्तकालयों तक पहुंच के लिए सीमित समय है, वे प्रभावी रूप से इन तक डायल अप प्रक्रिया द्वारा पहुंच सकते है।

ई सूचना स्त्रोत से संबंधित लायसेंसिंग मुद्दे:-

पुस्तकालय को ई–सूचना स्त्रोत को बनाने के लिए प्रकाशन से इसका उपयोग करने के लिए लाइसेंस की आवश्यकता होती है।

आईपीआर:–ई-सूचना स्त्रोत को आसानी से कॉपी किया जा सकता है, और दूसरे व्यक्ति को अग्रेशीत किया जा सकता है। इसके लिए आई पी आर को लेकर पुस्तकालयाध्यक्ष को सतर्क रहता चाहिए ।

मेटाडेटा के मानक:–मेटाडेटा विवरण के लिए मानक है जैसे मार्क 21 लेकिन बाजार में उपलब्ध ई–सूचना स्त्रोत का मार्क 21 द्वारा मानकीकरण नही किया जा रहा हैं।

कम बजट:–पुस्तकालय गैर लाभकारी संगठन है इसलिए वे महंगे इलेक्ट्रॉनिक-सूचना स्त्रोतों को खरीद नहीं सकते और वहन नहीं कर सकते हैं।

कुशल जनशक्ति :- इलेक्ट्रॉनिक संग्रह को संभालने के लिए कर्मचारी में उचित कौशल की आवश्यकता होती है। लेकिन पुस्तकालयों में कुशल जनशक्ति की कमी है।

बुनियादी ढांचे की कमी:-पुस्तकालय में ई - सूचना स्त्रोत के लिए सही बुनियादी ढांचे की आवश्यकता होती है। और साथ ही संचार प्रौद्योगिकी घटक की भी आवश्यकता होती है ।

निष्कर्ष :– आज के दौर में ई–सूचना स्रोत कितना महत्वपूर्ण है यह सभी को ज्ञात है। अतः इस सूचना स्त्रोत का क्रियान्वयन सदियों पुराने मानक "प्रत्येक पाठक को किसी भी समय सूचना मिलनी चाहिए" को ध्यान में रखते हुए इसके अनुरूप करना चाहिए। ई -सूचना स्त्रोत का उपयोग संपूर्ण एवं सटीक जानकारी सुनिश्चित करने में सहायक होते हैं। ई -सूचना स्त्रोत उपयोगकर्ता एवं पुस्तकालय प्रबंधन को विभिन्न खोज विकल्प प्रदान करते हैं। ई - सूचना स्रोत का उपयोग पुस्तकालय को पुस्तकालय के स्थान और उपयोगकर्ताओं के समय को बचाने में सक्षम बनाता है। ई - सूचना स्त्रोत पुस्तकालयो के साथ-साथ समाज के उन सभी उपयोगकर्ताओं को जो दुनिया के किसी भी कोने से विभिन्न प्रकार के सूचना को प्राप्त करना चाहते हैं इसके लिए सक्षम बनाता है । सूचना और संचार प्रौद्योगिकी सेवाओं में विकास ने वर्तमान में उपलब्ध पुस्तकालय संचालन कार्यों में आश्चर्यजनक परिवर्तन लाया है इसका लाभ यह हुआ है कि इलेक्ट्रॉनिक उत्पादों का उपयोग करने से उपयोगकर्ताओं का ज्ञान बढ़ा है।

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कोविड 19 महामारी परिदृश्य में महाविद्यालयीन पुस्तकालय का प्रबंधन

प्रा. मंगेश शामराव करंबे

पुस्तकालयाध्यक्ष, शरदराव पवार कला व वाणिज्य महाविद्यालय, गड़चांदुर, चंद्रपुर (महाराष्ट्र).

सारांश

सूचना, संचार और प्रौद्योगिकी की उन्नति न केवल पुस्तकालय और सूचना सेवा में बल्कि पुस्तकालय अध्यक्ष और उपयोगकर्ताओंकी भूमिका, कार्य में भी बहुत सारे बदलाव आए हैं। जानकारी के भंडारण से ज्ञान के युग में वैश्विक बदलाव के साथ पुस्तकालय की सेवाओं और उपयोगकर्ताओं में भी बदल होना अनिवार्य हुआ है। यह पेपर कॉलेज पुस्तकालयों के सामने कोविड-19 महामारी की वजह से आई चुनौतियां और अवसर को सूचीबद्ध करता है। महामारी के समय में भी पुस्तकालयीन सेवाएं विद्यार्थियों को कैसे प्रदान की जाए इस पर प्रकाश डालता है।

बीज संज्ञा:- महाविद्यालय, पुस्तकालय, कोविड-19 महामारी.

प्रस्तावना :-

कोविड-19 वायरस इंसानों से इंसानों में फैलने वाली मुख्य रूप से फेफडोंकी बीमारी है। कार्यस्थल पर, यात्रा के दौरान, भीड़ भाड़ वाली जगह से फ़ैलती है । इस वायरस का प्रथम संक्रमण दिसंबर 2019 से चीन के वुहान शहर से शुरू हुआ और देखते ही देखते पूरी दुनिया में महामारी के रूप में फ़ैल गया।

वायरस संक्रमण के बाद बुखार, खांसी, जुखाम, बदन दर्द, नाक बहना, गले में खराश और सांस लेने में तकलीफ जैसी समस्याएं उत्पन्न होती है। खांसी और छिक से निकलने वाली बूंदों से हवा में फैलता है। बीमारी के लक्षणों के अनुसार इस वायरस का इलाज किया जाता है।कोविड-19 के संक्रमण से बचने के लिए विश्वव्यापी टीका अभियान सुचारू रूप से कार्यरत होकर, देश के सभी नागरिकों को टीका लगाना अनिवार्य है।

कार्यस्थल के स्वरूपा अनुसार जोखिम का विभाजन तीन भागो में किया जा सकता है।

कम जोखिम :- इस समूह के श्रमिकों का जनता और अन्य कर्मियों के साथ न्यूनतम संपर्क होता है उदा. घर से काम करना कॉल सेंटर इत्यादि।

मध्यम जोखिम :- लोगों के साथ लगातार संपर्क वाले कार्य ऐसे कार्य जिनमें कर्मियों के बीच लगातार संपर्क की आवश्यकता होती है। उदा. सार्वजनिक परिवहन, पोलिस, शिक्षक इत्यादि।

उच्च जोखिम :- संक्रमित लोगों के संपर्क में आने वाले कर्मचारी की श्रेणी में आते हैं। उदा. आरोग्य कर्मचारी एंबुलेंस ड्राइवर इत्यादि।

पुस्तकालयअध्यक्ष के अधिकार कर्तव्य और जिम्मेदारियां

कोरोनावायरस को रोकने एवं नियंत्रित करने के लिए सरकार द्वारा दिए गए दिशा निर्देशों का पालन पुस्तकालय में करना चाहिए। कार्यस्थल पर रोकथाम के उपायों के लिए पुस्तकालयिन व्यवस्थाए एवं वाचक तथा विद्यार्थियों के बीच सहयोग की आवश्यकता है। सुरक्षा और स्वास्थ्य में पुस्तकालयीन कर्मचारी तथा वाचको के बीच जिम्मेदारियों की जवाब देही तय की जानी चाहिए।

कार्यस्थल पर कोविड-19 महामारी को रोकने और नियंत्रित करने वाली योजनाओं को कार्यान्वित करना। जोखिम के अनुसार व्यक्तिगत सुरक्षा उपकरण, कपड़े और सैनिटाइजर उपलब्ध करना चाहिए उच्च

जोखिम वाले कर्मचारी जैसे कि, अधिक उम्र के, गंभीर बीमारी वाले, कर्मचारीयोंका विशेष रुप से ध्यान देना होगा। अनौपचारिक ग्रंथालय सेवाएं एवं डिजिटल प्लेटफार्म के माध्यम से विद्यार्थीयोंको और सहकर्मीयोंको सेवाएं प्रदान करनी पड़ेगी। इसके लिए नीचे दिए गए संसाधनों की उपलब्धता पुस्तकालय योग में होनी चाहिए।

1. तापमान मापी
2. सैनिटाइजर मशीन
3. मास्क
4. अच्छा वायु वेंटीलेशन
5. पल्सऑक्सी मीटर (SpO2)

कोविड-19 महामारी में पुस्तकालयाध्यक्षों और पुस्तकालयों की भूमिका

सूचना और संचार प्रौद्योगिकी के युग में पुस्तकालय अध्यक्ष और पुस्तकालय की भूमिका दिन-प्रतिदिन बदल रही है। समाज तकनीकी परिवर्तन, सूचना विस्फोट और नेटवर्क के वैश्वीकरण पर अधिक जटिल और स्वतंत्र होता जा रहा है।

पुस्तकालय और सूचना केंद्र वह स्थान है, जहां ज्ञान के स्रोत को संसाधित एवं संगठित किया जाता है। और उपयोगिता की आवश्यकताओं के अनुसार प्रसारित किया जाता है पुस्तकालयो ने डिजिटल तकनीक के उपयोग से पुस्तकालय की भौतिक सीमाओं के बाहर ज्ञान सामग्री तक पहुंचने के लिए पारंपरिक सेवाओं का विस्तार करना होगा। उपयोगकर्ताओं को उनकी आवश्यकता के अनुसार जानकारी एकत्रित एवं संशोधित कर उसे प्रसारित करना है।

कोरोना महामाई के प्रकोप से पुस्तकालयों की सेवाये बदल रही है जो कि महाविद्यालयिन उद्देश्य और उपयोग को प्रभावित करती है।

शैक्षणिक संस्थाओं में पुस्तकालय की भूमिका

पुस्तकालय सूचना तक पोहोच प्रदान करने में महत्वपूर्ण भूमिका निभाते हैं। ई संसाधनों की बढ़ती मांग के बावजूद भौतिक संसाधन का महत्व कम नहीं हुआ है। भौतिक संसाधन की मदद से विद्यार्थियों को क्रमिक साहित्य की सेवाएं प्रदान की जाती है।

पुस्तकालयअध्यक्षों की बदलती भूमिका

इंटरनेट पर सूचना के विशाल भंडार का उदय, पुस्तकालय अध्यक्षके लिए एक अलग तरह की चुनौती पेश करता है। कंप्यूटर में सर्च इंजीन उपयोगकर्ता को सीधे उस सूचना तक भेजते हैं जिनकी उन्हें आवश्यकता नहीं होती।

आईसीटी कौशल और सूचना अधिकारी

कोविड-19 महामारी में सूचना के क्षेत्र में नए कौशल आत्मसात करना व्यवसाइक जरुरत बन गया है। तकनीकी प्रगति के साथ अपने कौशल और ज्ञान को वृद्धिंगत करने की आवश्यकता है पारंपरिक सेवाओं के साथ नए कौशल और काम की परिस्थितियों के अनुसार सेवा प्रदान करना है।

पुस्तकालयों में आईसीटी का प्रभाव

आईसीटी वर्तमान और भविष्य के शैक्षणिक और संस्थात्मक विकास के साथ सर्वव्यापी हो गया है। शैक्षनीक विकास में इस प्रौद्योगिकी की भूमिका निर्विवाद रूप से महत्वपूर्ण है।

पुस्तकालय की बढ़ती एंव बदलती सेवाएं .

समाज में हो रहे सामाजिक राजकीय आर्थिक और तकनीकी विकास से प्रभावित हो रहे है। विद्यार्थियों की आवश्यकता को पूरा करने के लिए सुविधा कर्ता के रूप में कार्य करना होगा। पुस्तकालय को प्रौद्योगिकी नवाचार, तकनीकी जटिलताओं, सामाजिक और कानूनी मुद्दे, लागत जोखिम क्षमता, कर्मचारियों के कौशल और प्रौद्योगिकी को तेज करने पर ध्यान केंद्रित करने के लिए बाध्य होना पड़ रहा है।

निष्कर्ष :-

महाविद्यालय पुस्तकालय को विद्यार्थियों के उज्जवल भविष्य के लिए आधुनिक कौशल एवं तकनीकी दक्षताओं की आवश्यकता है। वैश्विक शिक्षा प्रणाली के परिणाम स्वरूप पुस्तकालय को उत्कृष्टता प्राप्त करने के लिए खुद को सदैव परिवर्तनशील होना होगा। इसके लिए नवीनतम उपकरणों और तकनीक का प्रयोग करते हुए अत्याधुनिक तकनीक पर आधारित सेवाएं प्रदान करना आवश्यक हो गया है।

शैक्षणिक संस्थान में पुस्तकालय को विद्यार्थियों और ज्ञान संसाधनों के विशाल भंडार, दूरस्थ कक्षा व्याख्यान, और सूचना के विशाल स्त्रोतों के बीच सक्रिय रुप से भाग लेने वाले माध्यम के रूप में माना जाता है। अकादमिक पुस्तकालय का अस्तित्व अनुसंधान विद्वानों, संस्थात्मक सदस्य और छात्रों की संतुष्टि पर निर्भर करता है। वर्तमान युग में पुस्तकालय सूचना संसाधनों के भंडार से सूचना सेवा केंद्र में अपनी भूमिका बदल दी है। पुस्तकालय अध्यक्ष को भी तेजी से विकसित हो रहे क्षेत्र की ओर अपने पेशेवर कौशल का उन्नयन करना चाहिए।

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सारांश

हा संशोधन लेख गडचिरोली जिल्ह्यातील महाविद्यालयाच्या ग्रंथालयांमध्ये उपलब्ध ग्रंथालय संगणकीकरणाच्या अजेंडा आणि आयसीटी आधारित ग्रंथालय सेवांच्या स्थितीवर आधारित आहे. ग्रंथालय संगणकीकरण सॉफ्टवेअर ही आज प्रत्येक महाविद्यालयाच्या ग्रंथालयाची गरज आहे. लायब्ररी लायब्ररी मॅनेजमेंट सिस्टम / सॉफ्टवेअरद्वारे अतिशय वेगवान आणि अचूक सेवा प्रदान करू शकतात. आणखी एक गोष्ट अशी आहे की माहिती संप्रेषण तंत्रज्ञानाच्या लायब्ररीच्या मदतीने, लायब्ररीचे कर्मचारी किंवा ग्रंथालय त्यांच्या वापरकर्त्यांना बर्‍याच सेवा प्रदान करू शकतात. लायब्ररी वापरकर्ते कमी वेळेत लायब्ररी संगणकीकरण सॉफ्टवेअर आणि आयसीटीच्या मदतीने आवश्यक सेवा देखील मिळवू शकतात. राष्ट्रीय विकासासाठी माहिती आवश्यक आहे; परंतु माहिती समृद्ध वाचनालये तितकीच महत्त्वाची आहेत. गडचिरोली जिल्ह्यातील अनुदानित महाविद्यालयांच्या ग्रंथालयांमधील ग्रंथालय व्यवस्थापन प्रणाली / सॉफ्टवेअरशी संबंधित विविध महाविद्यालयांच्या ग्रंथालयांच्या स्थितीबाबत; आणि लायब्ररी संगणकीकरण सॉफ्टवेअर आणि आयसीटी द्वारे विविध सेवा प्रदान करण्यात लायब्रीत अडचणींना ठळक करते. ग्रंथपालांनी भरून दिलेल्या सुसज्ज प्रश्नावलीतून एकूण २७ अनुदानित महाविद्यालयांपैकी २४ अनुदानित महाविद्यालयाचा डेटा प्राप्त झाला आहे.

कीवर्ड*: - एल. एम. एस., लायब्ररी मॅनेजमेंट सिस्टम, लायब्ररी सॉफ्टवेअर, लायब्ररी सर्व्हिसेस, आय. सी. टी., ग्रंथालय व्यवस्थापन प्रणाली.*

सारांश :-

गोंडवाना विद्यापीठ भारताच्या महाराष्ट्र राज्यातील गडचिरोली जिल्ह्यात आहे. मध्य भारतातील गोंडवाना प्रदेशानंतर त्याचे नाव घेतले गेले. गोंडवाना विद्यापीठ, गडचिरोलीची स्थापना २०११ मध्ये झाली. या विद्यापीठाच्या स्थापनेमागील मुख्य उद्देश ग्रामीण व आदिवासी भागातील विद्यार्थ्यांना शैक्षणिक विकास करणे हा आहे. तसेच; त्यांना त्यांच्या क्षेत्रात उच्च शिक्षण देखील देणे होते (unigug.ac.in). गडचिरोली आणि चंद्रपूर जिल्ह्यातील सर्व महाविद्यालये गोंडवाना विद्यापीठाशी संबंधित/संलग्रीत आहेत. सध्या गोंडवाना विद्यापीठात एकूण २३६ महाविद्यालये आहेत (unigug.ac.in/affcol/). (त्यापैकी एकूण ७० महाविद्यालये अनुदानित आहेत. इतर सर्व महाविद्यालये विना-अनुदान किंवा स्वयं-वित्तपुरवठा केलेली आहेत. चंद्रपूर जिल्ह्यात एकूण २३६ संलग्न महाविद्यालयांपैकी १७७ महाविद्यालये कार्यरत आहेत. उर्वरित सर्व महाविद्यालये गडचिरोली जिल्ह्यात कार्यरत आहेत. गडचिरोली जिल्ह्यात एकूण ७० अनुदानित महाविद्यालयांपैकी २७ अनुदानित महाविद्यालये आहेत; आणि उर्वरित सर्व 43 अनुदानित महाविद्यालये चंद्रपूर जिल्ह्यात आहेत. अनेक विना-अनुदानित पारंपारिक महाविद्यालये (व्यावसायिक महाविद्यालये वगळता; उदा. व्यवस्थापन, फार्मसी, अभियांत्रिकी इ.) त्यांच्या वापरकर्त्यांना चांगली पायाभूत सुविधा आणि

लायब्ररी सेवा पुरवत नाहीत अथवा त्यांच्या ग्रंथालय सेवांवर फार मर्यादा आहेत. विना-अनुदानित नवीन महाविद्यालये हे त्यांच्या ग्रंथालय सेवा विकसित करण्यासाठी निधीची कमतरता आणि वापरकर्त्यांप्रमाणेच आवश्यक असलेल्या गोष्टींच्या कमतरतेमुळे असू शकते. बहुतेक अनुदानित महाविद्यालये सन २००० पूर्वी स्थापित करण्यात आली होती. याचा अर्थ असा की ही सर्व महाविद्यालये किमान २० वर्षे जुनी आहेत. म्हणूनच, असे मानले/गृहीत धरले जाते की, सर्व महाविद्यालयीन ग्रंथालयांनी जास्तीत जास्त वापरकर्ता-आधारित लायब्ररी सेवा प्रदान केल्या आहेत आणि विकसित केल्या आहेत.

 Area wise colleges 1

अभ्यासाचे उद्दीष्ट :-

गडचिरोली जिल्ह्यातील अनुदानित महाविद्यालयांमध्ये ग्रंथालय व्यवस्थापन प्रणाली / सॉफ्टवेअरसह सुसज्ज ग्रंथालयांचा अभ्यास करणे आणि माहिती संप्रेषण तंत्रज्ञानावर आधारित ग्रंथालय सेवांची स्थिती जाणून घेणे हा या अभ्यासाचा हेतू आहे.

संशोध कार्यपद्धती/आराखडा :-

या संशोधन लेखाचा अभ्यास प्राथमिक, द्वितीय स्त्रोत तसेच विविध माहितीवर आधारित आहे. त्याचप्रमाणे, आवश्यक तेथे प्रश्नावली, पुस्तके, वेबसाइट ई. चा वापर केला आहे. (Das, 2000). प्राथमिक स्रोतांवर आधारित प्रश्नावलीच्या माध्यमातून गडचिरोली जिल्ह्यातील अनुदानित महाविद्यालयात कार्यरत ग्रंथपालंकडून माहिती मागविली गेली. अनुदानित अनुदानित २७ महाविद्यालयांपैकी २४ अनुदानित महाविद्यालयांची माहिती प्रश्नावलीद्वारे प्राप्त झाली आहे. 3 अनुदानित महाविद्यालयांमध्ये ग्रंथपाल हे पद रिक्त असल्याने त्यांची माहिती मिळू शकली नाही.

एलएमएसचे फायदे: -

ग्रंथालय व्यवस्थापन प्रणाली / सॉफ्टवेअरचे फायदे: -

आजकाल, लायब्ररी संगणकीकरण सॉफ्टवेअर मोठ्या आणि लहान सर्व प्रकारच्या लायब्ररीची एक गरज बनली आहे. ग्रंथालय व्यवस्थापन प्रणाली / सॉफ्टवेअरच्या (Tiwari, 2010) सहाय्याने शासकीय व खासगी शाळा व महाविद्यालयांची ग्रंथालये विकसित केली जातात. ग्रंथालय व्यवस्थापन प्रणाली / सॉफ्टवेअरचे काही मुख्य फायदे खालीलप्रमाणे आहेतः

a) वापरण्यास अतिशय सोपे.

b) सेवा देण्यासाठी कमी वेळ लागतो.

c) कमी वेळेत विविध अहवाल तयार करता येतात.

d) सुरक्षित.

e) क्लाऊडवर डेटा स्थापित करण्यासाठी सुविधा.

f) दूरस्थ प्रवेश

g) आपण वेळोवेळी श्रेणी सुधारित / अद्यतनित करू शकतो.

h) मोठ्या प्रमाणात साठवण क्षमता.

i) त्रुटीमुक्त.

j) बहुभाषिक आणि बरेच काही.

विविध महाविद्यालयाच्या ग्रंथालयांमधील ग्रंथालय व्यवस्थापन प्रणाली : -

खुल्या बाजारात अनेक लायब्ररी व्यवस्थापन प्रणाली (लायब्ररी मॅनेजमेंट सिस्टिम) उपलब्ध आहेत. प्रत्येक लायब्ररी व्यवस्थापन प्रणालीचे स्वतःचे फायदे आणि वैशिष्ट्ये आहेत. ते महाविद्यालयीन व्यवस्थापन, प्राचार्य व ग्रंथपाल/ ग्रंथालय विभाग यांच्या सूचना व आवश्यकतानुसार ग्रंथालय व्यवस्थापन प्रणाली निवडतात. किंवा त्यांच्या संस्थेद्वारे (इन-हाऊस एलएमएस) ग्रंथालय व्यवस्थापन प्रणाली विकसित करतात. गडचिरोली जिल्ह्यात एकूण २७ अनुदानित महाविद्यालये उपलब्ध आहेत. २७ महाविद्यालयांपैकी पैकी २४ महाविद्यालयांचे डेटा सुसंरचित प्रश्नावलीद्वारे प्राप्त केला गेलेला आहे. प्राप्त झालेल्या डेटाची टक्केवारी ८८.८८% (८९%) आहे. २४ महाविद्यालयिन ग्रंथालयांपैकी १५ महाविद्यालय ग्रंथालये मानक ग्रंथालय व्यवस्थापन प्रणाली/सॉफ्टवेअर (standard library management system/software) वापरत आहेत, ६ महाविद्यालय ग्रंथालये एमएस-एक्सेल स्वरूपात आपला डेटा व्यवस्थापित करीत आहेत; तर ३ महाविद्यालयांची ग्रंथालये अजूनही संगणकीकृत झालेली नाहीत अथवा ते कोणत्याही संगणकीकृत स्वरूपात त्यांचा डेटा व्यवस्थापित करीत नाहीत.

एल.एम.एस. (ग्रंथालय व्यवस्थापन प्रणाली)ची स्थिती :-

Type of LMS

एल.एम.एस. ऑटोमेशनची स्थितीः –

२४ महाविद्यालयाच्या ग्रंथालयांपैकी केवळ दोन (२) महाविद्यालयाची ग्रंथालये त्यांच्या एलएमएसद्वारे पूर्णपणे स्वयंचलित (fully automated) आहेत आणि पूर्णपणे स्वयंचलित तंत्रासह ग्रंथालयीन सेवा प्रदान करतात. एकोणीस (१९) महाविद्यालयाची ग्रंथालये अंशतः स्वयंचलित (partially automated) आहेत आणि स्वयंचलित तंत्राच्या मर्यादित वापरासह त्यांच्या सेवा प्रदान करतात; तर तीन (३) महाविद्यालयाची ग्रंथालये अद्याप स्वयंचलित नाहीत आणि कोणत्याही एलएमएस प्रणालीद्वारे किंवा कोणत्याही मूलभूत संगणक तंत्राने त्यांचे रेकॉर्ड जतन करू शकत नाहीत.

महाविद्यालयाच्या ग्रंथालयात वापरण्यात येणाऱ्या विविध व्यवस्थापन प्रणालीः-

भारताच्या मध्य भागात, बहुतेक महाविद्यालयाच्या ग्रंथालयात लिब-मॅन (Lib-Man) एल.एम.एस. वापरला जातो. याचाच अर्थ असा कि, बहुतेक महाविद्यालयाच्या ग्रंथपालांना लिब-मॅन एलएमएस वापरण्यात सोपी आहे. काही अन्य महाविद्यालयीन लायब्ररीमध्ये इतर एलएमएस देखील वापरले जातात. गडचिरोली जिल्ह्यात २४ महाविद्यालयांपैकी १४ महाविद्यालयिन ग्रंथालये लिब-मॅन (Lib-Man) एलएमएस (ऑफलाइन व ऑनलाइन) वापरत आहेत; (१) एका महाविद्यालयाचे ग्रंथालयामध्ये (शासकीय विज्ञान महाविद्यालय, गडचिरोली) सोल (SOUL) एलएमएस वापरत आहे. ६ (सहा) महाविद्यालयाच्या ग्रंथालयांनी एमएस-एक्सेलद्वारे त्याचा रेकॉर्ड राखला/जतन केले आहे; आणि ३ (तीन) महाविद्यालयीन ग्रंथालये आत्तापर्यंत स्वयंचलित नाहीत अथवा कोणत्याही स्वयंचलित सेवांद्वारे रेकॉर्ड ठेवण्यासाठी संगणक वापरत नाहीत.

महाविद्यालयीन ग्रंथपालांमध्ये आयसीटी ज्ञान/ जागरूकता: -

ग्रंथपालांना योग्य रचनेतील प्रश्न विचारले गेले की, तुम्ही एखादा कोणताही मूलभूत संगणक कोर्स केला आहे (उदा. एमएस-ऑफिस / डीआयटी किंवा इतर? किंवा तुम्हाला संगणक साक्षरतेबद्दल व्यावहारिकदृष्ट्या माहिती आहे का? उत्तर मिळाले की सर्व ग्रंथापालंनी मूलभूत संगणक अभ्यासक्रम केलेला आहे; आणि

त्यांना संगणक साक्षरतेबद्दल चांगली माहिती आहे. याचा अर्थ १००% महाविद्यालयीन ग्रंथपाल हे संगणक साक्षर आहेत आणि संपूर्ण २४ महाविद्यालयीन ग्रंथपाल हे आयसीटी व संगणक साक्षरतेविषयी जागरूक आहेत.

ग्रंथालयांमध्ये इंटरनेट सुविधा: -

सत्तावीस (२७) महाविद्यालयांपैकी संरचित प्रश्नावलीद्वारे चोवीस (२४) महाविद्यालयांकडून माहिती प्राप्त झाली आहे. तीन (३) ग्रंथपाल पदे अद्याप रिक्त आहेत. २४ महाविद्यालयाच्या ग्रंथालयांपैकी २३ महाविद्यालयीन ग्रंथालये इंटरनेट सुविधेने सज्ज आहेत. केवळ एका (१) महाविद्यालयाच्या लायब्ररीत इंटरनेट सुविधा उपलब्ध नाही. तेवीस (23) महाविद्यालयाच्या ग्रंथालयांपैकी अकरा (११) महाविद्यालयाच्या ग्रंथालयांमध्ये ऑप्टिक फायबरद्वारे इंटरनेट सुविधा उपलब्ध आहे; तर, इतर अकरा (११) महाविद्यालयाच्या ग्रंथालयांमध्ये वायरलेस कनेक्शन; आणि केवळ एका (१) महाविद्यालयाच्या लायब्ररीत अन्य प्रकारे इंटरनेटचे कनेक्शन आहे.

ग्रंथालयात पायाभूत आयसीटी सुविधा विकसित करण्यासाठी बजेट वाटपाबाबत ग्रंथालयाची मते: - आजच्या युगात प्रत्येक वाचनालयात आयसीटी विकास ही अत्यंत आवश्यक बाब आहे. आयसीटीच्या मदतीशिवाय आपण (ग्रंथालय कर्मचारी) लायब्ररी वापरकर्त्यांसाठी उत्कृष्ट सेवा देऊ शकत नाही. दिवसेंदिवस ग्रंथालय सेवा आयसीटीद्वारे डिजिटल होणार आहे. आयसीटी पायाभूत सुविधा नसल्यामुळे, ग्रंथालय त्याच्या लायब्ररीच्या वापरकर्त्यांना चांगल्या सेवा देण्यासाठी असहाय आहे. म्हणूनच प्रत्येक ग्रंथालयाला सर्व चांगल्या आयसीटी पायाभूत सुविधांनी सुसज्ज केले जाणे अत्यंत आवश्यक आणि गरजेचे आहे. महाविद्यालयाच्या ग्रंथालयातील आयसीटी पायाभूत सुविधांच्या विकासासाठी ग्रंथालय सल्लागार समिती किंवा महाविद्यालय व्यवस्थापनाने दिलेली बजेटबाबत ग्रंथपाल किती समाधानी आहेत ते खाली दिलेल्या स्पष्ट होते.

निष्कर्ष आणि सूचना: -

शिक्षणासह शक्य त्या सर्व सेवा प्रदान करणे ही समाजातील एक उत्तम आणि सन्माननीय गोष्ट मानली जाते. आयसीटी ग्रंथालयाची कौशल्ये अधिक विकसित करण्यात मदत करते. आयसीटीच्या ज्ञानाचा फायदा विद्यार्थ्यांना आणि शिक्षकांना / ग्रंथपालांना होतोच. ग्रंथपालाच्या अभ्यासक्रमात माहिती संप्रेषण तंत्रज्ञानाशी संबंधित विषय आहेत. म्हणूनच, ते आयसीटीच्या माध्यमातून ग्रंथालयाच्या वापरकर्त्यांना अधिक सेवा प्रदान करू शकतात.

एकूण अनुदान अनुदानित महाविद्यालयांपैकी सर्वाधिक महाविद्यलये ग्रामीण व निमशहरी भागात आहेत. जेथे माहिती संप्रेषण तंत्रज्ञानाद्वारे सेवा प्रदान करणे कठीण आहे. कारण भारताच्या ग्रामीण आणि दुर्गम भागातील विद्यार्थ्यांचा संगणक साक्षरता दर अजूनही खूपच कमी आहे. तथापि, ही समाधानाची बाब आहे की, गडचिरोलीसारख्या आदिवासीबहुल जिल्ह्यातील अनुदानित महाविद्यालयातील १००% ग्रंथपाल हे संगणक साक्षर आहेत (Wakude, 2021). जवळजवळ सर्व महाविद्यालयांमध्ये इंटरनेट सुविधा उपलब्ध आहेत; आणि त्याद्वारे ते त्यांच्या वापरकर्त्यांना विविध लायब्ररी सेवा प्रदान करीत आहेत.

गडचिरोली जिल्ह्यातील एकूण अनुदानित महाविद्यालयातील बहुतेक महाविद्यालय ग्रंथालय अजूनही एलएमएस / संगणकीकृत प्रणाली / सॉफ्टवेअरद्वारे पूर्णपणे संगणकीकृत नाहीत. तसेच; प्राप्त माहितीनुसार

असेही आढळले आहे की, ग्रंथालयांमध्ये आयसीटी पायाभूत सुविधांच्या विकासासाठी देण्यात आलेल्या अर्थसंकल्पित निधीबद्दल पुष्कळ ग्रंथपाल असमाधानी आहे.

महाविद्यालय व्यवस्थापन, प्राचार्य आणि ग्रंथालय सल्लागार समितीच्या प्रयत्नांनी ग्रंथालयात आयसीटीयुक्त पायाभूत सुविधा व इतर सुविधांच्या विकासासाठी अधिक बजेट उपलब्ध करून देण्यावर भर दिला पाहिजे. तसेच; विद्यापीठ, यूजीसी किंवा इतर संस्थेद्वारे पुरविल्या जाणाऱ्या विविध योजनांच्या माध्यमातून महाविद्यालयास कुठून आणि कसे अनुदान मिळू शकेल यासाठी प्राधान्य दिले पाहिजे. अशा प्रकारे आपण अधिकाधिक माहिती आणि संप्रेषण तंत्रज्ञानाचा वापर करून विविध सेवांच्या माध्यमातून विद्यार्थ्यांसाठी आणि समाजासाठी एक उज्ज्वल भविष्य घडवू शकतो.

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सोशल मीडिया का ग्रंथालय पर प्रभाव – एक अध्ययन

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सार

प्रस्तुत शोध पेपर में सोशल मीडिया का इतिहास, सोशल मीडिया के महत्व सकारात्मक प्रभाव और नकारात्मक प्रभाव और उनका ग्रंथालायोपर हुवा प्रभाव और उनका निष्कर्ष उलघतीत किया है.
शब्दसंज्ञा- *सोशल मीडिया, ग्रंथालय*

प्रस्तावना

सदियों से मित्रों और परिवार के साथ बातचीत करना सदियों से मनुष्यों की चिंता का विषय रहा है। सामाजिक जानवरों के रूप में, लोगों ने हमेशा अपने रिश्तों को मजबूत करने के लिए संचार पर भरोसा किया है। जब आमने-सामने की चर्चा असंभव या असुविधाजनक होती है, तो मनुष्यों ने बहुत सारे रचनात्मक समाधानों का सपना देखा है। उसमे सोशल मिडिया बहुत हि महत्वपूर्ण है

सोशल मीडिया का इतिहास (History of Social Media):

सोशल मीडिया की जड़ें आपकी कल्पना से कहीं ज्यादा गहरी हैं। यद्यपि यह एक नई प्रवृत्ति की तरह लगता है, फेसबुक जैसी साइटें सोशल मीडिया के कई सदियों के विकास का स्वाभाविक परिणाम हैं।

सोशल मीडिया 1900 से पहले:

महान दूरी पर संचार करने के शुरुआती तरीकों में एक व्यक्ति से दूसरे व्यक्ति को हाथ से लिखे गए पत्राचार का उपयोग किया जाता है। दूसरे शब्दों में, पत्र, डाक सेवा का सबसे प्रारंभिक रूप 550 ईसा पूर्व का है, और यह आदिम वितरण प्रणाली भविष्य के सदियों में अधिक व्यापक और सुव्यवस्थित हो जाएगी।

1792 में, टेलीग्राफ का आविष्कार किया गया था। इसने संदेश को एक घोड़े से ज्यादा लंबी दूरी तक तेजी से पहुंचाने की अनुमति दी और सवार उन्हें ले जा सकता था। यद्यपि टेलीग्राफ संदेश संक्षिप्त थे, वे समाचार और सूचना को व्यक्त करने का एक क्रांतिकारी तरीका थे।

हालाँकि अब ड्राइव-थ्रू बैंकिंग के बाहर लोकप्रिय नहीं है, 1865 में विकसित, वायवीय पोस्ट ने प्राप्तकर्ताओं के लिए पत्रों को शीघ्रता से वितरित करने का एक और तरीका बनाया। एक वायवीय पोस्ट एक क्षेत्र से दूसरे क्षेत्र में कैप्सूल ले जाने के लिए भूमिगत दबाव वाली वायु नलियों का उपयोग करता है।

1800 के अंतिम दशक में दो महत्वपूर्ण खोजें हुईं: 1890 में टेलीफोन और 1891 में रेडियो।

दोनों प्रौद्योगिकियां आज भी उपयोग में हैं, हालांकि आधुनिक संस्करण अपने पूर्ववर्तियों की तुलना में बहुत अधिक परिष्कृत हैं। टेलीफोन लाइनों और रेडियो संकेतों ने लोगों को तुरंत महान दूरी पर संचार करने में सक्षम किया, कुछ ऐसा जो मानव जाति ने पहले कभी अनुभव नहीं किया था।

20 वीं शताब्दी में सोशल मीडिया

20 वीं शताब्दी में प्रौद्योगिकी बहुत तेजी से बदलने लगी। 1940 के दशक में पहले सुपर कंप्यूटर बनाए जाने के बाद, वैज्ञानिकों और इंजीनियरों ने उन कंप्यूटरों के बीच नेटवर्क बनाने के तरीके विकसित करना शुरू किया, और यह बाद में इंटरनेट के जन्म का कारण बना।

इंटरनेट के शुरुआती रूपों, जैसे कि CompuServe, को 1960 के दशक में विकसित किया गया था। ईमेल के आदिम रूप भी इस दौरान विकसित किए गए थे। 70 के दशक तक, नेटवर्किंग प्रौद्योगिकी में सुधार हुआ था, और 1979 के यूज़नेट ने उपयोगकर्ताओं को एक आभासी समाचार पत्र के माध्यम से संवाद करने की अनुमति दी थी।

1980 के दशक तक, घर के कंप्यूटर अधिक सामान्य हो रहे थे और सोशल मीडिया अधिक परिष्कृत हो रहा था। इंटरनेट रिले चैट या IRCs, पहली बार 1988 में उपयोग किए गए थे और 1990 के दशक में अच्छी तरह से लोकप्रिय रहे।

पहली पहचान योग्य सोशल मीडिया साइट, सिक्स डिग्री, 1997 में बनाई गई थी। इसने उपयोगकर्ताओं को एक प्रोफ़ाइल अपलोड करने और अन्य उपयोगकर्ताओं के साथ दोस्ती करने में सक्षम बनाया। 1999 में, पहली ब्लॉगिंग साइटें लोकप्रिय हो गईं, जिससे सोशल मीडिया सनसनी बन गई जो आज भी लोकप्रिय है।

आज के जमाने में सोशल मीडिया

ब्लॉगिंग के आविष्कार के बाद, सोशल मीडिया ने लोकप्रियता में विस्फोट करना शुरू कर दिया। माइस्पेस और लिंक्डइन जैसी साइटों ने 2000 के दशक की शुरुआत में प्रमुखता हासिल की और फोटोबुकेट और फ्लिकर जैसी साइटों ने ऑनलाइन इंटरनेट शेयरिंग की सुविधा प्रदान की। YouTube 2005 में सामने आया, जिससे लोगों के बीच संवाद करने और एक दूसरे के साथ साझा करने के लिए पूरी तरह से नया रास्ता बना। 2006 तक, फेसबुक और ट्विटर दोनों दुनिया भर में उपयोगकर्ताओं के लिए उपलब्ध हो गए। ये साइटें इंटरनेट पर सबसे लोकप्रिय सामाजिक नेटवर्क में से कुछ हैं।

2010 ने इंस्टाग्राम को पब्लिक डोमेन में लॉन्च किया

इंस्टाग्राम दुनिया भर के लोगों को जोड़ने के लिए दृश्य संचार और सामाजिक संपर्क का उपयोग करता है। यह उपयोगकर्ताओं को फोटो और वीडियो कहानियों को अपलोड करने और साझा करने की अनुमति देता है। इसमें कई फिल्टर हैं जो एक उबाऊ तस्वीर को इंस्टाग्राम-योग्य मास्टरपीस में बदल सकते हैं।

आज, सोशल नेटवर्किंग साइटों की एक जबरदस्त विविधता है, और उनमें से कई को क्रॉस-पोस्टिंग की अनुमति देने के लिए जोड़ा जा सकता है। यह एक ऐसा वातावरण बनाता है जहां उपयोगकर्ता व्यक्ति-से-व्यक्ति संचार की अंतरंगता का त्याग किए बिना अधिकतम लोगों तक पहुंच सकते हैं। हम केवल इस बारे में अनुमान लगा सकते हैं कि अगले दशक में या अब से 100 साल बाद भी सोशल मीडिया के प्रभाव से भविष्य क्या हो सकता है, लेकिन यह स्पष्ट प्रतीत होता है कि यह तब तक मौजूद रहेगा जब तक मनुष्य जीवित हैं।

सोशल मीडिया का महत्व

सोशल मीडिया प्लेटफार्म अपने उपयोगकर्ताओं तथा लाखों अन्य लोगों को जानकारी साझा करने में मदद करता है। सोशल मीडिया के महत्व को नजर अंदाज नहीं किया जा सकता क्योंकि यह आज हमारे जीवन में एक बहुत ही महत्वपूर्ण भूमिका निभा रहा है।

• ब्रांड बनाना : गुणवत्ता सामग्री, उत्पाद और सेवाएं आज ऑनलाइन आसानी से पहुंचने में सक्षम हैं। आप अपने उत्पाद को ऑनलाइन बाजार में बेच सकते हैं और एक ब्रांड बना सकते हैं।

- ग्राहक के लिए सहायक : खरीद और उत्पाद या सेवा से पहले ग्राहक समीक्षा और प्रतिक्रिया पढ़ सकते हैं और स्मार्ट विकल्प बना सकते हैं।
- सोशल मीडिया एक महान शिक्षा उपकरण है।
- सोशल मीडिया प्लेटफ़ॉर्म के माध्यम से आप अपने इच्छित दर्शकों से जुड़ सकते हैं।
- गुणवत्ता की जानकारी तक पहुंचने का यह एक शानदार तरीका है।
- सोशल मीडिया आपको केवल एक क्लिक में समाचार और सभी घटनाएं प्राप्त करने में मदद करता है।
- सोशल मीडिया आपको मित्रों, रिश्तेदारों से जुड़ने में तथा नए दोस्त बनाने में भी मदद करता है।

सोशल मीडिया के सकारात्मक प्रभाव

- o सोशल मीडिया दुनिया भर के लोगों से जुड़ने का एक महत्त्वपूर्ण साधन है और इसने विश्व में संचार को नया आयाम दिया है।
- o सोशल मीडिया उन लोगों की आवाज़ बन सकता है जो समाज की मुख्य धारा से अलग हैं और जिनकी आवाज़ को दबाया जाता रहा है।
- o वर्तमान में सोशल मीडिया कई व्यवसायियों के लिये व्यवसाय के एक अच्छे साधन के रूप में कार्य कर रहा है।
- o सोशल मीडिया के साथ ही कई प्रकार के रोज़गार भी पैदा हुए हैं।
- o वर्तमान में आम नागरिकों के बीच जागरूकता फैलाने के लिये सोशल मीडिया का प्रयोग काफी व्यापक स्तर पर किया जा रहा है।
- o कई शोधों में सामने आया है कि दुनिया भर में अधिकांश लोग रोज़मर्रा की सूचनाएँ सोशल मीडिया के माध्यम से ही प्राप्त करते हैं।

सोशल मीडिया के नकारात्मक प्रभाव

कई शोध बताते हैं कि यदि कोई सोशल मीडिया का आवश्यकता से अधिक प्रयोग किया जाए तो वह हमारे मस्तिष्क को नकारात्मक रूप से प्रभावित कर सकता है और हमें डिप्रेशन की ओर ले जा सकता है।

- o सोशल मीडिया साइबर-बुलिंग को बढ़ावा देता है।
- o यह फेक न्यूज़ और हेट स्पीच फैलाने में महत्त्वपूर्ण भूमिका निभाता है।
- o सोशल मीडिया पर गोपनीयता की कमी होती है और कई बार आपका निजी डेटा चोरी होने का खतरा रहता है।
- o साइबर अपराधों जैसे- हैकिंग और फिशिंग आदि का खतरा भी बढ़ जाता है।
- o आजकल सोशल मीडिया के माध्यम से धोखाधड़ी का चलन भी काफी बढ़ गया है, ये लोग ऐसे सोशल मीडिया उपयोगकर्त्ता की तलाश करते हैं जिन्हें आसानी से फँसाया जा सकता है।
- o सोशल मीडिया का अत्यधिक प्रयोग हमारे शारीरिक और मानसिक स्वास्थ्य को बड़े पैमाने पर प्रभावित कर सकता है।

सोशल मीडिया और भारत

सोशल मीडिया ने समाज के अंतिम छोर पर खड़े व्यक्ति को भी समाज की मुख्य धारा से जुड़ने और खुलकर अपने विचारों को अभिव्यक्त करने का अवसर दिया है। आँकड़ों के अनुसार, वर्तमान में भारत में तकरीबन 350 मिलियन सोशल मीडिया यूज़र हैं और अनुमान के मुताबिक, वर्ष 2023 तक यह संख्या लगभग 447 मिलियन तक पहुँच जाएगी।

वर्ष 2019 में जारी एक रिपोर्ट के मुताबिक, भारतीय उपयोगकर्त्ता औसतन 2.4 घंटे सोशल मीडिया पर बिताते हैं। इसी रिपोर्ट के मुताबिक फिलीपींस के उपयोगकर्त्ता सोशल मीडिया का सबसे अधिक (औसतन 4 घंटे) प्रयोग करते हैं, जबकि इस आधार पर जापान में सबसे कम (45 मिनट) सोशल मीडिया का प्रयोग होता है।

इसके अतिरिक्त सोशल मीडिया अपनी आलोचनाओं के कारण भी चर्चा में रहता है। दरअसल, सोशल मीडिया की भूमिका सामाजिक समरसता को बिगाड़ने और सकारात्मक सोच की जगह समाज को बाँटने वाली सोच को बढ़ावा देने वाली हो गई है।

भारत में नीति निर्माताओं के समक्ष सोशल मीडिया के दुरुपयोग को नियंत्रित करना एक बड़ी चुनौती बन चुकी है एवं लोगों द्वारा इस ओर गंभीरता से विचार भी किया जा रहा है।

सोशल मीडिया का दुरुपयोग

आँकड़ों के अनुसार, वर्ष 2018-19 में फेसबुक, ट्विटर समेत कई साइटों पर 3,245 आपत्तिजनक सामग्रियों के मिलने की शिकायत की गई थी जिनमें से जून 2019 तक 2,662 सामग्रियाँ हटा दी गई थीं। उल्लेखनीय है कि इनमें ज़्यादातर वह सामग्री थी जो धार्मिक भावनाओं और राष्ट्रीय प्रतीकों के अपमान का निषेध करने वाले कानूनों का उल्लंघन कर रही थी। इस अल्पावधि में बड़ी संख्या में आपत्तिजनक सामग्री का पाया जाना यह दर्शाता है कि सोशल मीडिया का कितना ज़्यादा दुरुपयोग हो रहा है।

दूसरी ओर सोशल मीडिया के ज़रिये ऐतिहासिक तथ्यों को भी तोड़-मरोड़ कर पेश किया जा रहा है। न केवल ऐतिहासिक घटनाओं को अलग रूप में पेश करने की कोशिश हो रही है बल्कि आज़ादी के सूत्रधार रहे नेताओं के बारे में भी गलत जानकारी बड़े स्तर पर साझा की जा रही है।

विश्व आर्थिक मंच की रिपोर्ट के अनुसार, दुनिया में सोशल मीडिया के माध्यम से गलत सूचनाओं का प्रसार कुछ प्रमुख उभरते जोखिमों में से एक है।

यकीनन यह न केवल देश की प्रगति में रुकावट है, बल्कि भविष्य में इसके खतरनाक परिणाम भी सामने आ सकते हैं। अतः आवश्यक है कि देश की सरकार को इस विषय पर गंभीरता से विचार करते हुए इसे पूरी तरह रोकने का प्रयास करना चाहिये।

सोशल मीडिया और फेक न्यूज़ संबंधी नियम-कानून

भारत में सोशल मीडिया प्लेटफॉर्म पहले से ही सूचना प्रौद्योगिकी (IT) अधिनियम, 2008 के दायरे में आते हैं।

यदि सोशल मीडिया प्लेटफॉर्म को अदालत या कानून प्रवर्तन संस्थाओं द्वारा किसी सामग्री को हटाने का आदेश दिया जाता है तो उन्हें अनिवार्य रूप से ऐसा करना होगा।

सोशल मीडिया प्लेटफॉर्म पर रिपोर्टिंग तंत्र भी मौजूद हैं, जो यह पता लगाने का प्रयास करते हैं कि क्या कोई सामग्री सामुदायिक दिशा-निर्देशों का उल्लंघन कर रही है या नहीं और यदि वह ऐसा करते हुए पाई जाती है तो उसे प्लेटफॉर्म से हटा दिया जाता है।

भारत में फेक न्यूज़ को रोकने के लिये कोई विशेष कानून नहीं है। परंतु भारत में अनेक संस्थाएँ हैं जो इस संदर्भ में कार्य कर रही हैं-

प्रेस काउंसिल ऑफ इंडिया: एक ऐसी ही नियामक संस्था है जो समाचार पत्र, समाचार एजेंसी और उनके संपादकों को उस स्थिति में चेतावनी दे सकती है यदि यह पाया जाता है कि उन्होंने पत्रकारिता के सिद्धांतों का उल्लंघन किया है।

न्यूज़ ब्रॉडकास्टर्स एसोसिएशन: निजी टेलीविजन समाचार और करेंट अफेयर्स के प्रसारकों का प्रतिनिधित्व करता है एवं उनके विरुद्ध शिकायतों की जाँच करता है।

ब्रॉडकास्टिंग कंटेंट कंप्लेंट काउंसिल: टीवी ब्रॉडकास्टरों के खिलाफ आपत्तिजनक टीवी कंटेंट और फर्ज़ी खबरों की शिकायत स्वीकार करती है और उनकी जाँच करती है।

सोशल मीडिया और निजता का मुद्दा

वर्तमान परिदृश्य भारत को डिजिटल सेवाओं के लिये एक नवीन डिजाइन तैयार करने का एक अनूठा अवसर प्रदान करते हैं, जिसमें व्यक्तिगत और राष्ट्रीय सुरक्षा दोनों का समावेश हो। निजता संरक्षण, डेटा संरक्षण से जुड़ा विषय है क्योंकि जब कोई व्यक्ति किसी डिजिटल पहचान द्वारा इंटरनेट माध्यम का प्रयोग करता है तो उस दौरान विभिन्न डाटाओं का संग्रह तैयार हो जाता है जिससे बड़ी आसानी से उपयोगकर्त्ता के निजी डाटा को प्राप्त किया जा सकता है। अतः डेटा संरक्षण ढाँचे के डिज़ाइन में महत्त्वपूर्ण चुनौती डिजिटलीकरण के उपयोग से दीर्घकालिक रिकॉर्ड को सुरक्षित रखना तथा इसके साथ ही गोपनीयता को बनाए रखना भी है।भारत में प्रभावी डेटा संरक्षण के लिये डेटा नियामकों के पदानुक्रम और एक मजबूत नियामक ढाँचे की आवश्यकता होगी, जो जटिल डिजिटल सेटअप और आम सहमति के अलावा हमारे मूल अधिकारों की रक्षा कर सके।

ग्रंथालयावर होनेवाला प्रभाव

संभावित ग्राहक और उपयोगकर्ताओं तक पहुंचने के लिए सोशल मीडिया एक महत्वपूर्ण भूमिका निभा रहा है। पिछले चार से पांच दशकों में दुनिया के एक ध्रुव से दूसरे ध्रुव तक बड़ी संख्या में सूचनाएँ स्थानांतरित की गई हैं। सोशल मीडिया 21वीं सदी का सबसे बड़ा बदलाव है और यह तेजी से बढ़ रहा है। एक ही चैनल पर एक से एक, एक से कई एक ही समय पर लाखों सूचनाएं साझा की जा रही हैं। पुस्तकालय अपने उपयोगकर्ताओं की आवश्यकता को पूरा करने के लिए सोशल मीडिया का उपयोग करने की आशा कर रहे हैं। सोशल मीडिया ने त्वरित समय के भीतर सूचनाओं के प्रसार के लिए पुस्तकालयों में उपयोग के कई कारक प्राप्त किए। कुछ उद्देश्य जो पुस्तकालय उपयोगकर्ता की जरूरतों को पूरा करते हैं और इससे नए ग्राहकों तक पहुंचने में मदद मिलेगी। इसके अलावा, उन्होंने चर्चा की कि सोशल मीडिया पुस्तकालय की छवि बनाता है और पुस्तकालय का आधुनिकीकरण करता है।

निष्कर्ष

पिछले वर्ष भारतीय पर्यटन एवं यात्रा प्रबंध संस्थान ग्वालियर के अध्ययन में बताया गया कि भारत आने वाले 89 फीसदी पर्यटक सोशल मीडिया के ज़रिये ही भारत के बारे में जानकारियाँ प्राप्त करते हैं। यहाँ तक कि इनमें से 18 फीसदी लोग तो भारत आने की योजना ही तब बनाते हैं जब सोशल मीडिया से प्राप्त सामग्री इनके मन में भारत की अच्छी तस्वीर पेश करती है।

सोशल मीडिया ने अभिव्यक्ति की स्वतंत्रता के अधिकार को नया आयाम दिया है, आज प्रत्येक व्यक्ति बिना किसी डर के सोशल मीडिया के माध्यम से अपने विचार रख सकता है और उसे हज़ारों लोगों तक पहुँचा सकता है, परंतु सोशल मीडिया के दुरुपयोग ने इसे एक खतरनाक उपकरण के रूप में भी स्थापित कर दिया है तथा इसके विनियमन की आवश्यकता लगातार महसूस की जा रही है। अतः आवश्यक है कि निजता के अधिकार का उल्लंघन किये बिना सोशल मीडिया के दुरुपयोग को रोकने के लिये सभी पक्षों के साथ विचार-विमर्श कर नए विकल्पों की खोज की जाए, ताकि भविष्य में इसके संभावित दुष्प्रभावों से बचा जा सके।

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