Perspective of digital library services: A review

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Abstract
Purpose of this paper is to present trends in digital library services research in 21st century along with the theme of the articles to readers to understand the past research in the field. It is also intended to presents the role of librarian in digital era. The study is based on the published English articles covered by LISA, LISTA and Google scholar using key terms digital library in title field and service in abstract field from the year 2000 to 2013. Review is presented after thorough study of full text articles. This work shows importance of digital library and the predominant developments in digital library and services. Findings revels that providing digital service is very important and need of the day as users perceived it positively and understand the benefits of it. There is no evidence of digital reference services provided in India. Many digital reference services are provided and evaluated in western countries.

Keywords - Digital library, Digital library services, Library services, Digital reference service, Repositories.

Article Classification - Literature Review

Introduction
The rapid expansion of the information technology, internet and the World Wide Web (WWW) has a great impact on how libraries are managing their collections and providing services. Now librarians are dealing with the concepts like electronic library, digital library, virtual library, hybrid library and library without walls. The term digital library is often used and it is playing key role in serving large number of clientele. According to (Borgman, 1999) Digital libraries are a set of electronic resources and associated technical capabilities for creating, searching and using information. In this sense they are an extension and enhancement of information storage and retrieval systems that
manipulate digital data in any medium (text, images, sounds; static or dynamic images) and exist in distributed networks.

With the introduction of digital library concept, institutional repositories, e-journals, e-books, e-book and e-journal databases, wiki’s, blogs etc. the word dissemination of information resources is replaced with services, (Chua et al., 2008) so libraries all over the world are undergoing fundamental paradigm shifts in the way they see their users and how they offer the services. (Li, 2006) these information services range from online bibliographic instructions, computerized library catalogs, digital libraries, distance learning services, e-databases, instant messaging services, inter library loan and document services, ready references, virtual classrooms, virtual references, and so on. These digital library systems and services can be accessed and utilized as easily as googling. (Han and Goulding, 2003) These easy-to-use digital library system and services are provided, which enable users to access information on their own. As a result, the paradigm of information accessing & searching is shifting away from professional-mediated mode to end-user self-service mode. So in order to understand the shift of information service and trends, evaluation of digital services is important.

Definition

(Borgman, 1999) defines digital library as (1) a service; (2) an architecture; (3) a set of information resources, databases of text, numbers, graphics, sound, video, etc. and (4) a set of tools and capabilities to locate, retrieve and utilize the information resources available. According to (Wilson et al., 2002) the term digital library is now a days used to indicate both the system that implements the service of a globally accessible library and the digital content of the library itself and of documents that are maintained and disseminated. (Rahman et al., 2004) define digital library services as “services those are delivered digitally through computer networks. It maintains all, or a substantial part of its collection in computer accessible form as an alternative, supplements, or complements to the conventional printed and microforms materials currently dominated library collection. Electronic/Digital information services are providing: CD-ROM facilities; Electronic transmission of documents; Maintaining of on-line subscriptions and purchase; Access to online periodicals, including free online journals; E-mail and electronic alerts from publishers of journals and Handling of websites and databases”.

Role of librarians

Librarians are uniquely positioned to play a major role in the digital era and they have to undergo changes in the way they operate and provide information services to users. According to (Sreenivasulu, 2001) librarian will become the guardian of digital information and will be the vehicle to reserve democratic access
to information. The digital librarian role will increasingly towards offering consultancy to the users and providing digital reference services, electronic information services, navigating, searching and retrieval of digitized information through web documents that span the universal digital library or the global digital library. Similarly (Krishnamurthy and Chan, 2005) mentioned that digital librarian is required to manage the digital libraries, organize digital knowledge and information to provide universal access and retrieval of digital knowledge and digital documents at any time and place. Additionally (Sharma, 2000) is of the opinion that professionals have to change themselves as the information professionalist and they have to work with e-information resources in the digital environment. According to (Garcia-Marco 2011) libraries aggregate information retrieval systems, books, journals, reference databases, electronic collections that are not produced by them. As a result, librarians facilitating knowledge transfer through the effective preservation and organization of public documents - public knowledge records - to ensure its social utilization so knowledge is effectively transferred. Role of librarian changes as per the type of libraries they are serving. In public libraries, to provide the service and to develop successful information systems, librarians need to understand how people relate to information in every social situation. (Lukasiewicz, 2007) in academic libraries, librarians play an increasingly important role in student success as students move away from the physical library and immerse themselves in the digital library. In research libraries (Maron and Smith, 2009) librarians have to provide new services in networked digital environment that are accessible to end users directly, and many of the services are essential tools for scholars conducting research, building scholarly networks, and disseminating their ideas and work.

**Review of literature**

Many efforts are made towards development of digital library and its services. According to (Borgman, 2000) scholarly professional interest in digital libraries has grown rapidly since 1990’s. Since then many digital library conferences were held and digital library topics were introduced at meetings in variety of discipline and profession. Many digital projects were also conducted during this time, the major one was Digital Library Initiatives I and Digital Library Initiatives II (popularly known as DLI-I and II). Special services through digital library came to being and attracted visionaries and decision makers with DLI-I and II project. Since then there is continuous research in digital library. We can broadly group digital library research in two groups. One that provides services with intervention of librarian like alerting service, digital reference services, SDI, CAS etc. and the other research which covers technical aspect of digital library services like metadata, harvesting system, ontology,
improvising search engines etc. For our study we have not covered the technical aspect of the research. To know the latest trends and for our convenience, we have reviewed research works since 2000 to 2013 and the studies are arranged under following headings; digital library services, digital reference services and digital library services through repositories.

**Digital library services**

According to (Bernard, 2006) relationships between producers, users, documents, and technologies are key elements for best services. In order to provide best services many librarians and information specialist have examined the opportunities. Among them (Pomerantz, 2008) explored digital library services, in both possible senses: services provided digitally by physical libraries, and services provided by digital libraries. He found that libraries provided a superb environment for service science to investigate new ways to produce value for users. He recommended to integrate digital library services and library service using digital resources to provide novel services. Additionally (Ganaie, 2013) found that libraries are actually marching towards achieving the goal of providing pinpointed exhaustive and expeditious information to those who are in need of that information. Research by (Zickuhr, 2013) shows that user expectations are high and users would embrace wider use of technology at libraries such as online research services allowing patrons to pose questions and get answers from librarians, apps-based access to library materials and programs, access to technology “petting zoos” to try out new devices, GPS navigation apps to help patrons locate material inside library buildings, “Redbox” style lending machines or kiosks located throughout the community where people can check out books, movies or music without having to go to the library itself, “Amazon” style customized book/audio/video recommendation schemes that are based on patrons prior library behavior.

**Services**

To provide digital library service (Xiao, 2010) explained an overall methodology and case study for the innovation and extension of a digital library. Author used the three-dimensional structure theory (resources, services and organisations/librarians) of the information service industry and combined with the comprehensive analysis with the practical experiences, in order to provide document delivery services (DDS). Further (Shabani et al., 2012) have attempted to present the prerequisites for establishing DDS and investigated the facilities offered by many libraries for the clients in academic and research institutes. (Koyama et al., 2011) provided inter library loan services (ILL) and found that there was increase in request for ILL due to bibliographic service, which enabled users to retrieve more references. (Moore 2005) Created digital map collection and provided digimap service to assist users in making full use of cartographic material, which helped users to
produce map extracts at a set scale, to generate their own maps online or download map data to use with appropriate application software such and CAD, GIS etc. He found that digimap service was accepted by many users and required more help on data usage. (Roda et al., 2005) developed digital image library by digitizing images with the help of professional slide/film scanner to overcome preservation, access and reuse problem and they provided access to images through a web-based interface for easy and interactive activity. (Solbakk, 2012) provided digital newspaper service at The National Library of Norway free of charge in collaboration with Norwegian newspaper, who provided high quality digitalized newspaper content. (Joint, 2006) illustrate how there are common ways of managing both digital libraries and VLEs (virtual learning environments) and analyzed that the intrinsic natures of VLE and digital library are similar, so it gives an opportunity to manage and implement them in similar way for providing the services. (Kurilovas, 2007) created an open source e-learning content and services system which is referred as digital library of educational resources and services (DLE). He has also created European learning resource exchange (LRE) system for schools and has investigated flexible approach to DLE creation and development. Continuing the research (Otubelu, 2011) appraised the online services provided through e-library of Nigeria and recommended to enhance service delivery and use of the online resources to boost e-learning. He also illustrated about information gateway that was established to support teaching, learning and research activities of the university. (Hunter et.al 2010) highlighted on the research computing lab service where they have merged the traditional IT services with traditional library services to blur the boundaries between traditional and e-Science librarianship. They have provided the service by established strategic partnerships with publishers. (Peters and Bell, 2006) implemented instant messaging service at the Galludet University, that supported to provide better reference service to deaf students. They found that students thrives on technology and social tools and suggested to use other cutting edge techniques in addition to chat-based reference service to reach out to the growing student base that feels most comfortable in a technological environment. Further they suggested that podcasting and using wikis are two ways that academic librarians can enhance their services. Further (Robinson, 2008) is of the opinion that there is lot of scope for providing services to digital natives in the digital environment. He has recommended to utilize tools like Web 2.0 applications, link resolving softwares, which can combine the convenience of the web with the quality of their own resources. (Rios, 2004) built personal digital assistant services (PDAs) to connect students, researchers, clinicians and staff with the biomedical information which users need to advance the education, research, patient care and public service programs of the
University of Virginia Health System. He highlighted that evidence-based literature search could be performed on a PDA and summarized answers to clinical questions could be downloaded and read. He recommended to use PDAs to record, transcribe dictating and also for fully interacting with the patient record. (Higgs 2013) explored how geographical information systems (GIS) can be utilized to provide digital service and how it support to take decision on opening and closure of library services. He suggested that a network-based GIS system can be used, in conjunction with detailed qualitative information based on user preferences and experiences, to plan digital services. (Zhang, 2011) mentioned about website service that was designed to provide access to China Digital Library for Visual Impairment. She designed website abiding to WCAG2.0 (Web Content Accessibility Guidelines) and applied blind screen reading software, which allows users to interact easily. Through huge response he found that the service was successful.

Resources & Infrastructure

Resources play a great role in digital library services. Providing digital resources itself is a service so (Monopoli et al., 2002) evaluated e-journals usage and found that academic researchers and staff used e-journals more. (Maron and Smith, 2009) investigated range of online resources and found that e-journals are the most cited content in all discipline. They identified eight principle types of digital scholarly resources: E-journals; Reviews; Preprints and working papers; Encyclopedias, dictionaries, and annotated content; Data; Blogs; Discussion forums; Professional and scholarly hubs. (Zickuhr, and Purcell, 2013) found the rising popularity of e-books is helping transform American’s reading habits. (Brynko, 2013) Also found that there is increase in demand of e-books. On the other hand (Liu and Wnuk, 2009) found that mere access to information, computers, and the internet are not enough. The hardware and software must be upgraded when necessary and users must have the skills to use both hardware and software to search competently. They recommended essential infrastructure like fast internet connection; enough workstations for patron; updating and maintaining of hardware and software; and sufficient time on computers to accomplish tasks. Further (Fox, 2009) found that in order to remain flexible with regard to the evolving needs of patrons, libraries should seriously consider a technology model which would allow the digital library to offer more responsive services to patrons. He recommended technology services offered by the library should be modularized and separable so that, the various technology concerns can be addressed individually and enhanced as required.

Problems

Identifying the problems in providing services to users and in receiving the service by users is very important to analyze and resolve the problem. In this direction (Gbaje, 2007) study
revealed that the shortage of web technologies, skilled librarians, poor information technology infrastructure, high cost of equipment and lack of funds are some of the factors militating against libraries providing online information services. Studying the problems from users perspective (Monopoli et al., 2002) found that users adopted a relatively unsophisticated, simplistic approach for browsing e-journals. They also found that users limited use of boolean operators and other commands while searching e-journals. Further (McMenemy, 2012) identified problem in guidance on the usage of the resources, as well as confusion and inconsistency in terminology usage across different library services. Analyzing the difficulties in accessing digital content (Bagudu and Sadiq, 2013) indicated that students experiences difficulties in accessing past examinations question papers as well as other digital contents. They suggested that institution can organize training workshop at least once in a semester for the postgraduate students in order to enable them to effectively utilize and benefit from digital content.

**Implications of services**

It is very important to know the feedback about the service provided, in this regard (Xia, 2003) found that undergraduates, postgraduates and academic staff had different purposes for using information services based on their information needs and they are happy to use the services. She suggested that the basic principle of digital library services should be to satisfy users needs. (Zia and Fatima, 2011) found that students have a keen interest in using digital information through digital libraries because they were aware of the importance and usefulness of digital resources/ information and wanted to get benefit of that in their education. Further (Bagudu and Sadiq, 2013) studied the students perception of digital library services. Their study clearly revealed that the postgraduate students have perceived the digital library positively and agreed that the digital collection is helpful for their studies. They also found that users are satisfied with the digital library service because it is easy to use the resources in the digital format.

**Digital reference services**

Digital reference service (DRS) is one of the important service that is been provided by many libraries around the world. DRS provided through different formats and models like email and web forms, Ask A librarian services, online chat reference, video conferencing, digital robots, and collaborative digital reference etc. Talking about importance of digital reference services (Cloughley, 2004) mentioned that libraries and information services have long been engaged in providing reference services to their users. Of late with the introduction of internet and digital libraries the nature of reference service has changed significantly, a number of digital reference services are now available from library and non library organization. Similarly (Agosto et al., 2011)
indicated that, there is heavy influence of the internet on reference services in areas such as virtual communication modes (chat, instant messaging). They also mentioned that the movement towards a more social approach to reference and research has started with the advent of Library 2.0 (blogs, wikis). They found that the students still need help so reference services are not dead, but the format and communication modes have changed.

(Krishnamurthy and Chan, 2005) is also of the opinion that when information is readily available especially with the help of “google – like” searching on the web, libraries are forced to focus on digital reference to navigate among the distributed information resources. To popularize the digital reference services (DRS) (Khan, 2006) illustrated traditional reference service and DRS and discussed on the concept and issues related to the use of digital reference in academic libraries. He also provided information on various terms sometimes used for DRS, their history and how they work in practice. Additionally (Osareh et al., 2009) suggested prototype for the digital reference desk service (DRD) after analyzing that the present model was not based on the existing standards. They proposed a model based on content analysis of DRD of the world’s national libraries and views of Iranian library and information specialists. They suggested to provide DRD service through email.

**Evaluation**

To know the success or drawbacks of any service it is very important to evaluate, with this intention (Diamond and Pease, 2001) analyzed the reference questions received by the DRS of a medium-sized academic library over two year period. They found that the libraries e-mail reference service receives many broad, complex, or difficult questions. They suggested that answer checklist may improve librarians effectiveness in the digital environment, which can serve as a reminder to reply in a systematic way, while reducing the problems of overly detailed question forms, and bombardment or hidden assumptions in the answer. Similarly analyzed to which degree the question types addressed have changed between the years 1999 and 2006. They found that proportion of ready reference questions had increased from 33 to 45%, where as the proportion of subject-based research questions had decreased from 57 to 47%. Based on the findings they have concluded that the internet has somewhat reduced the traditional role of public libraries in mediate topical searching. Contrary to this statement (LaGuardia, 2011) found that there is steady increase in the number of reference questions that become research consultations, since the initial question is, not surprisingly, just the tip of the research iceberg from the querent and witnessed paradigm shift in reference question complexity. Analyzing the reference services (Han and Goulding, 2003) found that reference work, mediated information searching and fee-
based services have dramatically declined. Also, some of the librarians’ intermediary work has been substituted by automatic tools, like SDI service, which is being carried out by resource providers automatically without human mediation. (De Groote et al., 2005) examined the effectiveness of a one-service-point digital reference service in a complex academic library composed of multidisciplinary and geographically dispersed libraries and measured the relative success of DRS. Their study demonstrated that a centralized digital reference service is feasible even in a complex academic environment serving a diverse user population with widely divergent disciplines. Working on the same line (Burke, 2008) analyzed reference services in forty Australian academic libraries. The results of the survey demonstrated a shift from the traditional, isolated location of the reference desk to the integration of the service with other functions similar to the Information Commons model used in US libraries. With similar objective (Dollah and Singh, 2010) studied the effectiveness of DRS in academic libraries in Malaysia. Their study is evident that the libraries have provided sufficient access to electronic resources, information literacy skills programs and training on how to use DRS. Further (Shakeri et al., 2012) compared traditional reference service and virtual reference service that is provided using web form “Ask Us” at national library and archives of the Islamic Republic of Irland and found that, majorly researchers use virtual reference service. (Choi, 2006) examined the extent to which digital library projects incorporated reference services to increase the value of the collections and support the use of information. For the study he analysed web-based registry for the description of digital initiatives in or involving libraries registered during 2005 and managed by the Association of Research Libraries. He found that services in two areas search and digital reference were implemented in many libraries. He also found that, online reference service (e-mail reference service), and bibliographical services were offered the most. (Chowdhury and Margariti, 2004) discussed the current practices followed by the major libraries in Scotland for providing DRS and analysed that DRS are effective forms of service delivery in Scotland’s academic, national and public libraries. They are of the opinion that DRS full potential has not yet been exploited. They found that E-mail is the major technology used in providing digital reference and recommended to use more sophisticated internet technologies. (Hill et al., 2007) briefed about the DRS “Text A Librarian” developed using Altarama’s “Reference By SMS” product which enabled users to use the text message feature of their cell phones to send questions to and receive answers from the library. They found that text a librarian was less used compared to chat and email services and text a librarian service popularized the ask a librarian service. (Miranda et al., 2006) have discussed plans for current and future assessment of digital
reference including e-mail, live online reference, and online instruction using evaluation program like RUSA, SERVQUAL, LIBQUAL and WOREP- Wisconsin-Ohio reference evaluation program. They have analyzed that WOREP is the best evaluation system. They found that setting standard for each type service offered is necessary for effective review of digital reference service, which provides library staff with essential information in enhancing reference, instructional process practice and understanding how user utilize the services. Evaluating the DRS software (Cloughley, 2004) reports on the performance of five free digital reference services (DRS) in answering ten reference questions. She described and studied 5 popular DRS Allexperts, The Answerbank, Questionpoint, Electronic reference service, KSU library email reference service and UCLA Ask a librarian usage. She found that KSU email service is the fastest in providing response and also identified that Answer book had special facility of pop up answer screen for similar kind of question. Further (Lochore, 2004) assessed the performance of the freely available DRS. To evaluate she submitted ten questions - five purely fact-finding, and five on the subject of political affairs to three DRS. The findings show that DRS deliver generally accurate information although the time taken to do so varies. Working on the same line (Henley, 2004) compared the performance of four digital reference services: Ask Bob; Ask a Librarian; Ask Zach and IPL Y outh Ask a Question. To evaluate ten questions that were submitted to each of the four services by seven students of Scottish primary school was considered. She found that IPL had provided best answer and link for resources than other services. Author Suggested that improvements in the design of the question form and services geared towards certain sections of society, such as children in particular, would improve the nature of the service offered. Assessing realtime reference services provided 24/7 (Bernard, 2006) found that the very efficient search service with the option of full-text searches was offered and email reference service was provided but realtime service was not provided by all projects under study. He also found that 75% of the projects provided online user instruction services. Working with similar objectives (Bakar, 2011) studied myths and realities of digital reference services to determine whether developing countries in Asia and Pacific region have caught up yet with the realities of offering digital reference services in real time with a 24/7 operating mode. He found that none of the countries surveyed had an academic library that offered virtual reference services in real time and 24/7 basis is a myth rather than a reality.

Users need
Identifying user need to provide new service and extend the services is important, with this intention (Johnson and Magusin, 2005) points out that student in digital libraries are susceptible to intermediation. They highlighted that academic librarians play an increasingly
important role in student success as students move away from the physical library and immerse themselves in the digital library. They found that students are overwhelmed by the various resources and need effective guidance from librarians through reference desk, chat or other modes of communication. Further (Buckland, 2008) of the opinion that there is need to develop structures appropriate to digital technology, to fulfill user’s needs, and to the users work environment. He suggested that for optimizing reference library service as a whole librarian has to equip with all the tools and technology required to provide service in digital environment.

**Digital library services using repository**

During the initial stage of digital library development we have witnessed the emergence of a novel scholarly publishing and communication model in the form of electronic or digital repositories (IRs) (Johnson, 2002) defined a digital IR as “any collection of digital material hosted, owned or controlled or disseminated by a college or university, irrespective of purpose or provenance”. (Cervone, 2008) emphasized on creating contextualized digital repositories that are useful to users in a broad range of endeavors. He explored five areas that need to be considered and addressed for digital repository i.e selecting the foundational repository software package; appropriate hardware infrastructure; defining general content submission and ingestion practices; clarifying content models and metadata practices; developing and implementing unique functionality. In his opinion, to develop a logical plan, library staff must understand the many factors of the local environment, both in terms of what is possible today as well as what will be required tomorrow. Further (Kesavan, 2009) provide step-by-step guidelines for planning, designing, developing and managing DL projects and offering digital library services. He defined the DL concept, elaborating the need for DLs and identified the resources for DL collections, and also provided practical approach for development of DL. He also drew digital library collection development policy document along with emerging issues. (Borbinha, 2004) has created a national digital library, which has been envisioned as a coherent group of services and resources for users. It is developed and maintained by professionals with the involvement of external agents. He provided technical solutions by integrating with the traditional library services. (Takle, 2009) mentioned that Norway digital library was created by digitizing all forms of material published in Norway and digital materials, using three guiding principles. Author analyses that it is in the process of establishing itself as a digital national library and taking a key role in the country's digital library service. (McGrogy et al., 2007) briefed about digitization process carried out to create digital repository for print disabled in Canada. They analyzed that with digitization, clientele have timely access to greater choice of
information resource. They found that clients were able to access library services independently. (Russell, 2010) opinion that depository libraries face a changed environment for managing collections and providing user services, but the inflexibility at the heart of the system has made it difficult to allocate resources and collaborate to respond to this new environment. They discussed initiatives of ASERL, which has provided federal depository library collections service and online access to digital and digitized copies without fee. (Veiga et al., 2007) presented an overview of a self-archiving service for the Brazilian digital library of computing (BDBComp). They found that they have built an easy, comfortable, and useful self-archiving service for BDBComp, which can be easily utilized by users for submission and accessing the content. Their study forms the basis and provides guidelines to conduct new and better experiments with other similar self-archiving services and systems.

(Ramakrishna, 2009) describes the setting up of the digital library at the JSW Steel Ltd., which provides users a single window access to structured information from their desktop. He has found that digital library has helped in saving users valuable time and enabling library staff to create and provide more effective information services to the users. Further (McArthur et al., 2004) described iLumina a digital library of undergraduate teaching materials in science, mathematics, technology and engineering (SMETE) education that is being developed by Eduprise to improve the quantity and quality of digital teaching resources, which provides service to the faculty across the country who have created a wealth of digital resources for teaching and are willing to share them. It also supports faculty to find related resources. Vidyanidhi, the Indian Digital Library of Electronic Theses initiative, is highlighted by (Urs and Raghavan, 2001) mentioned that vidyanidhi digital library project demonstrate the utility of digital library technologies to maintain, enhance access and increase visibility of Indian academic research. They have also discussed about various issues related to project design, development and management. (Southwick, 2006) mentioned about national digital library for electronic theses and dissertation (BDTD) built based on the Open Archives Initiative. He also mentioned that, BDTD has been integrated with the international initiative: the Networked Digital Library of Thesis and Dissertation (NDLTD). (Ghosh, 2009) examined the developments in ETD repositories, in particularly PhD thesis repositories, in India and performed a preliminary study to explore the possibilities for creating a national repository for the deposit, discovery, use and long-term care of research theses in an open access environment. He found that digital preservation of theses and dissertations is already in progress, though some of them are still in a preliminary stage. He proposed to construct a reservoir of extensive doctoral research and an Indian portal to enable
perserving of scientific and technological research materials in the country and to provide global view of Indian institutional research assets. (Wenqing and Ling, 2013) discussed about China Academic Digital Library Information System (CALIS) a national digital library for higher education, which provides services and access to resources containing more than seventy million records of all kinds of information such as bibliographic data, theses and dissertations, conference papers, preprints, courses, pictures, audio and video material, scholarly web pages, etc, to all 1,800 Chinese academic libraries and universities. It offers many services like centralized information search service, inter-library loan and document delivery, information consultancy service, collaborated Q&A service etc.

Conclusion
Digital library and digital library services are not a new concept. Research on digital library and services are been conducted frequently to upgrade the services and initiate new services. The advent of digital resources available in varied forms like e-journals, e-journal databases, e-book databases, web-blog, information on websites, institutional repositories, information on internet etc., have raised challenges to library to manage the information resource potentially tailored to the needs of user. In order to meet these challenges digital services need to be provided at shortest possible time. This review revealed that research and practice in digital libraries has made way for innovative services and exploded many issues in digital library such as infrastructure, creating awareness, providing training to user community etc. Future trends points towards need for extensive research in digital libraries especially in services aspect and for the transformation of libraries as community information centers. With the advance of research and practice digital library has ability to extend extensive services.

Reference


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