ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

A bird's eye on the Evolution – Web 1.0 to Web 5.0 : Lib 1.0 to Lib 5.0

Mrs. M. Parvathi
Library Assistant,
Thiruvalluvar University College of Arts and Science
Arakkonam, India
parvathisadiq@gmail.com

Mrs. R. Mariselvi
Librarian,
M.A.V.Vidyashram, Sembakkam
East Tambaram, India

***Abstract*— In modern world, we are travelling in digital era. Digital environment has dissemination powers through various institutions and organizations like Industries, Medical, Educational Institutions. The Digital generation has enabled a great amount of information to be readily available and easily accessible. It has promoted several changes in the digital world, including in the educational institutions. Information is one of the key factors for any kind of research and development. Today information has changed its origin. Earlier the information platform was totally different when compared with the present system. The world is getting inclined more towards technology side. It has different modes of action. One of it is web technology. The web technology plays a vital role in socio-economic and cultural development. One of it main objectives is to enter a paperless culture. Apart from that we are also subjected to frequent natural disasters, which necessitates for us to encourage green eco based culture. Computer and internet are the key components which connect us with the World Wide Web. Recent thinking describes the changing web as Web 1.0, 2.0 and etc., managing the web information as knowledge of connection. Empowerment of web generation has led change in the information centre, which is the Library system. Library should catch up with the present trend because information resources are more and more available in the internet. The fifth law of Library Science says "Library is growing organism". Therefore libraries may do well to continue adopting these web technologies. This paper describes the generation of Web technology i.e. web 1.0 to web 5.0 and evolution of Library services and also discusses the implication of Library 1.0 to Library 5.0.**

Keywords*— *Web technology, Web 1.0,2.0.3.0,4.0,5.0, Library, Library 1.0, 2.0, 3.0, 4.0, 5.0, www, Library services, Digital, information.

I. INTRODUCTION

Today world has changed to Digital environment, the 21st century is seeking to be technology era. Computer and Internet, invention gives new dimension to the information and knowledge based works, the Web based technology to improve individual development also; it is moving so rapidly that is making difficult to cope with changes and challenges day to day. Information activities have undergone rapid transformation from conventional methods; consequent upon introduction of new technologies [1] Information is one of the key factors of any kind of research and development. The technology has enabled a great amount of information to be readily available and easily accessible.

Information is a fundamental resource which is essential for survival in today's competitive and wired world. The information itself and way it is accessed have undergone changes owing to the developments in information and communication technology [2]. Further, origin of internet and the development of World Wide Web revolutionized the information communication technology. Now, web service developed 1.0 to 5.0. Recognizing the advantages application of web technology the libraries are essential to provide the facilities to their user community. It is more and more information to the user, according to Shannon and Weaver 'Information is any stimulus that reduces uncertainty". Another definition by Ching-Chin Chen and Peter Hernon defines information as "all knowledge, ideas, facts, data and imaginative works of mind which are communicated formally and or informally in any format". The world wide web (www) is communication tool of those who seeking the information. It has the largest information for various format like text, video, images and etc., its main objective of accessing the information from anywhere at any time in form of interlinked hypertext language known as web. Library is one of the information centre they should be transition to the present trend. Nowadays, Library advent generation of Library 1.0 to 5.0. Is to the equivalent growth as web generation.

> "The number one benefit of information technology is that it empowers people to do what they want to do. It lets people be creative. It lets people be productive. It lets people learn things they did not think they could learn before, and so in a sense it all about potential" – Steve Ballmer.

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

II. OVERVIEW OF WEB

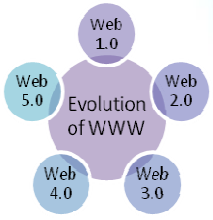
A. Definition of Web Technology:

A Technology which acts as in interface between web servers and clients. It includes markup languages, programming interfaces, standards to define document identity and display. Basically web technology is the process which allows two more computing devices over a network. Web technology has travelled many platforms with the help of computer and Internet connection. They share resources from various dimensions. Its infrastructural build by the Computer networks such as Local Area Network (LAN), Metroplitan Area Network (MAN) or a Wide Area Network (WAN) such as Internet. Communication on a computer could never be as effective as they are without the plethora of web technologies in existence. The mechanism must ensure that a message moves from the sender to the recipient, enable the receiver to retrieve the message and send feedback, and acknowledge reception or failure of communication [3].

HTML (Hyper Text Markup Language) is Markup language formatted by document that supports to link other documents as well as graphics, audio, and video files. This means you can jump from one document to another simply by clicking on hot spots. Not all Internet servers are part of the World Wide Web [4].

B. Evolution of WWW

Evolution of the World Wide Web in those days, the printing technology established a strong division with relationship of people who where to access the knowledge distributed and those who were not. In the same situation occurred with the web, the speed of its transformation. In each development generation of the World Wide Web (www) has transformed the knowledge distributed by the companies themselves. However, the evolution of web pinpointing the stage we are at in this dramatic digital transformation.



In 1989, Tim Berners Lee, a British computer Scientist and former CERN employee, created a global hyper text space where any network accessible information would be referred by a single Universal Document Identifier (UDI) [5].

The World Wide Web "is simply defined as the universe of global network-accessible information" (Berners-Lee, 1996); this information is generally contained within documents [6]. The World Wide Web is a system of interlinked hypertext documents accessed via the Internet. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia and navigate between them via hyperlinks. Main objective of this creation is to created a common information space allowing people to communicate and share information that leads to the development of web. Web Journey started from web 1.0 till web 5.0.

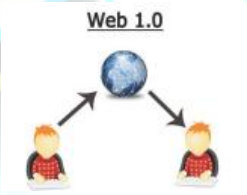
III. GENERATION OF WEB

A. Web 0.0 – Developing the internet

Web-0 is read only and the origins of this came in three phases. This web allowing users to view static web pages containing text, images and video across web via hyperlinks. Berners-Lee developed the three fundamental technologies of web: HTML, URI and HTTP which enables the retrieval of linked resources across the Web [5].

B. Web 0.5 – The Development Began

Tim Bereners lee wanted Web to be a central medium connecting everyone in the world and updating the data upto-date. Web began its journey from this stage and extended as Web 0.5, initially commenced enhancing static pages to dynamic and switching from non standard technologies to advance, during this period Web raised as a winner against competitive products, such as Gopher [7].



C. Web 1.0 - The Basic Publishing and Transaction Medium

Web 1.0 was the first implementation of the web and it lasted from 1989 to 2005. The WWW or Web 1.0 is a system of interlinked, hypertext documents accessed via the Internet. The first execution of the web represents the web 1.0, which, according to Berners-Lee, could be considered the "read only web." In other words, the early web allowed us to search for information and read it [9]. There was very little in the way of user interaction or content contribution. However, this is exactly what most website owners wanted: Their goal for a website was to establish an online presence and make their information available to anyone at any time [10]. It would have been static mainly based around search. It may have had some useful information but it would rarely if ever be updated. You could imagine it as a single page of a book placed up on

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

the web and then left there for people to read. It was also unresponsive in the sense it was purely a one way feed of information. There was no interactivity between the person who was visiting the site. No comments, no collaboration, no community [11].

Web 1.0 technologies includes core web protocols: HTML, HTTP and URI Newer Protocols: XML, XHTML, CSS Server-Side Scripting: ASP, PHP, JSP, CGI and PERL Client-Side Scripting : JavaScript, VBScript and Flash [12]. In web 1.0, a small number of writers created web pages for a large number of readers. As a result, people could get information by going directly to the source [13].

D. Web 1.5 – Introducting Dynamic web

Due to the rapid growth of consumers of Web, development of dynamic content development technologies began at 1996.It required advanced technologies to enhance the primary Web and made use of: Advanced Protocols: XML,

XHTML, CSS Server Side Scripting: ASP, JSP, PHP, CGI, PERL Client-Side Scripting: JavaScript, VBScript and Flash. It used closed Application Program Interfaces and its efforts tried enriching the business websites for increasing number of customers. Google, Amazon, eBay and basic content management systems are developed as Web 1.5 applications [7].

E. Web 2.0: The Social and Co-created Web

The next level evolution of web is the web of people developed as a "read and write" web enabling users to participate, collaborate and share data in a social net work such as blog, RSS, wikis, tags and applications such as MySpace, Facebook, Twiter, orkut and Ning; media sharing such as you tube, slideshare and flicker; social bookmarking, such as Delicious and CiteULike; collaborative knowledge through wikis i.e Wikipedia, codeproject, expertechange, stackoverflow etc; creative work such as podcasr, videocasts, blogs and microblogs (e.g. blogger); content aggregation and organization, such as RSS (Really Simple Syndication) Feeds and tagging tools; and remixing or mash-ups from different content providers into new forms such as combining geo graphical data with transportation or crime data [9]. The web defined by Dale Dougherty in 2004 and developed during 2000-2010. Web 2.0 is a web as a platform where users can leave many of the controls they have used in web 2.0. In other words, the user of web 2.0 has more interaction with less control. Web 2.0 is not only a new version of web 1.0 but it also implies to flexible web design, creative reuse, updates, collaborative content creation and modification in web 2.0 that should be considered as one of the outstanding feature of the web 2.0 is to support collaboration and to help gather collective intelligence rather Web 1.0 [14].

F. Web 2.5: The Mobile Web

Web 2.5 provides device oriented Web supporting moving and open content in a virtual-reality based environment. The development focuses the period 2005 to 2015. It enables user to keep devices always on connecting to the internet bringing desktop infrastructures to hand held devices. Though Web 3.0 remains as Semantic Web, Web 2.5 also concentrates on semantic annotations with folksonomy and social bookmarking services. Twitter, Diggo, Yahoo! Answers, Google Co-op, or Second Life are the applications of Web 2.5 [7].

G. Web 3.0 – The semantic executing web

The development is focused from the period 2010 to 2020. Web 3.0 was first coined by John Mark off, is consider as a "Semantic web" termed as the web of data providing a common framework allowing data to be shared reused across application, enterprise and community boundaries" [7]. It is able to improve data management, support accessibility of mobile internet, simulate creativity and innovation, encourage factor of globalization phenomena, enhance customers' satisfaction and help to organize collaboration in social web [14]. Resource Description Framework (RDF) Ontology Vocabulary Rules SPARQL Logic Proof Trust Security Layers. The RDF is a modelling language with a Subject-Predicate-Object structure called "triplets" generating the linking structure of data in Web using URI to identify the resources forming a graph model [14]. It also uses Rule Interchange Framework, Logic, Proof Trust and Encryption layer for security. Ontology is the study of behaviour or inference of an entity providing a semantic structure to the data. Ontology is considered as the backbone of the Semantic Web. The main goal of the Semantic Web is to build a common and collaborative environment to the users which are read, write and executable in nature. Eurekster, Ask Wiki, Twine, Freebase are few examples of Web3.0 applications [7].

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

H. *Web 3.5: The Ubiquitous web*

Web 3.5-The Ubiquitous Web Web 3.5 is fully pervasive, interactive, and concentrated on the personal context based on semantic technologies. Web 3.5 reflects the advancement of Web 3.0 upgrading Web to semantic technologies and aims to introduce more advanced 3D worlds involving such as holograms(physical structure diffracting light into image) or augmented reality, binding the virtual world closer to the real world. The period 2015 to 2025 is focused to build Web 3.5 and the applications of Web 3.5 include 3D-enhanced social networks, Radiofrequency identification (RFID), and ambient sensors [7].

I. *Web 4.0: The Ultra-Intelligent Web*

As the evoluvation of web 3.0 is web 4.0 is expected to build from 2020-2030. This is ultra intelligent web contian advancements of artificial intelligence, nanotechnology, tele communications and controlled interfaces, reading the contents of the web and deciding what content to be executed is the main functions of machines. Its "read write concurrency web". The next step is not really a new version, but is a alternate version of what we already have. Web needed to adapt to it is mobile surroundings. Web 4.0 connects all devices in the real and virtual world in real-time.Web-4 is in developing which provides communication with each other and called "Symbiotic web".

Chips implanted to restore the vision of blind people or sensors on the brain's motor cortex for controlling a computer with thoughts can be the future scenarios [15]. Web 4.0 or WebOS will act as a middleware, which is parallel to the human brain and entail a massive web of highly intelligent interactions [13].

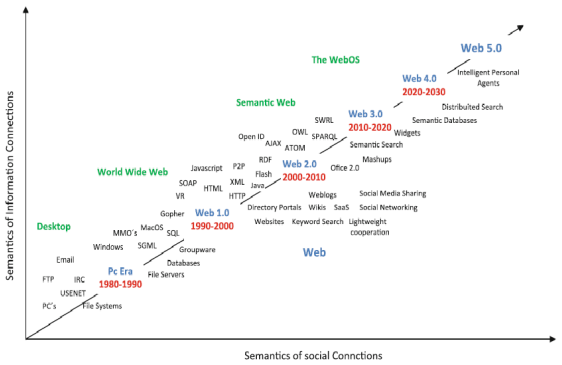
J. *Web 4.5: Web of Holograms*

Web 4.5- Web of Holograms Since Web 4.0 is already in a planning stage, Web 4.5 could be an idea of sensing holograms, using virtual worlds, and augmented reality. These intelligent and wise Webs will scoop up the intelligence of Web 1.0, Web 2.0, and Web 3.0 and Web 4.0 and move closer to Web 5.0 [7]

K. *Web 5.0: The Sensory-Emotive Web*

The fifth generation of web is the Sensory-Emotive Web called as a sentient web. Introduction of a new dimension in the web equation: Everthing is synchronized with time and web services which all revolve around time and bringing time based services to the user via what ever new methods happen to be available. Online clock starts Web 5.0. Web 5.0, the sensory and emotive Web, is designed to develop computers that interact with human beings. This relationship will become a daily habit for many people. Although at the moment the Web is ''emotionally'' neutral, i.e does not perceive what users feel and although emotions are still difficult to map, there are already technologies that can measure their effects. One example is www.wefeelfine.org which tracks emotional phrases on the Web, categorises them and registers the fre-quency and location of clusters of sentiments. Another example is the company Emotive Systems which has created neurotechnology. Using headphones, users can interact with content that responds to their emotions or changes the facial expression of their avatars in real time. If interactions can then be personalised to create experiences that excite users, then Web 5.0 will undoubtedly be more affable than its predecessors [20].

There has been increased in creativity of the user due to the emotive interaction with the web. Web 5.0 and the internet of things are expected to bring a new face in the human computer. The concepts are real and therefore the ideas have been there and will be there years to come. These two concepts will greatly affect the human work and lead our lives and therefore have been branded as the future. Referred to as the "next web", web 5.0 combines the attributes of an open, linked and intelligent web to produce an emotional web. It will map individuals feeling in real time and know what the person is feeling due to his/her interaction with the web. Internet of things that implies having all the devices we interact with connected to the internet. Opened linked and intelligent web = Emotional web. Which may enable people to get interconnected via Smart connector in the 3D virtual world of the Symbionet [18]. It is also termed as emotional Web or telepathic Web. Its application can be similar to the process "Through headphones the user can interact to the Web Content and data are concurrently manipulated with the emotional face change of the user, such applications can largely help in various fields of medicines, [5]. Tim Berners-Lee gave a 1989 still is in developing mode web to Symbiotic emotional web.



ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

Fig. Evolution of World Wide Web. Source Own elaboration based on radar networks and Nova Spivack, 2007—www.radarnetworks.com

IV. OVERVIEW OF LIBRARY SERVICE

Definition of Library Service

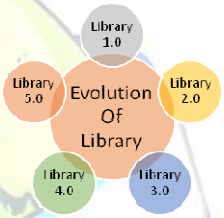
A library is a collection of sources of information and similar resources, made accessible to a defined community for reference or borrowing. In the 21st century, there has been increasing use of the Internet to gather and retrieve data. The shift to digital libraries has greatly impacted the way people use physical libraries. Between 2002 and 2004, the average American academic library saw the overall number of transactions decline approximately 2.2%. Libraries are trying to keep up with the digital world and the new generation of students that are used to having information just one click away. These facts might be a consequence of the increased availability of e-resources [8]. In library activities with support of computers in 1980's, there are issues and challenges in developing Web-based Information services though libraries of technical institutions are being established, scaling up the library operations and the quality of services over the years, revamping the information infrastructure, establishing liaison programmes and lack of support from parent organisations are big causes of concern for the long-term growth of libraries. The current web today is growing at an amazing pace. However most of the web pages are designed in such a way that the information contained in them cannot be understood or processed by computers. Semantic web is web of information that is machine meaningful process to computers.

The library ecosystem is changing, so do the patron world and expectations. The looming large web technology and its applications for libraries are exploited worldwide; the open source world also offers variety of solutions at almost no cost for developing web-based information sources. However, to start and strengthening library web services require strategic planning, training and exposure to latest technologies and constant learning in the long-term. yet there is room for massive transformation and change for the growing economy. [19] Information is available anywhere and everywhere and at any time through Internet and Intranet. Today, information is available at the finger tips of the users as there are innumerable sources of obtaining the same. The webs do the patron to change the library system. However, filtering from the vast sources of information and making available the right information at the right time and to the right user is presently required. Information Technology has broken the worldwide boundaries, new apparatus and methods help to provide better services to our users.

V. EVOLUTION OF LIBRARY

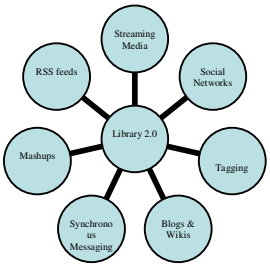
A. *Library 1.0*

Libraries as they are known today can be defined by the term Library 1.0. This defines the way resources are kept on shelves or at a computer behind a login. These resources can be taken from a shelf, checked out to the librarian, taken home for a certain length of time and absorbed, and then taken back to the library for someone else to use. Library 1.0 is a one-directional service that takes people to the information that they require. Library 2.0 – or L2 as it is now more commonly addressed as – aims to take the information to the people by bringing the library service to the internet and getting the users more involved by encouraging feedback participation.



B. *Library 2.0*

The next development of Library 1.0 to Library 2.0 is a term coined by Michael Casey on his Library Crunch blog in 2005. Though his writings on Library 2.0 are groundbreaking and in many ways authoritative, Casey (2006a) defines the term very broadly, arguing it applies beyond technological innovation and service. In addition to Casey, other blogging librarians have begun conceptually exploring what Library 2.0 might mean, and because of this disparate discussion with very wide parameters, there is some controversy over the definition and relative importance of the term. [16]. According to Thomas Brevik "Library 2.0 is the natural evolution of library services to a level where the library user is in control of how and when he (user) gets access to the services he needs" [21].



ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

Library 2.0 is a user-centered virtual community. It is a socially rich, often egalitarian electronic space. The details of how the applications so common to Web 2.0 will continue to evolve, and how libraries might utilize and leverage them for their patrons, are inherently hidden--they are wholly about innovation. But the conceptual underpinning of a library's web-presence and how it must evolve into a multi-media presence that allows users to be present as well, both with the library or librarian and with one another, are clearly in need of development. They are meant to conceptually explore and provide context to the relationship between the evolving Web and the evolving library, as outlined above, as a means to facilitate innovation and experimentation in library electronic services, and this list is by no means comprehensive.

Synchronous Messaging

This technology has already been embraced quite rapidly by the library community. More widely known as instant messaging (IM), it allows real-time text communication between individuals. Libraries have begun employing it to provide "chat reference" services, where patrons can synchronously communicate with librarians much as they would in a face-to-face reference context.

Streaming Media

The streaming of video and audio media is another application that many might consider Web 1.0, as it also predates Web 2.0 thinking and was widely employed before many of the following technologies had even been invented. But for reasons similar to synchronous messaging, it is here considered 2.0. Certainly, for libraries to begin maximizing streaming media's usefulness for their patrons, 2.0 thinking will be necessary. As mentioned, library instruction delivered online has begun incorporating more interactive, media-rich facets.

Blogs and Wikis

Library 2.0 is using Blogs and wikis and their global proliferation has enormous implications for libraries. Blogs may indeed be an even greater milestone in the history of publishing than web-pages. They enable the rapid production and consumption of Web-based publications. In some ways, the copying of printed material is to web-pages as the printing press is to blogs. Blogs are HTML for the masses.

The most obvious implication of blogs for libraries is that they are another form of publication and need to be treated as such. Wikis are essentially open web-pages, where anyone registered with the wiki can publish to it, amend it, and change it. Much as blogs, they are not of the same reliability as traditional resources, as the frequent discussions of Wikipedia (an online encyclopedia where any registered user can write, amend or otherwise edit articles) in the library world well note; but this of course does not eliminate their value, it merely changes librarianship, complicates collection development and information literacy instruction. The lack of peer review and editorship is a challenge to librarians, not in that users should avoid wikis, but only in that they should understand and be critical in depending on them. Wikis as items in a collection, and the associated instruction of users in the evaluation of them, are almost certainly part of the future of libraries.

In addition, a library wiki as a service can enable social interaction among librarians and patrons, essentially moving the study group room online. As users share information and ask questions, answer questions, and librarians do the same within a wiki, a record of these transactions is archived perhaps for perpetuity. And these transcripts are in turn resources for the library to provide as reference.

Social Networks

Social networks are perhaps the most promising and embracing technology discussed here. They enable messaging, blogging, streaming media, and tagging, discussed later. MySpace, FaceBook, Del.icio.us, Frappr, and Flickr are networks that have enjoyed massive popularity in Web 2.0. While MySpace and FaceBook enable users to share themselves with one another (detailed profiles of users' lives and personalities), Del.icio.us enables users to share Web resources and Flickr enables the sharing of pictures. Frappr is a bit of a blended network, using maps, chat rooms, and pictures to connect individuals.

Other social networks are noteworthy as well. LibraryThing enables users to catalog their books and view what other users share those books.

Tagging

Tagging essentially enables users to create subject headings for the object at hand. In Library 2.0, users could tag the library's collection and thereby participate in the cataloging process. Tagging simply makes lateral searching easier. The often-cited example of the U.S. Library of Congress's Subject Heading "cookery," which no English speaker would use when referring to "cookbooks," illustrates

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

the problem of standardized classification. Tagging would turn the useless "cookery" to the useful "cookbooks" instantaneously, and lateral searching would be greatly facilitated.

Of course, tags and standardized subjects are not mutually exclusive. The catalog of Library 2.0 would enable users to follow both standardized and user-tagged subjects; whichever makes most sense to them. In turn, they can add tags to resources. The user responds to the system, the system to the user. This tagged catalog is an open catalog, a customized, user-centeredcatalog. It is library science at its best.

RSS Feeds

RSS feeds and other related technologies provide users a way to syndicate and republish content on the Web. Users republish content from other sites or blogs on their sites or blogs, aggregate content on other sites in a single place, and ostensibly distill the Web for their personal use. Such syndication of content is another Web 2.0 application that is already having an impact on libraries, and could continue to do so in remarkable ways.

Already libraries are creating RSS feeds for users to subscribe to, including updates on new items in a collection, new services, and new content in subscription databases. They are also republishing content on their sites.

Mashups

Mashups are perhaps the single conceptual underpinning to all the technologies discussed in this article. They are ostensibly hybrid applications, where two or more technologies or services are conflated into a completely new, novel service. Users search for images by sketching images. In some ways, many of the technologies discussed above are mashups in their very nature. Example is WikiBios, a site where users create online biographies of one another, essentially blending blogs with social networks.

Library 2.0 is a mashup. It is a hybrid of blogs, wikis, streaming media, content aggregators, instant messaging, and social networks. Library 2.0 remembers a user when they log in. It allows the user to edit OPAC data and metadata, saves the user's tags, IM conversations with librarians, wiki entries with other users (and catalogs all of these for others to use), and the user is able to make all or part of their profile public; users can see what other users have similar items checked-out, borrow and lend tags, and a giant user-driven catalog is created and mashed with the traditional catalog.

Library 2.0 is completely user-centered and user-driven. It is a mashup of traditional library services and innovative Web 2.0 services. It is a library for the 21st century, rich in content, interactivity, and social activity. [16].

C. *Library 3.0*

Belling et al. (2011) explain that the term Library 3.0 refers to the use of emerging technologies such as the semantic web, cloud computing, mobile devices and established tools like federated search systems, to facilitate the development, organization and sharing of user-generated content through seamless collaboration between users, experts and librarians [24]. We are approaching web 3.0 very fast, the desires and expectations from the ICT have already started giving shape to this generation of web. Consequently Library 3.0 envelops lot of challenges to the librarians as well as new dimensions to the profession. Since, features of web 3.0 are little hazy but being a user and organizer of information, speed, accuracy, precision and systematic organization of information available on the web are the most desirable elements of Library 3.0. Below, we are describing few of the prominent features or aspects of library 3.0 generation in brief:

Semantic Web

Semantic web will provide us with the option to share, unite, search and organize the web information in easy manner. Sharing and organizing information available in every corner of the web, which is the main aim of this generation and expected to be achieved with the help of semantic web technologies [23].

OPAC

In library 3.0, Web OPACs of various libraries which are forming a part of visible or invisible web would be brought together. Metadata of contents (contents in any format) would seamlessly accessible and searchable from single user friendly interface, just the way a 'Portal' provides one stop shop for various contents in present generation.

Ontologies

These are the techniques to give richer semantic relationships between terms and thoughts of knowledge. These give more standardization in managing the web contents instead of merely indexing the terms. Ontology aims at how the information is organized rather than organizing the information. Librarians can adopt various ontological techniques to define the web contents in more professional as well as personal manner.

Ubiquitous contents

The ubiquitous computing offers various contents which can be used or re-used frequently and will also not get absolute in near future. The contents of this generation need to be created in various formats and can also be easily shared, transferred and accessible through all modes of communication. Ubiquitous contents are the personal contents of the people persistently stored on the web in form of movies, blog posts, RSS feeds, wikis, stories, articles, music, games, etc. These are always there on the web and accessible from everywhere over the Internet through all mobile and Internet accessible devices.

GeoTagging

Geo tag is help to users to find specific information located at specific location. It is simply a marking of various media or digital contents like images, photographs, video,

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

websites or RSS feed etc. Most of the cellphones and mobile devices have GPS (Global Positioning System) facilities, which allowing users to add metadata exactly where the data or image or video was created. The tagging helps users to mark their information in which they are interested for.

Virtual Reference Service

Since technology is developing very fast in all domains, librarians are more determined to serve the users who are away from the libraries. In virtual reference service, apart from helping the users in personal or telephonic way, librarians are now developing the contents which can easily be transferable and readable in cellphones and other mobile devices to help the users at any point of time.

In Nutshell

We are in the unorganized set of web contents these days but in library 3.0 to establish these unorganized web contents into a systematic and organized way. The most important sphere of library 3.0 is to establish a semantic relationship between all available web contents to ensure seamless accessibility, search-ability, availability and usability. Librarians need to be more inclined towards the use of latest tools and technology to create virtual library system. But basic aim remains the same i.e. 'right information to the right user at the right time' [23].

Web 3.0 refers to the use of emerging technologies such as the semantic web, cloud computing, mobile devices and established tools like federated search systems, to facilitate the development, organization and sharing of user-generated web content through seamless collaboration between users, experts and librarians. The main goal of library 3.0 is to promote and make library collections widely accessible, searchable and usable. The end result of Library 3.0 is the expansion of the 'borderless library', where collections can be made available readily to library users regardless of their physical location.

Cloud Computing

'Cloud Computing' means using the Internet and central remote servers to maintain data and applications instead of maintaining data on individual mainframe computers or PCs. In short, cloud computing refers to the technologies that provide software, data access, storage devices that do not require physical location of the system. It is one of the most important Library 3.0 applications that is gaining popularity day by day [22].

D. Library 4.0

Library 4.0 can be adapted to fit every different kind of library. Design/Methodology/Approach: For this purpose, first, major reference databases (e.g. Google Scholar, EbscoHost, LISA, etc.) were examined for literature that discusses Web 4.0 and Library 4.0. Second, examples of information technology environments as well as studies and news articles related to information technology were comprehensively collected and analyzed by focusing on those which may influence libraries. Third, examples of cutting-edge information technology applied in libraries were examined and analyzed. Other examples were found of cutting-edge information technologies that have not yet been used in libraries but would be applicable to the next-generation library. Fourth, this study developed a model for next-generation library service provided by Library 4.0 and representative keywords explaining Library 4.0. Findings: First, opinions of scholars tracking the rise of Web 4.0 vary widely, but Web 4.0 features commonly suggested by previous researchers are: reading, writing, and executing simultaneously, intelligence-based agents, connected web, ubiquitous web, intelligence connections, and intelligence-based web [25].

The transformation of Library 3.0 to Library 4.0 is being observed whole web will be known as library and will be called as learning web. Everything placed on the web will get a unique location and web itself synthesis and analyse every part of the published content. Open Access system gets more encouragement and library 4.0 will divide the web into two parts "learning web" and "Spamming or Trashing web". In this, 'learning web' will work as a 'gigantic open virtual library' with higher precision value and academicians will go with this. 'Spamming or Trashing Web', will be for the whole garbage available over the Internet which would cover recreational part of Internet. Libraries need to work in network or in collaboration with various professional networks. Library 4.0, dubbed the aesthetic library, is currently being mooted. Schultz (2006) explains that it will be a luxurious 'WiFree' space for meditation, relaxation and generation of ideas. She imagines Library 4.0 as the comfortable space enriched with 'exquisite brandy, smooth coffee, aromatic cigar, smell of leather and rustle of pages' [25].

Web portal may be defined as library portal to library services like e-journals, online databases and OPAC etc., [14] client server architecture increases usability through user friendly form-based interfaces.

E. Library 5.0

The fifth generation of Library is Lib 5.0 or L 5 is too expected in the future development of Library service. The Web 5.0 is the Sensory-Emotive Web called as a sentient web. Which is the Introduction of a new dimension in the web equation: Similarly, the Library 5.0 is related to sensory and emotive service to provide to the user. With the increase in creativity of the user due to the emotive interaction with the web, Web 5.0 and the internet of things are expected to bring a new face in the human computer. The concepts are real and hence the ideas will remain afresh for years to come.

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

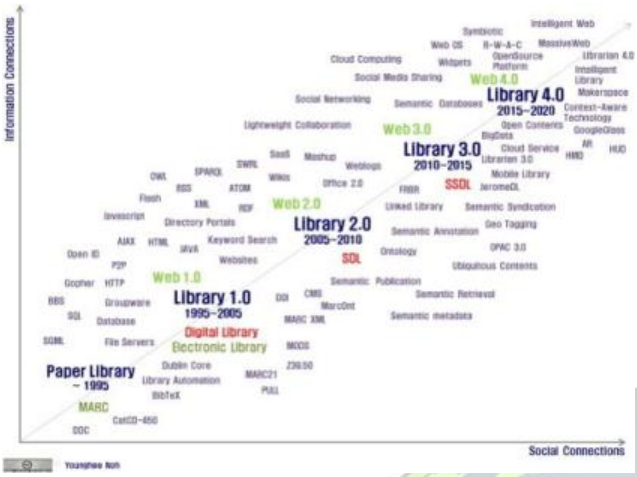


Fig 2. Development process of Library 1.0 to 4.0,
Source: Imagining Library 4.0: Creating a Model for Future Libraries, The Journal of Academic Librarianship, Volume 41, Issue 6, 2015, 786 – 797, http://dx.doi.org/10.1016/j.acalib.2015.08.020

VI. SUMMARY OF THE PAPER

Web generation + Library Service = Evaluation of Library service

The Journey of web is always to be forward, its implication in all over world. The main objective of both services is to transmission of Information to the user. And any where and any time this is the unity of two services.

The library service has to improve with the technology growth. The major thing is all the Institute and Organisations is changing into computer and internet community. World Wide Web is the essential for information transformation and knowledge dissemination. Library service has gone one step forward in this kind of technology growth, to improve themselves into printing mode to digital mode. However, Dr. S.R. Ranganathan says third law of Library science the information to help right time for right user and to save the user time. Today time is very precious, so the library service adopt the current trend web technology and improves itself.

VII. CONCLUSION

Web growth is hasty, inspire of the advantage of technology development. It is moving towards artificial intelligent techniques to be as a massive web of highly intelligent interactions in close future. The library service adopted the web technology in its system and to broadly spray the innumerable sources of information to the user anywhere and anytime. It discuss similarity of both technology development in various tools construction. Functions of tools and applications are vast utilized in library sector such as Academic libraries, Public libraries and Special libraries. In advanced countries they use very well in e-library and content management library websites. This paper presents the bird's eye on the evaluation of both Web 1.0 to 5.0 and Library 1.0 to 5.0 had much progress since 1989 and it is moving web of highly intelligent interactions in close future and is not the end of point. In future may be both systems would develop beyond the expectations.

Acknowledgment

I am thankful to those who helped me and encourage me to deliver this paper finally. And I also thank the below mentioned references which was very useful and guided me to publish this paper.

References

[1] S. N. Singh , "Digitization Initiatives And University Libraries In India", pp.. 202-209

[2] Dr. A. Vijayakumar, "Application Of Information Technology In Libraries:An Overview", International Journal of Digital Library Services, Vol.1, Issue-2, ISSN No.2250-1142, Oct-Dec.2011.

[3] https://www.reference.com/technology/technology-eebf0fb1e023190a#.

[4] http://www.webopedia.com/TERM/W/World_Wide_Web.html.

[5] R. Akil Sindhu, Dr. R. Manicka Chezian, "The Movement of Web from Web 0.0 to Web 5.0: A Comparative Study", International Journal of Multidisciplinary Research and Development, Volume 3; Issue 3; pp. 176-179; (Special Issue), March 2016.

[6] Berners-Lee, T "The World Wide Web: Past, Present and Future", 1996. Available at: http://www.w3.org/People/Berners-Lee/1996/ppf.html (Accessed: 31 October 2010).

[7] Sebastian Weber, Jorg Rech, "Handbook of Research on Web 2.0, 3.0, and X.0: chapter An Overview and Differentiation of the Evolutionary Steps of the Web X.Y Movement: The Web before and Beyond 2010"; 2.0:12-39.

[8] https://en.wikipedia.org/wiki/Library

[9] Dr K. P. Singh, Bebi and Dipti Gulati, "Technological March from Web 1.0 to Web 3.0:A Comparative Study", Library Herald, Vol 49 No 2 June 2011.

[10] S.T. Seena, K.G. Pillai Sudhier, "Impact of Web 2.0 Technology Applications in Kerala University Library: Library Professionals' Perspective" DESIDOC Journal of Library & Information Technology, Vol. 34, No. 5, pp. 419-425, September 2014.

[11] https://thebusinessofsocial.wordpress.com/2015/03/14/web-2-0-to-web-3-0-or-when-do-i-get-my-hoverboard-2/.

[12] Pu-Shih Daniel Chen et al., "Engaging online learners: The impact of Web-based learning technology on college student engagement, Computers & Education" 54,1222–1232, 2010.

[13] SarehAghaei, "Evolution Of The World Wide Web: From Web 1.0 To Web 4.0", International Journal of Web & Semantic Technology (IJWesT) Vol.3, No.1, Jan. 2012.

[14] Nupur Choudhury, "World Wide Web and Its Journey from Web 1.0 to Web 4.0", International Journal of Computer Science and Information Technologies, Vol. 5 (6) , 2014.

[15] R. Akil Sindhu, Dr. R. Manicka Chezian "The Movement of Web from Web 0.0 to Web 5.0: A Comparative Study", International Journal of Multidisciplinary Research and Development, Volume 3; Issue 3; pp 176-179, March 2016.

ISSN 2394-3777 (Print)
ISSN 2394-3785 (Online)
Available online at www.ijartet.com

International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)
Vol. 4, Special Issue 4, March 2017

[16] Maness, J. "Library 2.0 Theory: Web 2.0 and Its Implications for Libraries". Webology, 3 (2), Article 25, 2006. Available at: http://www.webology.org/2006/v3n2/a25.html

[17] https://flatworldbusiness.wordpress.com/flat-education/previously/web-1-0-vs-web-2-0-vs-web-3-0-a-bird-eye-on-the-definition/

[18] Karan Patel, "Incremental Journey for World Wide Web: Introduced with Web 1.0 to Recent Web 5.0 – A Survey Paper", International Journal of Advanced Research in Computer Science and Software Engineering,3(10), pp 410-417, 2013.

[19] Preedip Balaji B and Vinit Kumar, "Use of web technology in providing information services by south Indian technological universities as displayed on library websites", Documentation Research & Training Centre, Indian Statistical Institute, Bangalore, India.

[20] D. Benito-Osorio, Rey Juan Carlos, "Web 5.0: the future of emotional competences in higher education", 1:274–287, Published online: 7 May 2013, _ International Network of Business and Management 2013.

[21] Leena Khullar, "Information hub of cyber age : library 2.0", International Journal of Digital Library Services IJODLS Vol.4, Issue-2, April - June 2014.

[22] Anindya Bhattacharya, "Library 3.0 and its impact on modern library services" International Journal of Next Generation Library and Technologies (ISSN 2395 – 5201) IJNGLT, Volume 2 Issue -1, February 2016.

[23] http://key2information.blogspot.in/2009/09/library-30.html

[24] Tom Kwanya, Christine Stilwell and Peter G. Underwood, Intelligent libraries and apomediators: Distinguishing between Library 3.0 and Library 2.0, Journal of Librarianship and Information Science, 45(3) 187–197.

[25] https://www.researchgate.net/publication/282427811_Imagining_Library_40_Creating_a_Model_for_Future_Libraries.

[26] http://key2information.blogspot.in/2009/11/library-40.html.