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# Libraries And Cloud Computing Applications

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**ABSTRACT:**

Cloud Computing is amalgamation of technology and application. 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 Software as a services applications in libraries.

**Keywords** – Cloud Computing, Software etc.

## INTRODUCTION :

Cloud computing has come with the concept of computing resources as a utility, which can be consumed based on pay on demand the same as you go fashion like electricity, water and gas . 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.

The concept of cloud computing has sprung from J.C.R. Licklider's "intergalactic computer network" in 1960. 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.

## 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 technology which run on network environment standards. It is considered as fifth generation computing after mainframe, PC, client-server operations and web. 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 .

## CHALLENGES OF CLOUD COMPUTING USE IN LIBRARIES :

1. Reliability
2. Security
3. Privacy of patrons data
4. Non-flexible options
5. Lack of standard services
6. Fixed subscription prices
7. Vendor lock-in period
8. Poor integration with existing systems on campus and other cloud solutions.

## TYPES OF CLOUD COMPUTING :

1. **Software as a Service :**

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 . 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 :**

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 :**

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.

**CLOUD COMPITING AND LIBRARIES ;**

Libraries are in the stage of rapid transition from conventional set up to the modern outlook by enabling new technologies . 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 . 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,

**CLOUD COMPUTING APPLICATIONS IN LIBRARIES**

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

**WORD-SHARE MANAGEMENT SERVISES :**

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)

**DURA CLOUD :**

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.

**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,

**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 :**

The cloud computing is new way of computing. It enables users to work with new avenues-different working environment. 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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