



# इतिहासाचार्य वि. का. राजवाडे मंडळ, धुळे या संस्थेचे त्रैमासिक ॥ संशोधक ॥

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## संपादक मंडळ

- प्राचार्य डॉ. सर्जेराव भामरे
- प्रा. डॉ. मृदुला वर्मा
- प्राचार्य डॉ. अनिल माणिक बैसाणे
- प्रा. श्रीपाद नांदेडकर

## अतिथी संपादक

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## कार्यालयीन वेळ

सकाळी ९.३० ते १.००, सायंकाळी ४.३० ते ८.०० (रविवारी सुट्टी)

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# Cloud Computing execution for effective library services.

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### Abstract:

Cloud computing is an internet based, remote driven and service-oriented technology appear to allocated infrastructure as a service (IaaS), platform as a service (PaaS), software as a service (SaaS) surrounded by others. By execute cloud computing, libraries will particularly lower cost of maintaining systems, save energy, register a global view on the web, reveal library user to multi-variant information resources and optimize their services. This study tries to allocated awareness on the common relevance of cloud computing to libraries and how libraries can be transformed into smart center in order to implement the cloud technology. Five facilities such as digital resources, internet service, thin client architecture, wireless access point and digital librarian are considered as imperative for cloud computing emplace. It is recommended that libraries can recover and sustain their relevance by integrating with the cloud computing technology, which will make them part of Internet of Things (IoT) participation in that will soon intimidate the undertaking of every educational sector.

**Keywords:** Cloud Computing, Library, Smart Library, ICT based Library Services, Information Technology,

### Introduction:

The availability of alternatives like the Internet, World Wide Web and the Cloud is seen to reduce the number of users of the library. Computer technology, smart phones, laptops, workstations and other wireless and browser type devices make it

easy to find information but many libraries are trying to establish themselves on the web but with very little financial provision, technical information and internet, network tools, library databases and Unable to provide the necessary infrastructure, limited infrastructure spending has led to debate on the best way to bring information seekers and researchers back to libraries.

The concept of libraries without walls and the emergence of 2.0 technologies means the response of librarians to the changing information environment and the need to interact directly with information providers and the networks that connect them to enhance library services. But this communication tool is a challenge because disparate metadata and traditionally structured data need to be combined to provide uniformity for easy identification and retrieval. This goal could have been achieved in less time, but many librarians are confident that they are the only true experts in bibliographic metadata creation and service to information seekers, and at the same time pretend to be more intelligent than IT experts, and thus do not seek help from IT experts. Nowadays, library users are increasingly preferring non-traditional and non-library sources of information and methods of information seeking rather than overusing the library.

### Concept of Cloud Computing:

Cloud computing is referred to by scholars to mean different services provided remotely over Internet. Scholars try to connect cloud to anything suspended at an altitude to which remote access is



required to operate with it. Cloud computing as a pool of abstracted, highly scalable, and managed compute infrastructure capable of hosting end-customer applications and billed by expending.

National Institute of Standard and Technology (NIST) in Mell and Grance defines Cloud computing as a model for enabling everywhere, suitable, on-demand network access to a shared pool of configurable computing resources (for example, networks, servers, storage, applications, and services) Mell and Grace (2011).

Cloud computing is a mega change that has robbed IT of its traditional obligations and empowered the end users with on-demand utility computing.

### Characteristics of Cloud Computing:

The potential of cloud computing could be explained in terms of their characteristics or features as discovered and appreciated by vendors, clients and scholars.

1. Efficiency improvements and large savings in operational cost as well as upfront capital costs for tech-start-ups.
2. Cloud computing carries the characteristics of a disruptive general-purpose technology with a potential to greatly impact the economy as a whole.
3. Cloud computing include scalability, cost effectiveness, convenience and lack of security as a crucial factor in growth, dispensation and deferral.
4. Cloud computing such as self-healing, multi-tenancy, linearly scalable, service-oriented, SLA driven, virtualized and flexible.
5. Cloud computing, which includes On-demand self-service, broad network access, resource pooling, rapid elasticity and measured service.
6. Public based cloud computing is characterized with freedom of self-service, pay for what you use,

### Cloud Computing in the Libraries:

Cloud computing, though being around since the discovery of Internet, has becomes full extend because of outlying storage and access technologies. Cloud applications have figured an important role since their executions to the extent that scholarly journals and the software that provides access to these contents are more constantly cloud-based. Vision of library are now been fulfilled and exhibit by the existence of cloud-based solutions due to its support and facilitation of online electronic resources and services provision. Finally, cloud computing in libraries is illustrated by the Online Computer Library Centre WorldCat, which has been around for generations, where it is designated that cloud computing is already playing a crucial role for research libraries.

The cost efficiency of deploying cloud computing in libraries cannot be underestimated. That is why Mcmanus (2016) assume that libraries can cut cost to a minimum level through cloud computing implementation. It is pointy the reasons why cost of implementing cloud-based services will reduce library expenditure are that: Without hardware or software to install on-premise, there are fewer fees connected with hardware, software licenses, installation, training or upgrade for libraries.

1. The majority of cloud source have pay-per-use billing, meaning that companies, including libraries are only charged when actively using cloud services.
2. The multi-tenancy of cloud computing is most desirable because the cost for one cloud is shared among the different clients using it and therefore, libraries can optimise its budget for a better product.
3. With cloud providers, there is no need to panic about training in-house IT Team. Rather, libraries only need to concern themselves with training users; and
4. Convert over to the cloud will open up physical space in the library that was

previously occupied by shelves and other types of hardware.

### Advantages Cloud Computing to Libraries:

By forming cooperation libraries can utilize the resources in the cloud computing, refocus their times, money, services and avoid duplication of efforts/resources acquisition, thereby encourage one another for better service allocation. Educational institutions have a lot to convenience from cloud computing if enforced. Cloud computing technology infrastructures can help educational institution, exclusively universities, open their huge research strive to pursuit and efforts for research advancements. Universities would be orientated to handle their ever-growing resource requirements and vitality cost. University institutions would be able to teach students in new, different ways and help them for supervise projects and huge workloads; and consequently, students would better be familiar with universal human resources which would expose them to the value of new technologies.

### Age of Smart Library: A Necessity for library Services optimization:

Now that Internet of entity (anything and everything connected to Internet and interact evidently), is raise its prime covering educational domain, the relationship between library and cloud computing should be

integrate in a more spirited way. In recent time, it was predicting that library need to fight hard and fast to assist its roles as an enabler of information approachability otherwise its relevance will disappear. Smart library is an improved caliber of a library service in the face of technological advancement. It is a manifestation of a clever consumption of hardware, services and Internet that brings about qualitative changes in the user-librarian interactivity.

Smart library helps in exhibit library services vis-à-vis information infrastructure in a form that the needs of users are put into realization, as they play important role in the development of the library Potency through authorize smart wireless access to the e-resources.

### Provision for Cloud Computing execution:

In information age, libraries need to turn smart in their structure, infrastructure and service allocation approach. A library can only be smart if it can put in place the facilities such as high-speed internet service, wireless access point, disperse client architecture, digital librarian and digital resources. These facilities are essential for cloud computing implementation. The operations of libraries in information age need to move beyond sustain traditional service retaining by disposing themselves to using digital facilities to a higher expanse. That implicit making libraries smart.

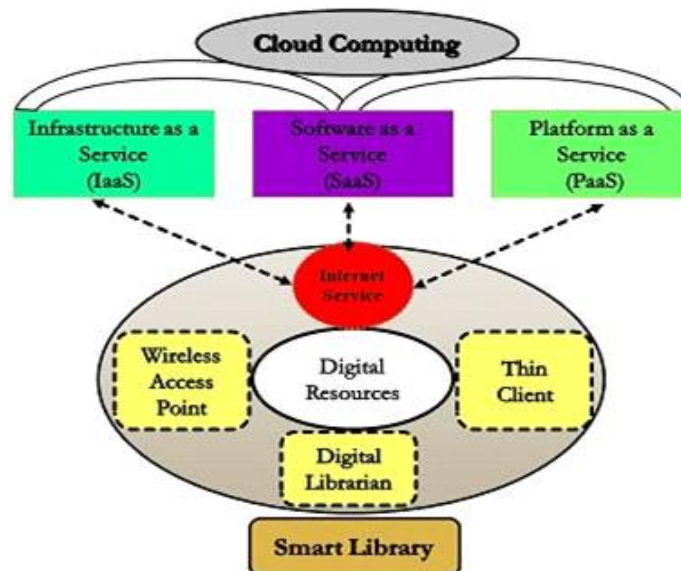


Figure 1. Design of smart library in recent age



As specify in Figure 1, smart library is a component of Provision es such as Digital resources, Internet service, slight User Planning, Digital librarian and Wireless access points. Library need to review the importance of each of the facilities indicated in the diagram. Cloud computing implementation cannot take off if one of the facilities is missing or not put in place. Information age is express with technological tools that make library management and use easy, flexible and encouraging. Let us talk about this potential in details

➤ **Internet access:**

Cloud computing host resources such as IaaS, SaaS, PaaS, etc. on machines that are remotely approachable via Internet technology. Internet service is a influential way through which resources can be acquire, shared and distributed among different people across the world.

➤ **Wireless access point:**

Wireless access points are wireless constancy that distribute connection for wireless keep up devices. Wireless access point is a terminal that circulate and receives data wirelessly within a Local Area Network It connects users to the server and as well to other users within the network.

➤ **Digital resources:**

Digital resources in the library are information resources that are either converted into digital format or information as given in electronic format. It is most valuable to possess electronic form of information in the library to make it easy for library user to easily make use of the resources.

➤ **Digital librarians:**

The personnel mandatory for cloud computing emplace is leased. Possibly, two personnel skilful on IT having good knowledge relating to system installation, networking and Internet management are good obligation for managing the Server/Thin client workstations and wireless access points.

**Conclusion:**

Cloud computing is already part of day-to-day existence of everybody. Integrating libraries into the cloud computing technology will absolutely convert library into smart library appellation and in future optimise and enhance library services in information age. Cloud based Library is now the globe emerging Smart Library Sector. Every library needs to build renovate information delivery infrastructure and beneficial environment that feasible supports research, learning and teaching. As a concern of fact, libraries require improve and honest their relevance by integrating with the cloud computing technology, which will make them part of Internet of Things experience that will soon control the recreation of every educational sector.

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