Next Generation Library Management System: A review

by

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Introduction

To cope with challenges posed by digital revolution. Library professionals and experts are talking about next generation library management system since 2007.

This article presents reviews of developments in library management systems towards next generation and based on analysis suggest model for next generation Library management system.

Library Management System: Developmental history

❑First generation systems (1950s – 1960s)

❑Middle generation systems (1960s – 1970s)

❑Pre-Internet generation (1970s – up to 1990s)

❑Internet generation (Web 1.0) (1990s – 2000)

❑Post 2000 – the Web 2.0 Era:

❑2010 onwards: Library services platforms: Integration of Systems

Need: Next generation Library Management System

❑ Libraries are spending a large portion of their budget on electronic resources.

❑ Now a days libraries have to manage hybrid collections.

❑ The inability of traditional library management system to manage steadily growing, library's electronic collections led to the development of various add-on products.

❑ The absence of integration imposes challenges to both library staff and users.

❑ Therefore there is need of such products which contains all functionalities for managing digital and physical collection and their unified access

What is next generation LMS and How should be the next generation LMS? : Experts Views

❑Provision for the management of electronic collection and Knowledge base

❑Unified access to all collection irrespective of format

❑Unified workflow for digital and print collection

❑Integration, interpretability and open standards

❑Open system architecture

❑Open application programming interface (API)

❑Service oriented architecture (SOA)

❑Discovery tools

❑Cloud supportive and multi-tenant architecture.

❑Support for multiple metadata schema

❑Platform-based ecosystem

Next Generation library management Systems

System	Installation Option	Release date
Blue cloud campus	Cloud	2014
Intota	Cloud hosting (SaaS)	2014
Kuali OLE (Open source)	Cloud hosting and local	2013
Alma	Cloud hosting	2012
Sierra	Cloud hosting and local	2012
Worldshare	Cloud hosting	2011

The new system is referred by different names like "the next generation integrated library system "library services platforms" and "library management platforms" "web-scale management solution" "library management service" or referred to generally as the new library system

Features

For the purpose of integration and communication with other system API / SOA are important elements.

❑ **Service-oriented architecture** (SOA) is a software design and software architecture design pattern based on distinct pieces of software providing application functionality as services to other applications.

❑ **Unified workflow:** Some expert also expecting unified workflow for both print and digital, Kuali OLE has implemented it.

❑ **Integration:** interoperability with systems within library and outside library such course management system, student system, finance system etc.

❑ **Application Programming Interface** (API) is a set of routines, protocols and tools for building software application. API allow integration of new features into existing applications (so-called "plug-in API"), or to share data between distinct applications.

❑ Cloud based

The Next Generation Library Management System: Functionality

❑Traditional library management system functionality

❑Acquisition/Select & Acquire:

❑Cataloguing / Describe & Manage

❑Circulation/ Deliver.

❑Serial control

❑Reporting:

ERM: E resource Management

❑**Acquisition workflow:**

❑**License management:**

❑**Subscription / renewal / purchase order, invoice & payment:**

❑**Creation of E Resource record:**

❑**Acquisitions administrative settings**

❑**Usage statistics management:**

❑**Holding management:**

❑**Integration /interoperability:**

Knowledge base & Discovery service:

The knowledgebase: There are vendor maintained knowledge bases are available. However development of Global Open Knowledgebase (GOKb) is started in November 2014.

Discovery layer / discovery service. This functionality can be made available by integrating open source discovery layers such as Vufind, Blacklight and commercially available web scale discovery services such as Summon, EBSCO Discovery Service, Primo Central, WorldCat Local etc.

There are two components in Web scale discovery services.

❑Discovery Layer:.

❑Central Index:.

Other functionality

❏Content management System:

❏Local digital collection management

❏E Book management

❏Citation management

❏Mobile compatibility

❏Integration with course management system

❏Link revolvers and Open URL compatibility

❏RDA

Approaches for development of next generation library management system

- ❑ **New fresh design approach:** "This approach involve recreating new product with ground up.

- ❑ **Reutilizing substantial portion of present system: Don't throw the baby out with the bath water: "**This is evolutionary approach. This approach re-utilizes the substantial portion of previous generation of technology and couples it with new technology.

- ❑ **Open source software approach:** This approach can be again divided into above mentioned two approaches

Model for Next Generation Open Source Library Management System

❑ The presently available LMS and various add on products have taken number of years and effort of hundred of person for development, testing and documentation.

❑It is difficult to replicate all functionality in new software in short period.

❑To throw all these product to develop new product will takes year to attain the full flagged   state of maturity.

❑Very few Next generation LMS are presently available and only one is open source i.e.   Kuali OLE.

❑Considering the above facts the researcher is proposing following models for next generation library management system which is based on reutilization/ reuse of presently available open source systems /software

Development of open source service oriented framework

❑ **Development of open source service oriented framework:** Service-oriented architecture (SOA) is a software design and software architecture design pattern based on distinct pieces of software providing application functionality as services to other applications. It is independent of any vendor; product or technology.

❑ **"Software reuse:** is the reapplication of knowledge encapsulated in software code in order to reduce the effort of developing and maintaining a new software system.
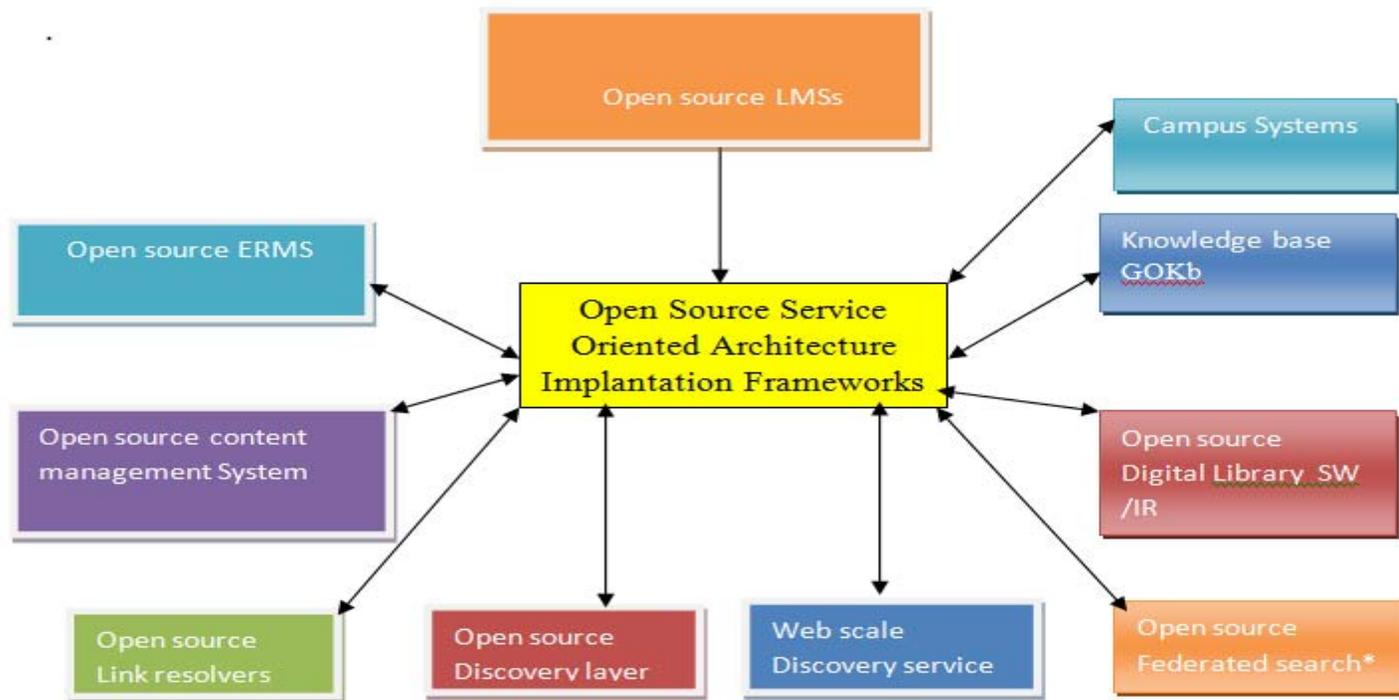
Model

Figure 1   *Optional (If WSD used)

Conclusion

❑The developmental history of the library management systems shows that, initially the library management systems were not integrated.

❑In the later phase there was demand for integrated systems to avails benefit of integration.

❑However during the decade due to the advancements in the information and web technologies and proliferation and use of electronic resources

❑Demand for integrating the systems rather than integrated systems. A systems which support integration, i.e. systems with service oriented architecture.

❑In response to this type of demand few vendor have developed and developing such kind of systems but are very few in number.

❑Kuali OLE is the only open source next generation library management system. There is need of more efforts in this direction.

❑The concrete ideas of the future ILSs are still being investigated".

Thank You