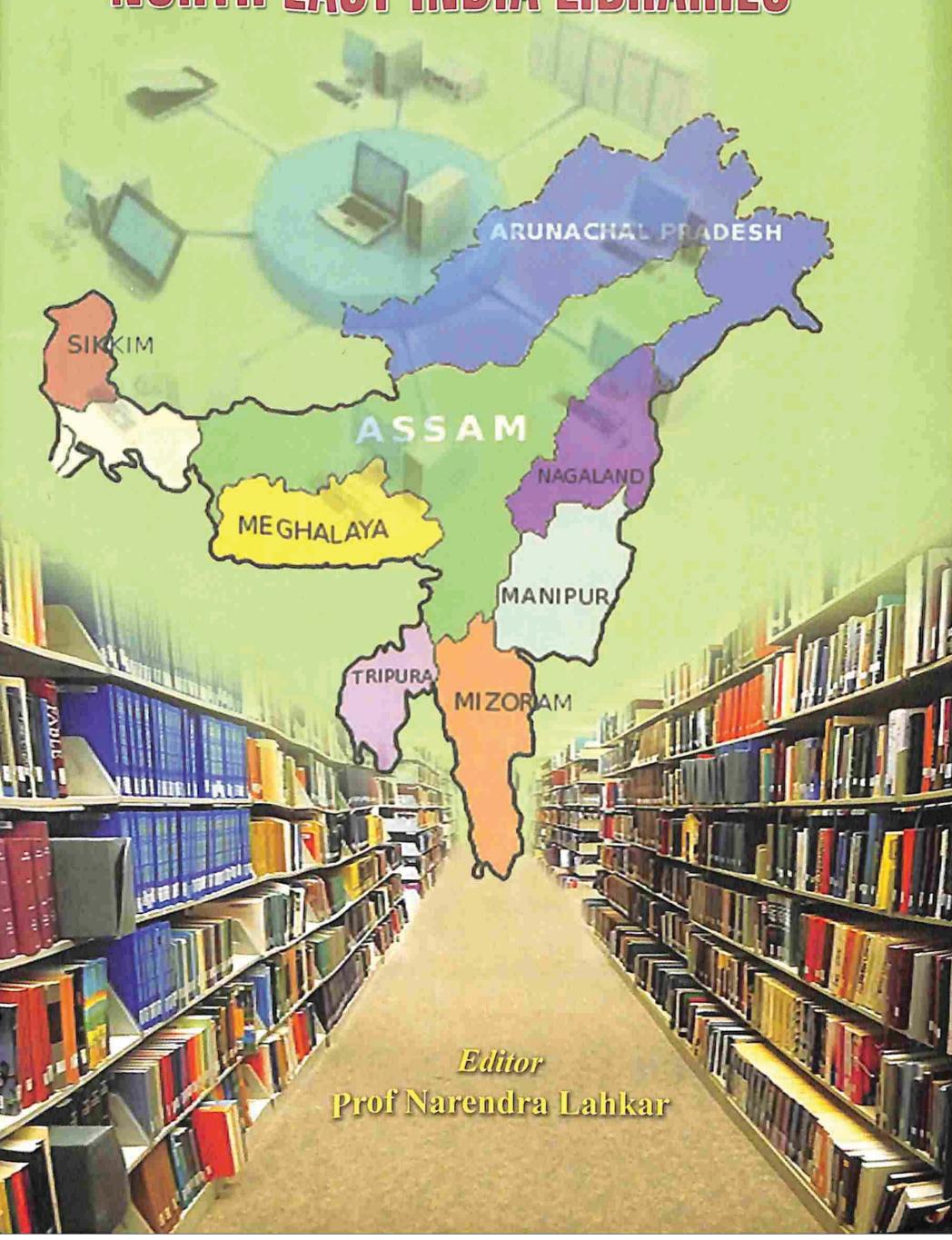
# PROSPECTS OF CONSORTIA FOR NORTH EAST INDIA LIBRARIES



# Prospects of Consortia for North East India Libraries

Proceedings of the National workshop organized by the Dept of Lib & Inf Science, GU in collaboration with the Indira Gandhi National Centre for the Arts (IGNCA), Ministry of Culture, Govt of India, New Delhi



Editor Prof Narendra Lahkar

With a foreword by **Dr P R Goswami** 

2016

Published by

Department of Library and Information Science

Gauhati University, Guwahati 781014

#### Preface

Continuous growth of literature, shrinking budget for the Library and Information Centres (LICs), price escalation and changed publishing environment have made the Library and Information Science (LIS) professionals to think for introducing and developing certain new methodologies for resource collection and use. This changed situation is not a new one. From the earlier days, libraries were in search of new ways and means to work together for giving common benefits to the users of the libraries without much financial burden to the library managements. Inter library loan, resource sharing, and the library networking are some of the steps taken by the library as per the availability of infrastructural facilities of individual libraries.

As a result of study and research in developing updated working conditions and extending services as per users needs different user friendly and management friendly processes are being implemented in the libraries. Once a process is implemented, it may not be permanent solution, and the process may further be developed and changed for the betterment.

Presently, library consortia are found to be one such process for library management and have got sufficient weightage due to its various advantageous factors. Especially with enormous publications in electronic format and extensive use of Information Technology (IT) devices, the situation becomes more conducive for the libraries to go for consortia based library system. Moreover, judicious spending of library fund by forming consortia group of libraries is possible to a large extent.

Cooperation among libraries for sharing resources is being practiced for a long time. The primary purpose of library consortia is to share the resources physically among the member libraries. However, because of the adoption of new technology from print environment to digital environment and the emergence of internet and its use in libraries, information delivery irrespective of its physical location has become common phenomenon. This has created an atmosphere of cooperative subscription and common use of resources.

Development of shared subscription is the facilities availed by the libraries through consortia. These have resulted proper and effective use of resources with minimal costs.

Libraries, especially the academic libraries of higher institutes are looking for establishing the consortia of libraries of the region. The Department of Library and Information Science Gauhati University, from its beginning in 1966 is engaged itself for over all developments of library environment and organizing number of professional events at different times. This time, we are very much thankful to the Indira Gandhi National Centre for the Arts (IGNCA), Ministry of Culture, Govt of India, New Delhi for collaborating a two day National Workshop on Prospects of Consortia for North East India Libraries in association with Dept of Library and Information Science, Gauhati University during March 17 - 18, 2016 at the Gauhati University. We have received very encouraging responses from the LIS professionals of the region both seniors and juniors. The organizer requested the selected participants for submission of brief report of libraries he/ she is working and the write-ups were received accordingly. The IGNCA has extended financial grants in a later date for bringing out a publication containing the write ups submitted by the participants and the decision for bringing out the print version was taken accordingly after the receipt of the fund. The present volume is the result of this endeavour. On our request, some participants have resubmitted their write ups in added/ edited form. The volume consisted of both revised version of the write ups who submitted afresh and those already submitted at the time of workshop. These are compiled and presented in the present volume.

The publication is expected to give guidance for future planning of developing the consortia based library system for the North East India. We are thankful to the participants for their cooperation and responses in making this professional event a success.

Dept of Lib & Inf Science Gauhati University, Dec., 2016 Prof Narendra Lahkar Editor

#### Foreword

We are pleased to know that the Department of Library & Information Science, Gauhati University is publishing the papers presented at the National Workshop on Prospects of Consortia for North East India Libraries'. This collaborative academic programme was organized by the Department of Library & Information Science, Gauhati University jointly with the Indira Gandhi National Centre for the Arts (IGNCA), New Delhi. As we all know recent advances in the information and communication technology (ICT) have prompted the librarians to take necessary steps for sharing of resources so that the problems arising due to rise in prices of scholarly periodicals, books and forms of research material can be solved in a cooperative manner. The participants have presented their viewpoint on this proposed venture. And many of them have presented status reports on their libraries. Consortia based subscription to periodicals have been taken up in big way by the organization like INFLIBNET, INDEST, DELNET etc. While subscribing to full text databases which contain scholarly periodicals the librarians have to be careful about the clauses mentioned in the license agreements. They have to see that the terms and conditions enumerated in the agreement are applicable in India. It is also to be seen whether the database company has agreed to permit the institution to retain the archival rights of Also the relevance of the contents of international databases has also to be ascertained. It has been found that many of the full text databases contain materials that are not useful for the researchers in India. The planning and implementation schedule of 'Library Consortia for North East India' should be carefully drawn taking into account all these issues.

On behalf of the IGNCA, I express deep gratitude to Dr Narendra Lahkar, Professor, Dept of Lib & Inf Sc, GU for his tireless efforts to organize this well attended academic event. I believe that on the basis of the recommendations made in this workshop, consortia for libraries of the North East Indian will be setup very soon.

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## Library Consortia and Interoperability Standards: Towards a Futuristic Framework

Dr P S Mukhupadhyay

#### Abstract

This paper aims to discuss the expanding horizon of library consortia keeping in view the changing demands and emerging standards in the domain. It organizes emerging interoperability requirements under seven layers. Major standards in each layers have been identified and listed with the scope for implementation to shape large-scale umbrella digital asset management systems like library consortia.

**Keywords:** Interoperability standards; Library consortia; Interoperability framework

#### Introduction

The concept of library consortia was originated as an extension of library network with the focus on cooperative acquisition. Library consortia, right from the beginning, are ICT-enabled resource optimization and dissemination services. As ICT has spillover effects, with the progress of time, library consortia are increasingly viewed as umbrella-level information service providers for a group of libraries related geographically with or without related institutional affiliation or distributed geographically but operating under same institutional affiliation. The activities of library consortia as an umbrella-level information entity must be supported by an array of standards to make participating libraries interoperable with each other, to achieve interoperability at the global scale (with other national and global consortia) and to integrate open access resources in the service vicinity.

The last decade witnessed the rise of open access journals, open access repositories and open datasets all over the world supporting the philosophy that "research funded by public money must

systems. The Reference model (Candela et al, 2011) prescribes - i) precise description of functions of each software modules; ii) recording of complementary and mutually dependent functions; iii) re-using of software modules that implement the desired functionality; iv) detailing of functionality profile of a digital assets management system, a digital asset management software and a digital asset management software module along with the associated interfaces.

#### d) Policy

The model refers to policy interoperability and policy classification (Candela et al, 2011). The policy level interoperability helps to achieve integration with third-party service providers (very much essential for library consortia as far as commercial resource providers are concerned including data archives and cloud providers). It prescribes standards for - i) encoding of policies for machine discovery (languages of representation); ii) policy management (policies are the appraisal and enforcement); iii) evolution of policies over time, and iv) relation between policy and quality.

#### e) Quality

This refers to the three most important elements of digital asset management system of large-scale digital asset management systems like library consortia - quality of contents, quality of services and quality of policies (Candela et al, 2011). It aims to investigate interoperability issues that prevent software of the domain from working together from the perspective of quality. Finally, it aims to develop a quality framework to support exchange of knowledge objects to achieve the goal of unified resource discovery.

#### f) Users

This refers to the Actor of digital asset management system and deals with issues such as user modeling, user profiling, user context, and user management. Till date, there is no generally accepted user model that can be used in every software that supports green and gold path of open access. The Reference model (Candela et al, 2011) identified two areas of user level interoperability - i) interoperability of user profile from system to system; and ii) interoperability of usage pattern across the systems.

#### Components of Interoperability Framework

Interoperability, in the broader sense, is the ability for systems (including information systems) to communicate with each other and pass information back and forth in a usable format (Mukhopadhyay, 2015). In the context of library consortia, interoperability may help us in contents aggregation, data mining, on-the-fly integration of related resources from different locations in real time, improvement of existing information services and introduction of new information services.

Mukhopadhyay (2015) in his book reported that interoperability may fundamentally be grouped into two categories - i) Syntactic interoperability, and ii) Semantic interoperability. In syntactic interoperability two different systems communicate and exchange data on the basis of standard data formats (e.g. MARC 21 or Dublin Core), standard exchange format (e.g. ISO-2709 or MARC-XML), text-encoding standards (e.g. ASCII, ISCII or Unicode) and communication protocol (e.g. Z 39.50 or OAI/PMH). Semantic interoperability, on the other hand, supports automatic interpretation of information elements on the basis of the common information exchange reference model (e.g. integration of two different thesaurus or classification schemes; conversion of bibliographic data available in CCF format into MARC formats on the basis of crosswalks).

COAR (Confederation of Open Access Repositories) identified following major areas of interoperability in the context of large-scale digital asset management systems and umbrella information entities -

#### a) Metadata level interoperability

It refers to the integration of metadata from different participating libraries (under a library consortia) into a single-window search service on the basis of metadata harvesting protocols and standards like OAI/PMH version 2.0 protocol. This helps to develop subject-specific portals and specialized search engines such as OAIster and BASE (Bielefeld Academic Search Engine).

#### b) Content level interoperability

This refers to the facilities of multiple-deposit process where author submits document in one place and automatically contents transfer from one system to another. This cross-system contents transfer is supported by protocols like SWORD (Simple Web-service Offering Repository Deposit) for multiple deposit and OA-RJ (Open Access Repository Junction) for managing multi-authored and multi-

institutional open knowledge objects. Multiple deposit means simultaneous submission into multiple repositories - author's own institutional repository (IR), co-authors' IRs, subject specific repositories, and funder repositories. CRIS-OAR (Current Research Information and Open Access Repositories), on the other hand, aims to support integration of research administration and open access repositories at the institutional level.

#### c) Network level interoperability

This supports development of national and regional repository networks on the basis of metadata harvesting. But global de facto standard for metadata harvesting OAI/PMH version 2.0 supports only unqualified Dublin Core metadata. Network level interoperability initiatives aim to layer some essential additional fields (may vary from network to network) on top of OAI/PMH. The DRIVER (Digital Repository Infrastructure Vision for European Research) project of European repository community first applied this model of interoperability which later followed by OpenAIRE (Open Access Infrastructure Research for Europe) project.

#### d) Statistics and usage data-level interoperability

Interoperability in usage statistics is emerging as an important area in open access domain. It allows measuring the impact of individual open knowledge objects (e.g. research articles) and supports aggregation and exchange of usage information from different repositories and information systems (like CiteSeer). Many protocols and standards are being developed in the area of cross-repository usage statistics like SURE (Statistics on the Usage of Repositories) and PIRUS (Publishers and Institutional Repository Usage Statistics).

#### e) Identifier level interoperability

As a library professional, you know the importance of authority data to support collocation of library documents. The same concept is also required for effective organization of openaccess resources. Like name authority, title authority and subject authority we need consistency in identification and naming of authors, items, the location of items, institutions, funding agencies, grants etc in organizing open access resources. Different standards and systems for unique author identification (e.g. ORCID and AuthorClaim), object identification (e.g. DOI, Handle system, PersID) and dataset identification (e.g.

DataCite) are emerging standards and services to support this area of open access interoperability.

#### f) Object level interoperability

Open access resources are increasingly becoming multimedia objects. These include different media types (text, audio, video, streaming video etc) and are called compound digital objects. These resources require standards of interoperability for exchange of web resource aggregations. OAI-ORE (Open Archive Initiative - Object Reuse and Exchange) is considered as the global de facto interoperability standard in this area.

#### g) Semantic level of interoperability

This refers to a meaningful exchange of data at machine-level. Standards such as the Resource Description Framework (RDF) is applied to achieve semantic interoperability in digital domain. RDF, as a greater metadata architecture, helps to express digital objects relationships in a machine understandable way. RDF-enabled open access information systems allow machines to create sophisticated services through integrating knowledge objects distributed across repositories and other systems.

In summary, we may list the major interoperability standards in all the above-mentioned layers as below:

Layer	Standards
Metadata level interoperability	OAI-PMH
Content level interoperability	SWORD OA-RJ CRIS-OAR
Network level interoperability	DRIVER OpenAIRE
Statistics and usage data level interoperability	COUNTER PIRUS SURE
Identifier level interoperability	ORCID and AuthorClaim DOI, Handle system, PersID DataCite
Object level interoperability	OAI-ORE
Semantic level of interoperability	RDF