

**Government of India, Ministry of Culture
National Mission on Libraries**

Minutes of the second meeting of the Advisory Committee of National Virtual Library of India (NVLI) under National Mission on Libraries (NML) held on 18th February 2016 at 11.00 AM in the Chamber of Secretary (Culture), Shastri Bhawan, New Delhi – 110 001.

The following members were present in the meeting

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| 1. Shri N. K. Sinha
Secretary, Ministry of Culture, GOI, Delhi | Chairman |
| 2. Prof. S. V. Raghavan
Department of Computer Science and Engineering
IIT Madras, Chennai | Member |
| 3. Prof. Deepak B. Phatak
Department of CSE, IIT Bombay, Mumbai | Member |
| 4. Prof. Uma Kanjilal
Department of LIS, School of Social Science, IGNOU, Delhi | Member |
| 5. Prof. Mangala Sunder Krishnan
Department of Chemistry, IIT Madras | Member |

MoC Officials present :

1. Shri K. K. Mittal, Additional Secretary, Ministry of Culture
2. Ms. Deepika Pokharna, Director (Libraries), Ministry of Culture

RRRLF Officials present:

1. Dr. Arun Kumar Chakraborty, Director General, RRRLF and Additional Mission Director, NML
2. Shri Soumen Sarkar, Deputy Director (II&M), RRRLF

CDAC Officials present :

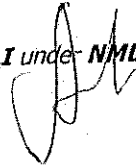
1. Prof. Rajat Moona, Director General, C-DAC
2. Dr. Hemant Darbari, Executive Director, C-DAC, Pune
3. Dr. Dinesh Katre, Associate Director & HOD, C-DAC, Pune

The Following members/officials could not attend the meeting due to other pre-occupation:

1. Shri Pankaj Rag
Joint Secretary (Libraries), Ministry of Culture, GOI, Delhi
and Mission Director, NML

Member Convener

Minutes of the second meeting of the Advisory Committee of NVLI under NML held on 18-02-in New Delhi.


11/5/2016

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| 2. Prof. Kannan M Moudgalya
Dept. of Chemical Engineering, IIT Bombay, Mumbai | Member |
| 3. Parthasarathi Mukhopadhyay
HOD, Department of LIS, University of Kalyani, W.B. | Member |
| 4. Ms. Mahalakshmi Ramakrishnan
Director (Finance), Ministry of Culture | MoC Official |

At the very outset Secretary (Culture) welcomed all the members present in the meeting. Thereafter the following agenda items were taken up for deliberation.

Item 1: To Confirm the Minutes of the Meeting held on 29th September 2015:

Minutes of the 1st meeting of the Advisory Committee of NVLI held on 29th September 2015 were confirmed.

Item 2: To consider the action taken on the recommendation:

Action taken report presented by Director General, RRRLF and AMD, NML was considered and noted.

Item 3: To consider the revised Concept note for NVLI, Modalities of system development of NVLI and Financial Projections:

Members present in discussed following aspects of development of NVLI at length:

- i. The Committee observed that the concept note prepared on the basis of inputs received from the Experts, Head of Organisations and Representatives of various organisations of MoC and circulated along with the agenda notes to be comprehensive.
- ii. The Committee observed that the scope of the project is vast and complex.
- iii. It was observed that the consolidation of data from various organisations as described in the "Concept Note" would be a gigantic task and the total storage space requirement, including the organic growth factor, may be huge say 100 Peta bytes plus.

- iv. Some members opined that already huge quantum of digitized data are available with various organisations. These data need to be subsumed under the NVLI project to avoid duplication of efforts in future.
- v. Some members opined that participating organizations need to contribute data/content in the format prescribed by NVLI. Participating organizations should also ensure the quality of the data contributed by them.
- vi. International metadata standard for Cultural Objects, Bibliographic data and other digitized resources would be finalized and strictly adhered to.
- vii. NML will arrange necessary training for metadata creation, content creation, content uploading etc. to the participating organisations.
- viii. NKN authority is required to be consulted for Storage space, Cloud Services, and High bandwidth network connectivity at various levels. It was observed that some of the modules like Virtual Museum/Virtual Walkthrough, Audio-Visual streaming would require high network bandwidth. It was observed by some members that distributed data model may be appropriate for effective dissemination of virtual contents.
- ix. Some members observed that data centre management, power management, diagnostic and running the system of such a huge data hosting infrastructure is a complex task and will require large number of highly trained manpower. It was opined that interoperability of cloud services are important and needs to be taken into consideration while designing and deploying the applications.
- x. The Committee observed that a DPR is required to be prepared to accommodating all aspects like, system development methodologies, systems platform, open source software to be used, systems management & operation requirements, post development sustainability plan for the project, system implementation plan, projected organic growth of the system etc.
- xi. The committee observed that assurance from the participating organisations regarding access to data, Uploading of the data held by them in NVLI specified format and upgradation of data over a considerable period should be ensured.

J. S. 4/5/2016

- xii. It was decided that the system should have multilingual federated search facility and also multilingual user interface.
- xiii. It was opined that a Developers Community may be progressively developed for the NVLI.
- xiv. Commonalities among various modules would be explored and identified.
- xv. The Committee also observed that after commissioning of the system, MoC should identify and entrust a suitable organisation for operation, management and continuity of the project. Appropriate capacity building measures should be taken for training of the manpower to be deployed for management & operation of the System.
- xvi. Some members opined that it should be kept in view that some of the Open Source Software like MySQL has become proprietary and technology may undergo changes within a very short span of time.
- xvii. Implementation of some of the functional areas may require R&D activities, which should be clearly specified in the DPR.
- xviii. The Committee observed that MoC should ensure smooth flow of funds for the project.
- xix. Members opined that 'Data' (library catalogue/ digitized materials of library/ museum/ archives/ museum databases/ artefact data bases etc., all facets which are being identified during Brain storming session) are in different format as different institutions/ org. NVLI system should be able to **subsume all kinds of structured/standard/non-standards data and need to develop "Standardized Database System"**. This is very complex and massive task. These standard data can be downloaded by any library/ organisation through z39.50 protocol for future maintenance of "Standardized Data".
- xx. Members also opined that, most of the organisations/ libraries would provide data to NVLI as is where-is basis. The project team needs to clean entire data in a structured standardized metadata format to subsume in the NVLI System. It is need less to say that content of data is responsible for the participating organisation.

- xxi. Participating organisation would have opportunity to download their clean data in their system and they would be trained to contribute updated data in a standard NVLI prescribed format this would enable entire country to get **"Standardized Information Retrieval System."**
- xxii. **Webscale Discovery Search Engine** -- Federated Search engine needs to be devised in the NVLI project which would be able to retrieve any data available in the NVLI System as well as data available in open access system like in Google or anywhere including data in multi-lingual (all Indian languages), different dialect, samas, ontology, thesaurus etc.
- xxiii. Project should also be able to include any facet derived in later stage i.e. continuous updating and sustenance is important aspect.

Secretary (Culture) assured the Committee that, MoC would ensure access to data and contribution of data/contents by the MoC organisations. In case data/contents are held by organisations of other Ministries, intervention of PMO would be sought, if required. Thus, uploading of data/ content through participating organizations would be ensured by the MoC. He also emphasized that we should start with some core development works and must deliver some visible output so as to ensure support for continuity of the project.

Secretary (Culture) also observed that Organisations like CDAC and NKN have been established by the Government of India to facilitate high end computing and high volume Data Services, thus it would be the responsibility of these organisations to provide necessary solutions for data dissemination services required for NVLI.

The Committee in consideration of the above issues flagged by various members, decided that the project for development of the NVLI System may be entrusted to IIT, Mumbai. IIT, Mumbai will develop the System in collaboration with the CDAC, Pune who have already put considerable efforts on the requirements of the project and also has appropriate domain knowledge. IIT, Mumbai would be free to engage any other organization/agency having proven domain knowledge/expertise for any specific development work of NVLI. Progress of the works would be monitored by the Advisory Committee.

The committee was informed that the schemes of NML which includes the NVLI project was submitted for EFC clearance with prior approval of the HLC, NML. EFC has approved the scheme of NML with a total approved budgetary allocation of Rs.400.00 crore for the current plan period, which includes an approved budgetary allocation of Rs.172.09 crore for NVLI.

The Committee was informed that an amount of Rs.7.5 crore is available with MoC for NVLI as on date, which is required to be released within 29th February, 2016 for meaningful activities of NVLI, otherwise it would lapse.

After due deliberation it was decided that, it would be prudent to entrust IIT, Mumbai to prepare a project proposal for development of the NVLI System. If the project proposal is accepted by the committee, grants could be released to the IIT, Mumbai for undertaking the development of NVLI in a project delivery mode. Project proposal should also indicate activity lists, implementation plan and funding required for the 1st, 2nd and 3rd year.


Prof. Deepak B. Phatak, Department of CSE, IIT Bombay agreed to take up the project through IIT, Bombay in collaboration with the CDAC, Kolkata and other organisations having the required domain knowledge. However, he informed that it needs the consent of the Dean of Studies. It was opined that some tasks could be outsourced.

Prof. Phatak informed that DPR will be prepared after detailed System Requirement Specifications (SRS) is drawn. The SRS would be a huge document and may require 3-4 months of time. Thus, he proposed that he would submit a Project proposal within 24th February, 2016 so that fund could be released for undertaking some core developmental works. He proposed that the project could have a three years development plan with activity list for each year. Some core components could be delivered in the first year so as to give some visibility to the project.

Prof. S. V. Raghavan emphasized that IIT, Mumbai should ensure deployment of adequate manpower for the project so that the progress of the work is not hindered.

The Committee, observed that advice and guidance of someone from NKN like Dr. R.S. Mani, Sr. Technical Director, NKN would be immensely helpful. Accordingly, it was decided to include Shri. R.S. Mani, Sr. Technical Director, NKN in the Committee.

It was decided that, the next meeting (3rd) of the Advisory Committee will be convened on **24th February, 2016 at 4.30 p.m.** in the Chamber of the Secretary (Culture) to consider the project proposal to be prepared and submitted by Prof. Deepak B. Phatak, Department of CSE, IIT Bombay.




Item 4: To discuss the modalities of Content Creation for various identified modules and role of the partnering institutions.

It was decided that the DPR should clearly specify the System Management, Content Creation, Content Management, Operational procedures, Infrastructure requirements etc.

NVLI System should have built in facility for conversion of existing digitized data available with various participating organisations to the format adopted by NVLI. NML will arrange necessary training for content creation.

The meeting ended with a vote of thanks to the Chair.


(Dr. Arun Kumar Chakraborty)
Director General, RRRLF
and Additional Mission Director, NML