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National Round Table on Modernisation and Networking of Libraries in India

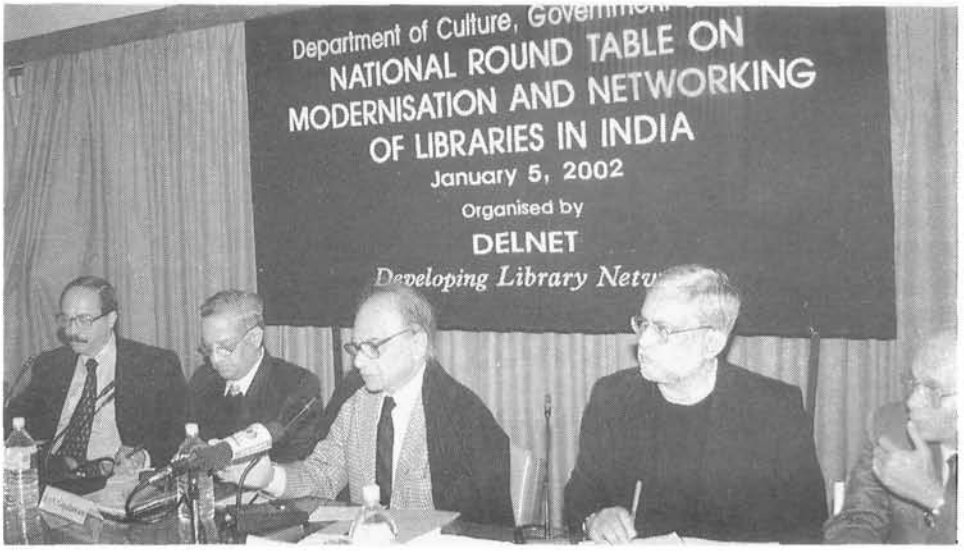
H. K. Kaul

The first National RoundTable on Modernisation and Networking of Libraries in India held on January 5, 2002 was sponsored by the Department of Culture, Government of India and organised by DELNET after the initiative taken by Mr. Jagmohan, Hon'ble Union Minister of Tourism and Culture, Government of India.

Delegates were welcomed by Mr. Vivek Rae, Joint Secretary, Department of Culture. Mr. N. Gopalaswami, Secretary, Department of Culture welcomed the initiative taken by Mr. Jagmohan, the Hon'ble Union Minister for Tourism and Culture by calling all the stakeholders for complete review of library services in the country. He mentioned that in the Ninth Plan the Department had 110 crores at its disposal and he was apprehensive that the situation might not be better in the Tenth Plan period. He averred that there was a need to be more innovative in order to achieve more with the funds available. He felt that though various agencies from outside the country were interested in digitisation of books, we should ensure that our interests are taken care of.

The Hon'ble Minister thanked all those who contributed to the organisation of the National RoundTable. He noted that a number of experts who were connected with the Library Movement had contacted him and presented a dismal picture of the libraries in India. He said that the idea of calling this national meet was to ascertain from all of them the problems that existed in the libraries in India and to get suggestions from them for making improvements. He added that he was told that the Asiatic Society in Kolkata had no Librarian for the past decade and a large number of books were damaged in the National Library. He noted that he had been receiving letters which indicated that there were many quarrels among the professionals. He maintained that there was a need to reorganise the entire library movement, look at the problems and set them right in a constructive way.

The Hon'ble Minister observed that the libraries were the repositories of the nation's memory and the intellectual workshops of the nation. He observed, "The nation that reads is the nation that leads". He added that IT was helping in the generation of substantial information but we did not have the capacity to absorb that information, to analyse that information or the habit of exercising discriminatory judgement in selecting the right kind of information. He was of the opinion that the library



Mr. Jagmohan, Hon'ble Union Minister for Tourism and Culture inaugurating the National Round Table

movement should help in promoting our thinking capacities. He referred to the importance that was given to the National Library during Maulana Azad's time but was sorry to note that generations had passed but the Library had not played a major role in India. He stressed that the finances would not be a problem in setting the Library Movement right. He emphasized the importance of training of library professionals. He said "There is not much constraint of resources as there is constraint of thinking on new lines."

The Hon'ble Minister spent eight hours chairing the National Round Table from 10 a.m. to 6 p.m., which had happened for the first time in the history of Indian librarianship.

The Round Table was divided into the following sessions:

1. National Library
2. Public Library Services
3. Department of Culture Libraries and Delivery of Books Act
4. Modernisation and Networking of Libraries in India; and
5. Electronic Libraries in Rural India

In addition to the papers presented at each session, discussions were held and the views of experts ascertained. The following is the resume of the discussions held during the National Round Table.

1. National Library

Prof. Amitabha Chatterjee described the functions of a National Library and referred to the Indian scenario under which the National Library of India had come up. He emphasised the revival of the National Library and stated that the proposal for the National Central Library and the regional national libraries had not materialised so far. He felt that every library in India worked in isolation. He wanted that the National Library, Kolkata, subject and depository libraries in Delhi, Chennai and Mumbai, and other libraries like Parliament Library, Central Secretariat Library and State Central Libraries needed to be immediately networked. He also suggested that in the second phase the national libraries should be brought under one umbrella.

Prof. Chatterjee emphasised that the National Library should perform its basic functions to the fullest extent and serve as the leader in the country for collection and preservation of non-printed materials besides printed materials. He added that the National Library should develop national standards for various library activities and provide consultancy to other libraries with regard to management, technical processing, digitisation, etc. Prof. Chatterjee recommended that the lending of documents from the National Library be stopped, adequate manpower be ensured, supervisory positions lying vacant for years be filled up, backlog of work be completed on a turnkey basis, all unwarranted sections be abolished, the Central Reference Library be made a unit of the National Library and the National Library Act of 1976 be implemented.

Mr. N. V. Sathyanarayana in his presentation mentioned that there was a need for making a radical change in the National Library. He said that the library movement had become more of a government movement than a public movement. He felt that the National Library should preserve, protect and perpetuate the intellectual heritage of the nation. With regard to the digitisation of documents, he affirmed that the National Library should be exempted from the provision of the Copyright Act in case of books which were still under the copyright. He said that the National Library should have the powers to digitise such a work for preservation purposes only and not for free distribution.

Mrs. Swati Bhattacharyya gave a resume of the services being undertaken by some of the best National Libraries in the world. She made several suggestions regarding the reorientation of the National Library and stated that it should provide efficient service to the users. She added that during the last 20-30 years there had not been any proper assessment made of its functions and the projects undertaken by the National Library. This, she felt, was necessary. She recommended redefining the objectives and programmes of the National Library and supported the employment of specialised manpower to run its digitisation programme. She added that the National Library should be able to offer its catalogues through the Internet and collaborate with other National Libraries and institutions in the world.

Mr. A. R. Sethi, made the suggestions including i. The National Library be designated as the National Humanities Library and NASSDOC made part of it; ii. The task of compiling State Bibliographies and assigning ISBNs and ISSNs be given to State Centre Libraries; iii. The Central Reference Library had no *raison d'etre* in the changed scenario with each National Library serving as the central reference library in its specific area; iv. The Library of the Indira Gandhi National Centre for the Arts be designated as the National Arts Library.

Prof. P. N. Kaula maintained that the two unions in the National Library were the cause of its maladies. He pleaded for saving the National Library and for motivation of the staff. He suggested shifting the National Library to Delhi as was originally proposed. He added that the functions of the National Library had to be considered afresh, including stopping the lending of books and constituting technical advisory committees for different activities.

Mr. Jagmohan, the Hon'ble

Union Minister assured the members that the Department of Culture would make a total assessment of the functioning of the National Library in the light of the present circumstances and chalk out future programmes for its betterment.

Prof. P. B. Mangla wanted the functions of the National Library to be redefined. He was of the opinion that within its functions academic activities could also be introduced. He noted that the collections of the National Library were hardly retrievable. He said that no leadership was given to the staff and it was like a sub-department of the Department of Culture. In the selection of the Director he advised that the Department should constitute a three-member search committee. He was of the opinion that the quality of the staff working in the library was not high.

Mr. D. R. Kalia maintained that he had served in the National Library for three years and was familiar with its problems. He added that the National Library was acting and functioning as a public library. It lent out books to the local people and did nothing for the nation. He said that the staff associations were so strong that no one wanted to work as Director. He added that six persons were appointed during the last 30 years but none of them could perform well. He stressed that the non-professional activities of staff needed to be curbed and they needed to be disciplined.

Dr. O. P. Kejriwal observed that the views of the users should be ascertained by the Director. He added that as a user whenever he went to the National Library, only slogans and hoardings welcomed him. As a result it was difficult to do serious study there. He referred to a number of small private libraries such as Banghya Sahitya Sabha Parishad or Uttarpara Library that contained important documents. Such documents, he added, were not available at the National Library. The National Library should have information on all such resources. He stressed the need for proper binding of books in the Library.

Dr. H. K. Kaul referred to the National Library Board of which he was a member. He said that only one short meeting was held during the entire tenure of his membership. He added that the Board needed to be reorganised and activated.

Dr. M. D. Baby stated that the National Library or the Department of Culture should make people aware of the existence of the National Library and its functions.

Mr. Shyamalkanti Chakravarti, Officiating Director of the National Library said that he was holding a temporary and part-time post as Director. He said that the trade union troubles had also bothered him. He gave a resume of the activities he had been introducing including exhibitions, training programmes, etc. He hoped that a permanent Director would soon take over and worked with far sightedness, long-term objectives, compassion and sympathy for staff.

Dr. P. K. Jayaswal averred that he was of the opinion that the National Library could only function well as a lending library in Kolkata. He felt that it had become like a fossil and was beyond repair. He felt that the state politics was responsible for its failure and not the Department of Culture or any other body.

Dr. R. Bhattacharjee observed that he had worked for a short time as Director of the National Library. He said that the readers were served properly. He added that the staff were the best professionals and they helped the readers. During the last decade no recruitments were made because of the difficulties in the amendment of the recruitment rules. He said that the preservation unit was among the best in the country. In the acquisition section a proper committee was responsible for the selection of books. He noted that all difficulties being faced now in the National Library could be sorted out. He was sure that if some sort of support was given to the staff to show their zeal and professional expertise, the National Library could be transformed into a better shape.

Prof. R. Satyanarayana said that he was associated with the National Library for 11 years in its good old days. He felt that there was a management problem. He said that the salaries of staff were meagre and were hardly

Dr. R. Bhattacharjee, Director, RRRLF and other experts at the National Round Table

revised. He felt that if a committee of experts sorted out their problems, the agitations would cease. He felt that it was more of a human problem, than anything else.

Prof. M. B. Konnur stated that the National Library should function as a nodal agency for developing the National Library system including computerisation.

Mrs. Kalpana Dasgupta who was Librarian of the National Library for 12 years said that the governance of the National Library should be taken very seriously. She affirmed that the Government of India had categorised the National Library under category VI which was the highest category. She added that the staff needed to be given what they deserved and they would then deliver as expected.

Mr. M. K. Jain said that it was proposed that the Central Reference Library should be brought to Delhi and named India Library, which was not done. He recommended that this could be done and the latest advanced technologies used to digitise the National Library collections and its resources made accessible through the India Library.

Dr. R. Bhattacharjee maintained that the National Library needed to be fully automated and proper status and direction given to it so that it could function as a National Library. He was not of the opinion that the National Library was acting as a public library in Kolkata alone.

Mr. T. Mallesappa wanted the National Library to play a pivotal role in bringing about coordination among various types of libraries, collect knowledge and information which the nation produced, serve as the national information centre, focus on creating databases in regional languages, arrange training programmes and promote training programmes in the country.

During the discussion it was noted that the Department of Culture should celebrate the National Library Week as it would give impetus to the library movement in the country.

Mr. Jagmohan, Hon'ble Union Minister said that a small reassessment committee will be constituted in the Department of Culture to look into the suggestions. He felt that efforts will be made to fill the posts and requirements of specialised staff taken into consideration. He added that the problem of governance can also be considered. He felt that short-term and long-term actions will be taken. He expressed thanks to the participants for making important suggestions.

1.1 Indian National Bibliography (INB)

Mrs. Swati Bhattacharyya suggested that the cataloguing of the National Library and the Indian National Bibliography (INB) should be done in electronic form together and a central database should be created.

Mr. Sukumaran Das maintained that the INB had not been published for quite some time. He said that INB needed to be put on the international map. He felt that according to UNESCO figures about 18,000 books were published in India every year but going by the figures with the Federation about 70,000 books were published every year.

Mr. K. Kuchukoshy noted that the INB was being published from June 2000 every month. He added that all data from 1958 was available in electronic form.

Dr. H. K. Kaul said that as per his information, INB had not yet been priced and therefore it was not being distributed among the libraries. As a result, the libraries in Kolkata had not even seen the copies of the lately printed version. He added that the purpose of INB was that it should became available to libraries every month and the latest books should be listed.

Prof. P. N. Kaula said that INB should have been published by the National Library but for some reasons it was brought out by the Central Reference Library in 1957-58 and it continued to be published by the Central Reference Library thereafter.

Prof. M. B. Konnur expressed the view that the INB should be made available online. Dr. T. A. V. Murthy highlighted the importance of INB and said that it not only could function as a bibliographic tool of use to librarians, research scholars, publishers and those related to the book world but could also be a potential source and instrument of national integration.

Mr. Jagmohan, Hon'ble Union Minister observed that there should be timely publication of the INB. He said that the Department of Culture would ensure that all issues were published on time and sent to various libraries.

2. Public Library Services

Dr. R. Bhattacharjee presented a descriptive account of public library services in India in a historical perspective. He referred to the establishment of the Raja Ram Mohun Roy Library Foundation and described its various activities. Dr. Bhattacharjee made several suggestions and recommended that the:

a. Networking of public libraries be undertaken;

b. Creation of compatible computerised databases;

c. Formulation of preservation programmes for libraries which had rare books/manuscripts;

d. Creation of awareness among users and library staff regarding the need for libraries and preservation of books;

e. Mobilisation of resources for development of public libraries;

f. Development of libraries in rural

areas, especially in Bihar, Rajasthan, Madhya Pradesh, Uttar Pradesh and such other poor states;

g. Training of library professionals;

h. Grant-in-aid be offered to NGOs that maintain public libraries; and

i. Setting up of an apex body to oversee and monitor the library and information system in India.

Dr. Banwari Lal stated that there was no library legislation in use in Delhi. He added that the records of books in the Delhi Public Library were not automated. He suggested that there should be a National Public Library in India. Dr. Banwari Lal described the public library scenario in the country and referred to the recommendations made by several committees. He also offered suggestions for the strengthening of public libraries in India.

Dr. P. K. Jayaswal described the public library system in the country and suggested that community information be provided in public libraries. He added that the Multipurpose Community Telecentres (MCTs), a concept proposed by the International Telecommunication Union be established in partnership with local, national and international stakeholders.

Ms. Swati Bhattacharyya gave a resume of public library facilities in West Bengal. She stressed the importance of the modernisation and networking of public libraries. She said that the people in rural areas who wanted to pursue higher education did not get proper course material. She recommended new services to be undertaken by public libraries. Among such services she demanded the establishment of textbook libraries, inclusion of non-book materials in public libraries, acquisition of collection that was related to improvement of quality of life and the establishment of self-learning IT Centres. She recommended the networking of State Centre Libraries and District Libraries within a period of three years. She added that public libraries should become switching centres for information. In order to do so suitable manpower development programmes needed to be introduced at the earliest.

Dr. M. D. Baby gave an overview of the traditional libraries and said that hybrid libraries, which could focus on the following functions, were important in this day and age:

a. Selection and collection - print and electronic
b. Information organisation - all forms but still print dominated
c. Access and delivery - increasingly integrated via Web
d. Assistance and advice - face to face and electronic.

Mr. D. R. Kalia said that the most important prerequisite of a public library system was a sound legislation. He felt that among the states where library legislation was passed, its performance in Tamil Nadu, Andhra Pradesh and Karnataka was the best. He suggested that public libraries should be put in the concurrent list with education. Mr. Kalia affirmed that according to the 73rd Amendment public libraries should have been transferred to panchayats, but it was left to the state governments to decide whether to create the library authority at the district level, sub-district level or the village level. He added that according to the 74th Amendment all cultural institutions should have been transferred to the municipalities and the corporations, but the state governments had been reluctant to do so.

Dr. R.P. Goswami maintained that the public libraries helped people to overcome some of the social and intellectual barriers. The libraries needed to be modernised and networked.

The Hon'ble Union Minister Mr. Jagmohan affirmed that he would discuss the subject with the Minister for Human Resource Development and see how model legislation could be introduced in all states. He added that incentives could be given during the Tenth Five Year Plan. He averred that he would suggest to the Members of Parliament to spend out of Rs. 2 crores given to Members of Parliament, 10-20 lakhs on the development of libraries within their constituencies. He added that he will work on persuading the State Governments to delegate power to local bodies. Regarding a query about the fate of vacant plots which were primarily meant for libraries, Mr. Jagmohan said that he wished to settle the issues by holding consultations with various organisations connected with libraries that have plots but were not using them for establishing libraries.

Dr. P. K. Jayaswal suggested that the library services should reach the rural masses. He mentioned that there was a proposal that the Department of Culture would establish 500 model rural libraries but that had not started. He said that the help of NGOs should be taken in establishing public libraries in rural areas.

Mr. E. Rama Reddy described the existing status of public libraries in India. He mentioned the major deterrents such as illiteracy, lack of trained manpower, lack of knowledge of hardware and software, lack of funds and fear of manpower dislocation. He said that the role of the public library was changing. The people who lived in rural India wanted information, though they were illiterate. He added that the existing public libraries suffered owing to lack of funds, trained manpower, improper physical facilities and inadequate collections.

Mr. Reddy presented an action plan to be adopted in two phases for the modernisation of public libraries. He

listed the essential infrastructure requirements for public libraries. He also pinpointed the tasks to be achieved. He added that in Andhra Pradesh 8 per cent of municipal taxes were given to public libraries and the system was working. He added that there was enough money with district central libraries and branch libraries. He said that the libraries that came directly under government control had financial problems. He added that the Andhra Pradesh Government had given Rs. 3 crores to the University of Hyderabad to modernise 30 major libraries, which included one each at district level, the State Central Library and seven regional libraries. Mr. Reddy added that the University of Hyderabad had also modernised the City Centre Library in Hyderabad/Secunderabad. He provided the details of the facilities that were made available in the Library.

Mr. Reddy urged that at the national level there should be a national coordination group that would set targets, review progress, etc.

Dr. P.V. Konnur stated that the Goa Public Library Act was amended in 1993 but because of political uncertainty it was under bureaucratic control. He added that there was no dearth of money in Goa. Goa could have a model public library system if the Act was implemented early.

Mrs. Kalpana Dasgupta was of the view that information centres in various rural areas at district levels needed to be set up.

Dr. R. Venkatsubramanian noted that the utility of the literacy programmes would be there if literacy was properly maintained. He added that this could be maintained if it was followed up with the establishment of reading rooms in villages and rural areas. He suggested that the Department of Culture could coordinate with other Ministries in order to ensure in what best possible manner the activity of the National Literacy Mission could be combined with the library movement programme. He mentioned that the school librarians should be trained for day-to-day functioning of the libraries so that school libraries functioned as Community Information Centres. He felt that there was no need to establish separate institutions in rural areas.

Prof. M. B. Konnur said that a phase-wise plan should be made to computerise and network public libraries in the country.

Mr. T. Mallesappa gave an overview of the public library services in Karnataka and suggested that several measures were being taken to network the public libraries down to the branch level, which included the creation of an online catalogue of their resources and making them available to others.

Dr. Neela Jagannathan maintained that public libraries only catered to the public, but the time had come when they should also cater to distant learners. She added that public libraries could develop collections in various disciplines for distant learners. She said that with modernisation and networking and development of collection in multimedia formats, the public libraries could reach the inaccessible in various villages.

The Hon'ble Minister Mr. Jagmohan referred to the suggestions made about the formulation of the National Library Policy and Indian Library Act and observed that the National Library Policy Statement could definitely be made but it was the implementation of the policies that was equally important. He added that so far as the Indian Library Act was concerned it was a State Subject. It could be implemented only if all the States passed the legislation or the Constitution was amended for this purpose.

3. Department of Culture Libraries and the Delivery of Books Act

Mrs. Kalpana Dasgupta stressed the need to modernise libraries under the Department of Culture and to have a perspective plan for this purpose. She advised the promotion of consortia culture in the Department. She said that there was minimal coordination between the libraries of the Archaeological Survey of India, Nehru Memorial Museum and Library and other libraries. She felt that archival libraries could be brought together. She considered that manpower development was a major issue with the Department of Culture libraries, which needed to be sorted on a long-term basis. In these libraries, she said the problems included the budgetary constraints, lack of sharing culture, bottlenecks in technical connectivity and infrastructural inadequacies. She mentioned that the National Bibliographic Database should be part of the retrospective conversion work at the National Library and other libraries under the D B Act. She added that the Department of Culture libraries had many maladies but that did not mean that the Department could not rectify them. She said that the Central Secretariat Library was designated as a depository library for government documents but unfortunately this was not working well.

Hon'ble Minister Mr. Jagmohan asked Mrs. Dasgupta to comment briefly on her idea of a perspective plan, development of manpower in the Department of Culture Libraries and asked her what suggestions she had regarding the removal of the maladies.

Mrs. Dasgupta in her reply referred to some of the issues under the perspective plan including collection development, standardisation, infrastructural development, need-based library and information services,

consortia facilities, proper planning of the National Bibliography, digitisation, etc. She added that the traditional libraries should shift towards the electronic culture and develop as hybrid libraries. For manpower planning we needed multi-tier planning for manpower development. The existing staff required to be given a different kind of training and different centres of training needed to be established or opened at well managed libraries. Mrs. Dasgupta emphasised proper communication between the teachers of library science and librarians.

Mr. Jagmohan suggested that the experts could decide whether an All India Institute of Library Management or Training Skills should be established. There could be a centre where all librarians could assemble and participate in refresher courses on public libraries, municipal libraries, etc. He said that since DELNET had one acre of land at JNU, support could be extended to DELNET with a grant for developing training facilities for librarians.

Dr. H. K. Kaul expressed the view that DELNET would be glad to coordinate and arrange training programmes for librarians. He said it would be easy for DELNET because they were already arranging such training programmes. He added that DELNET had signed an MOU with the All India Council for Technical Education to network nearly 3,000 technical institutions and had already planned for arranging training programmes regularly. He added that DELNET and INFLIBNET were promoting the use of MARC21 format and it would be advisable that all libraries used this format.

Mrs. K. Verma noted that there was no proper system of distribution of Government publications. A regular newsletter needed to be published on the subject which should be freely distributed. She felt that there should be an Agency which would distribute government publications. She added that a network should be created subject- wise because the demands of users varied from library to library and the holdings of libraries were also different.

Dr. H. K. Kaul observed that all subjects were now getting interrelated and if DELNET provided better service it was because it promoted all types of libraries and covered all subjects. He added that good books could be found on humanities in social science libraries and even social science books in science libraries. He said that as interaction occurred between the subjects, networks should support all subjects and cover all types of libraries.

Mrs. Vijayalakshmi Qureshi said that the Sahitya Akademi Library housed books in 22 languages and felt that it was important for the communication format issue to be thrashed out so that there was no difficulty in future.

Mr. T. Mallesappa suggested that in the states efforts should be made to develop virtual museums of classical, urban and rural cultural items specific to each state. Websites should be created of all Departments of Culture in the states providing all geographic, historic and cultural information about the state.

Dr. P. Vyasamoorthy averred that many members had expressed difficulties in acquiring government publications. He added that agencies like Rupa Book House and others were procuring government publications and distributing them well.

Mr. D. R. Kalia referred to the absence of corporate libraries in the country which in some developed countries housed the publications brought out by industrial and business houses. This he said was done under the Company's Act and could be followed in India as well.

It was discussed that the Manager of Publications had brought out a catalogue of government publications but later stopped it. It was said that Kitab Mahal and a few other distributors gave correct information about government publications. It was suggested that the Department of Culture should have an interaction with the Manager of Publications in order to arrange a quarterly publication of Government publications with annual cumulations. It was agreed that what was needed was not a long perspective plans but the application of the information technology and the basic infrastructure.

Prof. Amitabha Chatterjee maintained that publishers/suppliers should be sent receipts of all documents received under the Delivery of Books Act. He added that the number of copies to be deposited be reduced and postal charges for sending books under the Act be abolished. He also urged that electronically published documents be taken under the purview of the Act.

Mr. Sukumar Das noted that in view of the high postal rates and high paper costs, the publishers found it difficult to send four copies of the books to the depository libraries. He felt that the number should be reduced.

Mr. N.V.Sathyanarayana observed that if a publisher did not send a book to the National Library under the Act, the title should not have a valid copyright.

Dr. Banwari Lal affirmed that Delhi Public Library had received 1,84,000 books under the Act. About 20,000 were catalogued in machine readable form and 12,000 such records were forwarded to DELNET for giving online access to users.

Mr. M. K. Jain observed that the Indian National Bibliography should not be linked with the Delivery of Books Act.

He suggested that a copy should be purchased for the INB. Prof. M. B. Konnur said that the large collections of manuscripts available in the libraries needed to be preserved, maintained and recorded so that the contents could be preserved for future use. He felt that the NGOs providing library services needed to be helped by the Department of Culture.

Mr. R. Sarkar gave an overview of the automation work being undertaken in the Library of the Indian Museum, Kolkata. He added that a scheme was prepared for this purpose.

Mr. Abu Saad Islahi, Rampur Raza Library described the importance of the collection at the Rampur Raza Library. He said that they would welcome if DELNET was willing to modernise their library. He added that the catalogues may also be prepared on a CD. He also referred to the meetings organised by the Department of Culture regarding the modernisation of Oriental Libraries but said that no major programmes had been started so far. He referred to the importance of the sketches and paintings at the Library and mentioned that these needed to be catalogued and information about them disseminated to the users.

Mr. Salim said that the Khuda Baksh Oriental Public Library, Patna had more books than the Rampur Raza Library. He stated that they had started the modernisation programme and purchased Libsys software for that purpose. He referred to the problem of space among other problems at the Khuda Baksh Oriental Public Library.

During the discussion it was considered that many Oriental Libraries owned by individuals and trusts had rare manuscripts and documents. It was considered that those documents needed to be preserved and made available in electronic form.

Dr. H. K. Kaul referred to the initiative he had started for the promotion of Oriental Libraries on behalf of DELNET. He argued that the main difficulty was regarding the availability of a proper software for cataloguing books in Urdu. Once that was solved, Oriental Library collections in Urdu could be catalogued and used well.

During the discussion it was revealed that many libraries in Bihar had rich collections of manuscripts written on palm leaves and Bhoj Patras but many manuscripts from these collections were being stolen and sold outside India including America. Reference was made to Nau Nalanda Mahavihar in Nalanda which had manuscripts in Pali, Prakrit and Sinhalese. No arrangements existed there for the preservation, restoration and cataloguing of these manuscripts. Reference was also made to the condition of manuscripts in the Bihar Research Library, Magadh University in Bodh Gaya, and other institutions. It was said that according to the Manuscripts Act any manuscripts which were more than 100 years old would have to be registered, but this was not being done. It was suggested that a National Bibliography of Manuscripts be prepared.

Mr. Vivek Rae, Joint Secretary, Department of Culture averred that during the Tenth Plan it was hoped that the National Mission for Manuscripts would be started and most of these issues would be handled. He also referred to the National Register of Private Records being maintained by the National Archives of India. He said that the cataloguing of manuscripts was being done under the programme but it was very slow.

During the discussion it was revealed that there were over 5,00,000 manuscripts in about 250 centres in the country but they were not being preserved. It was suggested that in Germany, Indian manuscripts were being digitised. The Australian National Library had a similar programme. It was felt that the National Library in India should undertake such a programme. Mr. R. Sarkar mentioned that the National Library had taken up a project for the digitisation of manuscripts. It was reported that the Indian Museum proposed to digitise about 200 manuscripts lying in Manipur State Museum by March 2002.

Mrs. Swati Bhattacharyya mentioned that the Press and Registration Act and the Delivery of Books Act should be clubbed together and a new Act ought to be passed.

Mr. D. R. Kalia maintained that the publisher would send books to the National Library only if he knew that the Indian National Bibliography was published within a month or two. Otherwise the publisher would not be interested in sending the books under the DB Act. He suggested that the INB should be printed by a private firm so that it appeared on time.

Mr. Shymalkanti Chakravarti said that as Director, he had arranged the printing of brochures to educate the publishers about the provisions of the D B Act. A campaign was organised, especially in the North East for this purpose.

Ms. Meenakshi Sood mentioned that several unpublished documents were available in India and were created all the time. She asked if this material could also be deposited under the Act.

Dr. R. Bhattacharjee said that sending one copy in place of four copies was not advisable.

4. Modernisation and Networking of Libraries in India

Mr. T. Mallesappa described the

reasons for the modernisation and networking of the National Library and suggested some of the functions it could undertake.

Regarding the modernisation and networking of public libraries Dr. R. Bhattacharjee, Director, RRRLF mentioned that this work could be done in three phases:

Phase I: Computerisation of State Centre Libraries (28 States)

Phase II: District Libraries (400 Districts)

Phase III: Selected Tehsil/Town/ Panchayat and Village Libraries.

He described the importance of resource sharing and the types of jobs that could be undertaken during the modernisation and networking of public libraries. The details were given in his paper. He added that DELNET may be associated with the networking of public libraries.

Mrs. Kalpana Dasgupta noted that the Central Secretariat Library and the Department of Culture had taken the networking of libraries seriously. The Central Secretariat Library and the libraries of the National Museum, National Archives, Archaeological Survey of India, National Gallery of Modern Art and the Nehru Memorial Museum and Library were being networked. She said that before networking was done all the libraries had to be computerised to a certain level. She also advocated the introduction of consortia of libraries that possessed similar collections.

Mrs. Dasgupta said that digitisation programmes needed to be clearly thought out, as they varied from library to library. She added that it was necessary to find out if the libraries wanted to do it for preservation purposes or for user services or access purposes. She referred to the projects undertaken by CSL.

Dr. S. S. Murthy said that the retro-conversion work was an enormous task and this could be done automatically. He said that DELNET could undertake retro-conversion jobs in the country. He suggested that the retro-conversion expenditure should be made part of the Library Budget.

Dr. T. A. V. Murthy described the services being rendered by INFLIBNET. He stressed the need of modernisation and networking of libraries and said that INFLIBNET was prepared to help libraries in this work. He said that among the University libraries INFLIBNET was promoting infrastructure in the libraries, helping in retrospective conversion of catalogue records and offering SOUL for database and library management purposes. Dr. Murthy observed that INFLIBNET was arranging a number of training programmes for working librarians and this was found to be very useful. Dr. Murthy supported the use of MARC format and said that DELNET and INFLIBNET were working together in the modernisation and networking of libraries in the country.

Ms. Swati Bhattacharyya commented that modernisation and networking of libraries went together. Unless the libraries were modernised, they could not be networked. She felt that the State Centre Libraries should be modernised and networked first, followed by the networking of other categories of libraries. She added that networking of services and networking of exchanges would be a value addition to the public library service.

Dr. P. K. Jayaswal was of the view that public libraries should be networked and this job should be given to an established library network. He felt that as there was a shortage of resources, NGOs needed to be associated with the modernisation and networking of libraries.

Dr.C.R. Karisiddappa maintained that the syllabus of the University Departments of Library and Information Science needed to be upgraded on the pattern of the UGC recommendations. He said that he as Chairman of the Committee for the Revision of Syllabus of the Departments of Library and Information Science in the Universities, had revised the syllabus and the report had been submitted to the University. He said that it was up to the concerned University Departments to adopt the course. He concluded by saying that this would help in producing better library professionals.

5. Electronic Libraries in Rural India

Mr. E. Rama Reddy affirmed that the computerisation of public libraries was the first step before we introduced electronic/digital libraries in Rural India. He said that some of the technologies such as natural language processing, use of touch screens with suggestive icons and support of suitable sound could be used for illiterate people in the villages. He referred to the experiments made by establishing information kiosks which were attached to the libraries. He said that the experiments were catching up as information to the villagers could be given in machine readable form with a voice interface. He added that in Andhra Pradesh there was a good demand for Internet and E-mail in the rural areas.

Dr. P. Vyasamoorthy described the rural scenario and gave a graphic account of various experiments being carried out in establishing electronic information centres in Rural India which included the experiments carried out by Gyandoot, M. S. Swaminathan Research Foundation, EID Parry & Company, National Institute of Rural Development, Hyderabad and MANAGE, Hyderabad.

Dr. H. K. Kaul provided a

resume of public libraries and highlighted the importance of establishing electronic libraries in rural India. He emphasised the need for creating relevant electronic libraries. He said that it was essential to offer information to the people in rural India which they needed and could use in changing their lifestyles. The following were the subject areas on which he said that appropriate reading materials needed to be selected or developed anew:

I Health and Welfare: Primate information on health, sanitation, water, environment, etc.

II Agriculture: Appropriate information on seeds, herbs, crops, seasons, etc.

III Education: Language and literature, teaching aids, general science, geographic information, general history, current affairs, etc.

IV General Information: Information on marketing of agricultural products, government policies within the State and in other states, transportation, employment, development programmes, finance and credit, legal, etc.

V Small-Scale Information on establishing small-scale industries and units for making every individual and family financially self-sufficient.

Dr. Kaul referred to the methodology issues and gave a description of the Project. Dr. Kaul said that each Electronic Doorway Library could offer access to:

1. Government Generated Information
2. Courses / Continuing Education
3. Local Level Information
4. Information specially created for this project
5. E-mail
6. INTERNET Access
7. Access to DELNET Databases and other networks; and
8. Books and photocopies through ILL-Online of DELNET at the national level.

Mr. D. R. Kalia gave an introduction to the digital library and described its nature and scope. He said that to start with only material on and about India should be digitised. He said that a feasibility study should be made and the advisory committee be constituted to develop the perspective plan.

Dr. M. D. Baby noted that in Kerala there is a good network of public libraries. Dr Baby noted that the Cochin University of Science and Technology and Department of Science in Society adopted village libraries and provided them the manpower, resources and technological support. Dr. Baby referred to the project in Kerala called Rural Development and Appropriate Technology Project under which the rural information system is being developed. Dr. Baby suggested that in Kerala a hybrid type of rural libraries were being developed.

Dr. H. K. Kaul remarked that there was a growing demand from educated villagers to have access to more comprehensive literature and useful information. As this information was not being given, the transformation of village life was not taking place as desired.

Mr. T. Mallesappa said that there were about 2,728 Gram Panchayat Libraries in Karnataka and the creation of electronic libraries would mean to develop the infrastructure, arrange training of personnel, provide suitable content on agriculture, marketing, finance, health and family welfare etc. and educate the rural masses to use these facilities.

Mr. D. R. Kalia urged that a digital library was a must and this was due to the digital revolution that had largely occurred during the last thirty years. He said that the data kept in the digital form ultimately proved to be cost effective as it served a dual purpose. One, it preserved the material on a more durable medium and second, it made the data available to the entire country. He referred to the work done by the Library of Congress with regard to the digitisation of text and multimedia works. Mr. Kalia felt that a Committee should be constituted to draw up a list of material to be digitised and set the priorities. He concluded by saying that there was no need to draw up a perspective plan.

Mrs. Dasgupta said that rural libraries needed to be set up or existing infrastructures needed to be developed. She added that Indian content needed to be created for those libraries.

Prof. M. B. Konnur expressed the view that the Raja Ram Mohun Roy Library Foundation could play a major role in developing electronic libraries in rural areas, which would include purchase of hardware, software, training of library staff and arrangement of financial assistance to them.

Ms. Swati Bhattacharyya observed that rural libraries could be brought under the umbrella of computerisation in the sense that they could develop the database in the State Central Libraries and the computer printed catalogues could be sent to the rural libraries. She felt that networking could take a long time. However, she added that in West Bengal planning for such work could not be done for more than three years at a time.

6. National Bibliographic Database

Dr. H. K. Kaul averred that it was important in this age of library networking to create a national resource in the form of a National Bibliographic Database containing information about the books or other types of documents available in the country. He said that it had a direct relevance to the building

up of a nation since research could lead to development if proper information was available to researchers. Dr. Kaul noted that the National Bibliographic Database offered an authentic digital record of documents available in the libraries in a country. He referred to the working Group of the Ninth Plan that had recommended that DELNET should be supported to create a National Bibliographic Database and develop on the OCLC pattern. He referred to the pilot project supported by the Department of Culture to create 75,000 bibliographic records of books in English, Gurmukhi, Tamil and Telugu at Punjabi University, Patiala, International Institute of Tamil Studies, Chennai and Andhra University, Visakhapatnam. He added that DELNET was working for creating another 50,000 records in English, Marathi, Sanskrit and Bengali at the Asiatic Society, Mumbai and Asiatic Society, Kolkata. He said that there was a need to prepare a Mission Statement on the subject and DELNET was planning to prepare one. He referred to the importance of MARC format which was being used in the National Bibliographic Database. He said that there was a need for exploring the possibility of using UNICODE in place of GIST technology. He stressed the need of training library professionals working in the Indian libraries so that they could create records by using international standards including MARC. He stated that the digitisation of rare documents should also be part of the DELNET initiatives. He added that since DELNET had successfully completed the NBD Pilot Project, DELNET was prepared to undertake the creation of the National Bibliographic Database at the national level.

Mrs. Devinder Kaur presented a resume of the National Bibliographic Database Pilot Project work undertaken at the Punjabi University, Patiala. She described its redeeming features, the future prospects and offered suggestions for the development of the database in future.

Prof. M. B. Konnur appreciated the role played by DELNET. He felt that the records available in the school libraries, college libraries, newspaper libraries, etc. needed to be reflected in the National Bibliographic Database. He also stressed the importance of giving appropriate training to library professionals so that they could create better records for the National Bibliographic Database.

Dr. T. A. V. Murthy affirmed that the main objective of creating the National Bibliographic Database was to provide access to the holdings of thousands of libraries spread across the country.

Mr. T. Mallesappa described the importance of the National Bibliographic Database and added that it should be maintained and updated periodically and in its preparation the latest technologies should be used.

The participants were full of praise for the Hon'ble Minister Mr. Jagmohan who spent the whole day listening to the problems and discussing the relevant issues with them. The Hon'ble Minister also thanked the participants and observed that he would examine each issue and constitute a Committee to prioritise the issues for implementation.

Dr. H. K. Kaul who coordinated the National Round Table thanked the Hon'ble Minister Mr. Jagmohan for his interest, help and time and said that the library community would remember this day as a landmark in the history of librarianship in India . He also thanked the participants, the officials of the Department of Culture including Mr. N. Gopalaswami, Secretary, Mr. Vivek Rae, Joint Secretary, and Mr. Lakhanpal, Director and Mr. Sudesh Kumar, Under Secretary for their help and advice.

DELNET STATISTICS

(as on July 31, 2002)

Participating Libraries
512

DELNET Databases

Union Catalogue of Books: CCF
22,52,521 records

Union Catalogue of Books: MARC
44,132 records

Union List of Current Serials
21,330 records

(Adding the Web Addresses of E-Journals)

Union Catalogue of Serials
19,289 records

Database of Periodical Articles
4,40,688 records

Specialists' Database
2,000 records

CD-ROM Database
1,777 records

Union List of Video Recordings
3,610 records

Union List of Sound Recordings
748 records

Urdu Manuscripts' Database
210 records

Database of Theses and Dissertations
32,553 records

DEVINSA Database
20,000 records

DELNET also provides online access to:
GISTNIC
Library of Congress
U. S. Patents' Full Text
National Library of Medicine Databases

On the Emergence of India as a Knowledge Super Power

Dr. R. Natarajan

Dr. R. Natarajan, Chairman, All India Council for Technical Education delivered the Fifth DELNET Annual Lecture on January 4, 2002. Shri Jagmohan, Hon'ble Minister for Tourism and Culture, Government of India presided over the lecture. Dr. H. K. Kaul, Director, DELNET in his welcome address highlighted the major contributions Dr. Natarajan has made in the fields of technical education, research and development. The following is the complete text of the lecture delivered by Dr. Natarajan.

1. Introduction

The knowledge and information revolutions have touched everybody in their everyday lives. Even in the villages now people have been touched, and, of course, it is the dream of several states, particularly in the South, to take governance to the villages. Fortune 500 company lists are being rewritten, with a number of new companies replacing the old brick and mortar companies. A whole host of new terms have entered the vocabulary, all with the prefix "knowledge" — Knowledge Society, Knowledge Economy, Knowledge Industry, Knowledge Workers, Knowledge Officers. Companies now have designations like Chief Knowledge Officer; it is not even Chief Information Officer.

2. Our PM's Vision

While inaugurating the annual ASSOCHAM summit last year, our Prime Minister enunciated a five point-agenda: five areas on which the country needs to focus attention:

- Leveraging existing competencies in IT, including Telecom Biotechnology, Drug Design, Financial Services and enterprise-wide Management (All these are knowledge activities).
- Global Networking
- Education for developing a learning society. (It has several ramifications, starting from literacy all the way up to the high end of the spectrum).
- Vibrant Government-Industry-Academia interaction in policy-making and implementation. (Forging partnerships, coming together, synergising the strengths and working together.)
- Economic and business strategic alliances built up on capabilities and opportunities. (Because it is business which is going to drive a whole lot of things. We have accepted the market economy, but, of course, with constraints, knowing fully well what precautions we must take, so that the divide between the rich and the poor does not widen, but the gap is narrowed and everybody participates to ensure prosperity for the nation).

We have missed the Industrial Revolution, for historical reasons. Now, we have regained our strengths. We have giants like TCS, Infosys, Sathyam, WIPRO; all these names conjure up in the minds of young people dreams of prosperity. The country is hopeful that these initiatives will put us on the road to success.

3. The Recommendations of a Relevant Symposium

At IIT, Madras, we organised a Symposium on "The Emergence of India as a Knowledge Superpower" on January 29, 2000, involving the participation of the Planning Commission Member, Dr. K. Venkatasubramaniam, and several other eminent persons from academia and industry.

First was that we need to fulfil certain prerequisites before we can achieve success in our endeavours.

Dr. R. Natarajan, Shri Jagmohan, Dr. H.K. Kaul and Shri Soli J. Sorabjee

The present state of our country needs to incorporate certain changes. Secondly, we should not spread ourselves too thin. We must focus on a few carefully selected areas. Next, innovation was identified to be one of the most important contributors to the attainment of our goals. Opportunities should be created and exploited and entrepreneurship was identified as the means to the creation of wealth.

Narayan Murthy, the Infosys Chairman keeps saying that the creation of wealth is the result of innovation, is the result of entrepreneurship and is the result of a learning organisation. In a most developed and industrialised country, it is not only the large companies and the corporate sectors but also the small and medium enterprises where at the moment the productivity is not so high. It is very essential that whatever is available through the knowledge revolution is fed as an input to this sector. Higher education was, till recently, considered to be a non-merit good. One of the World Bank reports mentioned this and as a result higher education was given a lower priority for some time but they have revised their original idea and they point out that higher education is as important as elementary and secondary education. We also need partnerships and alliances between the sectors, government, industries, R&D labs in order to promote synergy. We need to have both long-term and short-term goals.

The essential attributes of a Knowledge Society include such characteristics as:

- competitiveness
- innovativeness
- flexibility
- ability of different sectors to carry out their functions harmoniously.

No nation can hope to achieve the status of a Knowledge Superpower over the entire range of human endeavour. We must make intelligent choices in relation to:

- its endowments — natural and human
- its strategies — economic, social and security

The following sectors need special focus and attention: IT, Biotechnology, Drugs, Telecom, Financial Services, Agriculture, Health Care, Disaster Management.

Some of the prerequisites for achieving Knowledge Superpower status are: reach, enhancement of productivity, competitiveness, sustainability, team-work, infrastructure, commitment.

Enabling conditions include:

- recognition of certain emerging trends, such as e-communities— both internal and external.
- a change in mind-set for bringing attitudinal changes.
- application of knowledge and expertise in certain critical areas, such as : energy saving, material saving, health care, education, environment.

Supportive features include: incentives, autonomy, flexibility, funding, venture capital, educational development, mechanisms to encourage strategic alliances, consortia, teams and partnerships.

We need policies that promote the creation of multiplier effect and lend themselves to replication.

The IT tools must be employed for effecting e-governance, at all levels. It is to be practised, not because it is fashionable, but with a commitment to reach out to the people.

The knowledge society should be relevant to all other sectors of concern and relevance — political, economic, trade.

India as one of the richest nations in the world, so far as human resources are concerned, should not lose this opportunity to establish itself as a Knowledge Superpower.

4 The IT Manpower 'Challenge and Response" Interim Report of theTask Force on HRD in IT.

In pursuance of the announcement made by our PM at the First National Conference of IT Ministers on July 15, 2000, a "Task Force on HRD in IT" was set up by the MHRD, with four specific TORs.

- To draw up a plan to optimally use the existing infrastructure of the IITs, RECs, other engineering colleges and educational institutions to double their student intake in IT from the next academic year, and triple it in the next two years.
- To make recommendations regarding the modalities for achieving mutually beneficial cooperation between educational institutions in IT in the formal sector and those in the private sector.
- To suggest measures necessary for ensuring that good quality IT education does not remain a preserve of the rich and the English-educated, but is also available to students from poor rural families, especially those from the Scheduled Castes, Scheduled Tribes and OBCs.
- To suggest measures necessary to improve teaching of non-IT subjects by using computers and the Internet for all students.

On the basis of deliberations and written input received from the Members, Permanent Special Invitees and others, the Task Force made 47 specific recommendations relating to the TOR. These recommendations are made "with a view to integrate the core competencies/ expertise of the country, and innovative information technologies to create for it a sustainable competitive advantage." For this purpose, a re-engineering of the technical education and training system of the country, with a focus on IT education, is proposed.

The 47 recommendations are given under 14 heads:

- Creating Public Information on IT Manpower
- Promoting What Works
- Monitoring Intake and Out-turn
- Categorisation of Institutions
- New Institutions
- Improving Institutional Quality
- Improving Infrastructure
- IT Faculty Development Initiative

- Curriculum and Courseware
- Promoting Technology-mediated IT Education
- Improving Connectivity
- Promoting PG Education and Research
- Facilitating Interface with IT Industry
- Investments and Implementation

5. The IT in Education : Vision 2010 Document of the Government of Kerala

In recognition of the extraordinary potential of the emerging IT in improving the quality of people, the Government of Kerala constituted a Task Force to evolve "Vision 2010" document, under the chairmanship of Prof. U.R. Rao. This document, released in November 2000, outlines the demands on education, and an agenda of action to meet those demands, in order to realise a knowledge-based society.

The terms of reference for the Task Force included:

- assessment of the current status of education in Kerala
- demands and requirements of the present decade
- assessment of future trends
- emerging technology opportunities in the area of education
- introduction of IT as a part of the curriculum; and
- formation of the overall vision and realisation of a knowledge-based society by 2010.

The Task Force believes that the Vision 2010 document is a practically achievable and realisable goal. When implemented, it will have a far-reaching impact in producing a new generation of young men and women, who can fully participate in the knowledge-based information age. The Vision document attempts to outline "the dynamic contours of IT and to envision the area of policy intervention in Education."

Several changes have been introduced in School Education in the recent past in Kerala:

- The School Curriculum is undergoing a thorough overhaul.
- A new pedagogy is introduced, and there is a new recognition of the need for constant upgradation of the skills and knowledge of the teacher.
- A learner- centred approach is proposed, with a new emphasis on participation and activity. It is expected to prepare the pupils "to face a future where applied knowledge is preferred to abstract information."
- There is a strong recognition of the potential and necessity of IT in the classroom.

The Task Force recognised that "the goal of IT in education is not to produce software programmers, but to create a new generation of: thinkers professionals, scientists, technologists, and entrepreneurs, who will be able to instantaneously access and use any relevant information using IT as a tool." The thrust of Education should be to accomplish computer proficiency, and to enhance curricular comprehension of the students, particularly at the school level. IT should be able to harmonise the state's twin educational concerns of Equity and Excellence.

The Agenda for realising the Vision presupposes certain policy initiatives. Introduction of IT in schools is not a one-shot affair. It is an evolutionary process that should be constantly updated and monitored. The action points are classified into: academic, HRD, technological, financial and institutional. IT should be seen as an enabler, and as "an effective tool to learn deeper, better and faster." The IT capabilities should be utilised to span distances and boundaries — Distance Education can alter conventional definitions and concepts of Education. Networking between institutions, between teachers, and between teachers and students should be accomplished.

Connectivity and bandwidth may continue to be twin problems impeding the growth of IT-enabled education. Every school may become an Internet cafe, open outside the school hours to the public for a specified period. A healthy and open relationship with the IT industry should be encouraged.

IT-enabled education, considered in isolation, can be prohibitively expensive. It has "to be synergised with the initiatives and developments in the allied areas, such as:

- connectivity and bandwidth
- e-commerce
- e-governance
- m-commerce; and
- the required information infrastructure"

The first steps to the "realisation of the Vision should be taken by launching a time-bound project, which would implement the initial phases of:

- integrating technology into the school curriculum
- developing the necessary content
- training the teachers
- getting the hardware into schools; and
- most importantly, developing and positioning systems that are essential for sustaining the activities in future"

6. The 21st Century Learners

The 21st Century Learners have never: wound a watch, touched a typewriter, played a record album, calculated with a slide rule, travelled in a steam engine, hand-written a letter, or known a world without computers. For them, technology is not the Internet or floppy disks; that is just the background hum of history, but as for most of us, technology is anything created since they were born. Today's school-age generation know more about technology than do their teachers. Young kids get bored if they are doing only one function at a time. They need multiple stimuli; for example,

they watch their computer screens, listen to music through headphones, and sustain a conversation, all at the same time. Today's kids have short attention spans, and have the attitude of take- it-all-at-once. They experience a technologically-saturated childhood. Their toys are all computerised, they know the ins and outs of computers, and use them regularly for all kinds of purposes, and unlike adults, they are not surprised by new technology — they simply integrate it into their lives. They will want and expect to collaborate with their teachers (and bosses), and not take orders from them. The new generation is growing up with technology, which they use to communicate, collaborate and shop on-line.

6.1 Some Unreasonable Expectations

- Learning is easy, requires no effort
- Access to information=Acquisition of knowledge
- Acquisition of knowledge and skills=Experience
- Like instant food, there is instant knowledge, instant skills, instant experience.
- Prosperity requires no hard work, sacrifice.

7. The 21st Century Teachers

The whole notion of the teacher as a disseminator of knowledge is turned on its head. While in the old scenario, the teacher was the boss, in the new scenario, the teacher becomes the facilitator. Teachers, who employ knowledge in the classroom, do not funnel information into their students' heads. They guide them to information, to be accessed, and interacted with. The teacher is no longer the sage on the stage, but the guide on the side. He is becoming less central to the learning process. Will IT, like what we thought of ET, replace them and make them superfluous? Learning with technology has to start by educating the teachers.

Information is what is contained in books, or benchmark in studies, or seminar proceedings, or consultant reports but knowledge is the ability to apply information to specific work and performance. Also there are differences made between tacit knowledge and explicit knowledge. Let me come to knowledge management. For many companies, particularly in the IT and the ICT sector, this is extremely important. R&D is a chart with the production of new knowledge, business is required to incorporate such knowledge into goods and services and thus seek competitive advantage. If you go back, it was Netherlands which was the first country to officially accord knowledge a national priority. Netherlands declared in the mid 1990s that the production and application of knowledge would be the prime force for the economic development in the emerging world order. If you look at our our own science policy resolution as well as the technology policy statement, it is clearly indicated that the lack of natural resources can be made up by the use of technology for creating the resources. Not the same kind of resources but a different kind of resources. Most advanced countries are in agreement that competitive advantage can only be derived by the generation and management of knowledge as a surrogate to trade and services. It is established that knowledge, education, R&D and wealth creation are all intimately linked.

Since I am talking to DELNET, I would spend some time on the content of libraries and the content revolution that has occurred and some comparison between paper and non-paper resources. For over 500 years, the bulk of human knowledge and information has been stored as paper documents. Many people believed that paper would be with us for the foreseeable future. But its importance as a medium for finding, preserving and distributing information will diminish. It has a competitor. If you look at the narrow definition of a document, it is one or more pieces of paper with print on them. A document can be any body of information. It may be a newspaper article, a web page, a TV show, a song, or an interactive video game. Because all types of information can be stored in the digital form, documents in the broader sense will get increasingly easier to find, store and send across a network. But paper is very awkward to store and transmit and its contents are limited to text with drawings and images. On the other hand, a digitally stored document can be made up of photos, videos, audio, programming instructions for interactivity, animation or a combination of these elements. What are the advantages of paper-based documents over digital ones? Take the example of a newspaper. It offers a wide field of vision. It has good resolution until the computer screens become better. It has portability and ease of use. A book is small, lightweight, higher resolution and inexpensive and therefore, paper has several advantages that digital documents do not have.

Next I would like to speak about innovation as the basis for a knowledge society and global competitiveness. Innovation stands for new products and new services. It stands for renewal, recreating oneself. People sometimes use innovation and creativity as synonymous. There are differences. But in any case, it is a process, a discipline and ability which go beyond simple improvements. Zurich's famous park Paroalto Research Centre's motto is, "The future can best be predicted by inventing it". You will always be the leader if you invent things and innovate. What are the important characteristics of successful innovators and inventors? Courage of one's convictions, stamina, single-

mindedness of purpose, versatility, ability to take criticism, readiness to make mid-course adjustments and critical detachment from one's own ideas. What does it demand? Innovation calls for a personal commitment. It demands a free spirt in a free environment. It needs substantial effort. An innovative person is characterised by high cognitive quality such as fertile imagination, ability to think analogously, metaphorically, associatively and playfully. Particularly in relation to our country, I would like to point out that the same creative individuals would be more creative in certain environments than others. We have several people of Indian origin who have won Nobel prizes—Hargovind Khurana, S. Chandrashekhar and Amartya Sen. We are very proud that they are of Indian origin but where did they do their work that got them the Nobel prizes? Is something wrong with the environment that we give to our people? I think it is something that one should look at. What did that environment give them that we could not give? A strong focus, a general awareness of new ideas, an open atmosphere for discussion and a healthy balance between individual competition and social cooperation. What are some of the criteria for innovation? The 3M Company have the 3-30 principle, i.e. 30 per cent of the profit comes from products which are less than three years old. In Siemens, another criterion, over 50 per cent of value are added which stems from knowledge intensive services. These according to them are measures of innovation.

Sometimes we engineers are depressed that the society does not give the kind of importance that it gives to other professions, So, the National Academy of Engineering in the US surveyed to find the engineering achievements that have had the greatest impact on the quality of life in the 20th century. The flow freely to students wherever they are, it will be impossible to credential or accredit all of them. We also need to develop sophisticated assessment techniques to measure and certify learning and competency. The focus therefore will shift from those who provide courses and how many hours it should start to assess whether true learning has occurred.

We are in the midst of an exponential change which Alvin Toffler called the "Future Shock". It lowers predictability and it increases uncertainty. For example, about 15 years ago, we never imagined the break-up of the USSR, the reunification of Germany, the lifting of apartheid in South Aftrica, and the new economic reforms in our own country. Therefore, things are happening which one did not expect many years ago. In terms of computer power it is said that the cost has come down 8,000 times over the past 30 years. Therefore, John Nicebet in his book, *The Global Paradox* says, "If we had similar progress in automotive technology today, you could buy a Lexus by about $2. It would travel at the speed of sound and give about 600 miles on a thimble of gas". Believe it or not, Bill Gates also mentioned this at the Comdex exhibition. Unfortunately, he took up on GM and said that "If GM had kept up with the technology like the computer industry has, we would all have been driving $25 cars that got 1,000 miles to the gallon." But GM responded. It said, "If GM had developed technology like Microsoft you would all be driving cars with the following characteristics. For no reason whatever, your car would crash twice a day. The air back system which is an emergency system would say, 'Are you sure?' before going off. Occasionally for no reason, you car would lock you out and refuse to let you in until you simultaneously lifted the door handle, turned the key and grabbed the radio antenna."

I would also like to give you two lists, one a list of those things which we do not have today which we had 30 years ago because they have grown obsolete. They are the 16mm movies, silent movies, slide rules, mechanical calculators, steam engines, typewriters, courtesy on the roads, vacuum tubes and so on. On the other side, I have a list of things which we have today and did not have 30 years ago. These are the dotcoms, dot organs, dot AC, 24 hours television, so many channels, etc. Alumni donation is also a new thing, betting in sports other than horse racing and boxing, catalytic converters, CAT Scan and bottled water. They said that they would make milk cheaper than water and they have succeeded. Others are electronic journals, fax machines, floppies, flyovers, all these did not exist 15-20 years ago. In terms of professions it is also interesting to see that those professions and jobs which have been obsolete by advances and technology are things like drivers, firemen for steam locomotives, rickshaw-pullers and draftsmen. The new professions which did not exist 20 years ago are the VJs, ISPs, IT professionals and psychologists for our cricket team. In educational requirements of the knowledge economy, I would like to compare the past requirements vs. the future requirements. In the past it was skills but now it is knowledge. Previously it was product-centric and now it is learner-centric. We were satisfied with a graduate but it is lifelong learning. It was passive engineers who were responsible for creating and applying technologies like electrification, automobile, airplane, safe and abundant water, electronics, radio on television, agricultural mechanisation, computers, telephone air-conditioning and refrigeration, inter-state highways, space exploration, internet imaging technologies, etc. The point I am trying to make is that technology has had a

tremendous impact on our lives and it is the engineers who are responsible. Again I would like to point out that it is not only IT that is important for a knowledge society. The Battle think tank have listed the top 10 technological challenges two years ago— affordable home-based health care, personalised consumer products, convergence of technology in the home in the sense of home being the place to work, shop, get an education and enjoy entertainment, environmental protection, human interfaces, nutritional health, mobile energy, micro security, renewed infrastructure and the global business cooperation in the new market economy. Looking at another list of six criticial national challenge transformations is to transfer the way we communicate, transforming the way we deal with information, transforming the way we learn, transforming the way we practise health care, transforming the nature of commerce and transforming the nature of work. All these involve technologies which are being developed and so on.

Are there any differences between what we give to these engineering students as inputs between what we gave them in the last century and what we need to give them in the current century? The traditional attributes for an engineer, should be problem-solving abilities, analytical skills, communication skills, ability to relate to practical aspects of engineering even though he may not fulfil these requirements. But the 21st century attributes are special— learnability, learning to learn on one's own through self-motivation, ability to master knowledge from neighbouring disciplines, ability to work in a team, exposure to commercial disciplines, integrity of skills and so on. As knowledge expands, two key factors come to the fore. One is our capacity to find our way through this material to identify and define problems and observe knowledge in a focussed manner and secondly, the technical means needed to obtain access to all this knowledge quickly, precisely and in a manageable form. In terms of education, I believe we have to change the established sequence of first taking a degree to acquire knowledge and then finding a career in which to apply. During the last national policy de-linking jobs from degrees was the favourite phrase. The requirements of the new knowledge society will be the ability to organise the knowledge base, provide high-speed access to a large amount of it and to select and prepare it. Some of us are worried that the virtual universities will take over the conventional universities. for as long as we know, formal education was regulated in two ways—access control by requiring students to come to college to receive education. Individuals and institutions providing instructions are to be credential or accredited. These controls were justified. They ensured quality of instruction and the degree represented a value addition to the student. But now it is impossible to control access to and delivery of educational services as in the past. As information sources become ubiquitous and participation earlier and now it is active participation. The whole paradigm was just in case, now the paradigm is just in time as and when needed. It was mandated and now it is self-directed. There were instructor led courses and now we have library of learning methods.

Let us talk about the future promises of technology. Can we predict what technology has in store for us? All predictions are fallible, especially those relating to the future. There are several examples of failure of imagination which have limited the ability of great minds from forcing technological possibilities. For example, Lord Rutherford who actually discovered the structure of the nucleus, poked fun at those who proposed the possibility of harnessing nuclear energy. Arthur C. Clarke has written a book *Profiles of the Future in* which he says, "Too great a burden of knowledge can clog the wheels of imagination", and then he enunciated Clarke's first law. He says, "When a distinguished but an elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is probably very wrong". And it is borne out by several examples. He also says that, "In physics and maths and in analytical sciences, the elderly syndrome sets in after 30. But in other fields like biology and so on, it is postponed to the 40s". So. what is the lesson? Scientists over 50 are good for nothing but board meetings. Clarke distinguished between two classes on inventions and technical devices. One, machines which would have been understood by any of the great thinkers of the past. Second, those that would be utterly baffling to them. His third law is that any sufficiently advanced technology is indistinguishable from magic. He listed the human inventions and discoveries, the unexpected which could not have been anticipated by even the best of minds of the past like carbon dating, electronics, ionosphere, laser, nuclear energy and so on. The expected includes even artificial life, automobiles, flying machines and so on. It is interesting to look at the 'perils of prophecy' as an issue of *Newsweek* called it a couple of years ago. How great men have tried to predict and they have gone wrong not in terms of under predicting but over predicting. W. Wright along with his brother invented flying in 1903. About five years later he recollected on how they did it and what they did and he said that he confirmed in 1901, two years before he actually flew. He said to his brother that a man would not fly for 50 years. Ever since I have distrusted myself and avoided all predictions. In political terms, David Lloyd George said in August 1, 1934,

"Believe me, Germany is unable to wage war". Charles Duel, the US Commissioner of Patents in 1899 said, "Everything that can be invented has been invented". Our government needs to work together in partnership with all sectors and I also believe that we have a great potential for doing much better than what we are doing.

While answering questions, Dr. Natarajan observed:

The reason for us to have ambition is because of the success of Indians in the Silicon Valley. That was the first thing. Secondly, companies which have been set up in India have been able to provide jobs not only for our own young people but have also taken up offshore jobs. This is basically the prosperity and characteristics of a superpower. Many studies have been done on why Indians have been so successful. Emily Saxinion has written a book on the success of Indians and Chinese responsible for the success in the Silicon Valley. We seem to be doing something right in our school education. This gives them the ability to develop these programming skills. But then the cautionary point I mentioned earlier, is that the population at the lower end of the spectrum of activities is excessive. We need to aim higher and higher including hardware. Dr F.C. Kohli, deputy chairman of TCS keeps saying that we produce only about 100 VLSI designers every year. We need a minimum of a 1000.

There is no doubt that organisations should be learning organisations otherwise they will not succeed. They knew it earlier but actually building quality and excellence in your organisation started only after 1991 when we had to export to countries which demanded quality and excellence. We always had two qualities—export quality and quality for the native including cashew nuts to fruits to flowers. It is only now that we are also being able to experience the goods and services of international quality. There is absolutely no doubt that networking helps. The Kerala government and the Indian HRD initiative look at the IT as an enabler. Not only research on IT or teaching IT, but also IT as an application and a technology tool for doing things that we had been doing earlier and better and also to be able to do new things. So, both of them are important.

I would like to discuss the future of virtual universities. One is virtual university for existing institutions to give as a dual mode education. The other one is the creation of virtual university as a stand-alone. But if you want to cater education to a large number of people and are able to give them quality instruction, I believe there is no other way of doing this. Virtual university has their own ups and downs. There are two major initiatives in the US—Western Governor's University and something else. Enrolment has not picked up. People first enrolled themselves but unless they find value for their money, unless the rest of the system recognises the certification, the degrees from the education of the virtual universities, it will not be successful. People are looking for education as a means to employment. So, I would say that it is now an experiment whose results we have to await.

On the information knowledge revolution:

"Those who can exploit this information knowledge revolution will gain. Not all the population has the same potential to exploit this. So, what you need is not only literacy but education, computing skills and programming skills. There are two types of solutions for this. One is the organisational solution, i.e. to make available facilities wherever education is sought. Second is the technological solution. Create devices that do not require literacy to be one of the necessary requisites. I think the correlation between education and prosperity is not that strong. Be fair to the corporate sector. They are also looking at themselves as not only producing wealth but also in making efforts to distribute this wealth. Many IT companies are setting up schools in rural areas and donating computers to them and sending people to teach. Secondly, I am not saying that as an engineer I have all the skills. Both my strengths and weaknesses are my analytical skills. We need specialists as much as we need generalists and who succeeds depends upon what the organisation wants. Third, I think you know there are many jeans-clad young millionaires. They are the bosses. Let us see how well they do. In terms of change of mindset, management is the same whether you are dealing with the IT sector or the brick and mortar sector.

The content of knowledge in industrial activities is increasing worldwide. Indians are doing much better in the US than the local people. The entrepreneurs have special qualities and we have to understand how they have created wealth and how to create a Silicon Valley in our own country. Different states are trying to do that. In a recent *Business Today* survey where they looked at the competitiveness of the different states of the country, they have pointed out that many states now have infrastructure and people comparable to the best in the world. So, I think we have a chance.

I would consider technology and engineering to be more or less synonymous. Science has suffered at the hands of technology. This is because technology and engineering provide better opportunities for employment. Unlike earlier days when education was for knowledge seeking and to become a good citizen, people

are now more practical and pragmatic because they have to earn their living. That is why the professional courses exist and young people want this. As a country if we do not have a science base, we cannot build on technology solutions. I am glad that the Department of Science and Technology is now trying to provide incentives for attracting young people into science. They are now competing with technology by providing suitable opportunities for young people. Our own scientists who have succeeded in their careers, they have to come out and disclose the success stories and indicate to them that science can also lead them to success.

Except for a few countries in most of the other countries R & D is supported largely by the government, e.g. the military industrial complex in the US. Indirectly the government was supporting the companies who then supported the universities. Therefore, the government has to play a very important role in R&D. The prime motivation of companies and industries is profit. Therefore, they will invest in R&D only to the extent that it will provide them value.

In a country with the kind of population that we have, how do you give a livelihood to all its people? Can we live on art and craft and so on? Don't we need basic necessities and how do we create these necessities? Can we have any other alternative? A completely new paradigm. We cannot have a part of this and a part of that and a piece-meal approach.

On the science policy resolution and technology policy statement:

At the moment on the anvil is an integrated science and technology policy which is going to be approved and announced very soon. This also links up with science and technology. There is a synergy between them and they are dependent on each other. Second, if the alumni are doing very well they can support you and on Indian salaries we cannot expect too much from alumni for institutions. With the dollar salary it is possible only if they earn in millions. It is good that some of them have come forward to help the institution. On a large scale, I do not think it will happen.

On Indians as inventors rather than followers of knowledge management, I believe that there are several types of barriers. One is our own tradition where rote learning was given considerable importance. Innovation calls for space to think laterally. Even in Japan students have to compete in order to succeed in examinations. After school, there is tremendous scope enabling lateral thinking. We have to have specific strategies for doing this and innovation can be taught and can be promoted. Secondly, the educational sector is also to be blamed. We have the affiliated systems where the colleges are not really free to innovate, introduce courses in keeping with the latest demands and so on. Our system also needs to be looked at. As a traditional society we have not been innovating too much, we have been following one or two leaders, whereas innovation calls for a decentralised approach and thinking at all levels which we lack.

On the brain drain:

India is not the only country and even the developed countries have this problem of brain drain. Canada and Britain have this problem and people there migrate to the United States. Brain drain can be looked at in two ways — one as a loss and the other as a gain as Rajiv Gandhi was the first to point out. If you look at our people who have been particularly in the US, the positive impression that has been created about India is due to the large success of the Indian professionals and the Indian entrepreneurs and therefore let us not look at them as people who are running away from this country. Fortunately also, because of this globalisation, two things are happening. Indian companies are doing work for foreign companies within India and also they are setting up companies outside. All these opportunities are becoming available as a result of the migration and travelling on both sides. But, attitudinally I do not believe, the people who have settled abroad will be happy to return. Even if they are happy, their spouses will not be happy. It is the question of the materialistic life that they have enjoyed there which we are not able to provide here. We find it when faculty members come here and they expect to have the infrastructure made available to them before they start work because they are used to all those facilities. Nobody will try to build one and try to procure one.

Shri Jagmohan. "Distinguished friends, we had a very stimulating discussion and we have covered a large part of the issue. I have hardly anything to add but I will dwell into two points which are somewhat off the track. One is knowledge and the other is information. Information you get and knowledge can be converted into information but the important part of it in my view is the wisdom part of it, whether you can convert that knowledge into wisdom and whether you can convert that into value-based wisdom or non-value-based wisdom. So, this is the issue. If information technology or information or knowledge could have solved all our problems, then I think the world would have been a wonderful place today to live in. We have had a tremendous problem during the last 50 years both in technological and scientific advancements. Yet, this is a country where more people are hungry today, more people are without clean water supply, more people are living in slums, more are living in the open than they were 50 years ago. In the overall system that we are generating, whatever name we like to

give it, the quality of life has not improved. It may have improved but for 15-20 per cent instead it has deteriorated in my view. I do not know if IT is going to add to the human happiness as a whole or going to give some value to 10-15 per cent of the people. Redistribution is not taking place in my view and it is only occurring in a marginal way if at all it is taking place. Now, if you create wealth the idea is to what direction you turned that wealth. If you spend one lakh rupees on a table after earning from IT on New Year's eve, then I think I will create more problems for my country than it otherwise existed. This aspect I think, has to be taken care of. Technology of mind is equally important. We are not catering to that aspect at all. Even when we talk about the person abroad who succeeds and we do not succeed here, there is something wrong with our environment. If we set that environment right we can produce here people who are more creative, constructive and willing to contribute socially as a whole. I have taken over charge as Minister of Culture very recently. I was shocked to see that the information we are talking about for the last 10 years and the world heritage sites' information called for in UNESCO, we sent only 13 heritage sites some two-three years before and they all got rejected saying that the information was incomplete. There is something that is lacking in us and we have to attend to this if we have to secure benefits from this revolution which we are witnessing.

The other point which has always worried me is at the global level where all things are merging. But if you observe history for the last 50 years you will find that the haves and the have nots of the developing countries and the developed countries are widening increasingly, and whatever is the position at the given point of time for the last five or ten years. But in the overall set up when you see the developed countries are 15-20 per cent of the population in the world as a whole has got such a tremendous advantage vis-a-vis you that we cannot compete. Only 5 per cent of our population will benefit from that but what about the remaining 95 per cent? Unless the social mind undergoes a revolution along with these virtual and non-virtual universities, I do not think we will get real benefits. You read books in the library and collect information but you should also require a discriminatory mind to find what is good and bad information. I was taken to the Ganga Ram Hospital to inaugurate some super technologist machines. In my presence they got 3-4 items of information throughout the world about a particular disease in the abdomen and how to cure it. But ultimately it is the doctor who has to discriminate which to apply. Ultimately it is your mature judgement that is going to clinch the issue".

(Cont. from page 23)

supported for establishing electronic libraries in rural India. He felt that a proper environment needed to be created for this purpose. Prof. Satyanarayana maintained that rural areas were important and to begin with some villages could be selected for experimental purposes. Dr. S. S. Murthy said that such initiatives should be self-sufficient in the long run. Some NGOs and Groups could be associated with such an activity at the state levels.

Dr. K. Venkatasubramanian concluded the Seminar by suggesting that for such an activity local support was essential. He compared the growth of India with China and noted that China was growing very fast. We needed to find the reasons for such ropid development. He ended by saying that electronic libraries were a must and could be established in states, to begin with, as Pilot Projects.

Dr. H. K. Kaul thanked all the experts and participants. He said that DELNET did not get any financial support for this seminar from any Government Agency but organised it as DELNET was deeply interested in making its information resources available to rural people in the country. This was considered to be the appropriate issue to mark the National Technology Day.

Form IV

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I, H. K. Kaul, hereby declare that the particulars given above are true to the best of my knowledge and belief.

July, 2002

H.K. Kaul
Publisher

Electronic Libraries in Rural India

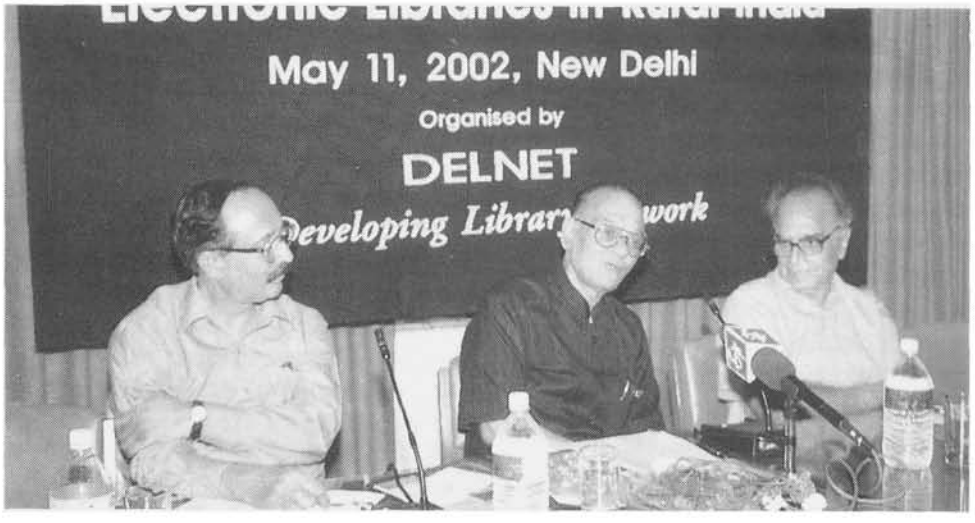
The Seminar on Electronic Libraries in Rural India was organised by DELNET - Developing Library Network on May 11, 2002 to celebrate the National Technology Day. The Seminar was inaugurated by Shri Jagmohan, Union Minister for Tourism and Culture. In his inaugural address, Shri Jagmohan stressed the importance of education and of spreading know-how of the latest technology among the rural masses. He said that knowledge should reach everyone so that they can benefit from it. In doing so, he added that the use of information technology was a must. He appreciated the importance of establishing electronic libraries and the creation of appropriate content to suit every person living in different parts of India. He observed that the Department of Culture, Ministry of Tourism and Culture would provide the necessary assistance for such an activity. He felt that pilot projects needed to be undertaken in the first instance.

The Seminar was chaired by Dr. K. Venkatasubramanian, Member, Planning Commission. Dr. Venkatasubramanian highlighted the importance of libraries and librarians. He affirmed that the Library and Information Science professionals were conducting important jobs and they needed to be given appropriate training, status and salaries to suit the specialised work they were undertaking. He fully supported the establishing of electronic libraries in rural India and noted that he would recommend that financial support be given to such projects. He was also of the opinion that pilot projects needed to be undertaken to pinpoint the technologies that needed to be used in this sector.

Dr. Venkatasubramanian said, " A village node of this information network can serve as a virtual institution performing the functions of an effective community centre, and perhaps as a bank, a medical centre, a matrimonial office, a public telephone or an educational resource centre." He averred that a number of projects have been started by NGOs to achieve these objectives but there was a need to undertake the projects at the national level with a national agenda. He felt that school libraries could function as public libraries where an information facilitation centre could be established. Dr. Venkatasubramanian referred to some prominent experiments being carried out in this regard such as Gyandoot Dotcom project in Madhya Pradesh.

Dr. Venkatasubramanian alluded to the High Level Task Force of Yojana Bhavan with himself as the Convener and said that it was working on how to shape India as a Knowledge Super Power. He added that efforts were being made to establish optical fibre based links, technologies for increasing bandwidth in the country, use of Cable TV for Internet access, conversion of existing post offices, public telephones and STD booths as knowledge centres, use of voice over Internet Protocol (VOIP) and the convergence of appropriate technologies for this purpose.

The keynote address was given by Dr. H. K. Kaul, Director, DELNET.



Mr. Jagmohan, Dr. K. Venkatasubramanian and Dr. H. K. Kaul at the Seminar.

Dr. Kaul highlighted the condition of libraries in India. He observed that according to international standards there was need to have one library for every three thousand persons. He said that so far about 60,000 public libraries were established, out of which 28,000 public libraries were established since 1954. According to international standards, India would need 500 years to build 2,68,000 public libraries to provide public library services to everyone, at the current rate of population. Dr. Kaul suggested the ways and means of how electronic libraries could help all sections of the rural population.

Dr. Kaul noted that in addition to the creation of content on the above subjects, it would be beneficial to promote at least one library for undertaking the work of database creation of bibliographic records. This input will be of great use to the local

users in the villages in the State. All full text and bibliographic data would be available in local languages.

He maintained that State Coordination Committees and Content Advisory Committees at State levels and at the Centre would have to be constituted to advise the Project Managers.

Mr. M. Moni, Deputy Director-General, National Informatics Centre gave a presentation on the role of National Informatics Centre in establishing digital information services for sustainable development in rural India. He referred to the revolutions that had occurred in industries, agriculture, information and communication technology and bio-technology. He highlighted the impact of ICT on economic growth and sustainable development. He felt that the developments in information technology were bringing about a second industrial revolution. He described the National Agenda, especially vis-a-vis ICT and the announcements of IT policies. He described how Internet could help people in the rural areas. He noted that for India a national inventory of all digital library initiatives was of a high priority. He listed the areas in which IT applications for sustainable agricultural and rural development would be beneficial. He also gave a resume of the NICNET Based Agricultural Informatics & Communication (AGRISNET), which is a Central Sector Scheme of the Department of Agriculture & Cooperatives in the States during the Tenth Plan.

He concluded by highlighting the role of digital libraries. He affirmed that the information systems should be treated as investments and these could play a major role in the villages as the nation's prosperity travelled through villages. He highlighted the contributions made by NIC and DELNET in the networking of libraries.

Dr. P. Vyasamoorthy, Advisor, Virtual Information Centre, ICICI Technology Park, Hyderabad referred to the inadequacy of information infrastructure in the rural areas and maintained that there was a great need to bridge the poverty gap and decrease the digital divide between the people. He referred to several experiments and developments related to information kiosks in Maharashtra, Tamil Nadu, Andhra Pradesh, Madhya Pradesh, etc. The following were the important projects he referred to:

1. Gyandoot - Covering twenty villages in five blocks in the tribal area of Dhar District, Madhya Pradesh. The project reveals that electronic mail is the peoples' favourite, registration of the names of villagers, etc are covered. Won several awards.

2. M.S. Swaminathan Research Foundtion, Pondicherry has covered four villages by a Wireless System and Information Kiosks. Provides all information needed by villagers.

3. EID Parry & Company, Nellikuppam Village in Duddalore District in Tamil Nadu allows voice and data to be simultaneously carried over a single pair of lines at cheaper rates. Technology developed by IIT Madras. Nearly 110 registered users are benefiting from this experiment.

4. NIRD, Hyderabad has established two Public Information Kiosks, one each in Ranga Reddy District and Guntur District of Andhra Pradesh. All services are nominally priced. Information given includes examination results, directories, agricultural prices, government forms, etc.

5. MANAGE, Hyderabad. National Institute of Agricultural Extension Management in Hyderabad has set up Internet Kiosks in 24 districts in 7 States — AP, Bihar, HP, Jharkhand, Maharashtra, Orissa and Punjab. The efforts are being appreciated, though the services are priced. E-mail is being used at all places. Kiosks were handed over to women entrepreneurs who wanted to sell information.

6. TARAhaat.com, a portal established by Development Alternatives for villages in Bundelkhand, UP. The kiosks provide E-mail, mandi rates, household tips, virtual tours, computer skills, learning opportunities, etc.

7. Warna Wired Village Project covers 70 villages in Kohlapur and Sanghi Districts in Maharashtra. Provides agricultural and medical information.

8. Dairy Cooperative: Automated Milk Collection System established by National Dairy Development Board has developed a dairy portal which helps farmers to get information on cattle diseases, ways to get more milk yield, etc.

9. DRISHTI provides access to government programmes and benefits, market-related information, etc. Has established 90 kiosks in Haryana, Punjab, UP, Orissa and Rajasthan. Provides information on Gram Mandi, Land Records, On-line Registration of applications.

Dr. Vyasamoorothy was hopeful that establishment of information kiosks would be of great help in the transformation of lifestyles of rural life in India.

Dr. R. K. Sharma, Librarian, United Nations Information Centre, New Delhi discussed the importance of electronic libraries and highlighted the key problem areas that needed to be overcome in order to establish an effective digital library. He described the methods of converting traditional libraries to digital libraries and discussed issues such as universal access to knowledge, how to overcome language barriers, promotion of private participation, etc. Dr. Sharma described the role of libraries in the United Nations Information System including

UNESCO. He described the methods of bridging the digital divide and listed the issues that library professionals could take into account in order to promote an electronic library environment.

Dr. Sharma presented the international scenario of electronic libraries and made the following suggestions in order to promote electronic libraries in India:

1. A Legislative Forum, comprising the legislators and library leaders be constituted to create a clear vision plan for the electronic library system in India.
2. Internet service should be considered as a public utility service.
3. National development plans should give due recognition to "Information Sector".
4. Complete re-examination of traditional information policies and strategies so that the National and Public Library System can meet the technology challenge.
5. There should be a wider and effective programme to make the citizens not only traditionally literate but also information literate.
6. Appropriate care should be taken to develop systems and managerial skills.

Mr. Vivek Rae, Joint Secretary, Department of Culture who spoke on the subject observed that the condition of traditional libraries in India such as the National Library, National Medical Library, etc. needed to be improved before digital libraries were established. He, however, felt that in some States experiments could be carried out for establishing electronic libraries in the villages.

Dr. Pravakar Rath highlighted the role played by DELNET and observed that DELNET should be

(Cont. on page 20)

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NACLIN 2002

Fifth National Convention on Library and Information Networking

Theme: ***Bridging the Digital Divide***

to be held at

Cochin University of Science and Technology, Kochi, Kerala

October 21-24, 2002

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DELNET - Training Programmes

DELNET had organised a series of three day training programmes in collaboration with National Informatics Centre at New Delhi from January 28th-30th, February 25th-27th and March 11th-14th at NIC, New Delhi.The topics covered included MARC 21, Library Resources on INTERNET, Web searching strategies, Building and Designing a Website, DELNET online system, etc.In order to promote the better participation of the Library Professionals from different parts of the country, a number of Regional Training Programmes have been organised. A Training Programme of three days duration was held from July 8th-10th 2002 in collaboration with Rajiv Gandhi University of Health Sciences, Bangalore at RGUHS, Bangalore. Dr. R. Rama Raj Urs, University Librarian, RGUHS acted as a local coordinator. A number of LIS professionals attented the programme. These training programmes have been extended free of charge to the AICTE approved technical institutes in the country.

Training Programme Participants at RGUHS, Bangalore.

Library and Information Networking: NACLIN 2001

H. K. Kaul and E. Rama Reddy

Library and Information Networking (NACLIN 2001) includes 43 papers which were presented to the National Convention on Library and Information Networking at the University of Hyderabad, Hyderabad from November 6-9, 2001. These papers cover a wide range of issues such as Web content Management and Creation, Digital Information, Electronic Journals, Intellectual Property Rights, Copyright Act, Knowledge Networks, Electronic Libraries, Knowledge Management, CD-ROM databases, Library Networking and Resource Sharing, ILL Protocols, Z39.50 and Education of Library and Information Science Professionals. Papers in this volume also highlight the current scene in Library and Information Networking in India.

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Announces the organisation of forthcoming

DELNET Training Programmes for Library and Information Science Professionals on the following dates:

November 26-28, 2002 at Jadavpur University, Kolkata *December 2-4, 2002 at NIC, New Delhi*

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