Annexure
ROUTE TO HIGHER TECHNICAL EDUCATION IN INDIA

8th STD

10th STD

10+2

GC

EC/TU

BSC

TU

BE/BTECH

HIGHER STUDIES

ME/MTECH

PhD

SCHOOL

ITI/VTS

NTC

DIP

JOB

PROFESSIONAL SOCIETY

ASSO MEMBERSHIP

EC/TU

NTC

JOB

BSC

TU

BE/BTECH

HIGHER STUDIES

ME/MTECH

PhD

Annexure - A
Annexure: B

Higher and Technical Education during XI\textsuperscript{th} Five-Year Plan

XI\textsuperscript{th} Five-Year Plans for Higher and Technical Education:

The following press-release by the MHRD on April 1, 2008 highlights the major points in the XI\textsuperscript{th} five year Plan for Higher Education including Engineering Education.

1. The Eleventh Plan, as approved by the NDC, identifies “expansion, inclusion and rapid improvement in quality throughout the higher and technical education system by enhancing public spending, encouraging private initiatives and initiating the long overdue major institutional and policy reforms” as the core of the plan efforts. An outlay of about Rs. 85,000 Crores has accordingly been projected for higher/technical education during the plan period, which marks an over 9 times increase (at current prices) over the X Plan outlay for the sector. Priorities for Higher Education in the XI Plan are expansion of access (i.e. of institutional infrastructure), equity (i.e. to ensure effective participation of disadvantaged groups, and to correct regional imbalances), improvement of quality, and optimal use of ICT to promote achievement of these objectives. The XI Plan aims, inter alia, to increase Gross Enrolment Ratio from 11% in 2006 to 15% by 2011-12 through rapid expansion of higher education system while ensuring and inclusion, and restructure and reorient higher education system to meet the requirements of a knowledge economy in a globalized world.

2. These objectives would be achieved by implementing various major programs/scheme in XI Plan which is as under:

a. Establishment of 8 new IITs.

b. Establishment of 7 new IIMs.

c. Establishment of 3 new Indian Institutes of Science Education & Research of which one has already started functioning at Mohali and two more would come up soon in Bhopal and Thiruvananthapuram. This is over and above the 2 IISER at Pune & Kolkata which started in the last year of the X Plan.

d. Establishment of 16 central universities in States which have no Central university at present, (viz., Jammu & Kashmir, Punjab, Haryana, Himachal Pradesh, Uttarakhand, Rajasthan, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Orissa, Tamil Nadu, Kerala, Karnataka, Gujarat and Goa. Another 14 Central Universities which would aim to attain world class standards.

e. Establishment of 20 Indian Institutes of Information Technology- as far as possible in the PPP mode.

f. Establishment of 370 Colleges in districts where access and participation rates are lower than the national average. Most of these districts also have a concentration of SCs, STs, and minorities.

g. Establishment of about 600 new polytechnics in Government and PPP sectors and promotion of at least another 400 polytechnics in the Private sector. In particular, a polytechnic would be established in every district not having one at present. This would again benefit particularly those districts with a concentration of SC, ST, and minorities, all based on autonomy and marketability principle.

h. Establishment of an Indira national Tribal university with countryside jurisdiction to promote study and research into tribal history, economy, society, culture, etc. and into tribal issue, as well as to promote education of Scheduled Tribes.

i. Establishment of Women’s Hostels for universities, colleges and polytechnics on a large scale.

j. Establishment of 2 Schools of Planning and Architecture in Bhopal (Madhya Pradesh) and Trivandrum (Kerala).

k. Setting up of 370 degree colleges in low GER districts.

l. Identifying 50 Centres for training and Research in frontier areas.

m. Supporting uncovered state universities particularly in undeserved regions and for socially disadvantages groups and colleges for quality up gradation to a minimum level.
n. Technical Education Quality improvement Program (TEQIP) Phase II covering inter alia 200 State Engineering colleges,
o. Educational loan interest subsidy, scholarship and fellowship schemes.

3. The XI Plan would also accord priority to promoting research of high quality across the Higher Education system, modernizing curricula and evaluation system, enhancing coverage of the accreditation process, and introducing necessary reforms in apex institutions like the UGC and AICTE so as to make them more responsive to current and future challenge and needs.

4. India has been admitted as a provisional member of the Washington Accord during 2007. With permanent membership, Indian students graduating from programs which are accredited by the National Board of Accreditation of the AICTE will have easier access to education and employment opportunities in member countries of the Accord like USA, UK, Canada, Australia, Japan, Korea and Singapore.

5. Special attention continues to be paid to the educational needs of the NER; Each State of the region now has a central university (with Assam having two). Besides the existing IIT at Guwahati, an IIM will, as mentioned earlier, started functioning at Shillong. Also, besides the older NIT at Silchar, an NIT has been establishment in Tripura and establishment of a third NIT in the region (in Manipur) is under active consideration.

6. In the coming years, the thrust in on the use of ICT to strengthen the system of Open and Distance Learning. In order to deliver the benefits of ICT in the learning process, a new scheme namely (National Mission in Education Through ICT) would be launched, with the objectives of providing connectivity to the learners to the ‘Knowledge World’ in cyberspace and to make them ‘Citizens’ in order to enhance their self learning skills and develop their capabilities for on-line problem solving. The Mission would also work for creation of knowledge modules with right contents to address to the personalized needs of learners. It also aims for certification of competencies of the learners, acquire through formal or non-formal means, as also to develop and maintain the database having profile of human resources. In order to deliver the benefits of ICT enabled learning, the Mission would also focus attention on achieving technological breakthrough by developing a very low power consuming access device, making available free bandwidth, for education purpose, to every India, and to build knowledge network between and within institutions, of higher learning in the country.

7. Subject to the decision of the Supreme Court of India, initiatives will be taken by the Department of Higher Education to provide for augmenting the number of seats in central universities, and technical education institutions under the Ministry of HRD to pave the way implementation of the policy on reservation based on the provisions of Central Educational Institutions (Reservation in Admission) Act, 2006. The implementation will be carried out in a phased manner over a period of 3 years.

Some other important recommendations/observations in the XIth Plan document concerning engineering education are listed below:

a. The intake in technical education institutions needs to grow at 15 % per annum to meet the skilled manpower needs of the growing economy.
b. For establishing the new Technical Institutions proposed (8 IITs, 7 IIMs, 10 NITs, 3 IISERs, 20 IIITs, and 2 SPAs) the scope for PPP would be explored and for their location and selection of sites clustering will be a key consideration and States would be incentivized for co-locating institutions in strategic locations.
c. 7 selected institutions will be upgraded subject to their signing MOUs on commitments for making reforms in governance structure, admission procedures, etc. and aligning with the character of national institutions.
d. A quick feasibility study will be undertaken to decide upon the optimum intake capacity of the central institutions and support them for additional infrastructure.
e. Efforts will be made to establish 50 centres for training and research in frontier areas like Biotechnology, Bio-informatics, Nano-materials and Nano-technologies, Mechatronics,
MEMS, High Performance Computing, Engineering, etc. However, these will be funded on the basis of specific proposals and on a competitive basis.

f. The state engineering colleges which suffer from severe deficiencies in academic infrastructure, equipment, faculty, library facilities, and other physical facilities will be supported since top ranking students in entrance examination of the States opt for these institutions in view of relatively low fee structure and government recognition.

g. TEQIP Phase II is expected to be substantially enlarged to cover additional 200 State engineering institutions, diversified, made more flexible and allow for greater involvement of States in design and implementation.

h. An integrated S&T Plan would be evolved involving UGC, DST, CSIR, ICAR, Departments of Atomic Energy and Space to provide the resources needed for substantially stepping up support to basic research, setting up a national level mechanism for evolving policies, and providing direction to basic research.

i. Evolving an empowered National Science and Technology Commission responsible for all matters relating to S&T (Administrative, Financial, and Scientific) including scientific audit and performance assessment of scientists and scientific institutions through peer review.

j. The present output of about 450 doctorates per annum in Engineering and Technology, should increase several folds with the expanded technical education capacity, offering substantial scope for postgraduate and doctoral level programs.

k. Government schemes and AICTE will proactively encourage establishment of higher (technical) institutions in deficient States.

l. The changing role of the Apex Regulating Bodies (UGC, AICTE, MCI, Bar Council, NCTE etc) will be reviewed in the light of what these organizations are expected to perform in the context of global changes, with a view to enabling them to reach out, regulate and maintain standards, and meet the challenge of diversification to enhance access and maintain the quality and standards of higher, professional, and technical education.

m. A knowledge city in Mohali, Punjab is being planned with a vision to promote innovation and start up companies having a cluster of institutions on a single campus: The Indian IISER, National Agri-food Biotechnology Institute, Nanotechnology Institute, Management School, technology and IP Management Centres, Business Centre, an Informatics Centre, Centralized Platform, Technology facility, a good Manufacturing Practices (GMP), a Technology Park for start-ups, and a host of other shared facilities Governance, as a cluster is so designed as to allow dynamic contact and collaboration within the cluster and with all existing local institutes and enterprises synergies and sharing.

n. A Faculty Augmentation and Development in Science and Technology initiative is to be shared with the following components: a substantial increase in the intake in JRF; enhancing research fellowship for PhD students if they are given additional responsibility to also take up teaching as lecturer and making eligible non-NET PhD scholars also foe fellowship; increasing the number of fellowship and the quantum of assistance for M Tech students; making the teaching system attract and retain the best talent with better pay/perks and funded research, and performance based rapid career progression; increasing industry-institution interface including provision for tenure jobs in industry for faculty; setting aside of project funds as incentives payments for the searchers/fellows; selecting top class institutions to undertake special programs for best faculty development; infusing knowledge capital in the Centres of Excellence through MOU; opening up institutions for international faculty, visiting programs, and faculty exchange; reviewing recruitment policy of faculty for providing more flexibility in appointments, short-term contracts, assignments, and possibility of outsourcing select faculty that is in short supply; initiating a major expansion of faculty development program.
Dear Sir/Madam,

I, Mr. Kishor Ch Satpathy working in NIT, Silchar, pursuing for the research in the field of “Technical Education” from Assam University, Silchar (Assam), under the guidance of Prof. N B Biswas, Deptt. of Education, Assam University, Silchar. The area of my research study is entitled “Technical Education in North East India with Special Reference to Information Services: An Exploratory Study”. To collect the data, the methodology and tools used are survey method and interview technique.

I need your help in completing the research project, as your institute is one of the Technical Institute in the NE Region. For this purpose I am enclosing a questionnaire. I request you to go through the questionnaire and return the same to me dully filled in at the earliest possible. You can clearly mention your view, which will be helpful to me in the study.

Please spare some time from your busy schedule of work and corporate in filling up the enclosed questionnaire. Your contribution will be immensely benefited to the scholars working in the field of technical education. I further assure you that the data given will remain confidential and will be strictly used for my research purpose only.

I look forward to receiving your reply within shortest possible time, so as to start the completion soon. You can send the response on E-mail also. You can send me your E-mail ID so that I can send you the E format of the questionnaire for the fast communication. Further, I request you to spare some of your valuable time so that I can come over there & personally interact with you.

With the best regards and thanks in advance for the cooperation extended to me.

Yours Sincerely,

Kishor Chandra Satpathy
Librarian
National Institute of Technology
(A Deemed University-Institute of National Importance under Ministry of HRD, GOI)
Silchar-788010, Assam, India
Telephone : +91-3842-240055 (Off) +91-9435175531 (M)
E-mail : kishor_satpathy@yahoo.com and ksatpathy@gmail.com
Questionnaire

“Technical Education in North East India with Special Reference to Information Services: An Exploratory Study”.

ABOUT THE INSTITUTE:

1. Name of the Organization/Institute/University/College: .................................................................
2. Year of Establishment: .........................................................................................................................
3. Name of the Director/Principal: (optional): ......................................................................................
4. Postal Address:

   Ph-
   Fax-
   Email-
   Web-

5. Name of the Funding Organization: ...................................................................................................
7. AICTE of UGC/Affiliation: (Please specify) ......................................................................................
8. What is the Governance Pattern: Govt (Central / State) or private: .................................................
9. NAAC Accreditation: ...........................................................................................................................
10. Area of the premises: (In Sq Meter) .................................................................................................
11. Annual Budget of the organization: .................................................................................................
12. Courses offered by the Institute. Please provide following details:

<table>
<thead>
<tr>
<th>Sl.</th>
<th>Name of the dept.</th>
<th>Year of course estd</th>
<th>Courses offered (BTech/MTech/MSc/PhD)</th>
<th>Student Intake</th>
<th>No of labs available</th>
<th>No of faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Architecture</td>
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<td>2</td>
<td>Chem. Engg</td>
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<td>3</td>
<td>Civil Engg</td>
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<tr>
<td>4</td>
<td>ECE</td>
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<td>5</td>
<td>EE</td>
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<td>7</td>
<td>Environmental Engg</td>
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<td>8</td>
<td>Electro &amp; Instru Engg</td>
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<td>9</td>
<td>IT</td>
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<td>10</td>
<td>ME</td>
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<td>11</td>
<td>Metallurgical Engg</td>
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<td>12</td>
<td>Mining Engg</td>
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<tr>
<td>13</td>
<td>PE</td>
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<td>14</td>
<td>Struc. Engg</td>
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<tr>
<td>15</td>
<td>Textile Engg</td>
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<tr>
<td>16</td>
<td>Other subjects</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

   Total No of depts available . . . . .

   Elect Engg

   Total No of Intake: 

   No of labs available . . . . .

   No of faculty

13. Total number of courses conducted: ..........................................................................................
14. Any special course conducted (please specify): ........................................................................
15. Total number of departments available: ...................................................................................

16. Duration of Course:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Duration full time</th>
<th>Duration part time</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG</td>
<td></td>
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<tr>
<td>M. Tech/ME/PG</td>
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<tr>
<td>MCA</td>
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<tr>
<td>PhD</td>
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<tr>
<td>Other courses</td>
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</tbody>
</table>

16.1: Do you have any specific Centres (Please give the name of Centre)

a)
b)c)

17. Total No. of faculty (All Regular, Temp, Contract, adhoc etc):

18. Total number of staff (Institute): Administration—Technical

19. Total Strength of students and research scholars:

a) UG: __________________________
   b) PG: __________________________
   c) PhD/ Research Scholars: ______

  Total Number: ____________________

20. Admission Procedure for the students in to the Institute:

a) JEE
b) AIEEE
   c) JAT
d) JET
e) Other

21. Financial Resources of the Institute (Please tick)

- Technical Board/Deptt. [ ]
- World Bank [ ]
- State Government [ ]
- Central Government [ ]
- Contingency Grant [ ]
- Under Self Financing Scheme [ ]
- Others [ ]


23. Do you have Internet Connectivity?
   If yes, please give details

24. What are the facilities available in the Campus (Please tick) & give numbers

a) Bank
b) Canteen
c) School
d) Auditorium
e) Health Centre
f) Guest House
g) Hostel
h) Play Ground

25. What is the examination pattern you follow? Annual/ Semester.
26. Do you have Collaboration arrangement / exchange programme / Networking with other institutions. Yes/No
   If yes, kindly provide the details

27. Do you have student/Faculty exchange programme with any other Institute? Kindly name the Institute.

28. Do you have international students enrolled for any programme. Pl. provide the details of the same.

29. What according to you are the strengths & weaknesses of your Institute?

30. Pl. provide the number of Research Project undertaken by the Institute in last 10 years.

31. Kindly point out few problems & Challenges faced by your Institute:

32. Pl. Attach a latest copy of Annual Report & Vision Documents

ABOUT THE LIBRARY & INFORMATION SERVICES:

1. Name of the Library:
2. Year of establishment of Library:
3. Total strength of Library Staff:
4. Is there a separate library building available in the Institute: ............ Or it is part of any other building: .................
5. Area of the premises of the Library: (In Sq Ft) ........................................
6. Library Resources:

<table>
<thead>
<tr>
<th>Sl.</th>
<th>Types of Material</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Books</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>E-books</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-database</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Current E-Journals (Indian/Foreign) subscribed</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Current E-Journals (subscribed)</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>E-Journal online through network</td>
<td></td>
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<tr>
<td>6.</td>
<td>Back/bound Volumes of journals</td>
<td></td>
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<tr>
<td>7.</td>
<td>Thesis/dissertations/project reports</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Workshops/seminar/symposia etc report</td>
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<tr>
<td>9.</td>
<td>Manuscripts/rare collection</td>
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<tr>
<td>10.</td>
<td>Gifted collection/exchange collection</td>
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<tr>
<td>11.</td>
<td>CDs/VCDs/DVDs/CD ROMs</td>
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<tr>
<td>12.</td>
<td>Any other (please specify)</td>
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<tr>
<td>7.</td>
<td>Library Budget: (in Lakhs): Books ..............</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Do you subscription to E-book, E-journals etc. in your library? Yes/No</td>
<td></td>
</tr>
</tbody>
</table>

iv
9. Is your library a member of Library Consortia for e-resources other than UGC-INFONET: Yes/No. Please Tick
   INDEST
   UGC INFONET
   CSIR Consortia
   DBT Consortia
   DELNET Consortia

10. What are all the e-resources (full-text and bibliographic databases) subscribed for you by INDEST consortium / UGC/DBT Consortia? (Please tick)

<table>
<thead>
<tr>
<th>Full-text databases</th>
<th>Bibliographic databases</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Science direct</td>
<td>• Engineering village2</td>
</tr>
<tr>
<td>• ACM digital library</td>
<td>• (compendex &amp; INSPEC)</td>
</tr>
<tr>
<td>• IEEE Online</td>
<td>• Web of science</td>
</tr>
<tr>
<td>• Springer link</td>
<td>• Chemical abstracts</td>
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<tr>
<td>• Proquest</td>
<td>• Any other</td>
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<tr>
<td>• ASME</td>
<td></td>
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<td>• ASCE</td>
<td></td>
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<tr>
<td>• Nature</td>
<td></td>
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<tr>
<td>• ASTM journals and standards</td>
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<td>• Standards (CD/Intranet)</td>
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<tr>
<td>• J-Gate</td>
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<td>• JCCC</td>
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<tr>
<td>• Any other</td>
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</tbody>
</table>

Does your library subscribe to any e-database on its own budget apart from those paid by consortium? (Please name)

11. About Library Automation: Is library automated? Yes/No

12. Name of the software used for the automating library functions:

13. Is your library in the process of Initiating Digital Library? Yes/No

14. Do you have Networking Facility in the Library & in the Institute? Yes/No

15. Do you have LAN /INTRANET facilities? Yes/No

16. Is your library as a part of the LAN/INTRANET? Yes/No

17. Do you have Internet facilities? Yes/No

18. If yes please tick the mode of connectivity
   a. Dial-up Yes/No            b. Leased line Yes/No
   c. VSAT Yes/No               c. Others like ISDN

19. Is your library a member of any library networks, and a part of any consortium in India? Yes/No, If yes pl. tick
   DELNET [ ]
   CALIBNET [ ]
   BONET [ ]
   MALIBNET [ ]
   INFLIBNET [ ]
   Any other..................
20. ILL facilities is available? Yes/No

21. Do you provide library services with help of computers?
   Yes/No
   If yes, please specify
   a) In answering reference queries (short range/long range)
   b) In preparing a subject bibliography
   c) CAS
   d) SDI
   e) OPAC
   f) Indexing & Abstracting Services
   g) User education
   h) Current / Retrospective literature search
   i) CD ROM based search
   j) On-line search through Internet
   k) Any other (please specify)

22. Please enumerate your views on technical education below.
# ANNEXURE-D

Snapshots of the Facilities available in the Technical Institutes of NER

## HOSTEL FACILITIES

<table>
<thead>
<tr>
<th>AEC, Gauhati</th>
<th>IIT, Guwahati</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU, Silchar</td>
<td>Dibrugarh University</td>
</tr>
</tbody>
</table>

## ADMIN BUILDING

<table>
<thead>
<tr>
<th>Tripura University</th>
<th>Dibrugarh University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tezpur University</td>
<td>R G University, Itanagar</td>
</tr>
<tr>
<td>Nagaland University</td>
<td>SMU, Sikkim</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

The information revolution, along with its attendant explosive growth of knowledge, and the related phenomenon of the globalization of the world economy, has brought about the Information Age. NER is no exception to this disparity between information-rich and information-poor. The need of the hour is, therefore, to join national academic information portals with that of other regional initiatives in a collaborative effort to use information and communication technologies (ICT), specially the power of the Internet, for knowledge sharing and dissemination of academic information. The NER comprises of eight states that are Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura and Sikkim.

NETECHLIBNET will facilitate knowledge-sharing and research partnership between professional networks, researchers, libraries and key knowledge-end-users, including policymakers, trainers at institutions of higher learning, civil society organisations and the private sector.

Judged by many indicators, NER's economic performance has improved in recent years, but it remains fragile, and poverty is becoming deeper and more widespread. The challenge of attaining and sustaining higher levels of growth to reduce poverty remains overwhelming. There are currently some national research and information network initiatives in different parts of India. But the lack of an effective networking mechanism to bridge these activities, inadequacy of institutional arrangements to link various research-institutions and organisations and centres of higher learning and public policy decision-making entities, have led to a number of shortcomings including:

- Absence of a portal, or gateway to the best researched information generated by various knowledge sources in the region and South Asia-focused research centres abroad;
- Duplication;
- Isolation of research from the training of future policy leaders at institutions of higher learning;
- Limited local content in training programmes at all levels;
- Limited policy impact of research and programmes on public policy;
- Limited enrichment of civil society programmes from contemporary research;
- Limited local research in the search for solutions to private sector-industrial and social problems.

Increased knowledge and more local content are needed to solve public problems, enrich the teaching curricula, stimulate the private sector, invigorate civil society governance and strengthen the integration of NER societies and economies into the intensely competitive global environment. The linking of knowledge and information sources to knowledge-end-users is critical to achieving this objective.

The NETECHLIBNET will federate existing networks with the linking of existing networks with the 'renewing indigenous, policy-oriented research and analysis for more effective use by NER policymakers. NETECHLIBNET provides a continuous link between NER research networks, think-tanks and training institutions (mainly technical institutes) and supports centres of NER excellence and NER think-tanks which are critical to the pooling of resources for effective knowledge production and use. NETECHLIBNET will be particularly important to promote consensus among NER's academic and development stakeholders around key challenges, and to lay the foundation on which research initiatives should focus. By creating feedback loops between knowledge-production and knowledge-use, NETECHLIBNET will strengthen applied research and advisory services to NER researchers, policymakers, civil society organisations and private sector entities. NETECHLIBNET's comprehensive database of expertise across disciplines will be pivotal to solving the demand for knowledge-types in the continent.
Through technical support for IT-enhanced networking as well as participation by the knowledge networks in regular programs of research, advisory services, policy conferences, seminars and workshops, NETECHLIBNET will facilitate continuous and effective interaction between research networks and policy-makers. It will thus generate demand-driven research relevant to practical policy issues. NETECHLIBNET would initially focus on setting up various databases (using data provided by the existing networks); setting up a web-based directory of NER originated web sites to promote networking activities; as well as creating and moderating discussion lists.

The immediate beneficiaries from the NETECHLIBNET will be various organizations and academic institutions in who are planning and implementing different development initiatives. They will be more cooperative in knowledge and resource sharing in their approaches and will develop a capacity to tackle impediments to their development programs following the approaches of others who succeeded. NETECHLIBNET envisages taking advantage of the most important aspects of the Internet, and building the ability to capture and disseminate information services consistently across the region and provide a unique platform for broad collaborations among various stakeholders in education and research sector as well as with other existing online networks.

NETECHLIBNET will bring together academics and researchers to collaborate online and engage in knowledge sharing within the region. The Mission of the NETECHLIBNET is to create a regional academic information portal for the NER through partnership; networking, sharing and exchanging of knowledge and other resources. Therefore, the overall objective of this project will be the elaboration of an online academic network strategy and plan of action for the region, as well the implementation of an effective researchers’ network. The realization of the above will additionally address several other critical goals.

NETECHLIBNET also aims to provide a forum for individual and community-based and local, regional or national research organizations to share and exchange ideas, experiences and resources on issues of common interest. It will catalyse the development of latest research methods by providing web applications and ICT based services, notably for e-learning, and online library services.

A major component of NETECHLIBNET will be a collaborative network of libraries in the region that contribute vision, policy, principles and advocacy realized through information and communication technology infrastructure resources used to deliver library-mediated development information resources. The set of computer applications with internet services provide a point of entry for librarians and the public to resources of NER libraries and other networked information.

INTRODUCTION

“Knowledge should be available to all as
Universally as the air we breathe,
The water that quenches thirst and the Sun’s
Energy that sustains the cycle of life”

Sri Chilakamarthi Laxminarasinharm’s
Granthalaya Vedam (miniature manifesto)

Library & Information Professionals are fully aware of the phenomenon of ever increasing trend in the cost of books and periodicals. On the other hand, library budgets have been going through a stage of stringency for the last few years. As a result, libraries are struggling for continuation of current periodicals and purchase of new books. The academic institutions can cope with this problem only by networking and resource sharing.

No library resource centre of the world is self-sufficient to meet the various information needs of the users. With the rapid growth of publications, knowledge explosion, shrinking resources, escalation of prices and ever increasing expectation of users compelled the library and information centres to go for networking for resource sharing. The most important goal networking is to maximize the availability of resources & services at minimum expenses.
The libraries and information centres, with their diminishing or 'a best static financial allocation, have to consider new ways to consolidate global resources amongst them in order to maximize their limited financial resources. For this purpose, resource sharing, networking & forming consortia are the best opted methods. Resource sharing among libraries is now an accepted compulsion. It has existed in different forms, in different countries for many years. Some kind of RS was and still is informal, while other types of RS encompass complex process to share collection or services. Traditionally, library co-operation meant sharing collections. But, it also included sharing of services, or of processes. Mostly, co-operative efforts had an economic motive, being effective utilization of resources. Recent development in library funding, and the growth in importance of electronic materials has led to a change in thinking about how libraries can cooperative, and the growth of formal co-operative entities. i.e. library consortia. The library consortia are also often called library network/library resource sharing. These formal organizations operate for the mutual benefit of all participating libraries.

The concept of network aims at evolving a mechanism of partnership in which each member has something useful to contribute to the others in the network. Basically, it is a cooperative venture of two or more libraries with a view to optimise the utilisation of available resources. However the old cooperative arrangements and the new networking differ in several ways, while the traditional one is informal, unstructured the new one is a formalised system with integrated organizational structure whose potential for rendering service is greater than that of its parts.

WHAT IS A NETWORK

Network can be defined as a group of individuals or organizations that are interconnected. The advent of computers and new developments in telecommunication technology made networking a global phenomenon library and information institutions are forming networks to achieve better resource sharing and to provide better services to the users. A library network is broadly described as, a group of libraries coming together with some agreement of understanding to help each other with a view to satisfying information needs of their clientele. Networks today are very easy to use and configure. Networks are no longer an expensive and educational toy for researchers, but are being used by real people. Most sites with networks will not be able to hire a full time person with networking experience to start and keep the network running.

NEED OF LIBRARY NETWORKS

There are generic social and organisational forces that drive the development of Networks: in particular the pursuit of effective centralised control over far-flung operations scattered in heterogeneous settings. In an academic community, networks may foster the building up of value consensus, setting up minimum standards of performance and contribute to homogenizing the knowledge base of all the members of the. Typically the prime uses of computer information networks in the academic field like electronic mail, databases strengthen the sharing of thought, words and their fine-tuning through intense peer-to-peer communication. The networks help elite groups to develop and maintain shared ideologies without having to enter into cooperative relationships.

DEVELOPMENT LIBRARY NETWORK IN INDIA

Forced by circumstances and by design, there has been a spurt in activities on library network development in the recent past. Some of the factors responsible for promotion and support of such efforts in India have been:

- Increased awareness of the need for resource sharing.
- Resource crunch.
- Increased computer installations or access facilities in library environment and enhancement of computer literacy among library professionals.
- Improvement in computer communication facilities within and across geographical regions, and availability of general data networks like NICNET (Planning Commission), INDONET (CMC Ltd), ERNET (Department of Electronics) and more recently the I-NET (Department of
Telecommunications), VSNL for Internet & Private Service providers like Reliance, TATA Telecom etc.

- Creation of facilities for e-mail by networks above mentioned VSNL, SIRNET (network of the Council of Scientific & Industrial Research set up by INSDOC), and the ICNET, SPRINTMAIL (SPRINTRPG) etc. in the private sector.

**The library network development in India has taken three board directions namely:**

In India, library networking efforts using computer communication technologies started during the late 1980's with the initiation of metropolitan / city networks like:

1. Development of Metropolitan Area Networks (MAN) in cities like Bombay (BONET), Calcutta (CALBINET), Delhi (DELNET), Madras (MALIBNET), Pune (PUNENET), Ahmedabad (ADINET), Mysore (MYLIBNET), Hyderabad (HYLIBNET) and Bangalore (BALNET).
2. Development of countrywide networks like the INFLIBNET (for university libraries).
3. Development of sectoral facilities like the BTISNET (Biotechnology Information System Network), and the proposed ones for oil and natural gas, management science and environment.
4. Development of National Consortia like INDEST, UGC Infonet, CSIR Consortia etc.

**NETWORK RESOURCE SHARING IN INDIAN LIBRARIES**

Indian librarianship has seen many initiatives with regard to library co-operation, resource sharing, library networks, consortia and related area. The co-operative activities were initiated much before 1980s, by the National Documentation and Information Centers such as INSDOC (Now, NISCAIR), DESIDOC, NASSDOC, SENDOC and others, the actual momentum towards sharing resources has gained when series of city based library networks were initiated and supported by NISSAT. From 1985, the Library profession has seen several multi type library networks setup/library and information systems with a sole objective to create the infrastructure and promote the culture of resource sharing among different types of libraries. Following are some active library and information networks in India.

**City Based Active Library and Information Networks in India**

<table>
<thead>
<tr>
<th>Network</th>
<th>Description</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUNENET</td>
<td>Poona Library Network</td>
<td>1992</td>
</tr>
<tr>
<td>BONET</td>
<td>Bombay Library Network</td>
<td>1993</td>
</tr>
<tr>
<td>ADINET</td>
<td>Ahmedabad Library Network</td>
<td>1994</td>
</tr>
<tr>
<td>MALINET</td>
<td>Madras Library Network, INSDOC,</td>
<td>1993</td>
</tr>
<tr>
<td>BALNET</td>
<td>Bangalore Library Network</td>
<td>1995</td>
</tr>
<tr>
<td>MYLIBNET</td>
<td>Mysore Library Network</td>
<td>1995</td>
</tr>
<tr>
<td>DELNET</td>
<td>Delhi/Developing Library Network</td>
<td>1988</td>
</tr>
<tr>
<td>CALBNET</td>
<td>Calcutta Library Network</td>
<td>1996</td>
</tr>
<tr>
<td>MANLIBNET</td>
<td>Management Libraries Network</td>
<td>2000</td>
</tr>
<tr>
<td>RECNET/NITNET</td>
<td>REC/NIT Library Network,</td>
<td></td>
</tr>
</tbody>
</table>

These are a few city based active library networks. All these library networks have more or less similar agenda i.e., creating union catalogue of library holdings, avoiding duplications in collections, promoting inter library loan and document delivery services and professional manpower development etc. These library networks have contributed to a great extent to promote the culture of sharing. Some have grown from city based networks to a national level networks offering various services. Some continue to work actively within the geographical boundaries that they have chosen and some have disappeared from funding agencies, lack of commitment and involvement from the member libraries.

**NORTH EAST INDIA AT A GLANCE**

The North East is a true frontier region. It has over 2000 km of border with Bhutan, China, Myanmar and Bangladesh and is connected to the rest of India by a narrow 20 km wide corridor of land. One of the most ethnically and linguistically diverse regions in Asia; each state has its distinct cultures and traditions.
From times immemorial, India's North East has been the meeting point of many communities, faiths and cultures. A place renowned for its magical beauty and bewildering diversity, North East India is the home for more than 166 separate tribes speaking a wide range of languages. Some groups have migrated over the centuries from places as far as South East Asia; they retain their cultural traditions and values but are beginning to adapt to contemporary lifestyles. Its jungles are dense, its rivers powerful and rain, and thunderstorms sweep across the hills, valleys and plains during the annual monsoons. The lushness of its landscape, the range of communities and geographical and ecological diversity makes the North East quite different from other parts of the subcontinent. In winters, mist carpets the valleys but swirls around the traveler in billows during summer rains, thus creating an enchanting and romantic atmosphere. The North-East of India is a land of breath-taking natural beauty. North East India comprises of seven states commonly known as the “Seven Sisters”. They are Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura and Sikkim.

North-Eastern India, has a very strategic geographical location as far the population living in the Indian subcontinent is concerned. It is surrounded by the nations of Bangladesh, Myanmar and Bhutan and easily accessible to the population in Nepal and China. In fact, it can be a regional hub for the educational network for the people living in all these five countries. The hills with dense forest cover make traditional forms of communication very difficult. A vital need has been felt to extend the reach of modern day technology to the area in order to enable rapid socio-economic development and bring the area closer to the national mainstream. A vital need has been felt to extend the reach of modern day technology to the area in order to enable rapid socio-economic development and bring the area closer to the national mainstream,

**IMPORTANCE OF NETWORKING IN NORTH-EASTERN EDUCATIONAL INSTITUTES**

The socio economic-cultural context of North East attracts special attention of our national planners and various developmental activities are geared to improve the basic facilities in this region. Among the most crucial factors which are essential to the regional development vis-a-vis social unrest prevailing in the NER is Education and as such educational planning & programmes attains special significance in our national priority list for this region. Already a host of educational institutions supported by Central & State Government exists in these states. However, it is strongly felt by the planners in NER that any programme undertaken in this region must have a inter state correlation and it must have a NER perspectives. In other words-(educational) development activities must take North East as a whole without confining them to any one state. Educational institutions like IIT Guwahati; IIM Shillong; NIT Silchar & Agartala; NERIST Itanagar; NERIWALM Sonitpur; Central Universities like NEHU Sililong; AU Silchar; TU Tezpur; MZU. Aizwal; NU Kohima & Medical Institutions like RMRC Dibrugarh & NEIGRIHMS Shillong are such institutions which are not only catering the educational needs of the concerned states but also to the entire North India & rest of India. With a host of large number of educational Institutions, there has been a growing need to have NETWORK for these educational Institutions. Further more there is a growing demand by the LIS professionals for the networking of said institutions & other state level institution libraries for better resource sharing. On this background, the idea for North Eastern Technical Library & Information Network (NETECHLBINET) has come up. On the line of other active Library networks Like DELNET, INFLIBNET etc. it is proposed that North East India should have a network North Eastern Technical Library & Information Network (NETECHLBINET) for NE Region.

**Knowledge Resources Available in NER through Different Networks and Consortia**

Libraries in NER have access to vast resources, which can be shared through NETECHLBINET.

<table>
<thead>
<tr>
<th>Libraries</th>
<th>Knowledge Base</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>INFLIBNET, DELNET, INDEST, DelCon etc.</td>
<td>Social Science, Humanities, Science</td>
</tr>
<tr>
<td>IIT, NIT &amp; Engineering Colleges</td>
<td>INDEST, DELNET</td>
<td>Engineering, Applied Science, Science, Engineering and Management Science</td>
</tr>
</tbody>
</table>
The resources of these libraries are ranging from 10000 volumes to 200000 volumes, with specialization of various subjects. The main objective of the NETECHLIBNET is for better bibliographical control of these resources, which will eventually help in the increased usage of the resources.

VISION OF NORTH EASTERN TECHNICAL LIBRARY & INFORMATION NETWORK (NETECHLIBNET)

The vision of NETECHLIBNET can't be different from the shared vision of its participating libraries. The vision of NETECHLIBNET is

- To establish a cost-effective network linking of all academic and research libraries in NER.
- To establish a network of internet-based information and knowledge resources and services;
- To establish a web of virtual libraries and knowledge exchanges relevant to NER development issues.
- Provision of wider access to universe of knowledge, information and resources and promote understanding of the cultural diversity of NER.

OBJECTIVES

In the light of the factors mentioned above, the objectives of the NETECHLIBNET will be:

1. To build an online research, information and library support systems to help researchers, academics, stakeholders in all the major sectors of the economy and society;
2. Create an online 'network of networks' among NER information resources that are available and which reflect the needs of academics, researchers and average information users in government, business, culture, education, tourism, energy, health, transport and natural resource management;
3. To enhance the utilization of the resources in a better way, by concentrating on specific areas of interest.
4. To generate new services and to improve the efficiency of existing ones.
5. To develop forums for interaction among information professionals and users to address to the issues of the user community.
6. To promote and support adoption of standards in library operations. To identify and establish ways for improving the information flow among the members and member institutions.
7. To form a NE Library Consortia for greater benefits in accessing the information resources across the world.
8. To promote better understanding and exchange of information among participating institutions & libraries.
9. To organize seminars and group discussions for exchange of views and information on the latest developments in the field.
10. To prepare a union catalogue of collections available with different institutions.
11. To offer computerized services to the users and coordinate efforts for suitable collection development and for reducing unnecessary duplication wherever possible.
12. To provide all their library resources to the members in sharing and networking culture and deliver to them after due identification, the library reading material, at individual costs.
13. To prepare a common platform & develop electronic discussion forum for the LIS professionals.
14. Providing access to e-books, policy documents, bibliographic databases, general information and expert and institutional profiles;
15. Building capacity at institutional, national and regional levels on development of integrated virtual library services;
16. Promoting regional cooperation on standardization and virtual library system development; and
17. Facilitating research and developmental activities in both infrastructure and development of digital and virtual libraries.
18. To have networking among the participating institutions.
IMPLEMENTATION STRATEGY

General Principles

The World Summit if the Information Society (WSIS) adopted a number of guiding principles on the information society. Based of the WSIS principles, members of the NETECHLIBNET have to agree on the following general principles:

a. Building the information society must be inclusive of all stakeholders including Government, as well as private sector, civil society and other regional and international organizations.

b. Building the information and shared knowledge society will contribute to achieving the Millennium Development Goals to improve quality of life and eradicate poverty by creating opportunities to access, utilize and share information and knowledge.

c. The international community will tackle information society building based on commitments to remove obstacles to bridging the digital divide.

d. Building an inclusive information society requires the use of the languages of the concerned populations.

Membership

The following criteria for membership will guide participation in the network:

a. NETECHLIBNET will be composed of libraries, information and documentation centres, systems, clearinghouses, research institutions, agencies and institutions in the NER that are interested in promoting knowledge sharing and networking activities in the development field;

b. Members may be representatives of university/academic and research institutions at the national, sub-regional or regional level in the region;

c. Associate or affiliate membership shall be open to centres, information systems and networks outside the region which may have some special contributions to make towards the advancement of the goals of NETECHLIBNET.

Responsibilities of the Members

All categories of members of the network shall be expected to:

a. Actively co-operate with other network members to promote better ways of identifying and improving the flow of development information within the region;

b. Institute co-operative arrangements to facilitate the strengthening of development information activities;

c. Agree to utilize, whenever possible, those standards for information exchange adopted for the use of network members;

d. Ensure appropriate physical and human capacities for active participation in NETECHLIBNET and be responsible for providing content and related input into the network;

e. Provide the NETECHLIBNET Secretariat with information on their respective development information activities as they pertain to the development and implementation of digital and virtual libraries;

f. Contribute information for inclusion in NETECHLIBNET promotional activities and publications (including the NETECHLIBNET newsletter);

g. Share information, knowledge, experiences and expertise to the extent possible;

h. Establish and maintain the infrastructures necessary for promoting the overall aims and objectives of NETECHLIBNET.

TECHNICAL FRAMEWORK

NETECHLIBNET will be a distributed network, meaning that its databases of information resources will not all be loaded onto a computer system of a single institution. Available databases, digital libraries and other information resources and services will be housed and operated locally, but connected to the internet. NETECHLIBNET will provide the necessary interfaces, including powerful search engines, collaborative software (knowledge exchange engines), and links to a variety of information objects. Information related to the various economic and social sectors will be covered including agriculture, gender and development, population, education, transport and
communications, health and environment, regional integration and other developmental concerns facing the NER.

**ISSUES INVOLVED**

For establishing such kind of network arrangement that enhances the usage of information, some problems are likely to crop-up, such as:

1. Who will take the initiative in bringing all the concerned institutions libraries on to one platform?
2. What will be the policies and guidelines for such a network?
3. Compatibility of existing hardware and software - guidelines need to be framed.
4. Manpower development in participatory institutes with special reference to information technology.

**CONSTRAINTS**

Certain Constraints/ Problems are involved while implementing NETECHLBINET. They are:

1. Lack of trained human resources
2. Lack of financial resources
3. Lack of infrastructure facilities in LICs
4. Lack of knowledge awareness in IT based information handling services.
5. Lack of interest on the part of the library professionals in implementing the IT based information handling services in their libraries.
6. Lack of motivation on the part of library staff
7. Lack of legislative measures in the library acts towards consortium / network based library services
8. Lack of co-ordination among the library staff to go in for IT based information handling services in LICs
9. Users attitude towards information seeking pattern and behavior

**SUGGESTIONS FOR NORTH EASTERN TECHNICAL LIBRARY & INFORMATION NETWORK (NETECHLBINET)**

The following suggestions would be worth mentioning in developing the network.

1. National level intervention would be required for the coordination of such network and ensure adequate and reliable funding. However, this control must not affect the performance of the participating libraries, institutions and the individual professionals.
2. Policy makers must have awareness on the necessity of information networking. The lack of adequate funding the major problem in libraries is not always due to lack of financial resource but due to lack of knowledge on the advancement information services and its importance.
3. Provision of adequate funding facilities for IT based Information Product and Services.
5. Implementing the National Information Policy (NIP) for Information and Documentation Management activities.
6. Training of librarians and other information service providers is an essential component.
7. Short-term trainings, regular workshops, seminars and workshops are necessary to facilitate the current awareness of information professionals in acquisition, classification, storage, repackaging and dissemination of information. However, staff expertise has to be put to practice what they have learned.
8. Motivating the information professional people to go in for IT based information handling services in LICs.
9. Creating co-ordination among the library staff to go in for IT environment in LICs.
10. The structure of the networking may affect information accessibility.
11. Evaluation of networking activities is an indicator of whether activities are conducted as planned and a way to improve future endeavors.
12. There should be staff exchange programs and training for professional upgrading through attachment in different information centers.
13. Effective information exchange and dissemination within the members is essential to avoid duplicating resources.
14. Providing orientation programme to the information user community periodically as and when the new products are acquired in the Library, Information and Documentation Centers.

INDICATORS OF SUCCESS

Indicators of success will include:

a. Number of library and information network nodes established;
b. Number of knowledge exchanges and knowledge institutions connected with web-based library networks;
c. Number and quality of capacity building training, meetings and workshops held; and
d. Increase in adoption and adherence to international standards on information processing, management and dissemination.
e. Number of visitors to the NETECHLIBNET portal.

CONCLUSION

In highly competitive emerging scenario, the information user can’t afford to collect information at leisure spending a lot of time to read documents for pleasure. The library and information services must match the requirements of information users. The demands of the information users are not only growing but they are also required to be fulfilled just in time. In such a level of service requirements, there is no place of standalone libraries to play their significant role in the process of information transfer, they have to get integrated and form library networks.

The success of library automation and networking depends mainly upon the proper planning and appropriate decisions taken by the appropriate authority time to time. At the same time the motivation, zeal and lot of efforts of library and information professionals and well-trained professionals also results in quick and early implementation of library networks.

For the success implementation of the NETECHLIBNET, the Institute like IIT Guwahati, IIM Shillong or NIT Silchar should take a lead role. The organizations like NIRD, NEIBM, AIDC, SIDBI, NEDFi, IIE, IIT, NIT, Universities and State Industry department should help in setting up such a network. The North Eastern Technical Library & Information Network (NETECHLIBNET) will constitute a unique opportunity for the NER of India to avail of cutting-edge Information Technology to give a fillip to the development of the region.
North-Eastern Regional Education Council (NEREC)

Setting up NEREC: To give practical shape to the Prime Minister's words of wisdom in the field of education, NEC decided to constitute the NEREC in July 2005. Its membership includes heads of institutions of higher learning in the region e.g. VCs of all universities, Directors of IIT, Gauhati and NERIST, Itanagar; representatives of all the eight NE states; regional experts; representatives of bodies like the UGC, Consortium of Educational Communication (CEC) of UGC, IGNOU, NCERT, and AICTE. NEREC has become the apex expert body in the North-East in the field of education and human resource development (Shrivastav, 2008).

NEREC's Road Map: For Re-tuning the Education System, NEREC held several meetings, set up subcommittees to go into specific issues, organised seminars in universities and held informal discussions on the problems of education on several occasions to evolve practical solutions. The elements of the road map for reforming education in the NER that emerged are enumerated below:

1. **Teaching training**: To improve quality of education, the first step is to plan for the skill up gradation-cum-orientation of teachers, from the primary level onwards. NCERT and IGNOU have been requested to develop training modules and commence the training of 1.5 lakh teachers over a period of two years in consultation with the NE states.

2. **Vocational training**: This has two components. First, the introduction of relevant vocational courses in the general academic stream as discussed earlier. Second, a massive programme of teaching and up gradation of skills, in vocations relevant to the North-East, is being launched shortly, using open distance learning techniques under the stewardship of IGNOU. This is aimed at reaching the large number of youth outside the formal school system, the educated unemployed dropouts and those who cannot afford the money or do not have the time for regular education/training in institutions.

3. **Cluster approach for upgrading institutions**: The general idea is to start by improving at least one existing college per district and one higher secondary school per block as institutions of excellence. These should emerge as hubs for networking within the region under the overall umbrella of university/education directorates. The selected schools and colleges should also serve as mother institutions for the feeder schools and colleges in their hinterland by sharing with the latter their up graded facilities- like libraries and residential hostels, games and sports infrastructure, and information and communication technology (ICT) facilities.

4. Students from feeder institutions can visit the mother schools/colleges periodically and thus gain regular access to modern educational facilities. Teachers belonging to mother institutions should be trained as resource persons for the training and orientation of teachers in the feeder institutions. The ultimate aim is to reach, in stages, the most isolated primary school in the remotest village of the NER.

5. **Develop centres of excellence**: Instead of spreading resources too thinly by offering all courses across the region, it would be much better for universities and colleges to carefully select certain subjects. These should be chosen keeping in view their relevance to the local ethos of area and the community, and the centres of excellence should be developed around these subjects. The centres can then be accesses by institutions all over the NER with the help of IT.

6. **Extensive use of distance education and IT**: This will enable the sharing of areas of excellence and the knowhow and expertise available in various institutions of learning in the NER. Model lessons can be centrally prepared and beamed right down to the primary school level. This would be the quickest way of overcoming the problems of difficult terrain and long distances. All universities, main libraries and select colleges should be electronically interlinked.

7. **Teaching foreign languages**: The languages spoken by our eastern neighbours should also be taught. This was recommended in view of the anticipated operationalization of the Look East Policy of GOI by the NEC and the eight NE states.

8. **Meaningful education**: The process of 'development' was depriving children of adequate exposure to the excellence indigenous value system of the NER discussed earlier. A set of
recommendations made by the Subcommittee of NEREC on Meaningful Education has been greatly appreciated. They found unanimous acceptance and were formally adopted by the NEREC. Most of the recommendations did not need any additional financial resources.

Recommendations of NREREC Sub-Committee on Meaningful Education:

Gist of recommendations of NREREC Subcommittee on Meaningful Education (Chaired by VC, Assam University, Silchar on 20-21 March 2006) is given below.

A. The subcommittee took note of the following:

1. The provisions introduced by the Constitution (52nd Amendment) Act, 1976, awareness of which must be imparted to the citizens of tomorrow, viz. "that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity".

2. It is said that values cannot be taught but are caught. In our present context values not only need to be taught by the teacher, by weaving them into whatever subject she/he is teaching, but also to caught by the students from the high personal example that the teacher ought to set, since she/he is the role model for them.

3. The need for the entire process of education to be made value-oriented, instead of reducing values to a series of do-s and don'ts.

4. The need for periodic repetition, review and reiteration of value-based material for students (and even for various sections of the community).

B. The subcommittee recommended the following measures:

1. In view of the continuing erosion of values in society, it is imperative that steps be taken to inculcate values in the minds of the upcoming generation, right across the n-to-u i.e., nursery to university) levels; and that this process may begin from the time the child enters the education system, which is the most impressionable and formative stage of his/her life. Values are important as they develop a positive attitude in the minds of students. Since teachers are the main role players in imparting education, they should take the chief responsibility for inculcating values in the students.

2. Powerful inspiration to catch values is provided by biographies, autobiographies, anecdotes, epistles, passages from scriptures, lessons of history, lessons of cultures, personal accounts of exhibition of values in critical situations of life, exposure to good music, visual expressions of beauty, harmony, grandeur of nature, etc. Such material should be produced in a manner that creates and sustains the interest and suits the tests and capacity of the students at various stages and should be included in the school curricula.

3. Centres of creative arts should be developed in all schools, colleges and universities, where interest in varieties of music, fine arts and literacy arts can be cultivated.

4. Since yoga is a university acknowledged and accepted way of achieving physical neat and concentration of the mind, and developing a healthy and happy outlook, it may be introduced in all schools, colleges and institutes of learning.

5. Healthy practices must be promoted among the students; for example, cleanliness, dignity of labour, recycling of waste products, etc.

6. Stories that draw on the local environment – which children can relate to and through which moral values can be inculcated- may be popularized at the pre-primary and primary levels.

7. At the Secondary; higher secondary, college and university levels, more actively-oriented programmes may be introduced. These can include sports, cultural activities, NCC and NSS. The spirit behind the action (i.e. sportsman’s spirit) may be emphasized since that is more significant than mere outward action.

8. A sense of responsibility needs to be inculcated amongst students by assigning them various tasks, like social education, disaster mitigation; cleanliness drives in nearby areas, etc.

9. In each educational institution, an environment should be created where people from different cultural backgrounds can be taught how to live harmoniously. Programmes promoting multicultural community living need to be encouraged.

10. Since parents play an important role in imparting value education, an orientation programme for parents (and opinion makers in the community) may be organized by all educational institutions.
11. The role of community participation in inculcating values in minds of students needs to be adequately emphasised.

12. Students need to be taught how to live in harmony with nature. Programmes like excursions to places where nature can be seen in various forms should be encouraged. Lessons on the study of nature should be included in the curriculum.

13. Games and sports develop team spirit, leadership qualities and, most important of all, the sportsman’s spirit. These activities may, therefore, be promoted in all educational institutions. Care should be taken to emphasise the spirit behind them, the discipline to abide by the rules of the game, unquestioned acceptance of the referee’s decisions, the moral of the strength to accept defeat as gracefully as victory, appreciation of the other person’s point of view, etc.

14. Since cultural develop the finer elements of life and also provide avenues for expressions the creative talents of students, such activities must find place in the curricula of educational institutions.