

D.O.No.F.16-3/2009-DL

January 20, 2009

Dear

As you may be aware a new Centrally sponsored scheme called **National Mission On Education through Information & Communication Technology [ICT]** has been sanctioned recently with an outlay of Rs. 4,612 cro res during the XI Plan, with a view to multiplying our efforts for enhancement of the Gross Enrolment Ratio in higher education by 5 percentage points, leveraging the strengths of ICT. The objective of the scheme is to provide high quality personalized and interactive knowledge modules over the internet / intranet and through satellite communication for all the learners in higher education institutions free of cost in any time anywhere mode. This would cover two major interventions viz: [a] content generation and [b] connectivity along with provision for ultra low cost access devices. The Mission also seeks to bridge digital divide i.e. gap in skills to use computing and access devices for the purposes of teaching and learning among urban and rural teachers / learners, and to empower those who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. I am enclosing a list of indicative activities that would be undertaken by the Mission. The Mission would cover more than 20,000 degree colleges irrespective of their being in the public or private sector and it would also address the needs of each of the departments of more than 400 universities in the country. Some work has already gone into some of the components of this Mission, for example the National Programme on Technology Enhanced Learning [NPTEL] has already generated nearly 400 e-courses with the help of faculty members of IITs and IISc Bangalore.

2. Under this Mission the generation of knowledge modules for all classes and all subjects in higher education domain, i.e. e-content would be fully funded by the Central

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Government. The Central Government would also bear 75% of the cost of providing connectivity of upto 10 to 25 Mbps per college or per department of a university if remaining 25% cost is borne by the State Government or by the college / institution concerned.

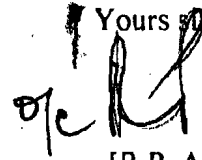
3. You would agree that this Mission is a great opportunity for the State Government and educational institutions located in the State [whether in the public sector or in the private sector] to increase access with equity and excellence. As we need to synergise our efforts in the direction of harnessing collective wisdom and knowledge of our experts for the benefit of the learners in the country, it is necessary that due approvals of your Government are obtained for providing the required contribution for the educational institutions supported by the State. Even the private educational institutions in the State should be encouraged to avail of the opportunities provided under this Mission. It is also imperative that due publicity is given to this National Mission so that experts in the institutions located in your State are encouraged to proactively think and submit their ideas for being supported under this National Mission.

4. Honourable Minister for Human Resource Development will launch this Mission on the 2<sup>nd</sup> February, 2009 at 4 PM at Tirupati in the campus of Sri Venkateshwara University. I shall be grateful if necessary steps are urgently initiated in this regard to derive full benefit of this National Mission in a time bound manner.

5. I would also like to inform you that the meeting of State Education Secretaries which had been convened at New Delhi on the 2<sup>nd</sup> February, 2009 by the Chairman, UGC, would now be held at 11 am on 2/2/2009 at Sri Venkateswara University Campus at Tirupati. As this change of venue has been decided in consultation with the Chairman, UGC, I would request you kindly to depute your Education Secretaries for the above mentioned meeting at Tirupati.

With

Yours sincerely,



[R.P. Agrawal]

To: Chief Secretaries of States/UTs

(55)

Copy to Chairman, UGC

## Activities of the Mission

The content portion of this Mission **would have an ambitious vision of catering** to the learning needs of more than 50 crore Indians (working population) and of providing a one stop solution to all the requirements of **the learning community**.

In order to bolster our knowledge resources, to obtain and maintain the competitive edge in the world, we require a system of identification **and nurturing of talent and lifelong learning. Knowledge modules based on the personalized needs of the learner would need to be delivered to him / her at the right time with the right content interactively to take care of his / her aspirations.** In due course of time there would be a need to develop and maintain the knowledge and capability profile of every individual learner / worker. Such a system would have to be developed in a cost effective manner over a period of time, integrating, inter-alia the following objectives:

1. Effective utilization of intellectual resources, minimizing wastage of time in scouting for opportunities or desired items of knowledge appropriate to the requirement,
2. Certification of attainments of any kind at any level acquired through formal or non formal means in conventional or non conventional fields,
3. Any-time availability of desired knowledge at appropriate levels of comprehension to all for self paced learning,
4. Platform for sharing of ideas and techniques and pooling of knowledge resources.
5. Systematically Building a huge database of the capabilities of every individual human resource over a period of time,
6. Scholarship / Talent management including identification, nurturing and disbursement electronically,
7. Nurturing of scholars and learners.
8. Support to all the learners / workers for any of their perceived learning needs,

9. Extensive **leveraging** of the advancements in the field of ICT for taking knowledge resources to the door steps of the learner,
10. Capability to handle the user base which would ultimately be expected to cross 50 crore in the long term.
11. Use e-learning as an effort multiplier for providing access, quality and equality in the sphere of providing education to every learner in the country.
12. Provide for Connectivity & access devices, content generation, personalization & mentoring, testing & certification and encouragement of talent.
13. Bringing efforts of different interested agencies working in the field of e-learning under one umbrella and establishing logical linkages between various activities.
14. Capacity building in this sphere and utilizing dormant capacities of various organizations. Creating infrastructural facilities for long term utilization and making sustained efforts for content generation & connectivity including access devices production.
15. Encouraging research in **spheres covered by Mission activities**. Creating a large number of networks of experts in various fields to carry forward the gigantic vision under this Mission.
16. Providing e-books & e-journals, utilizing the repository of contents generated so far and the automation of evaluation processes. Creating a high impact brand for e-Journals in leading disciplines with a provision for good incentive-based payment to the researchers publishing their high quality papers in these e-Journals.
17. Spreading Digital Literacy for teacher empowerment and encouraging teachers to be available on the net to guide the learners.
18. Multi-lingual content development for the learners more comfortable in those languages.
19. Voice support for educational material delivery and interactivity for the content on the portal.

20. Development of interfaces for other cognitive faculties which would also help physically challenged learners. These efforts may cut across all the content generation activities.
21. Conversion of existing educational tapes into indexed formats compliant with the internationally accepted standards such as **SCORM (Sharable Content Object Reference Model)**.
22. Launching a national movement for content and question generation.
23. Development of GIS (Geographical Information System) based resource inventory as a knowledge base (for subjects and skills where ever possible / feasible) for educational and planning purposes.
24. Improving teachers' training and course curriculum.
25. Providing **Digital/Information Literacy** for teacher empowerment.
26. Creating a clearinghouse cum rating agency for various web based learning contents for guiding Indian learners.
27. Establishing a credible rating institution for knowledge content available on the Internet utilizing the large expert base, which would get collaboratively networked through one of the sub Missions of this National Mission.
28. Preparation of metadata and timed index preparation for educational video / audio content on tape or other media.
29. Credit based flexible module formulation for openness to qualifications and easy transfer of credits from one programme / course to another.
30. ERP (Enterprise Resource Package) and e-Governance for education.
31. Development of pedagogical techniques based on edu-entertainment.
32. Customisation of Open Source Tools etc.
33. Development of robust models of networking to encourage community participation at local levels.
34. Content delivery through EduSAT and narrowcasting of TV signals. Providing 1000 DTH (Direct to Home) channels on 40 transponders [to be availed through the Department. of Space] so that a separate DTH channel is available for every subject for every class in various languages to the extent possible.

35. Development of DTH platform for EduSAT and cheaper equipments for way connectivity through satellites.
36. Providing e-Learning support to every higher education institution for technology assisted learning.
37. Setting up virtual labs and lab centers and finishing schools for quality enhancement.
38. Development of cheap access devices to make them affordable for every individual.
39. Making broadband affordable for every learner.
40. Developing reliable identification systems for learners and examiners and also developing model testing centers to test the learners under controlled environment.
41. Developing very low cost, low power consuming wireless mesh [Institution of Electrical and Electronics Engineering (IEEE) 802.11 standard or better] or point to point long range communication [IEEE 802.16 standard or better] capable robust video servers to act as communication and computational hubs at educational institutions.
42. Development of devices for achieving convergence among connectivity technologies.
43. Standardisation & Quality Assurance of e-Content.
44. Facilitating development and deployment of ultra low cost physical tool kits for engineering and science students to encourage project and design based learning complementary to the e-learning.
45. Deriving lessons from our ancient knowledge base.
46. Reducing ill-effects of internet / web based learning.
47. Guidance to learners through various psychological / personality tests.
48. Coordination and synergisation of knowledge related activities of different Ministries and organizations.

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**LIST OF CHIEF SECRETARIES OF STATES/UTs**

1. Shri Ranjan Chatterjee,  
Chief Secretary,  
Government of Meghalaya,  
Secretariat,  
Shillong 793 001.
2. Shri A.K. Basu,  
Chief Secretary,  
Government of Jharkhand,  
Mantralaya,  
HEC Dhurwa,  
Jharkhand.
3. Mrs. Naini Jayaseelan,  
Chief Secretary,  
Government of Puducherry,  
Raj Niwas, Chief Secretariat,  
Puducherry – 605002.
4. Shri P Ramakanth Reddy  
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5. Shri P.C. Sharma,  
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Guwahti 701 006.
6. Shri R.J.M. Pillai,  
Chief Secretary,  
Government of Bihar,  
Old Secretariat,  
Patna 800 015.
7. Shri P.J. Oommen,  
Chief Secretary,  
Government of Chhattisgarh,  
Dau Kalyan Singh Bhawan, Mantralaya,  
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8. Shri J.P. Singh,  
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13. Shri Rakesh Kumar,  
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14. Shri ~~Hauzel Haukhum~~ Vanhela Pachuao,  
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15. Shri Lal Huma,  
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16. Shri A.K. Tripathy,  
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17. Shri Ramesh Inder Singh,  
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N.K. Sinha, IAS  
Joint Secretary [DL]

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NEW DELHI 110 046

D.O.No. F. 16-3/2009-DL

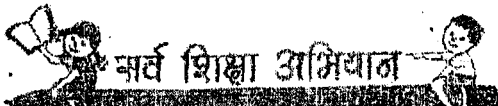
21<sup>st</sup> August, 2009

Dear Sir / Madam,

Kindly recall my earlier letters of even number dated the 9<sup>th</sup> January, 2009 and the 13<sup>th</sup> July, 2009 respectively (copies uploaded on our website [www.sakshat.ac.in](http://www.sakshat.ac.in)) regarding the National Mission on Education through ICT (NMEICT), inviting participation of your institution and experts in the mammoth exercise of e-content generation, teacher empowerment and adopting e-learning as an effective means of teaching-learning activities. While some project proposals from the Universities and Institutions have started trickling in, the need is to accelerate this process and convert this into a movement for utilising the ICT tools to enhance the quality of instruction and reach of the educational delivery system to the unreached. I once again urge you kindly to proactively participate in the Mission and put creativity of your organisation to the best service of the Nation by utilising the resources (Rs. 900 crore) made available in the current year's budget.

2. As you are aware, providing connectivity to the Colleges, Institutions and Universities is a key component of the NMEICT, so that the high quality e-content could be reached to the teachers and students of these educational organisations. The connectivity under NMEICT would seamlessly integrate with the National Knowledge Network (NKN). You would be glad to know that the work of providing connectivity to these organisations has already been initiated by Bharat Sanchar Nigam Limited (BSNL), which has become a partner in this Mission by investing its resources.

3. While 1 Gbps connectivity to NKN for 10 years and 400 node LAN for each of the Universities in the Country has been envisaged under NMEICT at 25% cost to the Universities, to begin with the Colleges and Institutes, BSNL officials will be providing 10 connections of 512 Kbps VPN over Broadband for unlimited use, with internet connectivity, to each of the Colleges / Institutions recognised under section 12-B of the University Grants Commission (UGC) Act. These Colleges will have to bear 25% of the cost of this connectivity by paying their contribution directly to BSNL. The total financial burden on each College / Institution on account of this level of connectivity would not exceed Rs. 15000/- in the current financial year. Rest 75% cost would be borne by NMEICT by making direct centralised payment to BSNL. As an Institution / College starts using more and more of bandwidth, the number of connections to those active users would gradually be enhanced to upto 20 connections per institution. With a view to encouraging BSNL to bring, at its cost, optical fibre to as many Colleges / Institutions as possible, it would be desirable if the Colleges / Institutions consider providing some

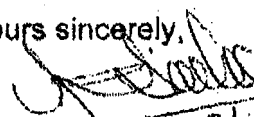


space for setting up a mobile tower in their campuses. For participating in this scheme, the Colleges / Institutions may expect / require your concurrence.

4. I shall be grateful, if you could kindly issue suitable instructions to the section 12-B recognised Colleges / Institutions of your University. I am also sending a copy of this letter to the Principal Secretary / Secretary of Higher Education of your State and also to all the Principals / Directors of UGC section 12-B recognised Colleges / Institutions. Let me add that the Mission covers all the educational institutions in the Higher Education domain, whether in public or private sector, and they would also be covered once their list is authenticated by State Govts. / Universities, for which a separate letter follows with a compiled list of such institutions.

With regards,

Yours sincerely,



(N.K. Sinha) 21

Vice Chancellors of All the Universities in India.

Copy to: Principals / Directors of All the Colleges / Educational Institutions in India,  
Principal Secretary / Secretary of Higher Education of All the States,  
CMD, BSNL, New Delhi.

Ministry of Human Resource Development  
Department of Higher Education

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**National Mission on Education through Information and Communication  
Technology**

**Guidelines for Stakeholders**

Government of India on 2.1.2009 approved a Centrally Sponsored Plan Scheme on National Mission on Education through Information and Communication Technology (NMEICT). The objective is to make best use of ICT with the purpose of identification and nurturing of talent and life long learning as well as extend the education facility to a larger section of people. The scheme would provide for development of knowledge modules to address to the personalized needs of learners, having right content to take care of their aspirations. These modules would be delivered through ICT. This Scheme has been envisaged to leverage the potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Educational Institutions in any time anywhere mode. This scheme has two **major** components i.e. content generation and providing connectivity to universities/colleges/institutions of higher learning throughout the country.

In order to realize the goals of the Mission, the following actions are expected to be initiated by various stakeholders:

**Action by State Governments**

**Connectivity**

1. Undertaking to pay the State Governments' portion for colleges and universities fully funded by the State Governments.
2. Ensuring that each college gets a Virtual Private Network [VPN] of 10 mbps [20 Nodes of 512 kbps each or lesser Nodes of proportionately higher kbps] from BSNL at an annual cost of Rs. 5000/- per Node [i.e. Rs. 1.00 lakh for 20 Nodes] out of which 25% payment, i.e. Rs.25000/- per year (**10% i.e. Rs.10,000/- in the case of North-Eastern Region**) for a college will have to be made to BSNL directly, as the other 75% (**90% in the case of North-Eastern Region**) is being centrally provided by the Central Government.
3. Ensuring that every university gets from BSNL an optical fiber connectivity of 1Gbps to National Knowledge Network [NKN] at one time cost of Rs. 2.00 crore, out of which 25%, i.e. Rs. 50.00 lakh (**10% i.e. Rs.20 lakhs in the case of North-Eastern Region**) will have to be provided upfront for each university to BSNL as the remaining 75% (**90% in the case of North-Eastern Region**) would be provided centrally to BSNL by the Central Government. This would take care of connectivity charges for a period of 10 years.

4. Ensuring that the universities get at least 400 Nodes Local Area Network [LAN] in order to utilize the bandwidth being made available to it under this Mission. For this purpose, a normative cost of Rs. 40.00 lakh per university payable to BSNL has been worked out and each university [or State Government on its behalf] will have to bear 25% of the cost, i.e. Rs. 10.00 lakhs (**10% i.e. Rs.4 lakhs in the case of North-Eastern Region**) to be payable directly to BSNL and the Central Government would bear the remaining 75% (**90% in the case of North-Eastern Region**) under the Mission. This would be in addition to the payment for connectivity prescribed above.
5. Preparing the list of private institutions / universities in the States and ascertaining from them whether they would be deriving the benefits from the Mission payment.
6. To monitor utilization of bandwidth by colleges and universities.
7. To identify gaps in ICT infrastructure of colleges / universities and making arrangement for bridging the same with a view to making full utilization of connectivity and e-content being provided under the Mission.
8. To send a consolidated list of universities and colleges fully funded by the State Governments. The list should include those partly funded private institutions & colleges and private institutions & universities who have agreed to pay their share in respect of connectivity.

#### **e-content**

1. Giving wide publicity to the Mission in order to enthuse experts / academicians to come together for content creation activities.
2. Identifying a group to make recommendations to align the curriculum with the UGC / AICTE model curricula and to indicate gaps, if any.
3. To identify groups of regional language knowing experts who could be utilized for translation of e-content into regional languages.
4. To make available States repository of audio, audio-visual, archives and e-content generated so far so as to get them integrated into the national effort of e-content generation.
5. To consider including some teaching-learning through e-contents in the curricula for various courses being offered by State Government institutions / universities.
6. To identify Nodal Centres and Resource Centres for virtual labs and other activities which could be synergized together.
7. Identifying ERP centres for implementation, monitoring, and testing
8. To create spearheading groups for getting the ERP modules [getting generated under the Mission] implemented in colleges / universities.

9. Making available resource persons for Talk To A Teacher Programme for the learners.
10. Synergizing State level institutions to create development of vocational educational modules and to enable e-delivery.
11. Organizing polytechnic teachers to submit projects to the Mission for e-content development for polytechnics and vocational programmes.

### **Connecting employability with contents**

1. To tie-up and coordinate with local industries delivering vocational modules suited to their needs, better employability in those industries for the learners and participation of their experts in relevant content generation.
2. To develop certification courses relevant to local industry to enhance the local employability.
3. To identify formal and informal sectors for up-gradation of education to improve the employability in the State.

### **Popularization and involving the stakeholders**

1. Organizing workshops to disseminate information on the Mission and to identify resource persons for e-content creation.
2. Organizing workshops for empowerment of teachers and learners so as to enable them to derive full benefit of e-learning being made available under the Mission.
3. Organizing periodic conferences of stakeholders of the Mission in the State to ensure proper synergy.
4. Organizing workshops to try the effectiveness of e-content modules on the intended learner groups with a view to ascertaining gaps, if any, in the modules getting generated and for giving any feedback for further improvement and enhancement of the modules.
5. Organizing workshops and seminars for development of tools, technologies and products relevant to local needs for e-education.
6. To conduct an annual competition to identify five best projects covered under the areas mentioned in the Mission.
7. Prepare action plan and seek approval by uploading these on the Sakshat Portal ([www.sakshat.ac.in](http://www.sakshat.ac.in)). Reimbursement will be given only in the case of approved action plan.

### **Implementation Mechanism**

1. To properly monitor connectivity to their colleges / universities with the help of State-wise Implementation Committee for connectivity related issues. For which separate orders have been issued.
2. To identify and intimate to MHRD a Nodal Officer and State Coordinator / Supervisor for activities of the Mission coordinating with MHRD.
3. Willing experts from institutes in the State may be encouraged to draft project proposals for contributing to e-content generation and upload it on Sakshat Portal ([www.sakshat.ac.in](http://www.sakshat.ac.in)) for approval. The cost of generation of e-content will be borne fully by the Central Government under NMEICT.

## Action by Universities

### Connectivity

1. Obtaining approvals for establishment of 400 Nodes LAN and provision of 1Gbps connectivity to the university at 25% of the cost, i.e. Rs. 10.00 lakh for LAN and Rs. 50.00 lakhs for 1Gbps connectivity for 10 years.
2. Contacting BSNL and State Government and making payments for LAN and connectivity to BSNL.
3. Instructing constituents and affiliated colleges to avail of BSNL VPN connectivity at 25% cost for utilizing e-content and internet based educational resources, monitoring uptime of networks so installed in the university and constituent / affiliated colleges.
4. To ensure that each college gets a Virtual Private Network [VPN] of 10 mbps [20 Nodes of 512 kbps each or lesser Nodes of proportionately higher kbps] from BSNL at an annual cost of Rs. 5000/- per Node [i.e. Rs. 1.00 lakh for 20 Nodes] out of which 25% payment, i.e. Rs.25000/- per year (**10% i.e. Rs.10,000/- in the case of North-Eastern Region**) for a college will have to be made to BSNL directly, as the other 75% (**90% in the case of North-Eastern Region**) is being centrally provided by the Central Government.
5. To ensure that the university gets from BSNL an optical fiber connectivity of 1Gbps to National Knowledge Network [NKN] at one time cost of Rs. 2.00 crore, out of which 25%, i.e. Rs. 50.00 lakh (**10% i.e. Rs.20 lakhs in the case of North-Eastern Region**) will have to be provided upfront for each university to BSNL as the remaining 75% (**90% in the case of North-Eastern Region**) would be provided centrally to BSNL by the by the Central Government. This would take care of connectivity charges for a period of 10 years.
6. To ensure that the university gets at least 400 Nodes Local Area Network [LAN] in order to utilize the bandwidth being made available to it under this Mission. For this purpose, a normative cost of Rs. 40.00 lakh per university payable to BSNL has been worked out and each university [or State Government on its behalf] will have to bear 25% of the cost, i.e. Rs. 10.00 lakhs (**10% i.e. Rs.4 lakhs in the case of North-Eastern Region**) to be payable directly to BSNL and the Central Government would bear the remaining 75% (**90% in the case of North-Eastern Region**) under the Mission. This would be in addition to the payment for connectivity prescribed above.
7. To identify gaps in ICT infrastructure of colleges / universities and making arrangement for bridging the same with a view to making full utilization of connectivity and e-content being provided under the Mission.

### **e-content**

1. Encouraging formulation of good and viable projects for being funded under the NMEICT.
2. Monitoring e-content from the point of view of their utility and appropriateness for the students.
3. Fine-tuning of curricula and obtaining approval of statutory bodies of university for e-learning based modules, virtual lab etc.
4. Identification of gaps in the e-content modules from the point of view of curricula approved by the university and razing the demand for creation of additional e-content in those areas.
5. Raising of demands for additional e-content generation for those students of the universities whose academic accomplishment may not be very high.
6. Giving wide publicity to the Mission in order to enthuse experts / academicians to come together for content creation activities.
7. Identifying a group to make recommendations to align the curriculum with the UGC / AICTE model curricula and to indicate gaps, if any.
8. To identify Nodal Centres and Resource Centres for virtual labs and other activities which could be synergized together.
9. To create spearheading groups for getting the ERP modules [getting generated under the Mission] implemented in colleges / universities.
10. Synergizing State level institutions to create development of vocational educational modules and to enable e-delivery.

### **Connecting employability with contents**

1. To develop certification courses relevant to local industry to enhance the local employability.
2. To identify formal and informal sectors for up-gradation of education to improve the employability.

### **Popularization and involving the stakeholders**

1. To disseminate information about NMEICT among teachers and students and learners.
2. To create peer groups of experts / academicians in various subject fields and interact with peer groups of other institutions to deliberate upon various activities of the Mission.

3. Spreading information about NMEICT to their constituents and affiliated colleges.
4. Organizing workshops to disseminate information on the Mission and to identify resource persons for e-content creation.
5. Organizing workshops for empowerment of teachers and learners so as to enable them to derive full benefit of e-learning being made available under the Mission.
6. Organizing workshops to validate the effectiveness of e-content modules on the intended learner groups with a view to ascertaining gaps, if any, in the modules getting generated and for giving any feedback for further improvement and enhancement of the modules.
7. Organizing workshops and seminars for development of tools, technologies and products relevant to local needs for e-education.

### **Action by Industry Experts**

1. To review projects for which they are invited as experts.
2. To provide feedback from real world focus on projects referred to them.
3. To enable creation of e-content in areas specific to their industry from the point of view of furthering employability.
4. Enabling development of technology.
5. Defining project specific and requirements.
6. Identifying content for vocational courses.

### **Action by Teachers and Researchers**

1. Acting as a major resource for the Mission.
2. Creating knowledge and disseminating different types of contents in different forms through ICT.
3. Training teachers to reduce digital and knowledge divide.
4. Talking to students and learners to facilitate absorption of knowledge.
5. Verifying contents and promoting education through technology.

### **Action by Open Source / Access Community**

1. This Community would encourage development of tools, solutions and technology which would be available for open access to all learners and students.
2. Refining all existing tools, solutions in open domain / source relevant to the thrust of the Mission.
3. Integrating tools developed in Mission with existing tools.
4. Identifying gaps and needs for the learners in terms of software resources.

**Action by BSNL / DTH / Satellite / Connectivity Community**

1. Providing connectivity to all colleges and universities, testing connectivity.
2. Enabling access to whole academic world for academic activities.
3. Carrying content to each learner enabling development of new types of connectivity.
4. Giving inputs about the challenges for the connectivity for research as per the Mission objectives.

### **Action by Academic Experts**

1. To contribute in preparing syllabus, organizing content and teaching methodology, pedagogy and evaluation.
2. Suggesting different methodologies for evaluation of teachers and learners both.
3. Giving highly specialized pedagogical inputs to improve knowledge transfer from teachers to learners.

### **Action by Peer Groups**

1. To assist in evaluating projects, monitoring projects and testing the outcomes of the projects.
2. The Expert Group would also identify potential teachers who can contribute to the Mission.
3. The Expert Group will contribute to review and give feedback and advice to the content developers and the tool developers.
4. They will suggest new topics and research topics for distance learning.
5. They will assess completeness of the content for each course as per the curriculum.

### **Action by Polytechnic Teachers**

1. They would create vocational resource centres to develop vocational labs and course content.
2. They will also develop courses in regional languages.
3. The Polytechnics teachers will train vocational trainers.

**Action by Content Advisory Committee**

1. The Content Advisory Committee would evaluate completed content for the different courses coverage and highlight the gaps and improvements, if any.
2. The Committee will continuously correct Bharat Wiki content on continuous basis.
3. The Committee will also give advice / suggestions and inputs to new methodology for representation of different kinds of contents.

**Action by Knowledge Hubs / R&D Hubs**

1. These Hubs would act as a resource centres for virtual labs and up-gradation of knowledge of already employed learners. The R&D Hubs will contribute to identify the need of ICT to research and development.
2. The Knowledge Hubs and R&D Hubs would contribute to product development and technology development for enhancing educational effectiveness.

### **Action by Entrepreneurs**

1. They will liaise closely with NMEICT and support productisation of various software and hardware products created under the Mission keeping in mind the relevant guidelines of the Mission regarding IPR and commercialization.
2. The entrepreneurs will also identify opportunities for incubation and innovation of technologies, tools and softwares for distance learning.

### **Action by Language Translators Group**

1. The translators will assist in translating and adapting content created in NMEICT into local languages.
2. The content created in local languages will also be translated into English and national languages by this group.
3. This group will test and check the content created in different languages.

## **Action by Colleges**

### **Connectivity**

1. Contacting BSNL and State Government and making payments for LAN and connectivity to BSNL.

### **e-content**

1. To create peer groups of experts / academicians in various subject fields and interact with peer groups of other institutions to deliberate upon various activities of the Mission.
2. Encouraging formulation of good and viable projects for being funded under the NMEICT.
3. Fine-tuning of curricula and obtaining approval of statutory bodies of university for e-learning based modules, virtual lab etc.
4. Identification of gaps in the e-content modules from the point of view of curricula approved by the universities and raising the demand for creation of additional e-content in those areas.
5. Raising of demands for additional e-content generation for those students of the college whose academic accomplishment may not be very high.

### **Connecting employability with contents**

1. To develop certification courses relevant to local industry to enhance the local employability.
2. To identify formal and informal sectors for up-gradation of education to improve the employability.

### **Popularization and involving the stakeholders**

1. To disseminate information about NMEICT among teachers and students and learners.
2. Spreading information about NMEICT to their constituents and affiliated colleges.
3. Giving wide publicity to the Mission in order to enthuse experts / academicians to come together for content creation activities.
4. Organizing workshops to disseminate information on the Mission and to identify resource persons for e-content creation.

5. Organizing workshops for empowerment of teachers and learners so as to enable them to derive full benefit of e-learning being made available under the Mission.
6. Organizing workshops to validate the effectiveness of e-content modules on the intended learner groups with a view to ascertaining gaps, if any, in the modules getting generated and for giving any feedback for further improvement and enhancement of the modules.
7. Organizing workshops and seminars for development of tools, technologies and products relevant to local needs for e-education.

### **Implementation Mechanism**

1. Monitoring e-content from the point of view of the utility and appropriateness for the students.
2. To identify gaps in ICT infrastructure of the college with a view to making full utilization of connectivity and e-content being provided under the Mission.
3. To identify Nodal Centres and Resource Centres for virtual labs and other activities which could be synergized together.
4. To create spearheading groups for getting the ERP modules [getting generated under the Mission] implemented in the college.

