Agenda Papers

for

XXIX

Project Approval Board (PAB) Meeting

20th MAY, 2015

at

Conference Room, Shastri Bhawan, Ministry of Human Resource Development, New Delhi- 110 001

Government of India
Ministry of Human Resource Development
Department of Higher Education

15th May, 2015

To,

All Members of the Project Approval Board
of National Mission on Education through Information
and Communication Technology.

Sub: Agenda for XXIX Meeting of the Project Approval Board (PAB) of National Mission on Education through Information and Communication Technology.

Sir / Madam,

Enclosed please find Agenda papers for the XXIX Meeting of the Project Approval Board of National Mission on Education through Information and Communication Technology scheduled to be held on <u>Wednesday, 20th May, 2015</u> at 03:00 pm under the Chairmanship of Secretary (HE), Ministry of Human Resource Development, Government of India, New-Delhi at the following venue:

Conference Room No.112-C Wing (First Floor)
Department of Higher Education,
Ministry of Human Resource Development
Shastri Bhawan
Dr. Rajendra Prasad Road
New Delhi

Kindly make it convenient to attend the meeting.

Yours faithfully,

(Dr. D. K. Paliwal)
DEA (ICT) & Nodal Officer
Tel : 011-23384235

Copy to:

1.   PSO to Secretary (HE)

2.   PS to JS (TEL)

3.   PS to JS & FA

4.   US (TEL)

XXIX Meeting of PAB, NMEICT

Date : 20th May 2015

AGENDA ITEMS

Confirmation of the "Minutes of the 28th Meeting of the Project Approval Board" held on 26th June, 2014.

Agenda Item No. I

The "**Minutes of the 28th Meeting of the Project Approval Board**" held on 26th June, 2014 is placed for **perusal and confirmation please** (**Appendix-I: Page No. 140 to 169).**

Agenda Item No. - II

"Action Taken Report" on the Minutes of 28th Meeting of the Project Approval Board held on 26th June, 2014.

Agenda Item No. II

The "**Action Taken Report**" on the Minutes of the "28th Meeting of the Project Approval Board" held on 26th June, 2014, is placed at **Appendix-II (Page No. 170 to 191).**

Items for Ratification

Agenda Item No. III : Items for Ratification

Agenda Item No. III. 1

Proposal   :   Constitution of DTH Operations& Monitoring Group (OMG).

Ministry of HRD, vide decision taken by the National Apex Committee, NMEICT and 16th PAB Meeting, held on 1st September 2010, has issued an office order No. F.16-49/2010-DL dated 24th December 2010, constituting a 15 member Committee on Direct to Home (DTH), popularly called "DTH Committee" under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Adviser to the Government of India.

The Committee has prepared a draft report on DTH and shall soon submit its report to Secretary, Ministry of Human Resource Development, Department of Higher Education.

Taking the MHRD DTH Programme from Design to implementation, management & operational level, the Secretary, Higher Education in its capacity as Chairman, PAB and on the recommendations of Chairman, DTH Committee, has constituted 'DTH Operations& Monitoring Group (OMG).

Accordingly, MHRD under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F.No. 01-01/2014-TEL, dated 16th January 2015, [Annexure- III (i)] has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The Terms of Reference of the 'DTH Operations& Monitoring Group (OMG)' is given in the office order as per attachment at **Annexure III (i) / Page: 4 to 8**.

The decision taken by the Chairman, PAB as per Annexure-III (i) Order is placed before the PAB of NMEICT for consideration and kind ratification.

F. No. 01-01/2014-TEL
Government of India
Ministry of Human Resource Development
Department of Higher Education
*****

Shastri Bhawan, New Delhi
Dated 01.01.2015

<u>ORDER</u>

Sub: Setting up of a High Level Committee for establishment of DTH Programme of NMEICT –regd.

Cabinet Committee of Economic Affairs (CCEA) has approved the provision 1000 DTH channels under the National Mission on Education through Information and Communication Technology (NMEICT) Scheme. To carry forward this initiative and address various issues regarding the Direct to Home (DTH) services, the DTH Committee was constituted by the Ministry vide letter no. F. 16-49/ 2010-DL dated 24th December, 2010 (Copy placed at **Annexure I**).

2.   Now with the approval of competent authority the DTH Committee has been re-named as DTH Operations and Monitoring Group (henceforth referred to as DTH-OMG) and shall have the composition as under:

S.No.	Members of "DTH Operations & Monitoring Group"
i.	Prof. S.V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt.of India- Chairman
ii.	Mr. K Sethuraman, Assistant Director, Satcom Application, Sat. Commu. Prog's Office, ISRO, Dept. of Space, Antriksh Bhawan, New BEL Road, Bangalore.
iii.	Prof. Magala Sunder K., Department of Chemistry, IIT Madras, Chennai
iv.	Mr. V.S. Palsule, Director, DECU, Space Application Centre Jodhpur Tekra, Ambawadi Vistar P.O., Ahmedabad – 380015.
v.	Mr. Ravi Saksena, Ex ISRO, A-3/1, Aishwarya Apartments, Opp. Star Bazar, B/h Abhishree Complex, Satellite Road, Ahmedabad- 380015.
vi.	VC, Jawaharlal Nehru University
vii.	VC, University of Delhi
viii.	VC, BHU
ix.	Director, IIT, Delhi
x.	Director, NIT, Bhopal
xi.	Director, NITTTR, Chandigarh
xii.	Director, CEC
xiii.	VC, IGNOU
xiv.	Director, IIM, Ahmedabad
xv.	Director, IISER, Mohali
xvi.	VC, Osmania University
xvii.	Director, Indian Agricultural Research Institute, Pusa, New Delhi
xviii.	Director, All India Institute of Medical Sciences, New Delhi
xix.	Director, IIIT Jabalpur
xx.	Pradeep Kaul, Senior Consultant, NMEICT - Coordinator

3.   The DTH-OMG shall be the Domain Experts Committee, to provide vision, mission and directions in making Satellite based Higher Education available to masses in India through DTH, IP network and Video on Demand and shall be responsible for design; implementation; operation, monitoring of Satellite based content generation, delivery and its reception at Institutions.

4.   The DTH-OMG shall interact with VC's / Heads of the Institutions to form Core Groups for establishment of Teaching End's and Delivery of Content (Live) for the DTH Transmission, select and make available a List of Teaching Ends (TEs) required for the programme.

5.   The functions of the DTH-OMG inter-alia include the following:

(i)   Oversee, monitor and coordinate all activities relating to creation and implementation of the proposed DTH Infrastructure and its usage.

(ii)   Identify suitable implementing agencies for all associated tasks to set up, operate and use the DTH Infrastructure for education.

(iii)   Issue necessary direction for preparation of a project report, where necessary.

(iv)   Finalize all technical issues relating to DTH, including the selection of best transponder option, satellite option, teleporting facilities, set-top-box option, implementing option, studio/teaching ends option and all such related subsystems/issues.

(v)   Finalize the matters relating to the scope of the DTH Programme including identification of institutions to be covered, terms of participation, etc.

(vi)   Resolve issues if any, between Teaching Ends, Content Provider & Monitoring Committee and any other agencies, arising during implementation and / or operation of the DTH programme.

(vii)   Make necessary specific recommendations from time-to-time to NMEICT Mission/ MHRD to obtain financial and other approvals of the competent authority.

(viii) Recommend the re-appropriation of recurring and non-recurring budget heads within the sanctioned budget heads approved by the PAB towards the DTH Programme within the parameters of the project and the guidelines approved by the competent authority.

(ix)   Recommend suitable staff strength and personal policies as may be needed for the identified implementing agency (agencies).

(x)   Recommend appointments other than those made directly by the Implementing Agency (Agencies) or such appointments required to be approved by the Government.

(xi)   Provide guidance for establishment of Special Purpose Vehicle as a permanent Body for operationlisation of DTH system after its inauguration and stabilization.

(xii) Oversee creation of contents, teaching material, usage of channels, archiving knowledge contents, interfacing with allied/satellite/ computer/ electronic/ ICT infrastructure, and such other achievements for enhancing the utility of DTH.

(xiii) To involve itself into any of the activities that is necessary for establishment of functional, operational and successful DTH system.

6.   The TA/DA payable to the members attending the Committee meetings shall be borne out of NMEICT Mission Secretariat Funds.

(A. K. Singh)
Director (ICT)
011 2338 4276

To,

    Chairman and all members of the DTH-OMG

Copy to:

1.   Project Manager (NMEICT)
2.   Prof. Uma Kanjilal, IGNOU and incharge Sakshat Protal

No.F.16-49/2010-DL
Government of India
Ministry of Human Resource Development
Department of Higher Education
(TEL Bureau)

New Delhi, dated the 24th December, 2010

In keeping with the objectives of National Mission on Education through Information & Communication Technology (NMEICT), a Centrally Sponsored Plan Scheme, Government of India, Department of Higher Education, hereby constitutes a Committee comprising of the following, on Direct to Home (DTH) services under the said scheme, with immediate effect:
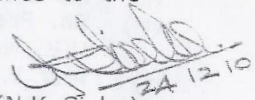
i)	Sh. S.V. Raghavan, Scientific Secretary to Principal Scientific Adviser, Govt. of India	Chairman
ii)	Dr. A. Bhaskaranarayana, Ex Scientific Secretary & Director	Member
iii)	Sh. K. Ravi Kant, Director, EMPC, IGNOU, New Delhi	Member
iv)	Sh. N. Neelakantan, Director, SCNP, ISRO HQ	Member
v)	Sh. K. Sethuraman, Associate Director, SCA&IO, SCNP, ISRO HQ	Member
vi)	Prof. Mangla Sunder K, Prof. IIT, Madras,Chennai	Member
vii)	Prof. A.K. Bakshi, University of Delhi, Delhi	Member
viii)	Sh. Pradeep Kaul, Joint Director (HW), CEC, UGC, New Delhi	Member
ix)	Prof. Y. N Singh, IIT, Kanpur	Member
x)	Dr. P. Ramanujan, C-DAC, Bangalore	Member
xi)	Dr. K. S. Das Gupta, Director, DECU, Space Application Centre, Ahmedabad	Member
xii)	Shri E. P. Balasubramanian, Group Director, DECU, Space Application Centre, Ahmedabad	Member
xiii)	Mr. V. S. Palsule, Group Director (ADCTG), DECU, Space Application Centre, Ahmedabad	Member
xiv)	Mr. Ravi Saksena, Head, DECU, Space Application Centre, Ahmedabad	Member
xv)	Mr. Tushar Kanti Roy, General Manager, MTNL, New Delhi	Member

2. Under the Mission, contents for various undergraduate, postgraduate and vocational courses are being developed. Connectivity is being provided for delivery of the contents and for meeting other objectives of the Mission through this connectivity provided to the Universities and Colleges. For full utilization of contents being developed, use of Direct to Home (DTH) mode has also been visualized in the Mission Document of National Mission on Education through

Contd. 2...

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Information and Communication Technology.   It has also been visualized that DTH mode will help in beaming of e-content in various regional languages. This will also ensure delivery round the clock to the students at their homes. Accordingly, the Committee may prepare a report, indicating as to how DTH technique can be used in this regard. In the process, the Committee may suggest number of channels, transponders, etc. required and also the source from which these can be procured with procedure to be followed.

3.   Certain DTH facilities are already available and system is being used even for education purpose. The Committee may suggest as to how the existing system can be used both by private and public sectors so that integrated approach is worked out.

4.   The Committee may co-opt any other member to facilitate the achieving of the objectives of the Mission.

5.   The Committee may devise its own methodology of work and may also deliberate through e-mails and through periodic meetings at Delhi or any other place, for which TA/DA shall be payable from the Mission.

6.   The Committee shall give its report within three months to Ministry of Human Resource Development, Department of Higher Education.

7.   Mission Secretariat of NMEICT will provide secretarial assistance to the Committee.

(N.K. Sinha)
Additional Secretary (TEL)
Tel: 23387781

Chairman & members of the Committee on DTH services

Copy to:

i) Hon'ble Minister of HRD & Chairman, National Apex Committee of NMEICT- for information.
ii) All members of the National Apex Committee of NMEICT - for information.
iii) The Secretary, Higher Education & Chairperson, PAB of NMEICT - for information.
iv) All members of the Project Approval Board of National Mission on Education through Information and Communication Technology- for information.
v) Nodal Officer (NMEICT)/Project Manager (NMEICT) – for information and necessary action.

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Agenda Item No. III. 2

Proposal   :   List of 213 Institutions and copy of a Standard MOU.

The 'DTH Committee' recommended setting up of 213 Teaching Ends (TEs) for Generation of live content for 50 channels located at a number of Institutions of Higher Education that include CUs, IITs, NITs, NITTTRs, IIMs, CEC & EMMRCs, IGNOU & State Open Universities, Institutions of National Importance, State & other Universities, Agriculture Universities, Medical Institutions etc.

Chairman, 'DTH Committee' vide letter 7th April 2014 to Chairman PAB communicated a list of Institutes and a standard MOU, to be signed between MHRD, Head Institute, where the TEs are recommended to be set up. The TEs shall be operational 8 Hrs a day all the 356 days a year for generation of live content and the Subject Matter Experts shall from these TEs deliver their sessions and answer live questions put by students across the country. The MOU defines role and responsibilities of each agency. The MOU has further been forwarded by MHRD to Ministry of Law & Justice for vetting. The ML&J has cleared the draft MOU. The List of 213 Institutions and draft standard MOU is attached as Annexure-III (2) (i)/Pages 10 to 30 and Annexure-III (2) (ii) / Page 31 to 38 respectively.

The draft MOU along with list of 213 Institutions where TEs are to be put up is submitted for kind ratification of PAB; on ratification, the MOU shall be communicated to the Heads of the Institutions by the MHRD as per list of TEs.

"Selected Teaching Ends"

S.N	Core Group Institution	Institution details at	Number of TE's to be set up in the Group
1.	Central Universities	**(Group-A)**	39
2.	IITs,	**(Group-B)**	16
3.	NITs,	**(Group-C)**	30
4.	NITTTR,	**(Group-D)**	4
5.	CEC & Media Centres,	**(Group-E)**	36
6.	IGNOU + State Open Universities	**(Group-F)**	12 13
7.	IIMs,	**(Group-G)**	4
8	Institutions of National Importance	**(Group-H)**	19
9.	State Universities	**(Group-I)**	20
10.	Agricultural Universities,	**(Group-J)**	4
11.	Medical Institutions,	**(Group-K)**	4
12.	Ind. Inst. of Infor. Tech. IIIT	**(Group-L)**	4
13.	ICAI, NIOS, CBSE	**(Group-M)**	5
14	For Redundancy at JNU Delhi		3
	Grand Total (1-14)		**213**
	Total Number of Channels		**50**

Note: Institutes in Group A to Mare shown separately.

(Group A)

List of Central Universities:

S.No	University
1	UNIVERSITY OF DELHI
2	NORTH EASTERN HILL UNIVERSITY
3	ASSAM UNIVERSITY
4	TEZPUR UNIVERSITY
5	MIZORAM UNIVERSITY
6	NAGALAND UNIVERSITY
7	MANIPUR UNIVERSITY
8	UNIVERSITY OF ALLAHABAD
9	RAJIV GANDHI UNIVERSITY
10	TRIPURA UNIVERSITY
11	SIKKIM UNIVERSITY
12	ENGLISH AND FOREIGN LANGUAGES UNIVERSITY
13	ALIGARH MUSLIM UNIVERSITY
14	BANARAS HINDU UNIVERSITY
15	JAWAHARLAL NEHRU UNIVERSITY
16	JAMIA MILLIA ISLAMIA
17	VISVA BHARATI
18	HYDERABAD UNIVERSITY
19	PONDICHERRY UNIVERSITY
20	BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY, LUCKNOW
21	MAULANA AZAD NATIONAL URDU UNIVERSITY
22	MAHATMA GANDHI ANTARRASHTRIYA HINDI VISHWAVIDYALAYA
23	INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY
24	CENTRAL UNIVERSITY OF BIHAR
25	GURU GHASIDAS VISHWAVIDYALAYA
26	CENTRAL UNIVERSITY OF GUJARAT
27	CENTRAL UNIVERSITY OF HARYANA
28	CENTRAL UNIVERSITY OF HIMACHAL PRADESH
29	CENTRAL UNIVERSITY OF KASHMIR
30	CENTRAL UNIVERSITY OF JHARKHAND
31	CENTRAL UNIVERSITY OF KARNATAKA
32	CENTRAL UNIVERSITY OF KERALA
33	Dr. HARISINGH GOUR VISHWAVIDYALAYA
34	CENTRAL UNIVERSITY OF ORISSA
35	CENTRAL UNIVERSITY OF PUNJAB
36	CENTRAL UNIVERSITY OF RAJASTHAN
37	CENTRAL UNIVERSITY OF TAMIL NADU
38	HEMWATI NANDAN BAHUGUNA GARWAL UNIVERSITY
39	CENTRAL UNIVERSITY OF JAMMU

Note: IGNOU as CU is shown separately.

		(Group B) Indian Institute of Technologies (IITs)	
1	IIT Bombay	Prof. Devang Khakhar Director Indian Institute of Technology (IIT) Powai, Mumbai - 400076	director@iitb.ac.in
2	IIT Delhi	Prof. R . K. Shevgaonkar Director Indian Institute of Technology (IIT) Hauz Khas, New Delhi - 110016	director@admin.iitd.ac.in
3	IIT Kanpur	Prof. Indranil Manna Director Indian Institute of Technology (IIT) P.O. IIT, Kanpur - 208076.	director@iitk.ac.in imanna@iitk.ac.in
4	IIT Kharagpur	Prof. Sankar Kumar Som Director Indian Institute of Technology (IIT) P.O. KHARAGPUR - 721302	director@ iitkgp.ernet.in
5	IIT Madras	Prof. Bhaskar Ramamurthi Director Indian Institute of Technology (IIT) P.O. IIT, Chennai-600036.	bhaskar@iitm.ac.in
6	IIT Roorkee	Prof. Pradipta Banerji Director Indian Institute of Technology (IIT) Roorkee - 247667	director@iitr.ernet.in
7	IIT Varanasi	Prof. Rajeev Sangal Director Indian Institute of Technology Banaras Hindu University Varanasi – 221005 Uttar Pradesh	director@itbhu.ac.in Sangal.cse@itbhu.ac.in
8	IIT Bhubaneswar	Prof. Chakraborty M Director Indian Institute of Technology (IIT) Bhubaneshwar Samantauri 751013 Bhubaneswar	director.office@iitbbs.ac.in
9	IIT Gandhi Nagar	Prof. Sudhir K. Jain Director Indian Institute of Technology (IIT) Gandhi Nagar	director@iitgn.ac.in
10	IIT Guwahati	Prof. Gautam Barua Director Indian Institute of Technology (IIT) North Guwahati, Guwahati- 781039	director@ iitg.ernet.in

11	IIT Hyderabad	Prof. Uday B. Desai Director Indian Institute of Technology (IIT) Hyderabad Ordinance Factory, Medak	director@ iith.ac.in
12	IIT Indore	Prof. Pradeep Mathur Director Indian Institute of Technology (IIT) Indore Institute of Engineering & Technology, DAVC Campus, Khandwa Road, Indore-452 017	director@iiti.ac.in
13	IIT Jodhpur	Prof. Prem K. Kalra Director Indian Institute of Technology (IIT) Rajasthan	kalra@iitk.ac.in
14	IIT Mandi	Prof. Timothy A. Gonsalves Director Indian Institute of Technology (IIT) Mandi	diroffice@iitmandi.ac.in
15	IIT Patna	Prof. Anil K. Bhowmick Director Indian Institute of Technology (IIT) Navin Govt. Polytechnic, Patliputra Colony, Patna 800013	director@iitp.ac.in
16	IIT Ropar	Prof. M. K. Surappa Director Indian Institute of Technology (IIT) Ropar Nangal Road, Rupnagar, Punjab	director@iitrpr.ac.in

Rank	National Institute of Technology (Core Group 'C')	State
1	National Institute of Technology, Warangal	Andhra Pradesh
2	National Institute of Technology, Tiruchirapalli	Tamil Nadu
3	National Institute of Technology, Surathkal, Mangalore	Karnataka
4	National Institute of Technology, Delhi	Delhi
5	Motilal Nehru National Institute of Technology, Allahabad	Uttar Pradesh
6	Malviya National Institute of Technology, Jaipur	Rajasthan
7	National Institute of Technology, Calicut	Kerala
8	Visvesvaraya National Institute of Technology, Nagpur	Maharashtra
9	National Institute of Technology, Kurukshetra	Haryana
10	National Institute of Technology, Rourkela	Orissa
11	Maulana Azad National Institute of Technology, Bhopal	Madhya Pradesh
12	SardarVallabhbhai National Institute of Technology, Surat	Gujarat
13	Dr. B R Ambedkar National Institute of Technology, Jalandhar	Punjab
14	National Institute of Technology, Durgapur	West Bengal
15	National Institute of Technology, Goa	Goa
16	National Institute of Technology, Jamshedpur	Jharkhand
17	National Institute of Technology, Hazartbal, Srinagar	Jammu & Kashmir
18	National Institute of Technology, Pondicherry	Pondicherry
19	National Institute of Technology, Hamirpur	Himachal Pradesh
20	National Institute of Technology, Raipur	Chhattisgarh
21	National Institute of Technology, Srinagar Garhwal	Uttarakhand
22	National Institute of Technology, Patna	Bihar
23	National Institute of Technology, Silchar	Assam
24	National Institute of Technology, Agartala	Tripura
25	National Institute of Technology, Papum Pare	Arunachal Pradesh
26	National Institute of Technology, Sikkim	Sikkim
27	National Institute of Technology, Manipur	Manipur
28	National Institute of Technology, Meghalaya	Meghalaya
29	National Institute of Technology, Mizoram	Mizoram
30	National Institute of Technology, Nagaland	Nagaland

Group D

'NITTTR' List

S. No.	Institutes Name	Address
1.	NITTTR Bhopal	**Prof. (Dr.) Vijay Kumar Agrawal** Director National Institute of Technical Teachers' Training & Research Shamla Hills, Bhopal - 462 002.
2.	NITTTR Chandigarh	Prof. M. P. Punia Director National Institute of Technical Teachers' Training & Research Sector 26, Chandigarh- 160 019.
3.	NITTTR Chennai	**Prof. Dr. S. Mohan** Director National Institute of Technical Teachers' Training & Research Southern Region, Taramani PO, Chennai- 600 113.
4.	NITTTR Kolkatta	Prof. Sanjay Kumar Bhattacharyya **Director** National Institute of Technical Teachers' Training & Research Block FC, Sector - III, Salt Lake, Bidhan Nagar, Kolkata - 700 091.

(Group 'E')

List of Consortium for Educational Communication (CEC) & EMMRCs

S.No	CEC & Media Centers (EMMRC'S)	Address	Directors Name & Email ID
1	CEC Delhi	Prof. Rajbir Singh Director, CEC , I.U.A.C Campus Aruna Asaf Ali Road New Delhi 110067	Prof. Rajbir Singh Director.cec@nic.in
2	Kolkata.	Dr. Someswar Bhowmik 50, Circus Avenue Kolkata - 700 017	Dr. Someswar Bhowmi K director@emrc.org
3	Delhi, Jamia	Prof. M. Obaid Siddiqui AJK-Mass Communication Research Centre Maulana Mohammed Ali Jauhar Marg, New Delhi - 110025	Prof. M ObaidSiddiqui director.mcrc@gmail.com
4	Indore	Dr. P. Singh Educational Multimedia Research Centre, Devi Ahilya Vishwavidyalaya, Indore – 452017	Dr. P. Singh head.avrc@dauniv.ac.in
5	Srinagar	Prof. Dr. Shahid Rasool University of Kashmir, Hazratbal Srinagar – 190006	Dr. Shahid Rasool office@emmrckashmir.com
6	Jodhpur	Prof. DGM Purohit Faculty of Engineering Campus, Jai Narain Vyas University, Jodhpur – 342011	Prof. DGM Purohit emmrcjod@dataone.in
7	Pune	Prof. Dr. Sameeran Datta Walvekar Educational Multimedia Research Center Pune, University of Pune Campus, Ganesh Khind, Pune – 411007	Dr. Sameeran Datta Walvekar sameeranw@gmail.com
8	Hyderabad	Dr. Krishna Rao Gandhe EMMRC-EFL University, Tarnaka, Hyderabad, Pin - 500007	Dr. Krishna Rao Gandhe gandhekrishnarao@rediffmail.com, emedia@emmrc-eflu.org

S.No	CEC & Media Centers (EMMRC'S)	Address	Directors Name & Email ID
9	Calicut	Mr. Damodar Prasad University of Calicut, Calicut University (PO), Malappuram District, Kerala. PIN- 673 635	Dr. Damoder Prasad emmrccalicut@yahoo.co.in, damodar.prasad@gmail.com
10	Mysore	Prof. A. Balasubramanian Educational Multimedia Research Center, Manasagangotri, University of Mysore, Mysore- 570006	Prof. A Balasubramanian emmrc1@gmail.com
11	Chennai	Prof. Dr. S. Gowri Educational Multimedia Research Centre, Sardar Patel Road, Anna University, Chennai - 600 025	Prof. Dr. S. Gowri avrcchennai@annauniv.edu, sgowri@annauniv.edu
12	Madurai	Dr. V. Sobhana Bai Madurai Kamaraj University, Palakalai Nagar, Madurai-625 021	Dr. V. Sobhana Bai emmrcmdu@yahoo.co.in
13	Imphal	Dr. N. Premchand Singh Educational Multimedia Research Centre, Manipur University, Canchipur, Imphal - 795003, Manipur.	Dr. N. Premchand Singh emmrcimp@yahoo.co.in
14	Osmania	Prof. M. Nagabhushanam Educational Multimedia Research Centre, Osmania University, Hyderabad -500007, A.P	Prof. M. Nagabhushanam emmrcou@yahoo.co.in
15	Patiala	Prof. Gurmeet Singh Maan Educational Multimedia Research Center, Panjabi University, Patiala, Punjab – 147002	Prof. Gurmeet Singh Maan emmrc.patiala@gmail.com, zazen31@gmail.com
16	Ahmedabad	Dr. Mandava .V.Rao Educational Multimedia Research Centre Guru Nanak Bhavan, Gujarat University, Navrangpura, Ahmedabad - 380 009	Prof. Dr. Mandava V Rao emrcabadad1@bsnl.in

S.No	CEC & Media Centers (EMMRC'S)	Address	Directors Name & Email ID
17	Roorkee	Dr. Sunil Mehru Educational Multimedia Research Center IIT Campus, Roorkee - 247667	Dr. Sunil Mehru avrc@iitr.ernet.in drsunilmehru@gmail.com
18	Sagar	Prof. J.D. Sharma Director (I/c) EMMRC Dr. Harisingh Gour Vishwavidyalya Sagar, 470003	Mob. 9425170616 D 07582-264153 07582-264417 Jdsharma29@gmail.com

(Core Group 'F')		List of Open University	
S. No.	Name of the SOU	Address	Email ID
1)	Indira Gandhi Open University, (IGNOU) Maidan Garhi, New Delhi 110068	Prof. M. Aslam	
2)	DR. B.R. Ambedkar Open University (BRAOU), Hyderabad, A.P. - (1982)	Vice Chancellor, BRAOU Prof. G. Ram Reddy Marg Road No.46, Jubilee Hills, Hyderabad - 500033	open@braou.ac.in
3)	Vardhman Mahaveer Open University (VMOU), Kota, Rajasthan - (1987)	Dr. NareshDadhich Vice Chancellor, VMOU Rawatbhata Road, Akhelgarh, Kota-324010, Rajasthan	vc@vmou.ac.in
4)	Nalanda Open University (NOU). Patna, Bihar - (1987)	Dr. Arun Kumar Vice Chancellor, NOU IIIrd Floor, Biscomaun Bhawan, West Gandhi Maidan, Patna - 800001, Bihar	nou@nou.ac.in
5)	Yashwantrao Chavan Maharashtra Open University (YCMOU), Nashik, Maharashtra - (1989)	Dr. R. krishnakumar Vice Chancellor, YCMOU Dnyanagangotri, Near Gangapur Dam, Nashik-422222, Maharashtra	Vc.ycmou@gmail.com
6)	Madhya Pradesh Bhoj Open University (MPBOU), Bhopal, M.P. - (1991)	Dr. S. K. Singh Vice Chancellor, MPBOU I.T.I (Gas Rahat), Building Govindpura, Bhopal – 462 023	vc@rbuphop.mp.nic.in
7)	Dr. Babasaheb Ambedkar Open University (BAOU), Ahmedabad, Gujarat - (1994)	Dr. Manoj Soni Vice Chancellor, BAOU R.C. Technical Compound, Opp. Gujarat High Court, Sarkhej-Gandhinagar Highway, Sola, Ahmedabad-380 060.	baouvc@gmail.com

(Core Group 'F')		List of Open University	
S. No.	Name of the SOU	Address	Email ID
8)	Karnataka State Open University (KSOU), Mysore, Karnataka (1996)	Prof. K S Rangappa Vice Chancellor, KSOU Manasagangotri, Mysore - 570006, Karnataka	rangappaks@yahoo.com
9)	Netaji Subhas Open University (NSOU), Kolkata, W.B. - (1997)	Prof. SubhaSankarSarkar Vice Chancellor, NSOU 1, Woodburn Park, Kolkata - 700020, West Bengal	vc_nsou@wbnsou.ac.in
10)	U.P. Rajarshi Tandon Open University (UPRTOU), Allahabad, U.P. - (1998)	Prof. A. K Bakhshi Vice Chancellor, UPRTOU Shantipuram Awas Youjana (Sector-F) Phaphamau, Allahabad-211013	uprtouvc@yahoo.co.in
11)	Tamil Nadu Open University (TNOU), Chennai, Tamil Nadu (2002)	No 577, Anna Salai, Saidapet, Chennai - 600 015.	contact@tnou.ac.in
12)	Pt. Sunderlal Sharma Open University (PSSOU), Bilaspur, Chhattisgarh - (2005)	Dr. A . R Chandraker Vice Chancellor, PSSOU Near Pandit Deen Dayal Upadhayay Park, Vayapar Vihar, Bilaspur (Chattisgarh) -495001	vc@pssou.ac.in
13)	Uttaranchal Open University, Haldwani, (Nainitall), Uttaranchal	Dr. H P Shukla Vice Chancellor, UOU Behind Transport Nagar Teenpani Bye Pass Road Haldwani, Uttarakhand 263169	
14)	Krishna Kanta Handique State Open University, Guwahati, Assam	Prof. Srinath Baruah Vice Chancellor, KKHSOU Housefed Complex, Last Gate, Dispur, Guwahati - 781006, Assam	kkh_sou@yahoo.com

Group G

Indian Institute of Management (IIMs)

S. No.	Name of B-Schools
1	IIM, Ahmedabad
2	IIM, Bangalore
3	IIM, Calcutta
4	IIM, Lucknow

(Group H)

INSTITUTIONS OF NATIONAL IMPORTANCE

S.No	Name of the Institutions
1.	Indian Institute of Science (IISc), Bangalore
2.	Krishna N Ganesh **Director** Indian Institute of Science Education and Research (IISER) First floor, Central Tower, Sai Trinity Building Garware Circle, Sutarwadi, Pashan, Pune, Maharashtra 411021, India
3.	**Prof. R N Mukherjee** Director IISER Kolkata Mohanpur Campus PO: BCKV Campus Main Office, Mohanpur - 741252,Nadia, West Bengal
4.	Prof. N. Sathyamurthy Director IISER Mohali, Knowledge city, Sector 81, SAS Nagar, Manauli PO 140306.
5.	Vinod Kumar Singh Director Indian Institute of Science Education& Research Bhopal Village :Bhauri, Tehsil : Huzur, Indore By-pass Road, District : Bhopal – 462030, Madhya Pradesh
6.	Prof. Chetan Vaidya Director School of Planning & Architecture, I.P. Estate, New Delhi - 110 002.
7.	Prof. Dipankar Pal Director North Eastern Regional Institute of Science and Technology (NERIST) Nirjuli (Itanagar) – 791109, Arunachal Pradesh, India
8.	Prof. RadhavallabhTripathi Vice Chancellor Rashtriya Sanskrit Sansthan, 56-57, Institutional Area, Pankha Road, Janak Puri, New Delhi.
9.	Prof. Harekrishna Satapathy Vice Chancellor Rashtriya Sanskrit Vidyapeetha, Tirupati, (A.P.).

S.No	Name of the Institutions
10.	Dr. S.N. Barman Director Central Institute of Indian Languages, Manasagangothri, Hunsur Road, Mysore 570006
11.	Prof Basudev Chatterji Chairman Indian Council of Historical Research (ICHR), 35 - Ferozeshah Road, New Delhi - 110001
12.	Prof. SukhadeoThorat Chairman, Indian Council of Social Science Research (ICSSR), Post Box No. 10528, Aruna Asaf Ali Marg, New Delhi - 110067.
13.	Professor Koneru Ramakrishna Rao Chairman Indian Council of Philosophical Research (ICPR) 36,Tughlakabad Institutional Area, Near BatraHospital,Tughlakabad , New DelhI - 110062.
14.	Indian Institute of Space Science and Technology, Dr. K. S. Dasgupta , Director Address: Indian Institute of Space Science and Technology Valiamala P.O., Thiruvananthapuram - 695 547, Kerala Email: ksd@iist.ac.in
15.	Prof. VasudaKamat, VC Shreemati Nathibai Damodar Thackersey Women's University, Mumbai
16.	Shri Mata Vaishno Devi University, Jammu
17.	TERI University, New Delhi.
18.	Prof. S. Parasuraman - Director, Tata Institute of Social Science. Pb No 8313 Opposite Deonar Bus Depot, SionTrombay Road, Telecom F. Deonar, Mumbai, MH 400088 Email: sparasuraman@tiss.edu
19.	Indian Institute of Remote Sensing, Indian Space Research Organisation, Dept. of Space, Govt. of India 4, Kalidas Road, Dehradun - 248 001 (India) Tel: + 91 - (0)135 - 2524105 Fax: + 91 - (0)135 - 2741987 , E-mail: director[At]iirs[dot]gov[dot]in,

Group-I   **State Universities.**

Universities	Location
1 University of Mumbai	M.G. Road, Fort, Mumbai-400 032.
2 Punjab University	Sector 14, Chandigarh, 160014
3 Osmania University	Osmania University, Hyderabad-500007
4 University of Madras	University Building, Chepauk, Chennai, Tamil Nadu 600005
5 Jadavpur University	LB Block, Plot No. 8, Salt Lake Bypass, Sector III, Salt Lake City, Kolkata, West Bengal 700098
6 Andhra University	Karachettu Road, Visakhapatnam, Andhra Pradesh 530003
7 University of Calicut	University of Calicut, Malappuram District, PIN 673 635 Kerala,
8 Gujarat University	120 Circular Road, Navrangpura, Ahmedabad, Gujarat, 380009
9 National Institute of Fashion Technology	Hauz Khas, Near Gulmohar Park, New Delhi,110016
10 Ranchi University	Jarkhand.
11 Jammu University	Jammu Tawi, J&K.
12 Himachal University	Himachal Pradesh.
13 Patna University	Bihar.
14 UtkalUniversity	Orissa.
15 Rajasthan University	Rajasthan.
16 Kamaun University	Uttarakhand.
17 Goa University	Goa.
18 Kurukshetra University	Haryana.
19 Bundelkhand University	Jhansi, Uttar Pradesh.
20 Gauhati University	Assam.

(Core Group 'J')

Agriculture Institutes

S.No	University / Institutes
1	Indian Agricultural Research Institute, Pusa, New Delhi
2	Punjab Agricultural University, Ludhiana
3	Indian Veterinary Research Institute, Izatnagar
4	Ch. Charan Singh Haryana Agricultural University, Hisar

(Core Group 'K')

Medical Universities

S. No	Institutes
1	All India Institute of Medical Sciences, New Delhi.
2	Postgraduate Institute of Medical Education and Research, Chandigarh.
3	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram.
4	Sanjay Gandhi Postgraduate Institute of MedicalSciences, Lucknow

Group L

Indian Institutes of Information Technology (IIIT)

1. Indian Institute of Information Technology, Allahabad.

2. Indian Institute of Information Technology and Management, Gwalior.

3. Indian Institute of Information Technology Design and Manufacturing, Jabalpur.

4. Indian Institute of Information Technology Design and Manufacturing, Kancheepuram.

Group-M

S. No	Address	No of TEs
1	Vijay Kapur ICAI Bhawan Indraprastha Marg Post Box No. 7100 NEW DELHI - 110 002	1
2	National Institute of Open Schooling A-24/25, Institutional Area, Sector - 62, NOIDA Distt. GautamBudh Nagar, Uttar Pradesh - 201 309	1
3	Central Board of Secondary Education "Shiksha Kendra", 2, Community Centre, Preet Vihar, Delhi - 110 092.	3

List-R
"Lead Institute(s) for each Core Group"

S.No	Core Group (CG)	Refer List Members of CG	Lead Institute(s)
1	Central Universities	Group-A	1. Jawaharlal Nehru University 2. University of Delhi, 3. BHU.
2	IITs	Group-B	IIT Delhi,
3	NITs	Group-C	NIT Bhopal
4	NITTTRs	Group-D	NITTTR Chandigarh
5	CEC & EMMRCs	Group-E	CEC
6	Open Universities	Group-F	IGNOU
7	IIMs	Group-G	IIM Ahmedabad
8	Inst. of Nat Importance	Group-H	IISER Mohali
9	State & other Universities	Group-I	Osmania University
10	Agriculture Institutes	Group-J	Indian Agricultural Research Institute, Pusa, New Delhi
11	Medical Institutes	Group-K	All India Institute of Medical Sciences, New Delhi
12	IIITs	Group-L	IIIT Jabalpur.
13	ICAI, NIOS, CBSE	Group-M	ICAI, NIOS, CBSE

"List of Teaching Ends as Training Centres"
(Refer RFP Page 5 Para D)

S.No	CEC & Media Centers (EMMRC'S)	Address	Directors Name & Email ID
1	CEC Delhi	Prof. Rajbir Singh Director, CEC , I.U.A.C Campus Aruna Asaf Ali Road New Delhi 110067	Prof. Rajbir Singh Director.cec@nic.in
2	Kolkata.	Dr. Someswar Bhowmik 50, Circus Avenue Kolkata – 700 017	Dr. SomeswarBhowmi K director@emrc.org
3	Delhi, Jamia	Prof. M. Obaid Siddiqui AJK-Mass Communication Research Centre Maulana Mohammed Ali Jauhar Marg, New Delhi - 110025	Prof. M ObaidSiddiqui director.mcrc@gmail.com
4	Indore	Dr. A. K. Singh Educational Multimedia Research Centre, Devi Ahilya Vishwavidyalaya, Indore – 452017	Dr. P. Singh head.avrc@dauniv.ac.in
5	Srinagar	Prof. Dr. Shahid Rasool University of Kashmir, Hazratbal Srinagar – 190006	Dr. Shahidrasool office@emmrckashmir.com
6	Jodhpur	Prof. DGM Purohit Faculty of Engineering Campus, Jai Narain Vyas University, Jodhpur - 342011	Prof. DGM Purohit emmrcjod@dataone.in
7	Pune	Prof. Dr. Sameeran Datta Walvekar Educational Multimedia Research Center Pune, University of Pune Campus, Ganesh Khind, Pune – 411007	Dr. SameeranDattaWalvekar sameeranw@gmail.com
8	Hyderabad	Dr. Krishna Rao Gandhe EMMRC–EFL University, Tarnaka, Hyderabad, Pin – 500007	Dr. Krishna RaoGandhe gandhekrishnarao@rediffmail.com, emedia@emmrc-eflu.org
9	Mysore	Prof. A.Balasubramanian Educational Multimedia Research Center, Manasagangotri, University of Mysore, Mysore- 570006	Prof. A Balasubramanian emmrc1@gmail.com
10	Chennai	Prof. Dr. S. Gowri Educational Multimedia Research Centre, Sardar Patel Road, Anna University, Chennai 600 025	Prof. Dr. S. Gowri avrcchennai@annauniv.edu, sgowri@annauniv.edu

Memorandum of Understanding

Establishing

Teaching Ends

For DTH *Educational Channels of*

NMEICT, MHRD

(as National Facilities) at various

Institutions*

Dated: 5ᵗʰ May 2015

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*IITs, Central Universities, State Universities, NITTTR, IIITs, NITs, IIMs, CECs, EMMRCs, Institutes of National Importance, etc.

MOU between MHRD and Head, Institution for establishing DTH Teaching End(s).

Memorandum of Understanding
Amongst
Department of Higher Education, Ministry of Human Resource & Development, University / Institution and
Chairman "Direct to Home - Operations Management Group" (DTH-OMG)
For establishing DTH Teaching Ends (TEs) as National Facility

1. This Memorandum of Understanding (MOU) is signed amongst Ministry of Human Resource Development through Mission Director, National Mission on Education through Information and Communication Technology (NME-ICT), hereinafter called the first party; the University/Institute agreed to set up 'Teaching End (TE)' hereinafter called second party and the Chairman, DTH-Operations Management Group (OMG) hereinafter called Third Party.

2. This Memorandum of Understanding has been entered amongst the three parties as above with the objective of broadcasting e-lectures, mostly Live through Direct to Home (DTH) platform, uninterruptedly, under NME-ICT, from Teaching Ends (TEs) being established in the premises of Second party.

3. The role and responsibilities of first, second & third party have been mentioned under paragraph no. A), B) and C) respectively.

A) Responsibilities of the First Party:

I. The first party shall issue instructions to the second and third party for successful conduct of DTH Programme.

II. The first party shall facilitate to address every activity needed for successful launch, operations and transmission of DTH services that includes providing infrastructure, providing DTH Studio's called TEs for content generation as National Facilities, arranging satellite transponders, beaming content to the satellite through Earth Station/Teleport, making arrangements for management of DTH programme etc., by considering the advice of third party, if necessary.

i. The first party on the recommendation of third party shall arrange for requisite Non-Recurring and Recurring funding required for various components of TE and for successful implantation of DTH programme.

III. The first party may arrange to conduct regular studies to analyze the impact of the DTH program, to understand viewership, to assess impact audience research, viewership profile etc., or consider the use of Social Networking and feedback mechanism to assess impact.

IV. The first party shall resolve issues, if any, between any parties during the implementation and operation of the DTH programme.

B) Roles and Responsibilities of the Second Party, Hosting the DTH TE:

a. General

ii. The second party shall comply with the instructions of Third Party or any agency authorized by the third party, regarding setting up of TE for content generation and operations of the DTH programme at TEs.

iii. The second party shall offer necessary assistance, to an Agency authorized by the third party to carry out work for putting a robust Optical Fibre connectivity, from TE location to National Knowledge Network (NKN) **POP**, for onward transmission of signals to the Teleport site.

iv. Second Party on the advise of Third Party, shall ensure Service Management Provider (SMP) is allowed to perform services at TE, successfully as per Quality of Service Contract; authenticate the 'Payment Claim Form' submitted by the SMP is as per contract between SMP and IIT Madras, within 7 days of working days on submission of payment claim form and make it available at DTH IIT Madras website. The certification, *interalia* include whether the S M P services involve any penalty for the month. The authentication certificate on Host Institute's letters head duly signed by the TE Co-ordinator of the Institute shall be posted to the Co-ordiantor at IIT Madras/uploaded on DTH IIT Madras website within the stipulated time.

b. Related to Physical Establishment of DTH TE(s)

i. The second party shall appoint 'Technical Programme Integrator' (TPI), in consultation with third party to establish the DTH TEs as per specifications as well as to install and integrate the TE Equipment in the DTH TEs.

ii. The second party shall provide requisite space, rooms of the size close to (30' x 22, x 15,), (18, x 22,) and (15, x 18,) – (all rooms collocated) along with electricity, power backup, water, telecom, security and other infrastructure facilities required for, with approval of Third Party for running the DTH TEs, within one month of signing of this MOU. The TE shall function as National Facility at this location.

iii. The second party shall receive Teaching End Equipment, acquired on their behalf by DTH-OMG/IIT Madras; confirm receipt of the equipment in accordance with the purchase order; enter the received equipment to an Asset Register of the Institute; submit a certificate to IIT Madras certifying that the equipment ordered by the IIT Madras for the second party has been received as per order and are in working condition; verify annually the physical presence & working condition of the equipment in the Asset Register and upload the report on DTH IIT Madras website and any discrepancy if noticed to be immediately intimated to the Third and First Party.

iv.   The second party shall establish DTH TEs infrastructure required for generation of educational content for the channels, viz., DTH Studios – also called Teaching Ends (TEs) – as National facilities, as per the specification finalized by the Third Party.

v.   The second party shall get the DTH TEs infrastructure completed along with the civil and electrical modifications, acoustic treatment, air-conditioning, fire detector and alarm fire extinguishers, etc., as per standard instructions, under the supervision of IIT Madras/DTH-OMG.

vi.   The second party shall ensure compliance by the Technical Programme Integrator (TPI) as per TPI contract with second party. After successful completion of the jobs, the Head of the Institution, where the TE is established, shall issue a Certificate to the Coordinator of TE establishment project at IIT Madras/DTH-OMG in the format provided by IIT Madras/DTH-OMG for further processing by IIT Madras/DTH-OMG. The running of DTH TEs operations shall be by a Service Management Provider (SMP).

vii. The second party shall comply with the instructions, issued by the First and Third party from time to time regarding Technical, Management, Operations etc., of the DTH programme.

c.   Operation and Management - Academic.

i.   The second party shall designates two faculties from its own institution in consultation with Third Party as TE Co-ordinators to be in-charge for smooth running of Academic, Technical Operations of DTH programme at the TE end. One of them shall be designated as Principal Co-ordinator and another as Associate Coordinator. The second party shall empower them (subject to their internal practices, procedures, and policies), to receive funds from IIT Madras / MHRD for making payment for academic activities. The payments shall include: honorarium to subject in matter experts (SME) for delivering Session(s) / lecture(s), transport charges (if any) and make such payments as per the policy framed prepared by the Third Party.

ii.   The Second party shall engage Subject Co-ordinator(s) and make payment to such subject co-ordinator (s) in accordance with the policies framed by the third party.

iii. The second party shall ensure that each TE (i) is used for live and interactive telecast for 2 to 3 hours a day without fail, 365 days a year, (ii) for e-content generation using the telecasted material and (iii) generates graphic, animation, power point etc. material required by the Teachers / SME's for telecast are produced well in advance (**qualification)** to the day of telecast.

iv. The second party shall allow Services Management Provider (SMP) appointed by IIT Madras/DTH-OMG to engage contractual staff for their TE(s) and coordinate their working for ensuring smooth operations for the DTH activities at the TE.

v. The second party shall Monitor DTH telecast for complete duration of the subject assigned to the Teaching End by the Lead Institute and file the Telecast report by 2nd date of every month to the designated agency assigned by the Third Party indicating transmission quality during the month.

vi. The second party shall provide by 2nd of every month a statement regarding the quality of services provided by the Service Management Provider, in order to enable monthly payments to the SMP by IITMadras/DTH-OMG by 10th of every month; shall also upload such information on DTH website maintained by IIT Madras and as instructed by the IIT Madras,.

vii. The second party shall follow instruction issued by the Lead Institute of the Core Group or an agency/committee designated by Third Party, regarding which subject is to be delivered by the TE.

viii. Second Party shall use the DTH website maintained by IIT Madras to upload issues relating to Audio / Video Production Equipment, Technical Programme Integration and Deliverables by Services Management Provider (SMP). Second Party shall further coordinate the resolution of faults and issues that are to be attended to by the Tenderer and display its status on the DTH IIT Madras website.

ix. The second party shall continuously encourage Teachers to get involved in a big way to deliver live lecture with multimedia rich content, interact live with students through the electronic medium as part of the DTH programme regularly, conforming to syllabus in vogue.

d. Operation and Management – Financial

i. The second party shall open a separate bank account for the funds, received by the Institute for running the DTH TE, from the first party or its designated agency, maintain books of account of the same, as per the extant rules of Government of India, in force from time to time and make available the account books, inventory for audit to the first party or CAG or any other agency indentified by first party.

ii. The second party shall maintain a separate account for the DTH activity in accordance with the grants-in-aid received from First Party and/or its designated agency, submits Utilization Certificate periodically as per provisions under General Financial Rules (GFR) of Government of India.

iii. The second party shall prepare and maintain a record of all assets acquired wholly or substantially out of grants received under the DTH programme. Such assets shall not

be disposed of, encumbered or utilized for other purpose other than DTH-operations without prior permission of the first party.

iv. The second party shall make available the books of account, equipment register **Service Record Book** etc., related to the DTH programme for which assistance is received, for inspection before the officer/committee/agency authorized by the first party/designated monitoring agency. The accounts relating to the project shall also be open for inspection by the Comptroller and Auditor General of India or its nominee(s).

C) Roles and Responsibilities of the third Party.

i. The third party shall advise the Second Party regarding engaging a 'Service Management Provider (SMP).

ii. The third party will recommend the First Party related to the number of satellite transponder(s) required for launching DTH channels. Such transponders shall be acquired from Department of Space (DOS), so that DTH channels on 24 x 7 basis are made available for as many subjects, for as many classes in as many languages to the extent possible. This would reduce the waiting time for watching the next lecture on that subject / topic or for repeat telecast based on demand. However, to begin with the first party shall at present provide two transponders and shall launch about 50 DTH channels.

iii. The third party shall recommend to the first Party regarding establishment of Cloud Server to make the DTH live content available via CDN to IP devices across the country using either Multicasting or Video on Demand.

iv. The third party in consultation with first party shall facilitate sufficient advertisement and awareness Campaign of the DTH Programme pre and post launch. The third party or may engage any other Organization/agency or seek assistance from Prasar Bharti for the Purposes of Cross Channel publicity on DD Channels, preparation of advertisement material, promos etc.

v. The third party in consultation with first party shall arrange/provide permanent space and building for setting up DTH Operations and Monitoring of MHRD DTH Channels, Earth Station etc., and shall arrange for funds available for this activity.

a. Coordination with other TEs and the DTH Programme.

i. The third party shall be responsible for overall functioning, progress and monitoring of MHRD - DTH programme in totality on regular basis and shall advise the first and second party from time to time on its all aspects.

ii. The third party shall advise establishment of a Core Group to which the second party shall belong; the Core Group along with Second Party, shall involve themselves rigorously in planning relevant subjects, courses, coverings many disciplines that can be delivered on the TE at the institute or elsewhere.

iii. The third party shall advise the second party regarding entering into a contract with a Teacher/SME for delivering live sessions at the TE.

iv. The third party shall recommended to the second party regarding conduct of workshops for subject matter Experts and / or allow them to participate in national or regional workshops as per the budget allocated by first party.

F) Commencement of MOU

The MOU shall be in force from the date the document is signed between Joint Secretary, TEL, MHRD, Head of the Host Institution for establishing DTH Teaching Ends (TEs) and the Director, IIT Madras.

G) Termination of MOU

i. Owing to nature of the programme, to run the DTH transmission uninterrupted, the MOU shall continue to be in force unless terminated by the first party. However, the second party may give a notice of six months to terminate the agreement.

ii. The first Party on the recommendation of third party, reserves the right to terminate the MOU with the Second Party, in case fail in quality of services taking place at the TE; however, the First Party shall give four months notice, on this, to the Second Party.

H   Dispute & Redressal Mechanism.

In the event of any dispute / grievance arising out of the MOU, efforts shall be made to settle the disputes/grievance amicably. However, in case the disputes/grievance persists, it shall be decided by the Secretary, HE, MHRD.

K.   Inking the MOU

In acceptance with the terms and conditions as mentioned above, each of the agencies hereby set their signatures on ……………………….. day of …………… 2015, in the presence of the Hon'ble …………….. (to be decided soon).

1.   **Joint Secretary (TEL), Ministry of Human Resource & Development.**

2.   **VC/Director, University/Institution**

3.   **Chairman, DTH Operations & Management Group.**

Agenda Item No. III. 3

Proposal   :   Process for Preparing Agenda Notes for New Proposals to be put up to PAB.

MHRD, TEL Division has issued the implementation guidelines/ procedures for processing of NMEICT project proposals on 12th December 2014. In the implementation guidelines/ procedures for processing of NMEICT project proposals, it is stated that based on the recommendations of the Domain Experts Committee (DEC), the agenda for the Project Approval Board would be prepared by the Mission.

The experience so far, has revealed that the recommendations of the Domain Experts Committee mostly are based only on the merit of the individual proposal, as the assessment and evaluation of the individual proposals is done by the DEC members, who are mostly academicians and their contribution and assessment is very appropriate, but mostly on the content of the work proposed, the cost estimates and the rigour of the methodology for execution of the project. This sometimes leads to putting up the DEC recommendations for new proposals to PAB without certain additionally needed factors relevant for PAB's decision making - like no. of similar proposals in the same area already sanctioned by PAB, the provision for compliance (or otherwise) for following GFRs and other relevant Government orders, the broad perspective about placement of the subject proposal in MHRD/ NMEICT vis-a-vis other bureaus of MHRD or other Ministries/ Departments of Government of India etc. Consequently some of the proposals sanctioned by PAB are not able to withstand such scrutiny, before placing the award to the PI.

In view of above it is proposed that the DEC recommendations for new proposals may be first got examined and commented upon by the Mission Director/ TEL Bureau so that the PAB approvals lead to faster award of the new projects and thus would be more effective as a process for processing of the new proposals. **Hence, it is put up for PAB's consideration that the TEL Bureau/ Mission Director assisted by Senior Consultants may first examine the DEC recommendations on all such factors and prepare the agenda notes for new proposals accordingly**

Items for Consideration

Engaging Additional Technical & Secretarial Support Staff for NMEICT

Agenda Item No. IV : Items for Consideration

Agenda Item No. IV A : Administration

Agenda Item No. IV A (1)

Proposal : Engaging Additional Technical & Secretarial Support Staff for NMEICT.

Presently, only 3 Senior Consultants are engaged through TSG-EdCIL in the Mission Secretariat to assist the Mission Director (NMEICT) and Nodal Officer (NMEICT) at Shastri Bhawan. These 3 Senior Consultants have been assigned about 100 sanctioned projects to mentor, guide, monitor, review and report as the representatives of MHRD/NMEICT through attending PRSG meetings as mandated in the Mission Document. In addition, these 3 Senior Consultants also serve on the three Domain Experts Committees and the PAB for preparing Agenda items and Minutes of the Meetings, etc. and have also been further allocated different Mission Areas/Components to nurture and report upon.

These 3 Senior Consultants (who are all retired senior Govt. Officials) do not have any technical and secretarial assistance provided to them, except for a Computer Operator each. This top-heavy approach of just Senior Consultants operating alone for assisting the Mission Director and Nodal Officer (NMEICT)constrains the working effectiveness of Senior Consultants and Mission for quicker processing of various proposals and concept notes, etc.

With recent initiatives started such as Digital India's Early Harvest Programme of Hon'ble PM to Wi-Fi all universities, National Digital Library, CHEERS, development of MOOCs Platform, DTH, etc. there is immediate need to engage additional technical and secretarial support for strengthening the Mission Consultants and Officials for ensuring smooth and expedient working. The additional staff proposed to be hired by NMEICT as the Project Staff on contract is as follows:

S. No	Category	Strength sanctioned by PAB	Positions in Place	Vacant	No. of Positions proposed to be filled
1	Senior Consultant/ Consultant	17	4	13	Sr. Consultant - 2 Consultant - 1
2	Junior Consultants & Support Staff	34	17	17	Junior Consultants - 3 Sectt. Support - 2 Office Assistant - 2 MTS/Messenger - 3

The posting of the staff is proposed as follows:

Senior Consultants (2) and Consultant (1): To assist for formal closure of completed projects files with guidance of Nodal Officer (NMEICT)/ TEL Bureau.

Junior Consultants (3): One each allocated to assist each of the 3 Senior Consultants.

Secretarial Staff (2): Senior Secretary cum Executive Assistant (1) to assist Nodal Officer (NMEICT); Junior Secretary (1) to assist the Senior Consultants on sharing basis.

Office Assistant (2): For assisting the Consultants (1) and for assisting Nodal Officer NMEICT (1).

MTS (3): one each under Mission Director (NMEICT), Nodal Officer (NMEICT) & Senior Consultants/Consultant on sharing basis

As recruiting the staff through EdCIL process may take considerable time of over 3 months, and also the staff so recruited by EdCIL may not be specifically oriented to TEL activities, it is proposed that the above staff may be immediately recruited by NMEICT as per the following specific requirements and eligibility conditions, pending regular recruitment:

<u>**Senior Consultant/ Consultant:**</u>

Educational Qualifications:

Essential: PG in IT/Computer Applications or Graduation in Engineering.

Desirable: PhD in Engineering or Management for Senior Consultants and PG in Engineering or Management for Consultant.

Experience: Minimum 20 / 10 years post-qualification experience in related field of IT/Computer applications for Senior Consultant/ Consultant respectively. Experience in education sector preferred.

Age limit: Max. 70 years for Senior Consultant and 40 years for Consultant.

Starting Fee range (consolidated): Rs. 60,000/- to Rs. 90,000/- negotiable for Senior Consultant and Rs. 40,000/- to 60,000/- negotiable for Consultant, depending on selection body's recommendation.

Junior Consultants:

Educational Qualifications:

Essential: Graduate in IT / Computer Applications/ Business Studies Graduation in Engineering.

Desirable: Graduation in Engineering or PG in IT/Computer Applications.

Experience: Minimum 5 years post-qualification experience in related field of IT/ Computer applications. Experience in education sector preferred.

Age limit: Max. 35 years

Starting Fee range (consolidated): Rs. 25,000/- to 40,000/- negotiable, depending on selection body's recommendation.

Secretarial Staff/ Office Assistants:

Educational Qualifications:

Essential: PG in Arts/Commerce/Humanities for Senior Secretary; Graduation in Arts/Commerce/Humanities for Junior Secretary, with proficiency in steno typing and typing.

Desirable: Diploma in Secretarial practice/ stenography.

Experience: Minimum 10 years experience for Senior Secretary cum Executive Assistant and 5 Years for Junior Secretary and Office Assistants in secretarial practice. Experience in education sector in Govt. organization/ autonomous bodies preferred.

Age limit: Max. 40 years for Senior Secretary, 35 years for Junior Secretary and Office Assistants.

Starting salary range (consolidated): Rs. 25,000/- to 40,000/- negotiable for Senior Secretary cum Executive Assistant, and Rs. 20,000 to 30,000 negotiable for Junior Secretary and Office Assistants, depending on selection body's recommendation.

MTS/ Messenger:

Educational Qualifications:

Essential: Senior Secondary Certificate.

Desirable: Graduation in any discipline.

Experience: Minimum 2 years post-qualification experience as support staff. Experience in education sector preferred.

Age limit: Max. 30 years

Starting salary range (consolidated): Rs. 10,000/- to Rs. 12,000/- negotiable, depending on selection body's recommendations.

PAB may approve the engagement of 13 additional Technical & Secretarial Support Staff for NMEICT, as proposed above.

Enhancement of Consultancy Fee of Senior Consultants and the Salary of other contractual Support Staff working in TSG-EdCIL and re-designation of Senior Consultants.

Agenda Item No. IV A (2)

Proposal: Enhancement of Consultancy Fee of Senior Consultants and the salary of other contractual supporting staff working in TSG-EdCIL and re-designation of Senior Consultants.

A. The consultancy fees of 2 Senior Consultants working in NMEICT as TSG-EdCIL support, (recruited by EdCIL through regular selection process), was fixed at Rs.90,000/- (consolidated) w.e.f. April 1, 2012, which has not been revised since then. In addition other supporting staff at various levels, who have been recruited by EdCIL, as a part of TSG-EdCIL support have not been given any raise since September, 2013.

Two of the Senior Consultants have been working for over three years without any raise and hence they have represented that in order to compensate for the price rise in last three years, they may be given appropriate annual raise in their Consultancy Fee(from the last fixed Rs.90,000), linked to the inflation as well as their performance rating done by the Mission Director. Similarly, all other supporting staff who have not been given any raise even after spending over 20 months since last salary fixation, have also been demanding appropriate annual raise commensurate with the inflation as well as their performance.

Since the Consultants and the supporting staff are all working on contract basis on a consolidated fee/ salary, they are not entitled for the DA increase done every 6 months for Govt. officials. Hence, EdCIL has fixed norms for annual raise for such cases, depending on the performance rating of the concerned staff. The rules being followed by EdCIL for annual increase, for other MHRD projects are as below:

Performance Rating	% Annual Raise
Unsatisfactory	Nil
Average	5% of existing remuneration
Good	10% of existing remuneration
Very Good	15% of existing remuneration
Outstanding	20-25% of existing remuneration

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Hence, PAB may consider and approve for the annual raise in the consulting fees of Senior Consultants, as per the above norms, without any ceiling or stagnation in their consolidated fees, similarly PAB may also approve the annual raise in the salary of all other supporting staff working in TSG-EdCIL in respect of all such employees who have not got the raise over last one year. PAB may also approve the application of such norms in respect of all other Consultants and staff who have not yet completed one year, but become eligible for annual raise after completion of one year since their joining.

B. Further, the Senior Consultants, who have to visit various projects for monitoring, as a part of their official duties are also not entitled for Air travel as per existing EdCIL Norms for Senior Consultants. Hence, it is also proposed that the present Senior Consultants may be re-designated as "Chief Consultant" because their consultancy fee, fixed on April 1, 2012 already corresponds to Consultancy fees of the Chief Consultants of EdCIL for other MHRD Projects.

Put up to PAB for consideration and approval for:

(a) **Annual raise in the consulting fees of Senior Consultants, as per the set norms of EdCIL, without any ceiling or stagnation in their consolidated fees, and also the annual raise in the salary of all other supporting staff working in TSG-EdCIL in respect of all such employees who have not got the raise over last one year. PAB may also approve the application of such norms in respect of all other Consultants and staff who have not yet completed one year, but become eligible for annual raise after completion of one year since their joining.**

(b) **Re-designation of present Senior Consultants recruited by EdCIL through regular selection process, as "Chief Consultant", without any additional financial outgo because of this proposed re-designation and without requirement for any additional post of Senior Consultants to be filled.**

Delegation of Financial powers for TSG-EdCIL Expenditure to Nodal Officer (NMEICT).

Agenda Item No. IV A (3)

Proposal: Delegation of financial powers for TSG-EdCIL expenditure to Nodal Officer (NMEICT).

TSG-EdCIL has been retained by MHRD to provide service support for NMEICT by providing the services of Consultants and supporting staff to the Mission and facilitating the conduct of various meetings and other events. For functioning of the Mission Consultants, staff and associated officials – including the Mission Director, Nodal Officer (NMEICT)and the TEL Bureau, the office equipment and services needed, as well as the travel expenditure of the Mission Consultants, TSG-EdCIL is entrusted to provide the required services.

As most of the work flow of TSG-EdCIL is through the Nodal Officer (NMEICT) - presently officiated by DEA (ICT) - it is proposed that the Nodal Officer (NMEICT) may be delegated the financial powers for expenditure needed by TSG-EdCIL, up to Rs. 5 lakhs. This would relieve the Mission Director from the daily routine workload for regularly needed financial sanctions and approvals for all such expenditures including the TA claims, office equipment, etc. Mission Director would thus be able to provide more time for strategic and policy matters concerning the Mission.

Put up to PAB for consideration and approval for delegation of financial powers to Nodal Officer (NMEICT) for TSG-EdCIL expenditure up to Rs. 5 Lakhs.

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Extension for continuing NMEICT projects pending proposed review/ evaluation by an independent agency for large projects and by respective PRSGs for smaller projects.

Agenda Item No. IV A (4)

Proposal: Extension for continuing NMEICT projects pending proposed review/ evaluation by an independent agency for large projects and by respective PRSGs for smaller projects.

All NMEICT projects continuing their work were given the last extension for completion date up to 30.09.2014 (*excepting phase-II of some projects awarded recently, for which PAB approval is there for longer period*) by the Mission and they were advised to complete the project and send the completion report to the Mission Secretariat by 30.09.2014. Though some of the projects have completed their work and sent the completion report, the same is awaited for some other projects, pending holding the PRSG meeting for certifying the achievement of planned outcomes. In some other cases the documentation pertaining to utilization certificates and review minutes etc. are still in the process.

It is proposed that before certifying satisfactory completion of the projects - particularly for large projects with a sanction amount exceeding Rs.1 crore - an independent agency may be asked to evaluate and review the project outcomes achieved vis-a-vis the planned outcomes and the financial due diligence of the money spent. The agency for a project to be evaluated may be picked up by the Mission from a panel of such expert agencies to be prepared after issuing an RFP through the open tender process.

It is expected that the process of creation of the panel of such independent agencies and consequent evaluation/ review of major projects and obtaining reports from them may take around 6-7 months - i.e. till 31.12.2015. Till that date, i.e. 31.12.2015 all continuing projects, may be granted extension for completion of the pending work and getting the certification for satisfactory project completion form such expert agencies. In respect of all other smaller projects, the existing mechanism of review through PRSGs for certifying the project completion status would continue as at present.

PAB may consider the proposal for creation of the panel of expert agencies and getting the review/ evaluation done by such agencies for major projects and similar review to be done by respective PRSGs, by 31.12.2015 and consequent extension for all continuing projects.

PAB may also authorise the Secretary (Higher Education) to accord approval for the RFP to be created by the Mission for creation of the independent panel of expert agencies through open tender process and subsequent award of the work to various agencies from the panel for review/ evaluation of the large projects.

Budget Estimate for TSG-EdCIL & Mission Secretariat of NMEICT for the Financial Year 2015-16.

Agenda-IV A (5)

Proposal : **Budget Estimate for TSG-EdCIL & Mission Secretariat of NMEICT for the Financial Year 2015-16**.

The Department of Higher Education, Ministry of HRD has entered into a Service Agreement with EdCIL (INDIA) Limited to establish & maintain a Mission Secretariat for the National Mission on Education through Information and Communication Technology (NMEICT). The Mission Secretariat comprises of a Technical Support Group (TSG-EdCIL), Consultants, Sakshat Portal Team and the Support Staff dedicated to the Scheme.

The TSG-EdCIL has engaged Consultants and Support Staffs for the Mission Secretariat to facilitate the Department of Higher Education, MHRD for implementation of the Scheme. These Consultants of Mission Secretariat provides technical support to the NMEICT.

The TSG-EdCIL maintains and supports the Mission Secretariat of NMEICT. The TSG-EdCIL also facilitates to organize various meetings under NMEICT Project viz. *National Apex Committee, Project Approval Board, Standing Committee, DTH Committee, Massive Open Online Courses (MOOCs) Platform, Implementation-cum-Monitoring Committee* and organizes Dissemination Workshops, whenever required and also organises to make on the spot payments for Travelling Allowance/ Honorarium (Sitting Fees) to the members/invitees/experts/participants of these Meetings/Workshops.

The expenses towards the salary of staff responsible for developing, maintaining, updating and upgrading of the Sakshat Portal of NMEICT is also met from the fund being provided by MHRD to EdCIL.

2.   Keeping in view the objectives of NMEICT Scheme to be realised in the current financial year i.e. 2015-16, the Budget for the TSG-EdCIL & Mission Secretariat of NMEICT is estimated to be between the range of Rs. 250 - 275 lakhs inclusive of the taxes at current applicable rates.

3.   In all the preceding years, the Budget Estimate of NMEICT has always been targeted to be within the overall ceiling of 1% of the total outlay fixed for the Project.

As the Budget Outlay for NMEICT Scheme has been gradually declining every year i.e. Rs. 900 lakhs in the year 2009-10 to Rs. 200 lakhs in 2015-16, it has now become difficult to meet the administrative expenses for running of the Mission Secretariat of NMEICT, within the overall ceiling of 1% of the total outlay.

Herein it is worthwhile to mention that there are notable contradictions in the overall ceiling for the establishment and administration related matters of the Mission Secretariat as stipulated in the various documents of the NMEICT. Briefly the same is enumerated as below:

3.1 **Note for Cabinet Committee on Economic Affairs in the Proposal for NMEICT Scheme**: MHRD vide No. F.5-29/2007-DL dated 23rd December 2008, in the "Note for the Cabinet Committee on Economic Affairs" under Para 7 (f), "Proposal for consideration of the Cabinet Committee on Economic Affairs (CCEA)", has sought approval of the CCEA for incurring an expenditure up to **1%** of outlay approved in the budget for a given the financial year for meetings the expenses of workshop, meeting of expert committees, on establishment and administrative related matters of Mission Secretariat and other contingent items.

3.2 **Mission Document** : Whereas at the end of the tabulation of Para 24, 'Physical Activities, Financial Requirements and phasing' and Sub Para 24.1 under 'Financial Requirements and Phasing', it is stated that " 3% of the above mentioned costs would be utilized towards recurring administrative expenses with the approval of the Empowered Committee of Experts".

4   On resolution of the issue of percentage of overall ceiling of the total Budget Outlay of the Project, the administrative expenses will be reviewed and future Budget Estimate will be regulated for being accordingly put up for consideration of the PAB.

5   The overall expenditure for the maintenance and support of TSG-EdCIL & Mission Secretariat of NMEICT is estimated to be between the range of Rs. 250 - 275 lakhs and as the Budget Estimate has to be within the overall ceiling of 1% of the total outlay fixed for the Project, i.e. Rs. 200 lakhs, hence it is necessitated that an estimate for a <u>curtailed</u> amount be drawn for the financial year 2015-16 in order that the project activities continue and are not hampered till the issue of percentage of overall ceiling of total Budget Outlay of the Project is reconciled.

6   In view of above, the Budget Estimate for the TSG-EdCIL & Mission Secretariat of NMEICT for the year 2015-16 has been curtailed through a consultative process for a total amount of Rs 233.87 lakhs, as per the summarized details enclosed at Annexure-I / Page: 51. The Service Tax is chargeable to MHRD at the applicable rates, on actual total expenditure. At present, Service Tax @12.36% is leviable on total expenditure (non-recurring, recurring & EdCIL's overhead & Service Charges). The detailed Budget Estimate is placed at Annexure-II/ Pages: 52 to 53.

Permission is also sought in respect of re-allocation of expenditure under the budgeted heads of the aforesaid Budget Estimate.

The un-utilized funds, if any, will be carried over to the next financial year to meet the expenses on activities of TSG-EdCIL & Mission Secretariat of NMEICT.

The Project Approval Board (PAB) is requested to consider and approve "Budget Estimate" of Rs. 223.87 lakhs [*Non- recurring expenditure (*Rs. *0.50 lakhs) + Recurring expenditure including contingency (*Rs. *189.75 lakhs)+ EdCIL Overhead & Service Charges (*Rs. *9.49 lakhs) + Service Tax (*Rs. *24.63 lakhs)*] for the Mission Secretariat for the year 2015-16 and consider to release the 1ˢᵗ installment of Rs. 111.93 lakhs (being 50% of the total Budget) after adjusting the unspent amount available with EdCIL. The 2ⁿᵈ installment of Rs. 111.93 lakhs (being 50% of the balance total Budget) will be considered for release after review of the expenditure incurred and the unspent amount available with EdCIL.

Budget Estimate for TSG-EdCIL/Mission Secretariat of NMEICT for the Financial Year 2015-16.

S.No.	Description of the Item	Total Cost *(Rs. In lakhs)*
I) NON-RECURRING EXPENDITURE		
Office Expenses		
A	Office Expenses - Procurement of IT items & Mobile Phones	0.50
	Sub-total *(Non-recurring expenditure)*	**0.50** ....(I)
II) RECURRING EXPENDITURE		
A	Professional Services	124.64
B	Salary & Wages	39.36
C	Over Time Allowance	1.00
D	Domestic Travel Expenses	2.40
E	Other Administrative Expenses	14.00
F	Office Expenses	6.85
	Sub-total *(Recurring expenditure)*	**188.25** ....(II)
	Total [Non- recurring expenditure(Rs.0.50)+Recurring expenditure (Rs.188.25)]	**188.75** ....(a)
	Lumpsump Provisions Contingency on (a)	1.00
	Total	**1.00** ....(b)
		189.75
	EdCIL's Overheads & Service Charges @5% on (b)	9.49
	Total Expenditure	**199.24** ....(c)
	Add; Service Tax @12.36% on (c)	24.63
	Grand Total	**223.87**

Detailed Budget Estimate for TSG-EdCIL & Mission Secretariat of the NMEICT for Financial Year 2015-16.

S.No.	Description of Item	Qty. (Nos.)	Unit Cost	Total Cost *(Rs. in lakhs)*
I)	**NON-RECURRING EXPENDITURE**			
A	**Office Expenses**			
1	Computer Desktops	1.00	0.50	**0.50**
	Total *(Non-Recurring Expenditure)*			**0.50** .... (I)
II)	**RECURRING EXPENDITURE**			
A.	**Professional Services**			
1	Professional Services for Mission Secretariat-Senior Consultants/ Consultants/Junior Consultants for the Bureau, Mission Secretariat and Sakshat Portal Team.	-	-	124.64
	Sub-total (A)			**124.64**
B.	**Salary & Wages**			
	Salary & Wages	-	-	39.36
	Sub-total (B)			**39.36**
C.	**Over Time Allowance**	L.S.	L.S.	1.00
	Sub-total (C)			**1.00**
D.	**Domestic Travel Expenses**			
1	Domestic Travel Expenses - Travel Expenses, Conveyance Allowance during tour, Boarding, Lodging, Resource Persons, Experts, Bureau Officials & TSG-EdCIL Official/Staff and Sakshat Portal Team for Visit / Field Visit, etc.	20	0.10	2.00
2	Local conveyance, etc. for Consultants/ Support Staff, Sakshat Portal Team & TSG-EdCIL, as per applicability / entitlement.	L.S.	L.S.	0.40
	Sub-total (D)			**2.40** ....C/o to II (D) of Appendix

S.No.	Description of Item	Qty. (Nos.)	Unit Cost	Total Cost (Rs. in lakhs)
E.	**Other Administrative Expenses**			
	Meetings/Seminars/Workshops including venue expenses, videography/ photography, etc as per requirement.	14.00	1.00	14.00
	Sub-total (E)			**14.00**
				..........C/o to II (E) of Appendix
F.	**Office Expenses**			
1	Pantry services	L.S.	L.S.	0.25
2	Mobile, Telephone, Fax & Internet charges including Data Card & DTH Connections	L.S.	L.S.	0.50
3	Office Stationery (Consumables)	L.S.	L.S.	0.60
4	Postal charges	L.S.	L.S.	0.25
5	Newspaper, Magazine, CD, Printing, etc.	L.S.	L.S.	0.15
6	Photocopying & Binding charges	L.S.	L.S.	0.50
7	Legal & Audit Expenses	L.S.	L.S.	
8	Vehicles for Bureau, Mission Secretariat & TSG-EdCIL for NMEICT activities (Innova/Swift/Indigo/Indica, etc. – average hiring charges on monthly basis)	2.00	0.15	3.60
9	Repair & Maintenance expenses including AMC charges	L.S.	L.S.	1.00
	Sub-total (F)			**6.85**
				..........C/o to II (F) of Appendix
	Total *(Recurring Expenditure)*			**188.25**
	Total *[Non- recurring expenditure(Rs.0.50) + Recurring expenditure (Rs.188.25)]*			**188.75** .....(a)
	Lumpsump Provisions Contingency on (a) above			1.00
	Total			189.75 .....(b)
	EdCIL's Overheads & Service Charges @ 5% on (b)			9.49
	Total Expenditure			**199.24** .....(c)
	Add : Service Tax @12.36 on (c)			24.63
	Grand Total			**223.87**

Agenda Item No. - IV A 6

Reconstitution of Selection Committee for interview of Senior Consultants & Consultants of NMEICT.

Agenda-IV A (6)

Proposal : Reconstitution of Selection Committee for interview of Senior Consultants & Consultants of NMEICT.

1) The Project Approval Board of NMEICT in its 6th meeting held on 29.05.2009 (Agenda Item No. 6) in respect of Selection Committee for interview of Consultants decided the following:

"In order to ensure that EdCIL hires persons most suited for the roles, Chairperson, PAB directed that the Selection Committee constituted by the PAB for recruitment of personnel for the project, inter-alia, should also comprise (i) VC, IGNOU (ii) Joint Secretary (DL), MHRD (iii) Prof. Prem K. Kalra, Director, IIT, Rajasthan (iv) Ms. Shakila T. Shamsu, Joint Adviser, Planning Commission (v) Prof. S.C. Saxena, Director, IIT, Roorkee (vi) AS&FA of MHRD or his nominee".

2) The Service Agreement signed on 7th July, 2009 between Department of Higher Education, MHRD and EdCIL (India) Limited for establishing a TSG for NMEICT also mentions the same Selection Committee for interview of Consultants.

3) The said list of experts of Selection Committee approved by PAB in May, 2009 is around 6 years old and outdated. Further, out of six members, three of the nominated members are by name and at present are either not available or have relinquished their positions.

4) The positions of Senior Consultants & Consultants has become vacant on their resignation besides unfilled positions are to be filled up after placing recruitment notice in newspapers, shortlisting of applicants, followed by an interview process.

5) **In view of the above and to ensure proper mapping of the capabilities of the Senior Consultants & Consultants recruited by EdCIL (India) Limited from time to time as per the requirements for the Mission Secretariat of NMEICT, the PAB may consider to reconstitute the Selection Committee for interview of Senior Consultants & Consultants for NMEICT as proposed hereunder:**

    i) **Representative of Mission Director (NMEICT),**
    ii) **Representative of EdCIL &**
    iii) **Domain Expert to be nominated by EdCIL in consultation with Mission Director (NMEICT).**

PAB may consider the proposal contained in paragraph 5 above and approve the same.

Proceedings of DEC's

Creating Digital - Learning Environment for Design in India (e-Kalpa)-Phase-II.

IV C (a) : Contents at Agenda

PAB Agenda Item No. IV C (a) 1

Proposal	**:**	**Creating Digital - Learning Environment for Design in India (e-Kalpa)-Phase-II.**
PI	**:**	**Prof. Ravi Poovaiah.**
Institution	**:**	**IIT Bombay**
NMEICT Contact	**:**	**Dr. C. S. Arora, Senior Consultant, NMEICT.**

During the Standing Committee meeting held on 25.08.2014, PI had presented the latest status about Phase-I of the project including funds allocated for Phase- I, UC submission, highly satisfactory observations of PRSG on Phase-I of the Project and the Partners institution details. PI had also reported the impact assessment of Phase-I of the project and requested for the starting of Phase-II with the budget grant of Rs. 8.4 Crores.

For Phase-II, PI has requested funds of Rs. 840 lakhs with the following break up:

Non recurring component

Photo- Video production facility	:	45 lakhs
Audio production facility	:	15 lakhs
Lab modification	:	15 lakhs
Computing facilities	:	30 lakhs
Total	:	105 lakhs

Recurring component

Consumables + Maintainance	:	25 lakhs
Manpower	:	150 lakhs
Workshops for dissemination	:	40 lakhs
Travel	:	30 lakhs
Total	:	245 lakhs

Projected Estimates

Non Recurring	:	105 lakhs
Recurring for 2014-2015	:	245 lakhs
Recurring for 2015-2016	:	245 lakhs
Recurring for 2016-2017	:	245 lakhs
Total	:	840 lakhs
Total for Project Phase 2	**:**	**840 lakhs**

The DPR submitted by PI for Phase-II work gives complete details of the proposal (*Appendix-III: Page No . 192 to 216*).

During the meeting, SC had observed the following:

- Dissemination should be emphasized in Phase-II while co-creating additional content on different arts/crafts under this project.
- Crafts and entrepreneurship should be amalgamated in phase-II to benefit the Craftsmen in terms of business and increasing their opportunities.
- Other NIDs and IITK Design Centres should also be involved in phase-II.

Finally SC has recommended for continuation of the Project to Phase-II with the unspent balance of Phase-I to be transferred for Phase-II work.

PAB may consider the approval for Phase-II work for 3 years at budgeted cost of Rs. 840 Lakhs as recommended by SC.

Entrepreneurship Development for the Educated Youth in India (Online Academy for creating easy & wide spread access to High impact content)

PAB Agenda Item No. IV C (a) 2

Proposal	:	**Entrepreneurship Development for the Educated Youth in India (Online Academy for creating easy & wide spread access to high impact content)**
PI	:	**Prof. Prem Chander, Visiting Professor, IIM Ahmadabad**
Institution	:	**IIM Ahmedabad, Wadhwani Foundation-NEN, IIT Bombay**
NMEICT Contact	:	**Dr. C. S. Arora, Senior Consultant, NMEICT.**

The project proposal pertains to developing and propagating a technology based learning platform. Such a platform would deliver online MOOC courses in entrepreneurship development for students to help them develop entrepreneurial skill sets. PI had initially proposed a Budget of Rs. 16.71 Crore (including Rs. 4.87 for content development) for 3 years. However after discussions during SC meeting held on 01.07.2014, PI was advised to modify the proposal and take up only the development of e-content in the first instance. Accordingly a modified proposal from the PI was received on e-content development that will provide massively open online courses (MOOCs) in entrepreneurship development (10 Courses) for students and young aspiring entrepreneurs. The revised proposal is attached *(Appendix-IV: Page No. 217 to 251*).

During the SC meeting, SC recommended in principle the development of 10 Courses by the PI in two year time at the rate recently approved by the PAB, i.e., Rs.29,000/- for e-content development (each course of 40 Hours) and Rs.2,000/- for Transcription. However, in the first instance, development of 5 Courses was recommended with a budget of Rs.62 Lakhs to be developed in first year.

PAB may consider for award of the project as recommended by the Standing Committee.

Agenda Item No. - IV C (a) 3

National Consultation for Educational Technology (for Establishment of Indian Association of Educational Technology (IAET) to promote Educational Technology initiatives in India).

PAB Agenda Item No. IV C (a) 3

Project	:	**National Consultation for Educational Technology (for Establishment of Indian Association of Educational Technology (IAET) to promote Educational Technology initiatives in India).**
PI	:	**Dr. Jayashree Shinde.**
Institution	:	**SNDT Women's University, Mumbai.**
NMEICT Contact	:	**Dr. C. S. Arora, Senior Consultant, NMEICT**

This Proposal was earlier presented to the Standing Committee on 3rd March 2014. In that, PI had proposed to establish "Indian Association of Educational Technology (IAET)" as a common platform for pooling together of expertise in the field of Educational Technology. However, SC had advised the PI to revise the DPR for a national consultation conference with NMEICT's funding. Accordingly PI has revised the proposal (*Appendix-V: Page No. 252 to 253*).

As decided by SC then, PI has now proposed for organising a 2- days Conference with financial support from NMEICT, with the following goals:

- To track ET initiatives in Higher Educational institutions in India.
- To bring experts in ET together for centralized efforts towards effective and efficient Higher Education.
- To suggest activities and programmes for developing global citizenship to Indian Education institutions of Higher Learning.
- To establish the need of research in the field of Educational Technology.
- To propose National policies in the interest of Indian Education e.g. OER Policy of the Nation.

PI has sought funding of Rs. 18.5 lakhs with break up as follows:

S. No.	Item	Rate	Days	Persons	Amt. (in Rs.)
1.	Travel of outstation delegates	20,000/-		45	9,00,000/-
2.	Travel of local delegates	1,000/-	2	5	5,000/-
3.	Hospitality	500/-	2	60	60,000/-
4.	Accommodation	5,500/-	2	45	4,95,000/-
5.	Local Conveyance	2,000/-	2	10	40,000/-
6.	DA	500/-	2	50	50,000/-
7.	Consultation Kit	500/-	2	50	25,000/-
8.	Sitting Allowance	1,500/-	2	50	1,50,000/-
9.	Honorarium for editing and finalizing reports	5,000/-		5	25,000/-

S. No.	Item	Rate	Days	Persons	Amt. (in Rs.)
10.	Technology support for video-audio recording, auditorium, etc.				50,000/-
11.	Contingencies				50,000/-
					18,50,000/-
	Total number of Experts			50	
	Cost per expert				37,000/-

The Standing Committee deliberated on the revised proposal on 25.08.2014 and recommended for grant of Rs. 18.5 Lakhs for the conference to be organized by the PI as proposed.

PAB may consider the proposal for grant of Rs.18.5 lakh as recommended by SC.

Agenda Item No. - IV C (a) 4

e-Training Environment for Training   Technical (Polytechnic) Teachers   & Students.

PAB Agenda Item No. IV C (a) 4

Project	:	**e-Training Environment for Training Technical (Polytechnic) Teachers & Students.**
PI	:	**Dr. S. Mohan, Director NITTTR Chennai.**
Anchor Institution	:	**NITTTR Chennai.**
NMEICT Contact	:	**Dr. C. S. Arora, Senior Consultant, NMEICT.**

Earlier a proposal was presented to SC on 3rd March 2014 with an objective to develop 80 courses for polytechnics by 4 NITTTRs with NITTTR Chennai as the Anchor Institution. For this, the course structure was to be finalized after mapping with NPTEL courses with help of Prof. Mangla Sunder. After that discussion with Prof. Mangala Sunder, the proposal (*Appendix-VI: Page No. 254 to 274*) was put again for SC's consideration on 25.08.2014. PI presented the project and highlighted the salient points. The following points were brought out:

1) Each NITTTR has identified 2 diploma programmes to develop e-content and in each programme, 10 programmes have been identified for the e-content development.

2) NITTTR, Chandigarh and NITTTR, Bhopal will develop e-content in Hindi with the subtitle in English whereas NITTTR, Chennai and NITTTR, Kolkata will develop e-content in English with subtitle in Hindi.

3) The total budget requested for the development of e-content for each NITTTR are as follows:

S. No.	Budget for	Amount (Rs. in Crore)
1.	NITTTR, Chennai(Coordinating Institute)	4.46
2.	NITTTR, Bhopal	2.98
3.	NITTTR, Chandigarh	2.98
4.	NITTTR, Kolkata	2.98
Total budget for four NITTTRs		**13.40**

The following suggestions were made by the Committee:

1) It is necessary to do the mapping of existing courses under NPTEL for the courses proposed and it should be the first activity in the project proposed and it was agreed by the Principal Investigator to carry out the same.

2) It is also suggested to include the available spoken tutorial wherever it is needed for all the courses or wherever it is appropriate. This is also agreed upon by the Principal Investigator.

3) It was clarified that NITTTR Chennai has already developed four courses under the NMEICT Project and was well appreciated by the Programme Review and Supervisory Group (PRSG).

4) The second and further installments may be released only after the review and recommendations of the PRSG to be reconstituted.

SC recommended releasing the 30% of total budget of Rs. 13.40 Crores, as first installment to initiate the program. SC also advised that PRSG for this program is to be constituted.

PAB may consider the recommendations of the Standing Committee for release of the first installment for 30% of Rs.13.40 Crore.

E- content creation in the area of Economics, Mathematics, Commerce, History, Zoology & Botany.

PAB Agenda Item No. IV C (a) 5

Project	:	**E- content creation in the area of Economics, Mathematics, Commerce, History, Zoology & Botany.**
PI	:	**Prof. Ramesh Kumar Gautam, Director, ILLL**
Institution	:	**Institute of Lifelong Learning**
NMEICT Contact	:	**Dr. C. S. Arora, Senior Consultant, NMEICT.**

The Co-PI of the project had made a presentation to the Standing Committee held on 08.09.2014 regarding the project and the progress made on the project. The PI assured that the remaining part of the project would be completed with the release of the balance fund of Rs.1 Crore, out of PAB's sanction amount of Rs. 2 Crores for this Project, and with the time extension of 1 year. He mentioned that the second installment of fund release for Rs. 1 Crore is needed immediately because the deployment of staff is temporary and funds are required for their continued employment and also to meet other financial commitments connected with completion of project.

After deliberations, SC recommended the following:

1. *Time limit for Project completion is to be extended for one year till 30th September 2015.*
2. *Release of Rs. 50 lakh as next installment out of 2 Crore budget already approved by the PAB.*
3. *PI may continue the Project work and present the status report in next 6 months before the SC and convene the PRSG Meeting to get the project status reviewed before 31st March 2015. Mission Director will notify the PRSG members in consultation with SC Chairman.*
4. *After PRSG's review report, SC will consider for release of the remaining funds of the project.*

Since the meeting of PAB could not be held till now, and considerable time has elapsed waiting for the balance funds, it is proposed to PAB to approve for extending the Project till 31.12.2015 while releasing the remaining funds out of the total sanctioned funds already approved by PAB for this Project.

Creation of Social Work Education Network.

PAB Agenda Item No. IV C (a) 6

Project	**:**	**Creation of Social Work Education Network**
PI	**:**	**Dr S. Parasuraman, Director**
Institution	**:**	**TISS, Mumbai**
NMEICT Contact	**:**	**Dr. C. S. Arora, Senior Consultant, NMEICT.**

TISS's proposal was discussed by SC in its meeting held on 28 May 2014. PI had asked for Rs. 29.94 crores for 3 years for meeting the following objectives:

i) Develop the National Curriculum Framework in Social Work.
ii) Establish a Knowledge Hub to share knowledge and learning resources - students located in any part of the country.
iii) Use e-network for sharing of knowledge and learning resources.
iv) Create a Quality Assessment and Accreditation Framework for Social Work Education and guidance service to students.
v) Regional Faculty Development Hubs to facilitate innovation in research, teaching and practice.

During that meeting, PI was asked to give certain clarifications about the proposal in the next meeting of the Standing Committee.

During the deliberations of the SC in its next meeting held on 01.07.2014, PI gave the following details asked by SC in the earlier meeting:

a) Delivery Platform Development: TISS will use a platform developed and maintained in FOSS domain.
b) TISS has reworked on the proposal and have removed any R&D funds which included PhD or fellowships.
c) M & E and Documentation cost has been completely withdrawn from the proposal.
d) The cost of the Project management team is the minimum which is required to run the project. TISS shall work in co-ordination with TCS to evolve the system for effective Monitoring and timely Evaluation of the project therefore the cost is not included in the revised proposal.

After extensive discussions, SC recommended the following:

a) The project is recommended for the first year of its implementation which includes setting up of six hubs in six regions including - North, South, East, West, North East and Central India. There would be 30 colleges affiliated to the six hubs based on the accessibility, resources and student strength. These hubs would be subject hubs.

b) Content Creation for 2000 (Two Thousand) Teaching hours shall be done.

c) Courses Offered – 2000 teaching learning hours will be created contributing to 4 complete courses and part content for 3 courses.

d) Teachers Training – Two batches of Teachers training shall be organized for 100 trainers during the first year of the project.

e) The project shall strive to build capacities of the teachers and will invest in ToT along with content creation for the network institutions. Considering the remote location of the centers and challenges related to the connectivity the project will be emphasizing on use of asynchronous mode.

The members recommended in principle the project and the budget in accordance with the DPR *(Appendix-VII: Page No. 275 to 311)* required for completing the project for three years. However, the SC recommended the release of only the amount needed for completing first year deliverables of the project.

Further, as desired by then Mission Director, Financial Due Diligence was got done by KPMG as an independent expert agency. In their report prepared after extensive discussions with the PI and his project team, KPMG recommended a final amount of Rs.945.27 lakhs from the original demand by PI of Rs. 1076.7 lakhs for the first year, thus recommending a reduction by Rs.131.43 lakhs, after their financial due diligence. KPMG's report is attached *(Appendix-VIII: Page No. 312 to 319)*.

PAB may consider for approval of the proposal for Creation of Social Work Education Network by TISS, with grant of Rs. 945.27 lakhs for 1 year.

Agenda Item No. - IV C (a) 7

Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India Sahapedia.

PAB Agenda Item No. IV C (a) 7

Proposal	:	**Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India Sahapedia.**
PI	:	**Professor Navjyoti Singh, Head, Centre for Exact Humanities, IIIT Hyderabad.**
Co-PI	:	**Dr. Sudha Gopalakrishnan, Executive Director, Sahapedia**
Control No.	:	**SER2805201413192**
Anchor Institution	:	**30 Universities and Cultural Centers across India**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant, NMEICT.**

Background

The PI propose to build an Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India, with a view to consolidating and developing appropriate digital tools and knowledge resources in the arts and humanities.

Scope of the pilot phase:

i) Engaging with nine partner institutions, both Universities and Cultural Organizations, representative of different states and areas of expertise, for digital educational content generation in Arts and Humanities.

ii) The Pilot Phase would involve about 70 faculty and students: one to three departments participating from each institute, with teams comprising a Professor and three students.

iii) 11 content modules + 3 proofs of concept / DPPs will be produced, explained in 'Outcomes'. Model humanities courses for science students will be shared through reprography of IIIT-Hyderabad's existing courses.

In the long-term, the Project would contribute to the creation and dispersal of knowledge on humanistic and cultural studies across different regions and disciplines in India. The Deliverables are:

S. No.	Item	Quantity
1.	Digital course, Introduction to Humanities	1
2.	Intensive courses in Exact Humanities	3
3.	Model projects on local history	2

S. No.	Item	Quantity
4.	Documentation and annotation of Kathakali performance, Nala Charitam	1
5.	Multi-media Modules (Traditional Medicine and percussion Systems of Kerala)	2
6.	Tutorials on Literature and Philosophy	2
7.	Collaboratory on Theory of Film	1
8.	Collaboratory on Humanities Projects	1
9.	DPP for networking India as a Translation Area.	1
	Total Courses	13

Standing Committee Recommendation.

The Domain Expert Committee meeting in its meeting held on 01st July 2014 deliberated and recommend.

Based on, in principal recommendation by the SC, the Mission Director, deliberated, recommended the project and the release of Rs. 43.72 Lakhs, to the PI for completing (in 4-6 months) the development of 13 Courses, on Pilot phase basis.

Due Diligence Recommendation

In accordance with the recommendations of the SC/DEC, the DPR & the above decision of the SC/DEC was forwarded to M/s KPMG, engaged by the NMEICT Mission Secretariat for due diligence of the proposal and the recommendations received from KPMG *(Appendix-IX: Page No. 320 to 325)* is for sanction of Rs.33.91 Lakhs instead of Rs.43.72 Lakhs recommended by DEC/SC.

The PAB is requested to approve a budget of Rs. 33.91 Lakhs to PI for completion of work regarding Project "Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India Sahapedia" as per due diligence report and recommendations of SC/DEC.

Seamless Integrated e-Learning Knowledge Management System" for Commerce Education at National Level COMMTEL (Commerce Enhanced Education through Technology Enabled.

Project	:	**Seamless Integrated e-Learning Knowledge Management System" for Commerce Education at National Level COMMTEL (Commerce Enhanced Education through Technology Enabled Learning).**
PI	:	**Prof. K. V.Bhanu Murthy**
Co-PI	:	**Dr. Jaswinder Singh & Dr. Vimal Rarh.**
Control No.	:	**PER 151220141324A**
Anchor Institution	:	**Sri Guru Tegh Bahadur Khalsa College, University of Delhi**
NMEICT Contact	:	**Mr. Pradeep Kaul Senior Consultant.**

The Proposal

Development of a Seamless System of Pedagogy in Commerce, by embedding a COMM-TEL through pervasive computing by Creating and Broadcasting Video enriched lectures (Live Plus) and an Integrated Knowledge Management System (IKMS) that promotes a multi-lingual learning platform that pervades through a four layered structure: National, Regional, Zonal, Local. The following shall be the main verticals integrated in COMMTEL project.

1) Development of Live-Plus Video lectures

2) Transmission / Broadcasting of Live Plus Video Lectures

3) Development of e-Learning Object Repository (e-LOR)

4) Development of Transcript of Live Plus Lectures as metadata and searchable tags

5) Development of Question Bank

6) Workshops and Training

7) Development of e-Learning Environment

8) Research on systems, e-learning, pedagogy, feedback, quizzes, etc.

Of these the seven verticals (1-7) shall be delivered for 8 courses in the Phase-I of the COMMTEL Meta project.

Standing Committee Recommendation.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 1st July 2014.

The Domain Experts Committee / SC members deliberated the merits and demerits of synchronous and asynchronous delivery of e-content under NMEICT programme. It was felt, in the first instance it may not be advisable to run synchronous content delivery under NMEICT, since it would be difficult to synchronise the content deliveries with the academic calendar of various universities and colleges in the country. The committee therefore decided that this project will only deal with asynchronous e-content Development.

Accordingly the PI was asked to concentrate on the development of lectures only to establish proof of concepts and transmission and broadcasting of these lectures shall be taken up by the MHRD at an appropriate stage.

Financial Implications

Year	Verticals	Deliverables	Total (Rs. In Lakh)
1	Video Lectures– Development Cost	156 Lectures (As per CEC revised rate Rs. 29,000/- per module)	45.24
2	Development of e-Learning Object Repository (e- LOR)	300 e-Los	52.5
3	Development of Transcript of Live-Plus Lectures	For 156 lectures (As per CEC revised rate Rs. 2,000/- per module)	3.12
4	Development of Question Bank	3000-3500 questions	-----
5	Workshops and Training	620 human days training	33.6
		TOTAL	134.46

The SC deliberated and the project in principal and a budget of Rs.133.45 Lakhs to be delivered as above in first year.

Due Diligence Recommendation

In accordance with the recommendations of the SC / DEC, the DPR & the above decision of the SC / DEC was forwarded to M/s KPMG, engaged by the NMEICT Mission Secretariat for due diligence of the proposal and the recommendations received from KPMG is for sanction of Rs.69.36 Lakhs instead of Rs.1.3345 Crore recommended by DEC/SC *(Appendix-X: Page No. 326 to 335).*

The PAB is requested to approve a budget of Rs. 69.36 Lakhs to PI for completion of work regarding Project "Seamless Integrated e-Learning Knowledge Management System" for Commerce Education at National Level COMMTEL "as per due diligence report and recommendations of SC/DEC.

Intelligent Tutoring Systems for Primary and Secondary School Subjects.

PAB Agenda Item No. IV C (a) 9

Project	:	**Intelligent Tutoring Systems for Primary and Secondary School Subjects.**
PI	:	**Prof. Amey Karkare, IIT Kanpur.**
Co-PI	:	**Microsoft Research (Sumit Gulwani, MSR India & Others)**
Control No.	:	**PEC3110201413242**
Anchor Institution	:	**IIT, Kanpur**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant.**

The Proposal

The PI intends to develop automated intelligent tutoring systems for various domains, including Physics, Chemistry and Mathematics topics for primary and secondary schools and for engineering courses. To build the system in such a way that it can be modified to support a new course. To help reuse the components of the system from one course (domain) to other, plan to develop a modular system having several components.

The practice problems shall be posed to a student : a student, having assimilated a concept, should be asked a question on the material. If the student fails to solve the problem, a step-by-step solution to the problem should be provided. The student should be asked similar questions until the teacher is confident that the student has grasped the essentials of the material. Thereafter, the teacher should move on to testing a new dimension of the concept.

Programming language researchers have demonstrated such technologies that can allow automatic generation of new problems with a controlled difficulty level as well as automatically generate descriptive solutions to problems such that a student can follow the line of reasoning to the solution.

Standing Committee Recommendation.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 1st July 2014:

The SC noted that the PI intends to develop automated intelligent tutoring systems for various domains, including Physics, Chemistry and Mathematics topics for primary and secondary schools and for engineering courses and to build the system in such a way that it can be modified to support a new course.

The SC recommended that the PI should begin with problems for weaker sections of students and thereafter increase the complexity gradually, provide multiple levels of answers, multiple types of steps and involve machine-learning techniques in the project.

The development of this project is to be placed in public domain.

The SC deliberated and recommends the project proposal to be developed in three years with a budget of Rs. 60.00 lakh.

Due Diligence Recommendation

In accordance with the recommendations of the SC/DEC, the DPR & the above decision of the SC/DEC was forwarded to M/s KPMG, engaged by the NMEICT Mission Secretariat for due diligence of the proposal and the recommendations received from KPMG is for sanction of Rs. 48.45 Lakhs instead of Rs. 0.6 Crore recommended by DEC/SC *(Appendix-XI: Page No. 336 to 341).*

The PAB is requested to approve a budget of Rs.48.45 Lakhs to PI for completion of work regarding Project "Intelligent Tutoring Systems for Primary and Secondary School Subjects" as per due diligence report and recommendations of SC/DEC.

National Programme on Technology Enhanced Medical Education (NPTEME).

PAB Agenda Item No. IV C (a) 10

Proposal	:	**National Programme on Technology Enhanced Medical Education (NPTEME)**
PI	:	**Dr. M. Manivannan, IIT Madras**
Control No.	:	**MOT1206201413196**
Anchor Institution	:	**IIT, Madras**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant.**

The Proposal

The PI proposes to develop prototypes of **Basic Medical Education ICT Tools**, comprising Haptic Feedback Device, Sensors and Actuators and Computer / Network/ Multimedia Equipment.

To develop prototypes of ***Mannequin Based Medical Education Tools***, comprising a dummy mimicking a patient, sensor and actuators and computer / network / multimedia equipment.

Standing Committee Recommendation.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 1st July 2014:

The SC noted that the deliverables of the project are as under:
  i) Ten Needle Procedure Simulators with Haptics.
  ii) Ten Laparoscopy Surgery Simulator with Haptics Feedback, with part tasks simulation.
  iii) Ten Neuro Surgery Simulator with Haptics Feedback.
  iv) Ten Endoscopy Simulator with Haptics Feedback.
  v) 3D Mesh Models of Human Anatomy Segmented from Visible Human project at various levels of details.
  vi) Haptics based Micro/Nano Surgical Planning.
  vii) Computer Models of Physiology Simulation for Medical Education.
  viii) Mechanisms, Sensors and Actuators for Medical Simulation.
  ix) National Agenda for Simulation-Based Medical Education.
  x) Modular Configurable Mannequin for Medical Education.

That the budget for completion of the project at six participating institutes and for three years is Rs. 5728.32 Lakh.

The Standing Committee suggested the PI, as Pilot Project, modified the proposal and focus on only two deliverables, instead of 10 deliverables as proposed in the original proposal. The timeline has been reduced to six months, instead of three years.

Accordingly, the following two deliverables have been chosen as a Pilot Project:

1) Laparoscopic Surgical Simulation with Haptics Feedback for training in Part-Tasks.

2) Mannequin based Training Simulator as teaching tool for Indian doctors

The members deliberated and recommends as a pilot project to develop two deliverables as above with a budget of Rs. 99.2 Lakh and to be completed in six months period.

Due Diligence Recommendation

In accordance with the recommendations of the SC/DEC, the DPR & the above decision of the SC/DEC was forwarded to M/s KPMG, engaged by the NMEICT Mission Secretariat for due diligence of the proposal and the recommendations received from KPMG is for sanction of Rs.78.67 Lakhs instead of Rs.0.992 Crore recommended by DEC/SC *(Appendix-XII: Page No. 342 to 345).*

The PAB is requested to approve a budget of Rs.78.67 Lakhs to PI for completion of work regarding Project "National Programme on Technology Enhanced Medical Education (NPTEME)" as per due diligence report and recommendations of SC/DEC.

Agenda Item No. - IV C (a) 11

"Running Online Courses for Polytechnics and Skill Development" by NITTTR Kolkata as Nodal Agency as extended arm of MHRD.

Proposal	:	**"Running Online Courses for Polytechnics and Skill Development" by NITTTR Kolkata as Nodal Agency as extended arm of MHRD**
PI	:	**Prof. Phalguni Gupta, Director, NITTTR, Kolkata.**
Co-PI	:	**Directors of other NITTTRs (NITTTR Bhopal, NITTTR Chandigarh, NITTTR Chennai)**
Control No.	:	**-**
Anchor Institution	:	**NITTTR Kolkata**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant.**

The Proposal

The PI proposes to setup the Massive Open Online Courses (MOOCs) platform. The Project may be named as Institute of Future Learning (IFL). In the initial phase all 4 NITTTRs will work together to design e-contents of various subjects for certification / diploma / degree courses as nodal institutes. Each nodal institute will be responsible to design various e-contents depending on the experts available at their institutes or other institutes.

A pilot run of the project is proposed for realization of various critical issues that may occur while implementing the actual project. In the pilot run, the NITTTR, Kolkata will take the help of other NITTTRs and various institutes of national importance. It will also take the help of some of thee-content courses already designed under NPTEL and other NMEICT projects. The IFL environment needs various platforms to achieve its goal. Creation of each such platform needs enough brain storming sessions and huge amount of time. Besides these, there may exist some available platforms, which are either already developed or being developed under MHRD initiatives or by the faculty members of various premier institutes. These efforts can be used to understand and analyze the suitable environment for the proposed IFL system. Using all these proto-models being developed in the country, in the pilot, NITTTR Kolkata likes to create a simulated environment for IFL system.

The proposed simulated environment will be made available to the candidates to understand the criticality and reachability of the original project. On registration candidates will get options to select programs as per their choice and the evaluation system will check their performance on completion of each such program. The pilot run will help to understand the acceptability of the system along with social impact and accordingly the actual project will be tuned to accommodate the experience learnt from the pilot run.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 01st July 2014.

The SC deliberated and recommends conduct of Pilot Phase of the project costing Rs. 5.00 Crores to be completed in 4-6 months period and as per the DPR.

Due Diligence Recommendation

In accordance with the recommendations of the SC/DEC, the DPR & the above decision of the SC/DEC was forwarded to M/s KPMG, engaged by the NMEICT Mission Secretariat for due diligence of the proposal and the recommendations received from KPMG is for sanction of Rs.4.60 Crores instead of Rs. 5.00 Crores recommended by DEC/SC *(Appendix-XIII: Page No. 346 to 353).*

The PAB is requested to approve a Budget of Rs. 4.60 Crores to PI for completion of work regarding Project "Running Online Courses for Polytechnics and Skill Development" as per Due Diligence Report and recommendations of SC/DEC.

Establishing a Centre of Excellence (CoE) for Research into Indian Knowledge Systems (RIKS).

Agenda Item No. IV C (a) 12

Project	:	**Establishing a Centre of Excellence (CoE) for Research into Indian Knowledge Systems (RIKS).**
PI	:	**Dr. P. Ramanujan, C-DAC, Bangalore**
Co-PI	:	**Prof. K Gopinath and Prof. AG Ramakrishnan, IISc, Bangalore**
Control No.	:	**De-29090910310**
Anchor Institution	:	**C-DAC, Bangalore**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant.**

The Proposal

The PI proposes to create online, ICT-enabled, PG-level, Sanskrit academic e-Content for seven disciplines in 4-quadrant approach to enhance and upgrade Central Sanskrit University curricular courses of UGC recognition.

To train faculty, research Staff and Traditional Scholars in inter-disciplinary research for harmonious development.

Modelling ancient Indian Knowledge Systems for cognitive research of Indian languages, Development of language technology resources tools and utilities for online Language Lab for Indian Languages. Summary in brief, to create:

1) Centre of Excellence for Research on Indian Knowledge Systems (RIKS), including e-Learning of Vedas, Sanskrit and Manuscripts, to be setup at IISc, Bangalore.
2) With the assistance of Sanskrit Institutions, to develop PG e-content in four-quadrant approach
3) A National Advisory Committee to be set up for guidance on the content.
4) Content creation for 20 papers of 7 subjects 7 x 20 =140 papers - 4-Quadrant mode
   i) Veda and Veda Bhashya
   ii) Vyakaranam
   iii) Nyaya
   iv) Mimamsa
   v) Vishishtadvaita Vedanta
   vi) Sahitya [Kavya-varga] and
   vii) Manuscriptology.

5) Development of Language Technology Resources Tools and Utilities for online Language Lab for Indian Languages

Standing Committee Recommendation.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 01st July 2014:

SC noted that the proposal is to develop PG e-content in seven subjects and each containing about 20 papers to be developed in four-quadrant with the assistance of Sanskrit Institutions.

Development of Centre of Excellence for Research on Indian Knowledge Systems (RIKS), including e-Learning of Vedas, Sanskrit and Manuscripts, to be set up at IISc, Bangalore.

Development of language technology resources tools for Sanskrit. To also develop modeling ancient Indian Knowledge Systems for cognitive research of Indian languages, Development of language technology resources tools and utilizing online Language Lab for Indian Languages andto train faculty, research staff and traditional scholars in inter-disciplinary research for harmonious development.

The members deliberated and recommended in principal the development of e-content in four-quadrants in seven disciplines (140 papers) (at a cost of Rs.7.00 lakh for each course) and amounting to Rs. 980.00 lakh. The members did not agree for establishment of Centre of Excellence as proposed by the PI. The SC recommends budget for first year, as per the DPR and recommends a sanction of Rs.329 Lakhs for 1st year content generation of 47 Courses.

Due Diligence Recommendation

In accordance with the recommendations of the SC/DEC, the DPR & the above decision of the SC/DEC was forwarded to M/s KPMG, engaged by the NMEICT Mission Secretariat for due diligence of the proposal and the recommendations received from KPMG is for sanction of Rs.3.29 Crores same as Rs.3.29 Crore recommended by DEC/SC *(Appendix-XIV: Page No. 354 to 359).*

The PAB is requested to approve a budget of Rs.3.29 Crores to PI for completion of work regarding Project "Establishing a Centre of Excellence (CoE) for Research into Indian Knowledge Systems (RIKS)"as per due diligence report and recommendations of SC/DEC.

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Learning By Doing (LBD) based course Content Development.

PAB Agenda Item No. IV C (a) 13

Proposal	:	**Learning by Doing (LBD) based course Content Development.**
PI	:	**Prof. Sandhya Kode**
Control No.	:	**KE-21080910249**
Anchor Institution	:	**IIT Hyderabad.**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant.**

The 25th PAB in its meeting held on 6th November 2012 discussed "E-content generation in 17 subjects in Electronics and Communication using Learning-by-doing (or 'butterfly') model as proposed by Prof. Sandhya Kode and Prof. Kannan Srinathan, IIIT Hyderabad" and decided as under.

"The PAB, based on the recommendations of the Standing Committee, approved this project at an estimated amount of Rs.119 Lakhs for development of 17 courses and suggested that the PI should ensure not to repeat the NPTEL course. The uniqueness proposed in this course should be maintained".

Accordingly, first installment, Rs.35.70 Lakhs was sanctioned to IIIT, Hyderabad and received by it on 22 August 2013.

It may kindly be noted that 27th PAB in its meeting held on 19th March 2014 has approved enhanced rate of Rs. 29000/- for Development of e-Content in four Quadrants and additional of Rs. 2000/- for transcription to the CEC.

The PI has reported that she has exhausted the funds and has requested for release of subsequent installments and requested for enhancement of budget for Development of e-Content for the next batch of Courses. The PI has conducted PRSG meetings and the progress reported on the project is found satisfactory. This proposal was put before the SC in its meeting held on 1st July 2014 and the following are recommendation of the SC.

"The SC after noting progress on the project recommends continuation of the project as per the PAB approval. The SC therefore recommended the release of next installment to the PI as per existing PAB approval. The SC in principal recommends for enhancement of the budget for development of e-Content for next batch of 17 Courses at the rate recently approved by the PAB of Rs. 29,000/- per hour of e-content in four quadrants and additional of Rs.2,000/- for Transcription, if being attempted by the PI. The SC recommends the development of 9 courses during the next year and recommends the Budget as per enhanced rate. However, the enhancement of rates for development of e-content of a project already approved needs the approval of PAB".

It may be seen that the DEC/SC in the above meeting has recommended enhancement of rates to Rs.12.4 Lakhs per Course for development of 9 courses out of 17 Courses of the Project approved by the PAB on 6th November 2012 at Rs.7.00 Lakhs per Course.

Accordingly out of 17 Courses approved by the PAB, eight Courses at Rs.7.00 Lakhs, budget for this amount to Rs.56.00 Lakhs and (if enhanced rate for 9 Courses is approved by the PAB) the remaining nine Courses at enhanced rate Rs.12.4 Lakhs, budget for this amount to Rs.111.6 Lakhs, are to made available to the PI for delivery of all 17 Courses as per methodology submitted in the DPR and production of e-content following four quadrant model to cater to the higher order thinking skills of right part of the butterfly model and quality as is followed by the CEC. The net amount approved previously by the PAB for development of 17 courses is Rs.119 Lakhs, however (if enhanced rate for 9 Courses is approved by the PAB) the net funds to be made available to the project, turns out to be Rs.167.6 Lakhs. The KPMG Report is attached **(Appendix-XV : Page No. 360 to 364).**

Put up for kind consideration of PAB to approve payment of Rs. 29,000/- per hour for production of e-content in four quadrants and additional of Rs. 2,000/- for transcription to the PI for completing the remaining 9 courses of the project 'Learning by Doing' (as approved to CEC by the PAB in its meeting held on 19th March 2014).

Agenda Item No. - IV C (a) 14

Production of e-content Courseware Development in Bachelor of Commerce, Bachelor of Business Management & Translation.

PAB Agenda Item No. IV C (a) 14

Project	:	**Design and Development of Neuro-Endo Trainer for Neurosurgery Psychomotor Skills Training**
PI	:	**Prof. Ashish Suri AIIMS.**
Control No.	:	**PR&2612201413258**
Anchor Institution	:	**AIIMS New Delhi & IIT Delhi.**
Partner Institution	:	**IIT Delhi.**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant**

The Proposal

The PI proposes the Development of a Neuro-Endo-Trainer that allows training and evaluation of basic tasks in Neuro-endoscopy as a part of the resident-year program of MCh / DNB Neurosurgery. The trainer developed shall be validated for the efficiency in neuro-endoscopic training. The training imparted can be validated using the evaluation criteria available in the literature and also by an Inertial Measurement Unit (IMU) and can assess the level of expertise gained by the trainees. After this basic training with the trainer, the advanced training can then be undertaken on cadavers and later on live animals. PI feels this kind of task-based training will reduce the use of cadavers and animal study and definitely prepare the trainee better before entering the Operation Room. The Deliverables are,

1. Design and Development of Neuro-Endo-Trainer for Neurosurgery Psychomotor Skills Training.

2. Validation of the Neuro-endoscopic Training.

Standing Committee Recommendation.

The proposal was put before the Domain Experts Committee meeting in its meeting held on 25th August 2014*:*

The SC deliberated and recommended the project with the budget of Rs.77.68 Lakhs in accordance with the DPR required for completing the pilot project in one year after financial due diligence for which, PI was advised to quantify the cost break-up for two deliverables. He was also advised to propose the names of 10 reviewers. PI was advised that pilot project be completed in a year. However, the developed prototype should not be a lab model but of production prototype.

The PAB is requested to approve a budget of Rs.77.68 Lakhs to PI for completion of work regarding Project "Design and Development of Neuro-Endo Trainer for Neurosurgery Psychomotor Skills Training" as per the recommendations of SC/DEC.

Production of e-content Courseware Development in Bachelor of Commerce, Bachelor of Business Management & Translation.

PAB Agenda Item No. IV C (a) 15

Proposal	:	**Production of e-content courseware development in Bachelor of Commerce, Bachelor of Business Management & Translation.**
PI	:	**Prof. H. Rajashekar, University of Mysore.**
Co-PI	:	**Dr. S. J. Manjunath, University of Mysore,**
		Ms. Poornima Shenoy, Latitude Edu tech Consulting
Control No.	:	**PEC 2507201413612**
Anchor Institution	:	**University of Mysore**
NMEICT Contact	:	**Mr. Pradeep Kaul, Senior Consultant.**

The Proposal

The PI proposes to develop e-content in a number of Subjects, Develop Teachers' and Experts' Resources in e-content Creation, make available these-content to Teachers and Students through the NMEICT portal for Formal and Non-formal Education, for supplementing and complementing the process of Teaching and Learning in Higher Education and translate from English into seven Regional Languages (Kannada, Hindi plus others as recommended by the SC) for a broader impact/ understanding in Higher Education beyond English Medium.

Presently it intends to develop the content in two Phases. In Phase-I, production of e-content Courseware for 26 subjects shall be produced and under Phase-II, production of e-content Courseware for additional 22 subjects shall be undertaken. Each subject consists of two Courses of 40 hours each.

The PI described the Methodology that he intends to create Content in English using UGC permitted reference material and classroom teaching notes, Conversion toe-Learning using Instructional Design, Enhancement using Graphic Design, Videos, Sub-titles as relevant, Translation into seven shortlisted regional languages with subtext, Hosting on NMEICT portal with tags, etc. The PI shall maintain highest audio/ video quality as relevant, Create transcription (text) out of the audio / video content and making the text available to the students in e-content modules as relevant E-book of each e-content module that will be created / developed & incorporated in template under downloads & academic script, besides introducing glossary, Frequently Asked Questions and their replies, quiz, assignment, case studies, tutorials, etc. (as applicable), Translate content developed into regional languages by practicing subject matter experts (SMEs) with reference to context and ensure Metatagging of content developed.

Standing Committee Recommendation.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 25th August 2014:

The members instructed the PI that since the content developed is to cater students of all Indian universities therefore the syllabus should not be framed on syllabus of a university but should be based on it having derived from major universities.

The members hoped that the PI has followed due diligence in selecting the project implementation partner that it intends to engage in managing the entire schedule, content development and coordinating etc.

The PI should formulate the process of content development etc in consultation of Prof. Mangal Sunder, IIT Madras and NMEICT contact person.

The Members recommended the university should ensure that the e-content developed under it and under NMEICT is implemented and utilized first by running on-line courses by the university and for constituent colleges of the university.

The SC deliberated that the duration of a course developed under e-content be restricted to 40 hour content and not 80 hours as proposed by the PI and the e-content rates sanctioned for e-content development and transcription per module be restricted to Rs.31,000/- as approved recently by the PAB. The PI may develop 48 Courses in two UG disciplines of Commerce and Management, each course of about 40 hours resulting in a budget of Rs.595.2 Lakhs in the long run.

However SC recommends the development of just 4 Courses by the PI as a Pilot at the rates approved recently by the PAB. SC will take up the issue of sanctioning part of the project on translation and language dubbing of the content developed as and when it finalizes the rates on this.

The PAB is requested to approve a budget of Rs. 49.6 Lakhs to PI for completion of work regarding Project "Production of e-content Courseware Development in Bachelor of Commerce, Bachelor of Business Management & Translation" as per the recommendations of SC / DEC.

Agenda Item No. - IV C (a) 16

Dissemination   of   NMEICT products through Google.

PAB Agenda Item No. IV C (a) 16

Proposal	:	**Dissemination of NMEICT products through Google.**
PI	:	**Mr. Rachit Jain, Principal Account Manager Google India Private Limited rachitjain@google.com**
Control No.	:	**RCO1513301413247**
Anchor Institution	:	**Google India Private Limited**
Budget	:	**Rs1.5 Cr- Pilot phase + Rs 10 Cr – Main Phase**

The Proposal

The PI proposes to massive publicity campaign to make the student and teacher community aware of the major products of the NMEICT. To reach out to millions of learners, use of social media for publicity campaign seems to be the best option as this will be very cost effective and instant dissemination is possible. Since the NMEICT has not previously used online promotion plans to drive user engagement on its various project sites, it is proposed to use a phased approach for the online promotions by Google India.

In the initial phase, Google will undertake a 6-8 week- long pilot project. As part of the pilot project, five major project websites of NMEICT are to be promoted across various Google's online platforms. On completion of the pilot project, the campaign will be reviewed for learnings, and areas of improvements, and subsequently 1year long main phase of the project is to be kicked off with full-fledged roll out of promotion campaigns.

The performance evaluation of the pilot project will be based on metrics that can be decided in mutual consultation between Google and NMEICT team. Metrics such as number of webpages viewed on each project's site, time spent per user on site, etc. is to be used to evaluate the campaign's performance. These metrics can be obtained from Google Analytics, which is to be installed on all project websites. Upon the completion of the pilot project evaluation, the full-fledged online promotion campaign for all critical NMEICT e-learning projects will be started. The full-fledged online campaign will be round-the-year campaigns that target potential students, existing students, recently graduated students, and industry practioners who may use the NMEICT products and services for knowledge and skill enhancement. The Project Deliverables are:

1) Develop banners, text and video ads to drive engagements with NMEICT projects for target audience covering students in higher education, graduated students and practicing industry professionals.

2) For the ad campaign Google search services and YouTube will be used. Apart from that ad displays will be done on the sites where Google has tie up and also use its mobile ad network to reach smart phone users. The media plan for the pilot project is to be drawn up in such a manner that it drives 11.5 Lakh visitors to NMEICT's project sites, delivers about 12 Lakh video views, and generates about 21 Cr banner ad impressions. The campaign over its 12-month Phase II period will aim to deliver close to 80Lakh website visits, and another 80 Lakh video views of the NMEICT e-learning content on YouTube.

3) Google Analytics will be used to measure the campaign success. Google will provide an online access to NMEICT to its AdWords interface that will help in reviewing the online promotion campaign performance on near real time basis.

4) Google ill work with the various project websites of NMEICT to aid in the analytics, and discoverability of the respective websites through Google Analytics tags on the respective project sites.

5) Google shall further work with NMEICT to simplify the ease of access for courseware by the users and mobile friendly access mechanism through mobile app development.

Standing Committee Recommendation.

The proposal was put before the Domain Expert Committee meeting in its meeting held on 8th September 2014:

The SC members deliberated and recommended, execution of Phase-I, in the initial stage, as proposed by the representative of Google India Pvt Ltd, at a cost of Rs.1.5 Crores, wherein Google during 6-8 week shall promote five major MHRD websites across various Google's online platforms. On completion of the pilot project, the results of campaign will be reviewed for the learning achievements and areas of improvements, and subsequently the SC may review the status and decide on Phase-II execution of the project of 1-year duration with full-fledged roll out of promotion campaigns. The SC assumes the PI has uploaded the DPR on Sakshat Website and the Control Number of the project is sought.

The PAB is requested to approve a budget of Rs.1.5 Crores to PI for completion of work regarding Project "Dissemination of NMEICT products through Google." as per the recommendations of SC/DEC.

Agenda Item No. - IV C (a) 17

Policy decision on Wi-Fi Campus Connect in University Campuses connected through NMEICT.

Agenda Item No. IV C (a) 17

Project : Policy decision on Wi-Fi Campus Connect in University Campuses connected through NMEICT.

1.   As per the earlier decision of the Mission (Mission Document page 59), which has approval of cabinet, states that "Yet another philosophy adopted in the area of Connectivity is that instead of purchasing costly LAN/WAN [Local Area Network/Wide Area Network] equipment for each of the institutions, this entire activity is proposed to be outsourced to the network provider such as Bharat Sanchar Nigam Limited (BSNL) etc".

2.   Further, in a letter 29th March 2009 to Department of Telecommunications, it has been indicated, for implementation of Scheme of connecting 20,000 colleges and all the departments of nearly 419 universities in the country under NMEICT, that this massive project, as specified in the Mission document, on the goals to be achieved, towards the provision of the above envisaged connectivity, the Ministry is intended to transfer Rs. 300 Crores, so that work gets done in the best possible manner. Further, it was stated that Ministry of Human Resource Development and Project Approval Board of the Mission, would be providing further advice and details and also the agency which would be entrusted to execute the project, keeping in view the integration of this network with National Knowledge Network being set up by the Department of Information Technology, so as to have the maximum outreach in the country.

3.   An agreement has been entered with BSNL/MTNL with the objective is to enable BSNL and MTNL to fulfill the connectivity to 419 Universities and 32,000 colleges under NMEICT and with the following responsibilities:

  a.   32,000 colleges including polytechnics to be provided with 20 VPN over Broadband connections @512 Kbps speed. The connectivity will be in phases with 10 such connections in Year 1, 15 in year 2 and 20 in year 3.

  b.   Extending 1 Gbps link from each of the 419 Universities to the nearest National Knowledge Network (NKN) point of presence (POP) and NKN at four locations. The work is required to be carried out in a single phase in first year.

  c.   Setting up of university LAN of 400 nodes per university for 419 Universities

  d.   Facility Management of this LAN network for five years.

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e. Atleast 1 Gbps interconnection between NMEICT network and NKN at 4 locations.

f. International bandwidth for internet connectivity to NMEICT network beginning with 5 Gbps in the first year, 10 Gbps in the second year and 30 Gbps in the third year.

g. BSNL/MTNL will ensure that 32 static IP addresses are available for each University for access from outside the network.

4. As per the latest update

- 403 universities (389 by BSNL and 14 by MTNL) have been provided connectivity of 1 Gbps
- 21,569 colleges, each of which has been provided with 20X512 Kbps broadband connectivity.
- 361 universities have been migrated (made coterminous with NKN) and 28 Universities are yet to be migrated.
- Out of 195 ITIs, 186 have been connected
- International bandwidth of 5 GB has been provided at Chennai and Mumbai - 3 GB augmentation is still awaited
- Out of 419 universities as per agreement BSNL has completed LAN connectivity for 50 Universities and for 48 universities it is in various stages of processing.

5. BSNL has been released a total amount of Rs. 994.46 Crores and MTNL Rs. 27.7 Crores.

6. Further, on BSNL performance in the project, complaints are being received from various institutions on non-satisfactory performance based on various complaints of non-performance are being received by Ministry. For example:

- Bilaspur University's LAN work is pending since August 2014.
- Provision of type II modems to Goenka College of Commerce and Business Administration, Kolkata, which was committed by BSNL, has been refused.
- Provision of LAN to Sree Sankaracharya Univnersity of Sanskrit, Kalady, has not been accomplished, inspite of making payment of its share to BSNL in March 2012.

In addition to the above,

- Non-satisfactory response & service
- Redundancy which is very essential component is not accounted for
- Non-satisfactory Uptime - SLA penalty to be levied
- Less coverage of LAN connectivity due to internal issues.

7. Recovery of the dues on the above counts is highly essential after working out delays in the services and non-provisioning of services as per agreed schedules with interest as applicable.

8. In view of the above developments, an effective monitoring mechanism should be in place for tracking and monitoring towards early rectification of the same should be in place and for imposition timely penalties as per standard SLA provisions in case of non-satisfactory/no resolution of complaints in time. The dues on this count are required to be settled within the same financial year after due consolidation.

9. As per the meeting taken by Principal Secretary to PM held on 17th December 2015, the following decisions are to be implemented:

   - LAN Connectivity: As LAN is an outdated approach, 350 universities, which are yet to be covered by LAN but have a sanction in place, will now utilize the funds for coverage by Wi Fi. BSNL will be instructed not to any further work on LANs in these universities.

   - Wi-Fi in universities: Rs. 40 lakhs that is available for each of the 350 universities for LAN will now be used for providing Wi Fi facility.

   - DoHE will finalize base document, which will be used by universities to tender for Wi Fi installation. It will take the assistance of DoT and DIT in finalizing the base document *(Appendix-XVI: Page No. 365 to 381).*

   - A panel consisting of Secretaries of Higher Education, IT and Telecom and DG UIDAI will finalize the base document and also a mechanism for accelerating the procurement of Wi-Fi through empanelled vendors *(Appendix-XVII: Page No. 382 to 387), (Appendix-XVIII: Page No. 388 to 395), (Appendix-XIX: Page No. 396 to 402) & (Appendix-XX: Page No. 403 to 409).* The document finalized is being referred to the committee for its approval.

   - **Proof of Concept of Wi-Fi**: DIT will provide the most modern, individualized secure access Wi-Fi coverage with modern security features in 5 universities including Allahabad University. DIT has been informed the list of the universities as 1. NEHU, 2. Pune University, Pune, 3. Osmania University, Hyderabad & 4. Utkal University apart from Allahabad University. As per the decision No. 1 of the minutes, i.e. providing Wi Fi facility to the above five Universities by DeitY, DeitY has to do the needful.

10. In view of the above developments, **PAB is requested to consider the following for a decision**:

   a. **To constitute a Fact-Finding Committee to look into the matter of providing connectivity to universities and colleges and LAN & Wi Fi Campus connectivity by BSNL and MTNL.**

   b. **Ratifying the action taken by the Department in order to comply with the decisions taken by Principal Secretary to PM in the meeting on Digital Initiative in HRD held on 17th December 2014.**

e-Exam

Agenda Item No. IV C (a) 18

Proposal	:	**e-Exam**
PI	:	**Prof. R. K. Shevgaonkar, Director, IIT, Delhi**
Institution	:	**IIT, Delhi and Professor of Electrical Engineering, IIT, Bombay**
NMEICT Contact	:	**Dr. V.V.S. Murty, Senior Consultant, NMEICT.**

India is one of the leading countries in e-learning. On the initiative of MHRD a large number of e-learning projects have been initiated under NMEICT in last one decade. Over the last few years the courses have gained popularity and worldwide and recently 1 billion hit mark was achieved by NPTEL website. Virtual lab and other projects have also made efforts in taking the live class rooms to wider audience across the country.

However, a question invariably asked is, how the e-content has helped in rising the standard of education in the country? While the NPTEL courses put thrust on fundamentals and logical development of the subject, the examinations in most of the universities test how well the subject content is memorized. The gap, between the content and testing mechanism, is required to be reduced to make the content more usable. It is imperative that 1. Integration of e-Content developed under NMEICT in the university curriculum 2. Designing of question paper commensurate with the content. The e-Exam would address the evaluation of e-learning process. It requires special effort to meet the requirement.

Any examination should test:

1. Knowledge of basic principles
2. Application of basic principles to define a problem
3. Solving the problem following systematic steps using analytical tools

The e-Exam needs development at two levels:
1. Creation of question bank and its dynamic solution manual
2. Development of a system which can assemble questions to create a question paper of desired composition

While the first component requires subject experts and technical manpower, later needs general software developers

The paper composition strategy is defined by the paper setter and therefore platform needs to be created which can use paper setter defined parameters to compose a question paper.

The project duration is two years. Each course will take about one year, e-Exam for multiple courses can be developed in parallel.

Anticipated Achievements of the Project:

1. The project will enhance the standard of examination in more than 5000 engineering institutions in the country
2. The expenses for conducting the university examination will be reduced substantially
3. There will be no necessity for to set multiple question papers for security reasons
4. It will make the question papers error free and therefore will avoid disputes
5. It will make the examinations leak proof
6. It will save time for the paper setter as the paper can be composed quickly and the solutions can be generated automatically
7. Evaluation may be computerized and can be made faster and error free

The proposal *(Appendix-XXI: Page No. 410 to 415)* has been considered by Standing Committee (SC) in its meeting held on 1st July 2014. SC in its recommendation has reduced the budget per course from Rs. 45 lakhs to 35 lakhs which has been agreed by PI. Further, it has also recommended the proposal as per DPR and to be completed in two years with a budget of Rs. 210 lakhs for five courses.

Further, as advised by Standing Committee, financial due diligence of the project has been carried out by M/S KPMG *(Appendix-XXII: Page No. 416 to 426).* KPMG's recommendations are as follows:

➢ Rationalized resource loading of manpower.
➢ Honorarium to be aligned to the general practice of computing at approximately 5%.
➢ It has recommended the same budget of Rs. 210 lakhs for the project after financial due diligence.

Project Cost Revision proposed: In view of the above observation of M/S KPMG, to have the honorarium @ 5% of course development cost which may be around Rs. 2 lakhs and accordingly, the revised cost of the project would be Rs. 135 lakhs (excluding Platform cost).

Accordingly, PAB may consider and approve for the award of the project for the Project e-Exam to be executed in two year for five courses within a cost of Rs. 167 lakhs.

Agenda Item No. - IV C (a) 19

Campus Connectivity - Provision of Wi-Fi in 350 Universities.

Agenda Item No. IV C (a) 19

Proposal	:	**Campus Connect - Provision of Wi-Fi in 350 Universities**
PI	:	**Prof. Jaspal S. Sandhu, Secretary, UGC**
Institution	:	**University of Grant Commission**
Mission Contact	:	**Dr. V.V.S. Murty, Senior Consultant, NMEICT**

This project is about providing Wi Fi services in 305 Universities at a cost of Rs. 40 lakhs per university. This Department is working hard for implementation of the decision taken in the meeting chaired by Principal Secretary to PM on 17th December 2015 regarding Digital Initiative in HRD. One of the components of the decision was provision of Wi Fi in universities. The Ministry is working to implement the decision on the lines suggested in the aforesaid meeting. In view of this, till a final outcome of joint efforts of Ministry of Human Resource Development, Department of Telecommunications, Department of Electronics and Information Technology, UIDAI and ERNET, arrived, **it is proposed that the above proposal may be deferred and accordingly appropriate decision may be taken by PAB**.

Distributed Digitized Answer Book Evaluation Software for a Computer Aided System.

PAB Agenda Item No. IV C (a) 20

Proposal	:	**Distributed Digitized Answer Book Evaluation Software for a Computer Aided System**
PI	:	**Dr. P. Sunthar, IIT Bombay**
Institution	:	**IIT Bombay**
Mission Contact	:	**Dr. V.V.S. Murty, Senior Consultant, NMEICT.**

The project targets towards development of a software system, associated answer book design, printing and post-exam booklet handling standards and protocols, making statistics and MIS for an unbiased, secured error free on screen evaluation of digitized answer booklets.

Software methodology:

1. Open source software would be deployed for the development: MySQL, Java through Tomcat, html5 / CSS3 rendering
2. Outsourcing of software development
3. Management of project by qualified project manager
4. IP for the development would be with IIT Bombay

Deliverables:

1. Proof of Concept to be demonstrated for large scale examination for first year UG students of IITB.
2. Proof of concept for one examination in a tier-II city in 9 months
3. Beta version of the software with startup kit to be released in one year. This comprises of sample answer booklets, documentation booklet, video tutorial and booklet on best practices.
4. Workshop for controller of examinations in universities/colleges of Mumbai in one year.
5. Source code of the program to be released under open source license in one year.
6. During the two year period of the project,
   a. Conduct of workshops for universities and departments in Mumbai
   b. Identification, training, certification of local private agencies for provision of infrastructure and implementation of the universities
7. Updated software (production release) and startup kit

In the standing committee meeting held on 1st July, 2014, the proposal was considered as agenda item 17. Standing committee after due discussions recommended the proposal in principle to be completed in two years and further advised for vetting of the proposal through financial due diligence by approved third party agencies.

M/S KPMG has been assigned for carrying out financial due diligence and has submitted the report.

As per the report, the following are the comments of M/S KPMG:

- Based on the shared effort estimates and industry standards and inputs from its IT advisory, software development through outsourcing has been estimated at Rs. 12 lakhs against 23.5 lakhs proposed by PI
- Similarly, the costs projected for laptops, scanner, have been evaluated and recommended the revised rates.
- Rounding of budget estimations at micro level have to be omitted
- Accordingly, M/S KPMG has recommended a budget of Rs. 35.4 lakhs against Rs. 50 lakhs proposed by PI.

Dr. P. Sunthar, the PI, has been consulted on the Financial Due Diligence report of M/S KPMG. The response received through email. Major point of concern on the report, is the software development costs have been drastically reduced. It seems PI has given his justification to IT personal of M/S KPMG including Break-up. Regarding, procurement of hardware, PI claims due justification has been given.

It is proposed that PAB may take view on the cost of the proposal as there is difference of opinion between KPMG which has recommended a reduced cost of Rs. 35.4 lakhs against Rs.50 lakhs sought by the PI and recommend accordingly.

Award of Consulting work for ERP project completion and integrated implementation.

PAB Agenda Item No. IV C (a) 21

Proposal	:	**Award of Consulting work for ERP project completion and integrated implementation**
File no.	:	**16-33/2009-DL**
PI	:	**Prof. Y.N. Singh**
Institution	:	**IIT Kanpur**
Mission Contact	:	**Dr. V.V.S. Murty, Senior Consultant, NMEICT.**

Standing Committee in its meeting held on 8th Sep. 2014, has reviewed the ERP project undertaken by IIT, Kanpur against aged item no. 9.

IIT Kanpur was involved since 2004 in the development of open source free Learning Management System (LMS) named Brihaspati and live lecture delivery system Brihaspati-sync. The project was funded by DIT and has been successfully running in IIT Kanpur for the last 10 years. The system is currently available in 17 languages including Urdu, Bangla, Marathi, Tamil, Gurmukhi, Hindi, etc. In 2010, it was envisaged to upgrade the Brihaspati initiative to a national level service to provide many ERP functionalities to academic institutions through NMEICT funding. The functionalities envisaged but not limited to Learning Management System, Admission Management System, Academic Registration System, Examination System, Multi-site project grant management system, scheduling system for creation of timetable and Project Management System. More functionalities were added as the system progressed. The NMEICT funded project was EduERP (Educational Resource Planning).

The institutions involved in the development of the system for the development of various modules are: DEI, Agra, IIT Roorkee, NIT Hamirpur, Sri Mata Vaishanav Devi University, Amrita University - Kollam, AMU - Aligarh, JMI-New Delhi and IGNOU Delhi. 9 out 15 components have been completed. Some components are in the process of bug fixation and testing. EduERP modules, work in silos and are lacking seamless integration within the institution and as well as across the institutions.

Current strategy is to integrate these systems in IITK and once we are satisfied, the same to be released in packaged form. Brihaspati ERP-1.0 to be released as bundle of few products at the end of first year as indicated herewith:-

Brihaspati ERP-1.0 (single integrated build containing Brihaspati-3, BGAS, PICO, Payroll Sys, and Brihaspati Sync).

Award of Consulting work for ERP project completion and integrated implementation.

Brihaspati-3, BGAS and Brihaspati Sync have been functionally tested and are already in use. The two more financial and accounting packages will be now functionally tested. All of them will be integrated and released as single build.

At the end of second year, BrihaspatiERP-2.0.would be released with a few more systems added to it.

BrihaspatiERP-2.0 (single integrated build containing Brihaspati-3, BGAS, PICO, Payroll Sys, Brihaspati Sync, OARS, LibEMS, TimeTable Mgt).

PI has informed that about 9 out of 15 EduERP components committed have been completed. However, most of the components are working fine but are working in silos and are lacking seamless integration of EduERP modules within the institution as well as across the institutions.

In order to ensure integration done and the missing components are also produced, SC suggested to award the work to a consulting agency for ERP project completion and completion of the following deliverables:

> **Preparation of an assessment report after carrying out "Gap Analysis".**

> **Shortlisting of qualified professional vendors for the development of the project as per the gap analysis report.**

The above work is required to be completed in three month period and proposed a cost of Rs.15 lakhs and agency engaged would continue to work for another three month period till the handover of development work to identified agency.

It is proposed that PAB may take a view on the above recommendation of the Standing Committee for a suitable decision.

The Village Community Network: Technology Development and Pilot Rollout Plan for Low Cost Opportunistic Communication Networks for Rural Areas of India.

Agenda Item No. IV C (a) 22

Proposal	:	**The Village Community Network: Technology Development and Pilot Rollout Plan for Low Cost Opportunistic Communication Networks for Rural Areas of India**
File no.	:	**16-106/2010-DL**
PI	:	**Dr. K. S. Daya,**
Institution	:	**Dayalbagh Educational Institute, Agra**
Mission Contact	:	**Dr. V.V.S. Murty, Senior Consultant, NMEICT.**

Standing Committee in its meeting held on 1st July 2014 has considered the proposal against agenda item no. 10.

1. PRSG meeting of the project was conducted on 5th April 2014.
2. Phase I of the project was comprised of development of low cost network synchronization oscillators for voice data networks to bring down cost of network installation, operation and services dramatically and to rollout technology for ubiquitous connectivity in two remote villages.
3. In phase II, development of the device, facility and production of in-house synchronization devices and to scale up of operations in 20 villages, were anticipated.
4. An amount of Rs. 3 Crore out of Rs. 6 Crore, approved by PAB has been released to PI for accomplishment of Phase I deliverables.
5. The PI, in Phase I of the project has developed dielectric resonators that can operate from -50 to 55 degree centigrade which are to be used as oscillators. The project has advantage over BSNL network.
6. PI has spent Rs. 3.22 Crore out of Rs. 3 Crore sanctioned.

The members of the standing committee deliberated the outcome of the project and appreciated the efforts of PI in achieving the critical goals of the project. However, it is felt that project can no longer be further funded under the Mission. SC has recommended for the closure of the project and release of excess amount spent by PI in the completion of the work amounting to **Rs. 22 lakhs**. UC has been received from PI which has spent excess expenditure of Rs. 23,05,235/-.

Accordingly, as recommended by SC, PAB may kindly consider for approval and release of 22 lakhs to PI which was spent in excess by PI for completion of the project.

DTH-OMG

Agenda Item No. IV C (b) : DTH - OMG

Agenda Item No. IV C (b) 1

Proposal : "Projects recommended by the 'DTH OMG' are put before PAB for Kind consideration & approval".

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations& Monitoring Group (OMG)' under the Chairmanship of Prof.S.V.Raghavan,ScientificSecretary,OfficeofthePrincipalScientificAdvisor,Govt.ofIndia

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended 7 projects as per Appendix-IV C (b.1) to Appendix-IV C (b.7) **/** Page: 97 to 119 as per attachment.

The decision taken by the DTH-OMG as per *Appendix-IV C (b.1) to Appendix-IV C(b.7)* / Page: 97 to 119 is placed before the PAB of NMEICT for consideration and kind approval.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project	:	Development of Pedagogy & Scheduling strategy for 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses' Programme.
PI	:	Prof. Vasudha Kamat, VC, SNDT Women's University
Co-PI	:	Dr. Jayashree Shinde, SNDT WU
Research Group Members	:	Prof. Binod Agrawal, Director General, TALEEM Research Foundation
		Prof. Uma Kanjilal,IGNOU
		Prof. Ashok Ogra, Director, APEEJAY
		Prof. Roy Satyaki, Asso. Prof. IIT Kanpur
		Dr. G. Janardhanan, NITTER,Chennai
		Mr. Pradeep Kaul, Senior Consultant & Convener, DTH OMG
Host Institute	:	SNDTWomen's University
Budgetary	:	**Rs.153.34 Lakhs**

Background Note

The Govt. has under NMEICT, on January 2, 2009, approved launch of 1000 DTH channels on 24X7 basis for every subject, for every class, in various languages to the extent possible. Dept., of Space has allotted for two Transponders capable of launching about 50 DTH channels. The MHRD DTH Programme is most cost effective, ICT education delivery programme to masses, designed to carry curriculum-based content in almost all subjects being taught in universities and colleges, to be delivered on TV sets at home & at Institutions. The content shall further be made available on IP devices such as PCs, Tablets, smart phones and on other personal devices.

The DTH Programme of MHRD is, 'People-centric' making the use of technology-enabled product that is affordable by students of the country and is a massive delivery platform to be made available simultaneously on TV Sets & on IP devices (both via video Streaming & Video on demand), meant to reach masses all over the country.

The pedagogy planned is the Teachers/Experts shall use Multimedia material & deliver live lectures of one-hour session and students watching DTH shall interact live on each channel and ask questions and seek answer instantaneously from the teacher. The questions can be asked using video conferencing, Mobiles / land lines, SMS's, e-mail etc., and the Teacher shall answer them live for about 20 minutes, each session and the remaining questions received shall also be attempted and answered off line mode.

The Teacher shall also submit each lecture plan, collection of graphics, pictures, animations, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., it shall be converted into e-content in four quadrants using a Template. The e-content thus produced out of DTH content, shall further be made available by NKN/NMEICT to viewers, through Cloud Servers, that can be viewed on Demand.

The DTH Committee, constituted by the MHRD under NME-ICT project, in its 9th meeting held on July 17, 2013 under Para 18 decided to entrusts **"Pedagogy & Scheduling expert committee"** with the responsibilities as under.

The above agenda was further put upas Agenda Item No.3 before the Domain Experts Committee on Content also called 'Standing Committee' (SC),in its meeting held on 8th September 2014.The SC deliberated and referred the issue to DTH Domain Expert Committee for suitable recommendations.

Deliverables:

It is proposed to deliberate on following issues, conduct Research on issues concerning pre launch and submit a report within 45 days and conduct post telecast research on monthly basis for one year from the date of telecast and submit the report:

A).   Pre Launch study:
   a) How to manage and plan to deliver the content on MHRD DTH channels.
   b) Assess as to how many lectures are required to plan, conduct & complete UG, PG & short Courses in Engineering & Non-engineering Subjects.
   c) Design methodology for transmission scheduling for 50 channels,
   d) Guide if the content should be recorded, viewed, certified and quality cleared, such as followed in Flip Classes etc., or to follow live classes beamed on MHRD channels.
   e) Provide pedagogy of live teaching of curriculum courses on DTH platform,

f) Provide Methodology of setting Interaction, assignments, guidelines for award of Credit Points to students.

g) Provide guidelines to incentivize and encourage teachers to contribute quality academics. (for example to equate number of sessions delivered through DTH, as equivalent to paper presented in National/international conferences and to link Teacher earned Academic Credit points that may benefit them in API (Academic Performance Indicators) score etc.

h) Guide how to monitor academic quality of content in each subject.

i) Provide methodology of repetition of telecast of a subject already telecast,

j) Provide Methodology in providing material for Electronic Programme Guide (EPG) & short synopsis by TE's,

k) To induct a member or engage an agency to meet the objectives of the Project under submission.

l) Plan and propose a couple of models to rejuvenate the DTH plan of action for self-generation of funding for the project.

m) Members of the group shall Join as experts in workshops being organised by MHRD or its designated institutions on methodology issues and how to deliver live lectures for DTH & development of e-content.

n) This group shall discuss, formulate and recommend all that is required for Development of Pedagogy & Scheduling strategy for MHRD DTH channels.

B). Conduct Pre Launch Research:

It is proposed to collect data from learners of Universities, colleges, via Social Media etc. Devise mechanism to conduct quick and periodic research that may be telecast on each channel. Conduct Research studies, surveys analysis, & identify the following, before launch of DTH programme:

i. Student preferences, expectations.

ii. Formats being implemented world-wide and those proving effective in terms of learners' acceptance

iii. Format preferences of learners.

C). Conduct Post Telecast Viewership, feedback, Learning assessment & Impact assessment study:

To carry out regular studies to analyze the impact of the DTH program, the Viewership & Impact assessment study shall be outsourced to a third party.It is also essential to find out how to conduct TRP of our programme on cost effective basis. The services of professional Agencies shall be sought for conduct of audience research, viewership profile etc. Use of Social Networking & feedback Mining tools. The feedback shall be used by the DTH Committee to make mid-course corrections in their strategy of telecast based on viewership requirements.

Total Budget Requirement:

    A.   **For conduct of meetings to deliberate and preparePre Launch study report on a) to o) as at A above. Rs.8.00 Lakhs**

    B.   **For conduct of Pre Launch Research. Rs.45.98 Lakhs as under:**

    C.   **For conduct of Post Launch Research. Rs.99.36 Lakhs as under:**

    Total A + B + C = Rs.153.34 Lakhs

A sum of Rs.153.34 Lakh is proposed, to be made available to SNDT Women's University, Mumbai to deliberate and submit a report on issues as stated above and conduct research concerning pre and post telecast issues in accordance of the "Terms of Reference" and submit the report in 45 days to the DTH Committee. The post telecast research shall be conducted on monthly basis for year from the date of telecast and report submitted to the DTH Committee regularly.

The project as Agenda Item No. 5, was recently put before the "Domain Experts Committee, DTH- Operations & Management Group" in its meeting held on 4th February 2015 and the DTH - OMG has recommended Rs.153.34 Lakhs to be sanctioned to the PI.

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and approval of Rs.153.34 Lakhs to SNDT Women's University, Mumbai.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project	**:**	**Design & develop a number of Logo's to be short listed by DTH Committee and further animate selected one to suit different channels regarding 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses' programme.**
PI	**:**	Prof. Ravi Poovaiah, IIT Bombay
PRSG Member	**:**	Mr. Pradeep Kaul, Senior Consultant, NMEICT & Convener, DTH OMG.
Host Institute	**:**	IIT Bombay
Budget	**:**	Rs.25.00 Lakhs

Background Note

The Govt., has under NMEICT, on January 2nd , 2009, approved launch of 1000 DTH channels on 24X7 basis for every subject, for every class, in various languages to the extent possible. Dept., of Space has alloted for two Transponders capable of launching about 50 DTH channels. The MHRD DTH Programme is most cost effective, ICT education delivery, programme to masses, designed to carry curriculum-based content in almost all subjects being taught in universities and colleges, to be delivered on TV sets at home & at Institutions. The content shall further be made available on IP devices such as PCs, Tablets, smart phones and on other personal devices.

The DTH Programme of MHRD is, 'People-centric' making the use of technology-enabled product that is affordable by students of the country and is a massive delivery platform to be made available simultaneously on TV Sets & on IP devices (both via video Streaming & Video on demand), meant to reach masses all over the country.

The pedagogy planned is the Teachers/Experts shall use Multimedia material & deliver live lectures of one-hour session and students watching DTH shall interact live on each channel and ask questions and seek answer instantaneously from the teacher. The questions can be asked using video conferencing, Mobiles / land lines, SMS's, e-mail etc., and the Teacher shall answer them live for about 20 minutes, each session and the remaining questions received shall also be attempted and answered off line mode.

The Teacher shall also submit each lecture plan, collection of graphics, pictures, animations, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., it shall be converted into e-content in four quadrants using a Template. The e-content thus produced out of DTH content, shall further be made available by NKN/NMEICT to viewers, through Cloud Servers, that can be viewed on Demand.

The DTH Committee, constituted by the MHRD under NME-ICT project, in its 9th meeting held on July 17, 2013 under Para 22 decided to entrusts "Design & Develop Logo for MHRD DTH Channels " with the responsibilities as under.

The above agenda was further put up as Agenda Item No.4 before the Domain Experts Committee on Content also called 'Standing Committee' (SC), in its meeting held on 8th September 2014. The SC deliberated and referred the issue to DTH Domain Expert Committee for suitable recommendations.

Objectives:

It is proposed to Design & Develop Logo for MHRD DTH Channels and develops in consultation with Mr. Pradeep Kaul, Senior Consultant & Co-ordinator, DTH Committee and submits final report within 45 days:

a) Design & develop a number of Logo's to be short listed by DTH Committee and further annimate a selected one to suit different MHRD DTH channels.

b) To induct a member or engage an agency to meet the objectives of the Project under submission.

c) This group shall discuss, formulate and recommend all that is required for Design & develop of Logo's for MHRD DTH channels.

Budgetary:

A sum of Rs.25.00 Lakh is proposed as under, to be made available to Prof. Ravi Poovaiah, IIT Bombay to Design & develop a number of Logo's and submit the report in 45 days to the DTH Committee:

The project as Agenda Item No. 5, was recently put before the "Domain Experts Committee, DTH- Operations & Management Group" in its meeting held on 4th February 2015 and the DTH – OMG has recommended Rs.25.00 Lakhs to be sanctioned to the PI.

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and approval of Rs.25.00 Lakhs to IIT Bombay.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project	:	**Develop strategies & Technical features for e-Content Development, Design Template & Training, Language Dubbing & Text Translation of content to regional languages regarding 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses' programme.**
PI	:	Dr. JagdishArora, Director, INFLIBNET
Co-PIs	:	Mr. Abhishek Kumar, Scientist C, INFLIBNET
PRSG Members	:	Prof. A Balasubramanian, Mysore University,
		Prof. Uma Kanjilal,IGNOU,
		Dr. Shahid Rasool, EMMRC Srinagar
		Mr. Pradeep Kaul, Senior Consultant & Convener, DTH OMG.
Host Institute	:	INFLIBNET, Ahmedabad.
Budget	:	Rs.35.00 Lakhs

Background Note

The Govt., has under NMEICT, on January 2, 2009, approved launch of 1000 DTH channels on 24X7 basis for every subject, for every class, in various languages to the extent possible. Dept., of Space has alloted for two Transponders capable of launching about 50 DTH channels. The MHRD DTH Programme is most cost effective, ICT education delivery, programme to masses, designed to carry curriculum-based content in almost all subjects being taught in universities and colleges, to be delivered on TV sets at home & at Institutions. The content shall further be made available on IP devices such as PCs, Tablets, smart phones and on other personal devices.

The DTH Programme of MHRD is, 'People-centric' making the use of technology-enabled product that is affordable by students of the country and is a massive delivery platform to be made available simultaneously on TV Sets & on IP devices (both via video Streaming & Video on demand), meant to reach masses all over the country.

The pedagogy planned is the Teachers/Experts shall use Multimedia material & deliver live lectures of one-hour session and students watching DTH shall interact live on each channel and ask questions and seek answer instantaneously from the teacher. The questions can be asked using video conferencing, Mobiles / land lines, SMS's, e-mail etc., and the Teacher shall answer them live for about 20 minutes, each session and the remaining questions received shall also be attempted and answered off line mode.

The Teacher shall also submit each lecture plan, collection of graphics, pictures, animations, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., it shall be converted into e-content in four quadrants using a Template. The e-content thus produced out of DTH content, shall further be made available by NKN/NMEICT to viewers, through Cloud Servers, that can be viewed on Demand.

The DTH Committee, constituted by the MHRD under NME-ICT project, in its 9th meeting held on July 17, 2013 under Para 20 decided to entrusts "e-Contentexpertcommittee" with the responsibilities as under.

The above agenda was further put up as Agenda Item No.6 before the Domain Experts Committee on Content also called 'Standing Committee' (SC), in its meeting held on 8th September 2014. The SC deliberated and referred the issue to DTH Domain Expert Committee for suitable recommendations.

Objectives:

It is proposed to deliberate on the following issues, develop a prototype and submit a report within 45 days to the DTH OMG:

a) Design Template(s) for e-Content Development for each subject under UG & PG, and process how to introduce Matataging.
b) Define how to re-package the recorded lecture and the material provided by the teacher for production of e-content.
c) Selection of tools for e-Content Development, LMS, Repository development & Content Management.
d) Define the process of e-content development, to be used at TE's,
e) What are the elements required to be sought from the teacher for e-content development,
f) How to authenticate the content developed.
g) Write the process of development of e-content & preparea Work Book for this.
h) Once the Template, tools for development of e-content and process is finalised, a DTH website shall be designed and a "Modele-content"

that shall be produced and uploaded on the DTH website that shall assist TE's in creation of e-content.

i) Develop methodology and programme of execution on Language Dubbing & Text translation of content to regional languages.

j) To induct a member or engage an agency to meet the objectives of the Project under submission.

k) Create a platform for encouraging Learner Community to develop & share Aps concerning DTH Platform etc.

l) Further workshops at clustered TE's on creation of e-content out of DTH deliveries shall be held to train TE techno-operational personal.

m) This group shall discuss, formulate and recommend all that is required for the DTH e-content recording & delivery.

Budgetary:

A sum of Rs.35 Lakh is proposed (in case of additional funds required SC shall again be approached) as under, to be made available to Director, INFLIBNET, Ahmedabad to deliberate and submit a report on issues as stated above and in accordance of the 'Term of Reference" and submit the report in 45 days:

The project as Agenda Item No. 5, was recently put before the "Domain Experts Committee, DTH- Operations & Management Group" in its meeting held on 4th February 2015 and the DTH-OMG has recommended Rs.35.00 Lakhs to be sanctioned to the PI.

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and approval of Rs.35.00 Lakhs to Director, INFLIBNET, Ahmedabad.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project	:	**Conduct trainings & workshops at CEC and some of the EMMRC'S for Subject Co-ordinators, Teachers / SME's, TE Co-ordinators etc regarding 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses' programme.**
PI	:	Prof. Rajbir Singh,Director, CEC, New Delhi.
CO-PI	:	1. Mr. Nageshwar Nath, ME, CEC 2. Dr. Sunil Meru, JD, SW, CEC. 3. Dr. Shatruddha, R.S, CEC
PRSG Members:		1. Dr. Jagdish Arora, Director, INFLIBNET, 2. Prof. Ashok Ogra, Director, APEEJAY 3. Prof. Uma Kanjilal, IGNOU, 4. Prof. A Balasubramanian, Mysore University, 5. Dr. Shahid Rasool, EMMRC Srinagar 6. Mr. Pradeep Kaul, Senior Consultant & Convener, DTH OMG.
Host Institute	:	Consortium for Educational Communication, IUAC Campus, Aruna Asaf Ali Marg, New Delhi.
Budget	:	Rs. 10 Crores

Background Note

The Govt., has under NMEICT, on January 2, 2009, approved launch of 1000 DTH channels on 24X7 basis for every subject, for every class, in various languages to the extent possible. Dept., of Space has alloted for two Transponders capable of launching about 50 DTH channels. The MHRD DTH Programme is most cost effective, ICT education delivery, programme to masses, designed to carry curriculum-based content in almost all subjects being taught in universities and colleges, to be delivered on TV sets at home & at Institutions. The content shall further be made available on IP devices such as PCs, Tablets, smart phones and on other personal devices.

The DTH Programme of MHRD is, 'People-centric' making the use of technology-enabled product that is affordable by students of the country and is a massive delivery platform to be made available simultaneously on TV Sets & on IP devices (both via video Streaming & Video on demand), meant to reach masses all over the country.

The pedagogy planned for MHRD DTH delivery is the Teachers/Experts shall use Multimedia material & deliver live lectures of one-hour session and students watching DTH shall interact live on each channel and ask questions and seek answer instantaneously from the teacher. The questions can be asked using video conferencing, Mobiles / land lines, SMS's, e-mail etc., and the Teacher shall answer them live for about 20 minutes, each session and the remaining questions received shall also be attempted and answered off line mode.

The DTH Committee, constituted by the MHRD under NME-ICT, in its 9th meeting held on July 17, 2013 decided to entrusts CEC & EMMRCs with the responsibilities to conduct Trainings and workshops at 10 EMMRC TEs for Subject Co-ordinators, Teachers / SME's, TE Co-ordinators etc., with the responsibilities as under.

The above agenda was further put up as Agenda Item No.8 before the Domain Experts Committee on Content also called 'Standing Committee' (SC), in its meeting held on 8th September 2014. The SC deliberated and referred the issue to DTH Domain Expert Committee for suitable recommendations.

Objectives:

1. To conduct Trainings and hold workshop at 11 TEs for about 4000 Subject Co-ordinators, Teachers / SME's, TE Co-ordinators, Academicians in the Pedagogy of educational content delivery for DTH etc., in consultation with Convener, DTH OMG, within 40 days after the award of TE tender to an agency till the launch of DTH Programme.
2. May invite or Coopt a member or engage an agency to meet the objectives of the Project under submission.
3. The PI shall discuss, formulate and recommend all that is required for the training of Academetia to be engaged in delivery of DTH programme.

Training Requirements:

The Teacher are required to submit lecture plan, collection of graphics, pictures, animations, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., for each transmission. The lecture delivered and the text & other elements collected from the Teacher shall be converted into e-content in four quadrants using a Template. The e-content thus produced out of DTH content, shall further be made available through NKN/NMEICT & Internet to viewers, through Cloud Servers, that can be viewed by students on Demand.

Methodology:

It is proposed to establish 11 TE Training Hubs at CEC & at EMMRC's situated at Kolkata, EFLU Hyderabad, Jodhpur, Pune, Jamia Millia Islamia, Chennai, Srinagar, Mysore, Imphal, Indore. For this activity, the TE equipment, human resources etc., shall be provided at the designated location within 60 days of award of TE Tender and such TEs shall be converted as Training Centres till the Launch of DTH programme. However, such TE shall continue to be a normal TE after Launch of DTH Programme.

Management & Planning of Trainings:

Topics to be covered for each category of training shall be planned & executed by the PI, Co-PI & Members of the PRSG.

Whom to Train, What to Train, Process Followed, Training Period

a)   **Training the Trainers:**

To train the Trainers through face-to-face or through non-contact mode to impart uniform training programme and follow common practices in delivering training to Teacher/SME, Subject Coordinators and TE Coordinators.

Process Followed: Discussion/Lecture mode/workshop or providing Work Book.
Duration: 2 Days or Off Line

b)   **Training Teachers / SME's,**

The Teacher/SME are required to be trained in live delivery of Telecast, TV Presentation, basics of Television & production, its grammar, Techniques of production, Story Board, Editing, Pedagogy of delivering live lectures and answering live questions. How to manage, produce & submit lecture plan, collection of graphics, pictures, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., for each transmission. How to coordinate & get animations produced at TEsetc. How the TE using four quadrants & a Template shall convert these elements into e-content. Students on Demand can view the e-content.

Process Followed: Discussion/Lecture mode, Demonstration. Each SME shall be required to produce content and one Live DTH delivery during the Training.

Duration: 4 Days.

c) **Subject Coordinators**:

To sensitize How to: Prepare National Syllabus of Subject alloted, prepare a list of names of SME against Courses, Allocate a Courses or part of it to SME & allocate a TE, allocate Standby SME for each Course, Coordinate with SME, fill-in a standard Contract form, Do's Don's, To seek answers to questions un answered during Live telecast & received at TE.

Process Followed: Discussion/Lecture mode

Duration: 2 Days

d) **TE Coordinators**

Orientation for TE Coordinators to make them aware of their role and responsibilities in the DTH Programme as in-charge, for smooth running of Academic, Technical and Operational activities of the DTH programme at the TE, to Co-ordinate with IIT Madras & Convener DTH OMG. Of the two faculty identified by the Host Institute (HI), one of them shall be designated as Principal Co-ordiantor and another as Associate Coordinator. HI shall empower them, subject to their internal practices, procedures, and policies, to receive funds from IIT Madras / MHRD for making payment for academic activities such as engagement of Subject Co- ordinator and SME's at each of the TEs as required for the creation of Content and make such payments as per the policy framed by the national DTH Committee or its successor.

Process Followed: Discussion/Lecture mode

Duration: 2 Days

Budgetary

Training shall be conducted in a batch of about 25 personal for days as mentioned above against each programme at 11 Centres and No of personal trained in a week through 11 Centres is likely around 275 and No of weeks required to train about 4000 personal are 15 (App 4 months).

On an average Budget of Rs.25,000/- per personal on TA-DA Food Stay is provisioned for the Training, procurement of Hardware and Software if any, Honorarium & travel for Experts etc.

A sum of Rs.10.00 Crores is proposed as under, to be made available to Director, CEC, New Delhi for conduct of Trainings and workshop at 11 TEs for Subject Co-ordinators, Teachers / SME's, TE Co-ordinators etc., and meeting expenses towards training, travel and logistics to about 4000 personal @ Rs.25,000/- per personal.

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The project as Agenda Item No. 5, was recently put before the "Domain Experts Committee, DTH- Operations & Management Group" in its meeting held on 4th February 2015 and the DTH - OMG has recommended Rs.10.00 Crores to be sanctioned to the PI.

The DTH-OMG in its meeting noted that only CEC wanted to revise their proposal, therefore the combined view was to forward all proposals for PAB in its forthcoming meeting and give opportunity to CEC to resubmit the proposal at the earliest. The CEC has so far not submitted the revised proposal. It is therefore to submit as under:

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and approval of Rs.10.00 Crores to Director, CEC, New Delhi. However, the funds may be released to CEC once the Chairman, DTH-OMG, receives a revised proposal from CEC and the Chairman DTH-OMG approves the proposal.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project	:	**Design and implement Advertisement, promo & Awareness programme on 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses'programme.**
PI	:	Dr.JagdishArora,Director,INFLIBNET
PRSG Members	:	1. Prof. Ashok Ogra, Director, APEEJAY & Ex Vice President, Discovery 2. Prof. Uma Kanjilal, IGNOU, 3. Mr. Pradeep Varma, Senior Consultant, NMEICT 4. Dr.C.S.Arora,seniorConsultant,NME-ICT 5. Mr. Pradeep Kaul, Senior Consultant & Convener, DTH OMG.
Host Institute	:	INFLIBNET, Ahmedabad.
Budgetary:		Rs. 505 Lakh.

Background Note

The Govt., has under NMEICT, on January 2, 2009, approved launch of 1000 DTH channels on 24X7 basis for every subject, for every class, in various languages to the extent possible. Dept., of Space has alloted for two Transponders capable of launching about 50 DTH channels. The MHRD DTH Programme is most cost effective, ICT education delivery, programme to masses, designed to carry curriculum-based content in almost all subjects being taught in universities and colleges, to be delivered on TV sets at home & at Institutions. The content shall further be made available on IP devices such as PCs, Tablets, smart phones and on other personal devices.

The DTH Programme of MHRD is, 'People-centric' making the use of technology-enabled product that is affordable by students of the country and is a massive delivery platform to be made available simultaneously on TV Sets & on IP devices (both via video Streaming & Video on demand), meant to reach masses all over the country.

The pedagogy planned is the Teachers/Experts shall use Multimedia material & deliver live lectures of one-hour session and students watching DTH shall interact

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live on each channel and ask questions and seek answer instantaneously from the teacher. The questions can be asked using video conferencing, Mobiles / land lines, SMS's, e-mail etc., and the Teacher shall answer them live for about 20 minutes, each session and the remaining questions received shall also be attempted and answered off line mode.

The Teacher shall also submit each lecture plan, collection of graphics, pictures, animations, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., it shall be converted into e-content in four quadrants using a Template. The e-content thus produced out of DTH content, shall further be made available by NKN/NMEICT to viewers, through Cloud Servers, that can be viewed on Demand.

The DTH Committee, constituted by the MHRD under NME-ICT project, in its 9th meeting held on July 17, 2013 decided under Para 24 to entrusts Design and implement Advertisement, promo & Awareness programme as under.

The above agenda was further put up as Agenda Item No.5 before the Domain Experts Committee on Content also called 'Standing Committee' (SC), in its meeting held on 8th September 2014. The SC deliberated and referred the issue to DTH Domain Expert Committee for suitable recommendations.

Deliverables:

It is proposed to Deliberate, design and implement Advertisement, promo & Awareness programme of MHRD DTH Programme on the following issues, submit a report to the Standing Committee within 45 days and conduct pre and post Launch Advertisement, promo & Awareness programme.

1. To look into complete advertising campaign of DTH, through TV, Radio, News papers & Social Media Networks.
2. Assign job(s) to an advertising Company(s), through DAVP or otherwise, for production of (i) Advertisement film(s) of 10-20 second duration (ii) Radio jingle and (iii) Advertisements etc., which may latter appear on Television, Radio Channels, News Papers all over the country and on social media outlets, from three months prior to launch and post launch till one year.
3. Organise Competition(s) on (i) slogan writing and (ii) posters design, on DTH, and the best entry may be paid a reward of Rs.1 Lakh for each category.
4. Student and faculty members of universities and college in India to be invited to participate in the slogan & poster competition.
5. The Committee may short list entries on Slogans & Posters and the final selection on this be done by the DTH Committee.

6. To induct a member or engage an agency to meet the objectives of the Project under submission.
7. The selected poster may then be got printed thro DAVP in sufficient numbers.
8. The posters should then be supplied to all universities with multiple copies and with a request to display it at prominent places in different departments in the university and to further supply the posters to constituent Colleges, with a request to display it in all departments of colleges, for wide publicity.
9. This group shall discuss, formulate and recommend all that is required for the Advertisement, promo & Awareness programme of MHRD DTH Programme.

Budgetary:

A sum of Rs. 505 Lakh is proposed (in case of additional funds required SC shall again be approached) as under, to be made available to Director, INFLIBNET, to deliberate and submit a report on issues as stated above and conduct pre and post Launch Advertisement, promo & Awareness programme research concerning pre telecast issues.

The project as Agenda Item No. 5, was recently put before the "Domain Experts Committee, DTH- Operations & Management Group" in its meeting held on 4th February 2015 and the DTH – OMG has recommended Rs.505.00 Lakhs to be sanctioned to the PI.

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and approval of Rs. 505.00 Lakhs to Director, INFLIBNET, Ahmedabad.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project	**:**	**Strengthening Activities, Management, Office, Manpower etc., for 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses' Programme at Delhi.**
PI	**:**	Prof. Kushal Sen, IIT Delhi
PRSG	**:**	Prof. Mangal Sunder, IIT Madras.
Members		Mr. Pradeep Kaul, Senior Consultant & Convener, DTH OMG.
Host Institute	**:**	IIT Delhi
Budget	**:**	Rs.75.00 Lakhs.

Background Note:

The DTH Committee in its 9th meeting held on July 17, 2013, noticed that the DTH programme has entered into a crucial stage of operation and is of large magnitude; it does not have a Project Investigator and a backing of an institute, to whom funds could be made available. Further the activity is at present run by a single person at NMEICT. In view of this, it was felt, there is a strong need to strengthen the DTH Mission Secretariat. The Committee felt till the time, the DTH Mission Secretariat is created & becomes operational; we should make some interim arrangements, maintain a mini office of the DTH programme at Delhi and as an interim arrangement and engage about eight personal in the office of NMEICT for exclusive use of DTH Programme and the recruited personal should report to Convener, DTH.

Recommendation requested:

It is therefore proposed in order to run (i) meetings of DTH Committees, (ii) Sub-Committees, (iii) DTH Operational Management Group, (iv) TA-DA Bills of the Co-Ordinator, DTH (v) set up Monitoring of 50 Channel Panel and DTH operational Centre at JNU,(vi) setting up office of the DTH activities at JNU or elsewhere in Delhi, (vii) engagement of contractual personal & administrative support for DTH activities and (viii) TA-DA payments to Mr. Pradeep Kaul regarding DTH activities, on the approval by the Chairman, DTH OMG. The IIT Delhi shall provide support to DTH Programme. For this a funding of Rs.75.00 Lakhs shall be required.

The members "DTH Committee" deliberated the DTH Programme does not have a 'Project Investigator (PI)' while all other projects of NMEICT have a PI & Co-PIs, to whom all responsibility of the project lies. At the same time Mr. Pradeep Kaul, Senior Consultant, NMEICT has been the Co-ordinator, DTH Committee and now the Convener, DTH OMG. Mr. Kaul has single-handed contributing to the work done so far in this programme and there is a serious need to strengthen human recourse in DTH programme. In order to Co-ordinate DTH activities, meet the time lines on DTH launch, Mr. Pradeep Kaul, Senior Consultant and Convener, DTH OMG has been requested by JS [TEL] during 10th DTH Meeting held on 9th January 2014 '*to put his full time & commitment to the DTH Project, which he has gladly accepted*'. In order to meet the stringent timeline and provide day-to-day administrative, technical & Operational guidance/supervision to DTH activities, Mr. Kaul shall be required to have a close co-ordination and report to Chairman, DTH OMG.

The DTH OMG, therefore authorised Mr. Kaul to travel concerning DTH activities, after having sought approval of the Chairperson, DTH Operational Monitoring Group and Mr. Kaul shall keep JS [TEL] informed on his travels. Further, about eight personnel are required to be engaged on Contractual appointments by IIT Delhi, report to Convener, DTH OMG, to assist the DTH Programme, apply for seeking WPC/NOCC/SACFA clearances from MC&IT, monitor the 50 Channels and maintain DTH Control Room / operational Centre at JNU Monitor on 365 day basis, etc. The Personnel shall operate from a temporary accommodation to be provided by the JNU for DTH activities, till regular construction on this is completed by the JNU.

The arrangements on this shall be that the PI Prof. Kushal Sen, IIT Delhi may engage (i) one Multi Tasking personal familiar with Accounts and HR, and (ii) upto total eight personnel, who will manage the DTH Office at Delhi.

The project as Agenda Item was recently put before the "Domain Experts Committee, DTH- Operations & Management Group" in its meeting held on 4th February 2015 and the DTH - OMG has recommended Rs.75.00 Lakhs to be sanctioned to the PI.

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and its approval and Rs. 75.00 Lakhs, to be made available to IIT Delhi for the purpose as above.

The MHRD, under the subject "Setting up of a High Level Committee for establishment of DTH Programme of NMEICT" and vide Office Order F. No. 01-01/2014-TEL, dated 1st January 2015, has constitution 20 member 'DTH Operations & Monitoring Group (OMG)' under the Chairmanship of Prof. S. V. Raghavan, Scientific Secretary, Office of the Principal Scientific Advisor, Govt. of India.

The DTH OMG vide its 1st meeting held on 4th February 2015, recommended a project proposal as under:

Project : **To study and design a number of Set Top Boxes, suitable for reception of MHRD DTH programme, Submit its RFP to DTH Committee and provide methodology to produce/procure, market/distribution & after sale service etc., for these STB's regarding 'Ubiquitous Satellite based Interactive Quality Education Delivery to Masses'.**

The Following are the Members of the STB Sub-Committee.
1) Prof Mangala Sunder, IIT M
2) Prof A. Balasubramanian, University of Mysore,
3) Mr. Ravi Saksena, Ex Scientist/ Engr. ISRO,
4) Mr. Rakesh Sharma, IGNOU,
5) Two representatives from Prasar Bharti.
6) Prof. Kavi Arya, IIT Bombay,
7) Dr. C.S. Arora, senior Consultant, NME-ICT
8) Mr. Pradeep Kaul, Senior Consultant & Convener, DTH OMG.

Background Note

The Govt., has under NMEICT, on January 2, 2009, approved launch of 1000 DTH channels on 24X7 basis for every subject, for every class, in various languages to the extent possible. Dept., of Space has alloted for two Transponders capable of launching about 50 DTH channels. The MHRD DTH Programme is most cost effective, ICT education delivery, programme to masses, designed to carry curriculum-based content in almost all subjects being taught in universities and colleges, to be delivered on TV sets at home & at Institutions. The content shall further be made available on IP devices such as PCs, Tablets, smart phones and on other personal devices.

The DTH Programme of MHRD is, 'People-centric' making the use of technology-enabled product that is affordable by students of the country and is a massive delivery platform to be made available simultaneously on TV Sets & on IP devices (both via video Streaming & Video on demand), meant to reach masses all over the country.

The pedagogy planned is the Teachers/Experts shall use Multimedia material & deliver live lectures of one-hour session and students watching DTH shall interact live on each channel and ask questions and seek answer instantaneously from the teacher. The questions can be asked using Skype, A-VIEW (a video conferencing mode of MHRD) Mobiles / land lines, SMS's, e-mail etc., and the Teacher shall answer them live for about 20 minutes, each session and the remaining questions received shall also be attempted and answered off line mode.

The Teacher shall also submit each lecture plan, collection of graphics, pictures, animations, Academic Script, Glossary, Frequently Asked Questions and their replies, Quiz, Assignment, case studies, Tutorials etc., it shall be converted into e-content in four quadrants using a Template. The e-content thus produced out of DTH content, shall further be made available by NKN/NMEICT to viewers, through Cloud Servers, that can be viewed on Demand.

The DTH Committee, constituted by the MHRD under NME-ICT project, in its 10th meeting held on July 17, 2013 to decided to entrusts design of Set Top Boxes suitable for reception of MHRD DTH programme to a committee with the responsibilities as under:

Objectives:

The present MHRD DTH Programme shall follow un-encrypted signals. The Conditional Access System (CAS) is a digital mode of transmitting TV channels trough a set-top box (STB), wherein the transmission signals are encrypted and viewers need to buy a set-top box that has decryption mechanism. The advantages the DTH service provider has while providing the CAS, is it provides the feedback on the numbers of subscribers watching the programme. The DTH Committee has felt it would be advantageous to follow introduction of encryption scheme of Doordarshan's DD Plus DTH and when encrypted is introduced in DD's transmission, the MHRD shall also follow encryption in its transmission, so that with a little extra cost in STB's the subscriber has to make, it will be possible to know the subscription base of MHRD DTH programme. This shall provide a valuable input on viewership profile.

It is proposed the Committee to deliberate on the following issues and submit a report within 45 days to the DTH Committee/OMG:

a) To study and design a number of Set Top Boxes suitable for reception of MHRD DTH programme, Submit its RFP and provide methodology to produce/procure, market/distribution & after sale service etc., for these STB's.

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b) To induct a member or engage an agency to meet the objectives of the Project under submission.

c) Deliberate on CAS, the decission so fat taken by the DTH Committee on induction of CAS to MHRD DTH programme, the timming & process of Induction of CAS to MHRD DTH programme.

d) Recommend, who are the best to take forward the RFP of different types of STB's and produce them in India.

e) This group shall discuss, formulate and recommend all that is required for design Set Top Boxes suitable for reception of MHRD DTH channels.

For Conduct of Meetings regarding design a number of Set Top Boxes suitable for reception of MHRD DTH programme, the IIT Delhi, shall support for their TA-DA, Sitting Fee, logistics etc.

The above recommendations made by the DTH Operations & Management Group are placed before the PAB of NMEICT for consideration and approval.

Agenda Item No. IV C (b) 2

Proposal : "Engaging Director, IIT Delhi for Setting up MHRD DTH Earth Station at JNU and seeking Technical assistance of Prasar Bharti".

The 24th Meeting of the PAB, NMEICT held on 4th October 2012, decided to request JNU to construct three floors to house MHRD DTH Teleport at JNU and approved a budget of Rs.13.00 Crores for Civil & Rs.6.5 Crores for Electricity, AC etc. The JNU also proposed to provide a temporary space for MHRD DTH Teleport, till the time the construction of the building gets completed.

The DTH Committee during 2011-12 decided to hire a Teleport facility for uplinking 50 MHRD Educational DTH Channels to the allocated two transponders by Department of Space in G-SAT-8 satellite. In this regard M/s TCIL (through tender process) was selected to find out through open Tender an agency to provide us Teleport agency to rent its facilities.

The 23rd Meeting of the PAB, NMEICT held on 28th February 2012,approved "Obtaining the services of Telecommunication Consultants India Limited (TCIL) a PSU under the Ministry of Communications and Information Technology for finding a Teleport Agency for engagement of up-linking 50 DTH channels of MHRD at one time payment decided by the DTH Committee through a transparent process"

The DTH OMG vide its 1st meeting held on 4th February 2015, deliberated regarding advantages on setting up our own Earth Station versus follow the process to hire a Teleport". The members discussed; "Should the MHRD proceed with the hiring of teleport or should it plan to have one of its own". It was felt that since we have now place to install our own Earth Station at JNU and have some time before the launch of 50 DTH channels, we could plan and launch our own earth station for up liking to the satellite, as this option turns out cost effective when compared to hiring a teleport service as was perceived by the DTH committee in the past.

The Chairman, DTH OMG felt, that MHRD following the provisions of MoU signed on 19 December 2013, between CEO Prasar Bharti & Secretary, HE, MHRD, wherein it is decided that the MHRD and Prasar Bharti will work together for the success of MHRD DTH programme and that the Prasar Bharti shall provide necessary technical and expert advice on the matters related to MHRD DTH programme, as and when such advice is sought by the MHRD; the Chairman, PAB may request CEO Prasar Bharti to kindly constitute a Committee of Senior Prasar Bharti, experts in the field of Teleport /Earth who along with Convener DTH OMG, NMEICT (who will Co-ordinate on this) to form a group to prepare 'Request for Proposal' (RFP) & specifications for acquiring MHRD 50 Channel DTH Earth Station. The Committee may meet as often as possible and submit the report to MHRD within one month, so that the uplinking station can be set up & the MHRD DTH channels made operations at the earliest.

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The RFP document on setting up of MHRD Earth Station as and when received shall be put before Chairman, DTH OMG for kind approved by the 'DTH OMG'.

It is further proposed to engage Director, IIT Delhi in floating & executing a Public Tender on 'Setting up MHRD DTH Earth Station at JNU'. The estimates on establishing MHRD DTH Earth Station shall be sought from the Prasar Bharti Committee constituted on this and funds on this are required to be made available to Director, IIT Delhi as recommended by the Technical Expert Committee on DTH Earth Station. It is to be kept in mind that for placing an Purchase Order and executing Letter of Credit, the actual amount as quoted by the Tenderer is required to be made available to IIT Delhi and the PAB is therefore requested to authorise Chairman, PAB to provide sufficient funds to Director, IIT Delhi as is required to acquire, assemble, and operationalize the MHRD DTH Earth Station at JNU.

Meanwhile on account of establishing aMHRD DTH Earth Station, initially,a sum of Rs.30.00 Crores (as assessed by DTH-OMG) is required, which may be made available to Director, IIT Delhi for procurement, commissioning and operational activities of MHRD DTH Earth Station/ Teleport, further funds on this to be sanctioned by PAB to Director, IIT Delhi based actual budget submitted by IIT Delhi and recommended by DTH-OMG.

The proposal as above is placed before the PAB of NMEICT for consideration and for kind approval, a sum of Rs.30.00 Crores to be made available to Director, IIT Delhi, on account of establishing MHRD DTH Earth Station and approaching CEO Prasar Bharti to assist in formation of RFP as per above.

Agenda Item No. IV C (b) 3

Proposal: "Revised Budget (R+NR) on DTH Programme and defining the Source of Budget for DTH activities".

The PAB in its 25th meeting held on 6th November 2012, approved a **budget of Rs. 572.73 Crores** for DTH Programme that includes Non-Recurring budget (on Equipment etc) of Rs. 197.77 Crores and Recurring Budget on account of content development etc., as Rs.374.96 Crores. The DTH shall deliver live telecast of 8 Hours per day/Channel or 400 Hours per day on 50 Channels.

Further, MHRD vide office order no F. No. 01-01/2014-TEL dated 02/01/2015 has issued order regarding "setting up of Teaching Ends at leading institute in the country for generation of content for 50 DTH educational channels" to Director IIT, Madras, stating that it may go ahead with the tender for setting up DTH Teaching Ends after revising / updating specifications as necessary and the duly constituted Committee may explore to reduce the cost.

The TE Technical Experts Committee, IIT Madras, has met during March- April 2015 and finalised the RFP regarding procurement, installation and operationalisation of 213 TEs, indicates the Budget estimates on this and based on the recommendations of the DTH OMG to procure an Earth Station / Teleport, instead of hiring the facilities; therefore a revised total Recurring & Non-Recurring Budget estimates of DTH Programme is proposed as under:

i) "DTH Non-Rec. &Recurring Budgetary of TEs and Analysis etc."

The MHRD 50 DTH Channels is expected to provide most affordable e-Content Generation & ICT delivery platform for viewing by Masses & makes use of Tech-enabled product affordable by student. It shall provide Live Structured Courses upto about 200 Courses a day and 400 Hours of Live Content. Student can interact live through Video Conferencing, Mobile, e-mail, SMS, etc., & get live reply from SME. Content can be received on TV sets, IP devices concurrently. These lessons shall further be converted into e-Content at TEs and with the help of CDN technology and MHRD Cloud Network, shall further be provided to viewers on Demand through 'Off-Line' delivery/ Unicast on Any Time, Anywhere and at One's Pace basis.

A. Equipment Package at each DTH Teaching Ends, for 8 hours on 365 basis:

S.No.	Item	Quantity for 1 Teaching End	Qty for 213 Teaching End	Tentative Budget Rs. in Lakhs
1	Integrated Broadcast (PTZ) Camera with Remote Control	3	639	12.0
2	Production Console / Video Switcher 8 Channel	1	213	5.0
3	Routing Switcher12x12 HD-SDI	1	213	1.2
4	Audio HD Embedder Stand alone	1	213	0.3
5	Audio Distribution Amplifier	1	213	0.3
6	Audio Mixer.	1	213	0.4
7	46" Flat Panel Display Device (LED)	2	426	1.0
8	Microphones			2.5
8(a)	UHF Wireless Lavalier / Collar diversity microphone with minimum of 8 selectable channels as per Indian region	2	426	
8(b)	Wired Lapel Microphone with standard accessories	2	426	
8(c)	UHF, Wireless Handheld diversity microphone with metal casing with minimum 8 selectable channels as per Indian region.	2	426	
9	Interactive Touch Screen Panel with required computer, Pen and software	1	213	4.0
10	PC based Character Generator	1	213	0.7
11	NAS based AV non-linear editing			11.0
11(a)	Editing Software	3	639	
11(b)	Editing Hardware, with IO Card	2	426	
11(c)	Software for Graphic Works	1	213	
11(d)	Network Attached Storage	1	213	
12	Media Asset Management H/w & S/w	1	213	4.0
13	Laptops	4	852	1.3

14	Laptop Touch Screen	1	213	0.7
15(a)	IP to Fiber Managed Switch 16 Port	1	213	1.0
15(b)	Single Mode Ethernet to Optical Convertor	1	213	
16	AVC Encoder	1	213	4.0
17	Telephone Hybrid, SMS, e-Mail etc	2 Set	426	1.0
18	Active Speaker pair (2 way)	2 sets	426	0.7
19	Headphones	3	639	0.15
20	Studio Cool Light Units	9	1917	1.5
21	Tel Land lines 2 Toll Free + I Land Line & Broadband Internet (2) to be sought with the assistance from Institute.	1 Set	213 sets	
22	UPS 10 KW	1 set	213 sets	2.0
23	DTH STB	2 set	426 Sets	0.5
24	Studio Intercom System + VoIP	1 set	213 sets	0.7
25	Studio LED On Air Warning Lights 3 Nos	1 set	213 Sets	0.05
	Total			**56.00**

B

1	**Civil, Acoustical, Electrical, etc at 213 TE's /TE**	**1 Lot**	**12.4**
2	Split ACs 2.0 Tonne	5	2.0
3	Split ACs 1.5 Tonne	2	0.6
	Total		15

Note: The Broadband Connectivity of 2 links of 25Mbps each would be provided to carry content from 213 Teaching Ends to Teleport End. For this Bandwidth and OFC/ MPLS network with end-to-end solutions created under NMEICT/NKN would be utilised.

Methodology and overall system Architecture:

a) Two Transponders on GSAT-8 have been allotted by the Department of Space to MHRD. The number of educational Channels to be launched from it is, 50.

b) Eight hours of fresh content shall be telecast a day, the content shall be recorded at Teleport End and repeated within twenty-four hour period.

c) A Subject Coordinator shall be engaged (to co-ordinate all academic activities, selection and engagement of 'Academic Experts', Scheduling & e-content certification of a Subject) by 'Lead Institutes' and for this an honorarium of Rs.2.5 Lakhs may be paid to complete one UG Subject.

d) Eight Hrs a day telecast may include 2 Lectures each of 60 Mts of duration of 4 UG subjects on a channel. E.g., Channel 22 shall carry UG Physics, Chemistry, Botany & Mathematics.

e) An Academic Expert or SME shall deliver Live lecture and shall be paid Honorarium/Sitting Fee of Rs.5000/- and TA of Rs.1000/- for delivering Live 60 mts. The Academic Expert is also required to submit the lecture plan, collection of graphics, pictures, animations scheme, question answers, Quiz / test, web-links, etc.

f) A teacher / SME shall deliver live lecture approximately of 40 mts of duration, in two sessions of 20 minutes followed by 10 minutes each Q&A session as Live Interactivity (Through, video conferencing through Skype, AVIEW, etc., Land line/Mobile telephone, SMSs, e-mail etc) session with the students spread across India.

g) Acquiring a Teleport / Earth Station is estimated at about Rs.60.00 Crores.

h) At each of the TE, operational personal consisting of Technical (2) Editor (2) Production/Manager (1) Attendant (1), staff to be provided by the Service Management Provider, with an average estimated Contractual fee of each Rs.22,000.00 PM +30% @ Sat + Sun + Holidays = Rs20.6 Lakhs/annum /TE. Plus Constancy Fee raise/year of 15%.

i) AMC, Spares estimates are @ 10% the cost of equipment, No AMC for first 2 years or more and AMC, Spares of equipment after warranty period Approx., Rs 12.0L

j) Electricity cost & consumable, estimated Rs.10.00 Lakhs/Annum/TE.

k) In order to ensure that live content is generated regularly, it has been decided to establish four Teaching Ends for a channel, thereby about 213 Teaching Ends for generating content for 50 channels shall be established. Further, after delivery of a subject is complete, the same set or different set of Teaching Ends shall support generation of content for new Subjects.

l) A TE shall be operative for about 8-9 Hrs a day, wherein besides average of 2:00 Hrs Live Telecast a day, the TE shall be engaged in creation of promos, Editing, e-content development of each days telecast material, creation of Multimedia material for the SME's, etc.

m) A rough pedagogy indicates that following UGC Model Course Curriculum (2001), a student perusing 3 Year UG, e.g., Physics (H) degree course, here for DTH delivery we shall choose teaching of Physics Subject only that may comprise of: Theory 585 Hrs, Theory + Tutorials 195 Hrs, Laboratory 292 Hrs and Lab + Tutorials 195 Hrs, Total Teaching on DTH on these is estimated to be 926 Hours.

n) Based on Para (m) above, we assume UG Physics; the teachers shall complete the subject in 926 Hours.

o) Based on Para (c) above a Subject Coordinator is paid emoluments to attend to a UG subject telecast duration of 926 Hours, therefore for calculating proportionate emoluments to be paid to Subject Coordinators for budgetary purpose for supporting 50 Channel, 8 Hours a day, amounts to 2.5Lx8x365x50 /926 = Rs.3.94 Crores.

p) A channel shall broadcast fresh content for 8 Hours/day, which shall include, about three to four Subjects, each for two hours and Vocational Training and Skill Development. Therefore 50 channels is capable of telecast of total 150 to 200 subjects simultaneously, completing 158 subjects and 225 Vocational Training and Skill Development (4 ½ H x 18 D) per annum. A UG subject shall take roughly 1 year and 98 days to complete.

q) The Teaching Ends are being created at 213 premier institutes across the country.

r) Any day 200 TEs shall be active and 13 TEs (6.5%) shall be on standby / on redundancy mode.

s) The system is designed and accounted to deliver content primarily on TV sets, however, it is being planned to deliver Multicast and Video on Demand content on PC's, Laptops, Tablets, Smart phones, etc.

t) It is expected to establish (i) Optical Fiber connectivity from 213 TE's to nearest POP NKN, (ii) utilising POP NKN national cloud to Teleport/ Earth Station regarding transmission of content and (iii) usage of OF Bandwidth 2X25Mbps at each of 213 TEs to be provided by NKN.

u) Utilise the Cloud Servers of NMEICT/NKN for CDN & VOD services.

v) Above statements are arrived out of decisions taken during Meetings of the DTH Committee, however it may be reviewed by the newly replaced Committee on this called "DTH Operational Management Group".

w) At Earth Station / Teleport End, operational personal shall work on 24X7 and consistof categories such as: Shift Engineers (2) Technical Assistants (4) MTS (2), staff to be provided for First shift and Engineers (1) Technical Assistants (2) MTS (2), staff to be provided for Second & Third shift by the Service Management Provider Teleport, with an average estimated Contractual fee of Rs.40,000.00, Rs.30,000.00, Rs.15,000.00 PM to respective category, add 30% @ Sat + Sun + Holidays = Rs76.44 Lakhs/annum. Plus Constancy Fee raise/year of 15%.

ESTIMATES only.

(C)   Establishing Teaching End.
    i)   Non-Recurring per TE

a) Equipment package	Refer A(26)	Rs.56.00 Lakhs.
b) AC, Accu, Electric, Civil. Ref B		Rs.15.00 Lakhs
c) NR-Sub Total a)+b) Per TE		Rs.71.00 Lakhs

    ii) **NR at 210 TE's**   **Rs.149.10 Crores**

    iii) Recurring/TE/Annum

a) Staff. Ref F(h)	Rs.20.00 Lakhs
b) AMC, Elect, Cons, Toll Free Tel Ref F(i, j)	Rs.15.00 Lakhs
c) Rec-Sub Total a)+b) Per TE	**Rs.35.00 Lakhs**

    iv) Recurring at 210 TE's   **Rs.73.50 Crores**

Note:

It is proposed to introduce CAS and the Middleware in the MHRD DTH system, as and when the Prasar Bharti in their channels introduces the CAS. The introduction of CAS shall allow MHRD any time to know the numbers of viewers that are watching the MHRD Programmes. For implementation of CAS, the budget required to upgrade the system shall be submitted accordingly.

(D)   Content development/Recurring/Annum

(i) Honorarium / Sitting Fee ref (e) = 6th x 2hrs x 365 X 200	**Rs.88.60 Crores**
(ii) Subject/Discipline Co-ordinator Ref (o) 2,5L x 9 x 365 x 50 / 926	**Rs. 4.44 Crores**
(iii)Total Content Dev at 200 TE's	**Rs.93.04 Crores**

(E)   Transponder & Teleport End.

  (i)   Non-Recurring

    a) Acquiring & Installing Teleport   Rs. 60.00 Crore

    b) TE, 3 Equipment Packages Ref. G(i,c)   Rs.2.02 Crores

    c) NR-Total   Rs.62.02 Crore

  (ii)   Recurring/Annum

    a) Human Resource 24X7 at Teleport   Rs.76.44 Lakhs

    b) Transponders (2) to DOS   Rs.12.50 Crores

    c) 3TEs Staff Ref. G(iii)(a)   Rs.60.00Lakhs

    d) Rec. Total   Rs.13.86 Crores

(F)   (a)   Recurring Budget on Developmental Issues

  (i)   Budget for Promos, Posters and Publicity /Annum   Rs.505 Lakhs

  (II)   Conduct Post Launch Research

    Research   Rs.99.36 Lakhs

  (iii) Strengthening management, office, manpower etc.

    DTH Office Manpower & Management   Rs.075.00 Lakhs

  Total F (a)   Rs.06.80 Crores

  (b)   Non Recurring Budget on Developmental Issues

  (I)   Pedagogy & Scheduling strategy, Conduct Pre Launch Research

    Pedagogy & Research   Rs.53.98 Lakhs

  (ii)   Design & develop of Logo

    Logo Design   Rs.025.00 Lakhs

  (iii) Design e-Content&Language Dubbing Template

    Deliberate & Design   Rs.035.00Lakhs

  (iv)   Conduct trainings for Subject Co-ordinators,

    Teachers/SME's, TE Co-ordinator Training & Workshop Rs.1000.00 Lakhs

  Total F (b)   Rs.11.14 Crores

Note (values taken at (C), (D), (E) & (F) above are estimates only, actual values on these shall be known only on award of Tender).

(G)   Total Budget on 50 DTH Channels

  a)   Non-Recurring

    (i) TEs. Ref C(ii)   Rs.149.10 Crores

      With 10% Contingency   **Rs.164.01 Crores**

(ii) Teleport End Refer E(i, c)	Rs.062.02 Crores
With 10% Contingency	**Rs.68.22 Crores**
(iii) Developmental Issues F(b)	Rs.011.14 Crores
With 10% Contingency	**Rs.012.25 Crores**
(iv) **Total (a)**	Rs.214.91 Crores
With 10% Contingency	**Rs.244.41 Crores**
b) Recurring/Annum	
(i) TEs 213 Ref. C(iv)	Rs.73.50 Crores
With 10% Contingency	**Rs.80.85 Crores**
(ii) Teleport End Ref. E(ii)(d)	Rs.13.86 Crores
With 10% Contingency	**Rs.15.25 Crores**
(iii) Publicity Ref FJ(a)	Rs.06.80 Crores
With 10% Contingency	**Rs.07.48 Crores**
(iv) Total (b)	Rs.94.16 Crores
With 10% Contingency	**Rs.103.58 Crores**
c) Content Development Recurring Ref. D(iii)	Rs.93.04 Crores
With 10% Contingency	**Rs.102.34 Crores**
(i) Total (c)	**Rs. 102.34 Crores**
Grand Total G (a+b+c)	Rs.402.11 Crores
With 10% Contingency	**Rs.450.33 Crores**

(H) **Total Project Cost** (Approx.)

i. Total Non-Recurring Ref. G(a)(iv)	Rs. 244.41 Crores
ii. Total Recurring/Annum Ref. G(b)(iv)	Rs. 103.58 Crores
iii. Content Development etc (D)	Rs. 102.34 Crores
Total Rec. & NR	**Rs.450.33 Crore**

B) **"Source of Funding for DTH".**

1. Following are current Budget Heads/components of DTH Programme regarding (A) Non-Recurring and (B) Recurring budget heads:

(A) Non-Recurring

I. For establishment of 213 Teaching Ends (TEs) from where the content shall get generated &transmittedlive with live interaction.

II. Acquiring Earth Station/Teleport, Integrating and Operation, Monitoring of Telecast on 24X7 basis.

III. Conduct Pre Launch Research, trainings of SMEs; design of Logo's, Template & STB; and Advertisement etc.

(B) Recurring Budget

    I. Payment on account of 'Operational workforce' at 210 TEs (on 8X365 basis), for production, Generation of Content and Live telecast.

    II. Rental Payment to ISRO on account of hiring two Satellite Transponders.

    III. Payment on account of 'Operational workforce' at Earth Station/Teleport.

    IV. Payment on account of 'Operational workforce' 3 TEs at Teleport.

    V. Conduct of Post Launch Research, Advertisement/ Publicity & DTH Office.

    VI. Payment on account of Live Content Development to Subject Matter Experts for 1.46 Lakh Hrs./Annum at 210 TEs.

Establish Optical Fiber connectivity from 213 TE's to nearest POP NKN, utilising POP NKN national cloud to Teleport/ Earth Station regarding transmission of content, usage of Optical Fiber Bandwidth 2X25Mbps at each of 213 TEs under NKN and Utilise the Cloud Servers of NMEICT/NKN for CDN & VOD services.

As per Mission Document, total allocation of budget for projects concerning educational content **delivery through Satellite** and received on TV sets & IP devices, including 50 DTH Educational channels, as per Mission Document, NMEICT, is Rs.401 Crores as under.

S.No.	Budget Allocation title	Amount	Expenditure booked for & Comments
1)	Provision of 1000 DTH Channels for Eklavya & other video based programmes including iPTV for e-learning	Rs.120 Crores	Setting up of 213 Teaching Ends (TE) for generation of video based educational content for DTH including iPTV
2)	Bandwidth charges for iPStar terminals 100cr + 200 cr + 200 cr + 100 cr + 50 cr till our satellite has 45 Gbps capacity @ one tenth.	Rs. 65 Crores	Bandwidth charges for G-SAT3 allocated by Dept. of Space.
3)	1 EduSAT teaching hub at each of the 100 Central Institutions / premier institutions.	Rs.60 Crores	Acquiring, Installing & Operations of Earth Station/Teleport for uplinking content received from 213 TE's being set up at Central Institutions / premier institutions in the country, to the Satellite.
4)	6 uplinking hubs for 6 National Beam transponders of EduSAT	Rs.24 Crores	

S.No.	Budget Allocation title	Amount	Expenditure booked for & Comments
5)	iPStar satellite access device @ $250 per device for 100*300+18000*5 = 120000 terminals @ one tenth.	Rs.12 Crores	
6)	1 EduSAT Satellite Interactive Terminal at each of the 18000 Institutions of Higher Learning.	Rs.108 Crores	Satellite receive system (capable to receive MHRD DTH channels) to be provided at each of the 18000 Institutions of Higher Learning and 100 Central Institutions / premier institutions.
7)	20 EduSAT Satellite Interactive Terminals at each of the 100 Central Institutions / premier institutions.	Rs.12 Crores	
	Total	Rs 401 Crores	

It may be kept in mind although, the MHRD initiative is called DTH programme, but in true sense it carries features beyond that of the DTH platform. Besides education content made available on TV sets and having live interaction with students, the content shall also be made available to viewers concurrently on IP devices (through Multicasting) such as on PCs, Tablets, smart phones and on other personal devices, further the programme & material supplied by the SME shall be converted to e-Content and made available to viewers through Cloud at any time, any where at ones pace, via Video on Demand. Thus the MHRD DTH programme encompasses features that are associated in DTH, EduSAT, IPTV & VOD and shall re-engineer live education content delivery & also provide live interaction by students through multiple platforms as per the objectives approved in the Mission Document. Thus the DTH programme is therefore in true sense 'A total ICT educational delivery System'.

For running DTH Programme, owing to nature of activities involved it is envisaged, budget and activities on these elements shall be utilised from different budget Heads alloted out of different Programmes under NMEICT Physical Activities, of Mission Document. The budget components projected under sub heads (A) & (B) above of DTH Project are going to be met as listed at **Annexure-I/ Page: 132 to 136**.

S. No	Expenditure under DTH Programme	Projected NR & R (per Anm.) Expenditure upto XIIth FY Plan end. Rs. Crores	Expenditure proposed to be met from Sub-head, NMEICT Document.	Budget allocation under the Head in NMEICT Document, Rs. Crores	Justification for utilising the Budget under proposed Sub-Head.
	(I)	(II)	(III)	(IV)	(V)
1)	Establishing 210 TEs	164.01 (NR)	a) Provision of 1000 DTH Channels and b) Content Generation	a) 120 Crores and b) Rs.1811 Crores	The establishment of 213 TEs shall directly contribute in Content generation and together with recurring expenditure on Content generation shall be only 39.31% to the payment offered for e-content development under NMEICT.
2)	Establishing Earth Station / Teleport End.	68.22 (NR)	a) One EduSAT teaching hub at each of the 100 Central Institutions / premier institutions.& b) Six uplinking hubs for 6 National Beam transponders of EduSAT	Rs.60 Crores Rs.12 Crores	Instead of 100 Teaching Hubs as proposed in Mission document, 213 Teaching Ends are being established at Central Institutions / premier institutions such as CUs, IITs, NITs and other Institutions.
3)	Research, Logo, Template, Training, STB.	12.25 (NR)	Content Generation	Refer 1 (iv)	Refer 1 (V)
4)	Operations at TEs + Running TEs for Cont. Gen., Live 1.46 Lakh Hrs/ Annum at 210 TEs	183.20 (R)	Content Generation	Refer 1 (iv)	Refer 1 (V)

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S. No	Expenditure under DTH Programme	Projected NR & R (per Anm.) Expenditure upto XIIth FY Plan end. Rs. Crores	Expenditure proposed to be met from Sub-head, NMEICT Document.	Budget allocation under the Head in NMEICT Document, Rs. Crores	Justification for utilising the Budget under proposed Sub-Head.
5)	Rental of two Satellite Transponder from ISRO.	13.75 (R)	Provision of 1000 DTH Channels for Eklavya & other video based programmes including iPTV for e-learning.	Rs.120 Crores	Being met out of alloted budget.
6)	Operations Teleport + 3 TEs at Teleport.	1.50 (R)		Refer 1 (iv)	Refer 1 (V)
7)	Research, Publicity, DTH Office	7.48 (R)		Refer 1 (iv)	Refer 1 (V)
8)	(i) Establishment of Optical Fiber connectivity from 213 TE to nearest POP NKN & (ii) POP NMEICT / NKN Cloud to Teleport End & (iii) OF Bandwidth of 2X25 Mbps at each TE usage Charges to be provided by NKN and (iv) utilise the Cloud Servers of NMEICT/NKN for CDN & VOD services.	Budget for these activities to be provided by NKN or Under Connectivity Head of NMEICT.	Connectivity 2000 nodes for 1 Gbps connectivity at each of the 100 Central Institutions / premier institutions to be connected Thro' BSNL Internet + VPN Plan	Rs.500 Crores	Only Last Mile Optical Fiber Connectivity from TEs to POP, remaining connectivity of existing OF network of NKN shall be utilised and in turn the 3650 Courses per yearcontent to Institutions shall be made available by DTH programme.
	Total = 244.41 (NR) + 205.92 (R) = 450.33.				

Put up for kind consideration of the PAB to kindly approve Non Recurring budget of Rs.244.41 Crores, Recurring budget of Rs.103.58 Crores/annum and Recurring budget for Content generation Rs.102.34 Crores per annum, as above for smooth launch & running of DTH programme and the expenditure on this to be booked as per Annexure-I above.

C) Budget Analysis on DTH Programme

(I) Cost towards Content Generation (Recurring /Annum)

a)	Total TE Recurring Ref. Gb)(i)	Rs.080.85 Crores
b)	Content Development Ref. Gc)	Rs.102.34 Crores
e)	**Total**	**Rs.183.20 Crores**
f)	Cost per Channel	**Rs.3.66 Crores**
g)	Cost per Course O (f) ÷ 365X8/40	**Rs.5.02 Lakhs**
h)	Cost per Hour (g)/40	Rs.12,548/-

(J) Cost of Telecast per Channel /Annum

a) Recurring Tx. Cost Per Channel (G)(b) ii) ÷50　　Rs.30.5 Lakhs.

Total Rec. Tx. + Cont Cost per Channel = J(a) + I(f)　　Rs.3.97 Crores

b) Non-Recurring cost (Ref. Ga) (iv)) of **Rs.244.41 Crores is spread over 7 years**

As per Industry Standards assuming the equipment last for seven years

Non-Recurring cost per year is　　**Rs.34.92 Crores**

Total Non-Recurring cost per Channel/Annum (J)b)÷50　　**Rs.69.83 Lakhs**

(K) Cost of Telecast & Content Generation per Channel / Annu

a)	Non Recurring Ref. J(b)	Rs.0.70 Crores
b)	Recurring Ref. Ref. J(a)	Rs.3.97 Crores
c)	**Total (Rec + N. Recu)**	**Rs.4.67 Crores**
d)	Per Course (c) ÷8x365 x40	**Rs.6.39 Lakhs**
e)	Per 21D training Progr. 4 Hrs/day/18 days	Rs.11.51 Lakhs
f)	Tx + Con Gen Per Hour	Rs.16,000/-

Cost Benefit Analysis:

S.No	Issue	Agency	MHRD DTH
1	Telecast cost per channel per Annum.	Prasar Bharti charges Rs.4.5 Crores.	Rs.69.83Lakhs @ 15.52%, Thus **Saving is 84.48%**
2	e-Content Production	NMEICT norms are Rs.11.6 Lakhs per Course	Rs. **5.02**Lakhs per course @ 43.27%, Thus **Saving is 56.73%**
3	e-Content Production volume	NPTEL 600 Course 4 Years, CEC 125 Courses 3 Years	3650 Courses per year, Efficiency is **24X or better**.
	Assuming 15% of 2.75 Crores of HE students benefit from DTH programme; cost towards per student/channel/annum is:		**Rs.11.32**
5	Cost towards per student/50 channels /annum		**Rs.566/-**

Besides, MHRD DTH Content is generated & delivered (i) live on TV sets using Set top Box at one time cost Rs.2000/- and live interactivity every hour with students, (ii) Live on PC's, Tablets, Smart phones etc, and (iii) Video on demand any where any time basis through Cloud servers of NME-ICT.

(L)   Cost Benefit Analysis on Content Generation:

a)   As per NME-ICT norms, for production of e-content per course of aprox. 40 Lectures each of 60 Mts duration costs Rs.11.60 Lakhs or Rs.29,000/- per Lecture.

b)   In comparison generation of one hour of Live Lecture and Live interactivity per course of 40 lectures shall cost Rs.5.02 Lakhs or Rs.12,550/- per lecture.

c)   Generation of content on DTH **just costs 43.27%** to NMEICT norms or a **saving of 56.73%.**

d)   **Generation and Delivery** of one Course (40 lectures, 1 hour each) of Live Content, Live Interaction of teacher with students and provision to reach 67% of Indian population (free to Air) is just at a cost of **Rs.6.39 Lakhs.** This represents true Countrywide ICT Classroom programme.

(M)   On Content Dissemination through DTH.

a)   Doordarshan is at present following the policy of e-Tendering and auctioning the spectrum for DTH, the current rates quoted are about Rs.4.5 Crores per Channel per year.

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b) As seen from the tentative budgeting above, the cost for Telecasting one MHRD DTH Channel is Just Rs.69.83 Lakhs per Annum. This is **just 15.52%** to the rate charged by the Doordarshan and **84.48% cheaper**.

(N) Meeting the Social Objectives

*By adopting the philosophy of delivering education through DTH: i.e. live content generation, live interactivity during each lecture in the form of question answer session between students and expert and the telecast reaching a potential 161 Million TV Homes in India, who by attaching a DTH Set Top Box costing around Rs.2000/- can receive the 50 channels, which are delivered FREE to AIR, is not only the most economic way to make available the education across the country (since we do not require to invest on Ground Reception Segment), but is also the quickest way to reach 80 Crores of citizens amounting to 66% of population. This delivery of education content is perhaps best and **most cost effective way** to achieve our composite goals of ensuring 'Access' with 'Equity' and 'Excellence' in higher Education in India and bridging the digital divide that exist in our society today. Besides this the content shall not only be delivered to learners on their TV sets, but shall also be delivered on their PC, Tablets and Smart-phones.*

Disclaimer:

The equipment list, numbers and price projected above are for reference only. However, these shall be finalised through a Teaching End Expert Committee and following Public Tender process.

Miscellaneous

Agenda Item No. IV D

Proposal : Process for preparing agenda notes for new proposals to be put up to PAB.

MHRD, TEL Division has issued the implementation guidelines/ procedures for processing of NMEICT project proposals on 12th December 2014. In the implementation guidelines/ procedures for processing of NMEICT project proposals, it is stated that based on the recommendations of the Domain Experts Committee (DEC), the agenda for the Project Approval Board would be prepared by the Mission.

The experience so far, has revealed that the recommendations of the Domain Experts Committee mostly are based only on the merit of the individual proposal, as the assessment and evaluation of the individual proposals is done by the DEC members, who are mostly academicians and their contribution and assessment is very appropriate, but mostly on the content of the work proposed, the cost estimates and the rigor of the methodology for execution of the project. This sometimes leads to putting up the DEC recommendations for new proposals to PAB without certain additionally needed factors relevant for PAB's decision making -- like no. of similar proposals in the same area already sanctioned by PAB, the provision for compliance (or otherwise) for following GFRs and other relevant Government orders, the broad perspective about placement of the subject proposal in MHRD/ NMEICT vis-a-vis other bureaus of MHRD or other Ministries/ Departments of Government of India etc. Consequently some of the proposals sanctioned by PAB are not able to withstand such scrutiny, before placing the award to the PI.

In view of above it is proposed that the DEC recommendations for new proposals may be first got examined and commented upon by the Mission Director/ TEL Bureau so that the PAB approvals lead to faster award of the new projects and thus would be more effective as a process for processing of the new proposals. **Hence, it is put up for PAB's consideration that the TEL Bureau/ Mission Director assisted by Senior Consultants may first examine the DEC recommendations on all such factors and prepare the agenda notes for new proposals accordingly.**

Item for Information

Agenda Item No V:

Proposal: "Request to Department of Space for Re-allocation of Satellite Transponders to MHRD for DTH programme"

Owing to the fact that if satellites used by two DTH service providers is a single satellite or the two satellites used by them are very close-by, the channels transmitted by one satellite can be picked up by the viewers of second satellite without adding any hardware, simply if such channels are assigned in the Electronic Programme Guide (EPG) by the second DTH service provider. The DTH Committee has felt that Doordarshan and MHRD having decided to be partners in MHRD DTH programme and the Prasar Bharti and MHRD having signed an MOU on this, the two agencies being national broadcasters& education Content providers, we should encourage enlarging the number of channels viewed by the Doordarshan viewers, so that such viewers can benefit and view the MHRD educational 50 channels without any financial outlay to any one.

The ES, HE and Chairman, PAB, NMEICT, on the request from Chairman, DTH OMG has approached the Chairman, ISRO and Secretary, DOS on 19th February 2015 to swap the two transponders allotted to MHRD (at GSAT-8 satellite, location at 55º degree East), to a location close to a satellite presently being used by the Doordarshan (INSAT-4B satellite, location at 93.5º East). By positioning MHRD transponders in INSAT-4B or at a position close to 93.5º East, it shall enable the DTH viewers of Doordarshan (and some other DTH Providers in that location) to view the MHRD channels also.

The ES, HE has further requested to Secretary, DOS that with the proposed launch of GSAT-15 satellite by DOS, in September 2015 at 95º East that it going to be co-located with a satellite being used by Doordarshan, if the MHRD two transponders (72 MHz transponder space)are re-alloted in GSAT-15 satellite, the DTH viewers of Doordarshan and some other DTH providers shall be able to view the MHRD channels also without any cost to the viewers or that of MHRD.

In this way the viewers of Doordarshan & that of Dish TV, both located on INSAT 4B, approximately 20 and 15 millions respectively in numbers can also be able to watch, the 50 channels of MHRD DTH programmes without having loaded such channels on their network & uplinking such channels. By this arrangement (with a written agreement) the viewership of MHRD Channels shall be more than the combined viewership of Doordarshan and Dish TV i.e., 35 millions from the day on of its broadcast, which is a significant number and shall result in saving national resources and spread of educational content to larger number of viewers.

Chairman, ISRO and Secretary, DOS has vide letter dated 12th March 2015 replied favorably to ES, HE that the proposal shall soon be put before the Insat Co-ordination Committee for consideration.

Put up before the PAB for its kind information please.

Ratification and approval for relaxation in qualification of Ms. Shilpi Tiwari for temporary appointment as Consultant under NMEICT.

Agenda Item No. VI : Table Agenda 1

Ratification and Approval for Relaxation in Qualification of Ms. Shilpi Tiwari for Temporary Appointment as Consultant under NMEICT.

A note dated 11th March, 2015 was received from the office of Hon'ble HRM conveying the desire of Hon'ble HRM for appointment of Ms. Shilpi Tiwari as Consultant under NMEICT. The note from HRM office was processed by MHRD / TEL Division in file No. 8-15/2015-TEL. Another note dated 20th March, 2015 was received from Hon'ble HRM's office clarifying that Ms. Shilpi Tiwari will work on website, social media and other communication related activities including but not limited to design and content development for MHRD. The note was marked to Secretary (HE), who is also the Chairman of PAB stating that Hon'ble HRM has directed to finalize this proposal expeditiously on priority.

After examination of the proposal by EdCIL India Limited, as TSG for NMEICT, Secretary (HE) has approved the appointment of Ms. Shilpi Tiwari. It is proposed that initially she has to be appointed for the period of 3 months at a fee of Rs. 35,000/- per month, after ratification and approval for relaxation in qualification of Ms. Shilpi Tiwari by PAB as follows:

Qualifications prescribed for appointment of Consultant as per EdCIL norms:
    "*M. Tech or M.Sc or Post Graduate in relevant area*"

Qualification of Ms. Shilpi Tiwari:
    "Bachelor or Architecture from School of Planning & Architecture, New Delhi.
    No Master Degree in required filed.

Put up to PAB for Ratification and approval for relaxation in qualification of Ms. Shilpi Tiwari for temporary appointment as Consultant under NMEICT.

Appendix

APPENDIX

Appendix-I	:	**Minutes of the 28th Meeting of the Project Approval Board (PAB) held on 26th June, 2014**
Appendix-II	:	**Action Taken Report on the "Minutes of "28th Meeting of the Project Approval Board" held on 26th June, 2014.**
Appendix-III	:	Proposal on "Creating Digital-learning Environment for Design in India (e-kalpa) - Phase II.
Appendix-IV	:	Proposal for Entrepreneurship Development for the Educated Youth in India.
Appendix-V	:	Detailed Project Report (DPR) for National Consultation for Educational Technology (for Establishment of Indian Association of Educational Technology (IAET) to promote Educational Technology initiatives in India).
Appendix-VI	:	Proposal for e-Training Environment for Training Technical (Polytechnic) Teachers & Students.
Appendix-VII	:	Detailed Project Report (DPR) for Creation of Social Work Education Network.
Appendix-VIII	:	KPMG Report for Creation of Social Work Education Network.
Appendix-IX	:	KPMG Report for Financial Due Diligence for Sahapedia.
Appendix-X	:	KPMG Report for Financial Due Diligence for Seamless Integrated e-Learning Knowledge Management System" for Commerce Education at National Level COMMTEL (Commerce Enhanced Education through Technology Enabled Learning)
Appendix-XI	:	KPMG Report for Financial Due Diligence for Intelligent Tutoring Systems for Primary and Secondary School Subjects.

APPENDIX

Appendix-XII	:	KPMG Report for Financial Due Diligence for National Programme on Technology Enhanced Medical Education (NPTEME).
Appendix-XIII	:	KPMG Report for Financial Due Diligence for "Running Online Courses for Polytechnics and Skill Development" by NITTTR Kolkata.
Appendix-XIV	:	KPMG Report for Financial Due Diligence for Establishing a Centre of Excellence (CoE) for Research into Indian Knowledge Systems (RIKS).
Appendix-XV	:	KPMG Report for Financial Due Diligence for Learning By Doing (LBD) based course Content Development.
Appendix-XVI	:	Draft Tender Document for Wi-Fi Campus Connect.
Appendix-XVII	:	Letter for Empenelment of M/s Bharti Airtel Ltd. for Wi-fi Connect
Appendix-XVIII	:	Letter for Empanelment of M/s Intek Micro for Wi-Fi Campus Connect.
Appendix-XIX	:	Letter for Empanelment of M/s Reliance for Wi-Fi Campus Connect.
Appendix-XX	:	Letter for Empanelment of M/s Zephyr for Wi-Fi Connect.
Appendix-XXI	:	Proposal for e-Exam Project.
Appendix-XXII	:	KPMG Report for Financial Due Diligence for e-Exam Project

MINUTES OF THE 28th MEETING OF PROJECT APPROVAL BOARD OF NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY (NMEICT) HELD ON 26th JUNE, 2014 AT 15:00 HRS AT CONFERENCE ROOM, 3rd FLOOR, BLOCK NO. 3, NKN, DMRC BUIDING, SHASTRI PARK, NEW DELHI-110 053.

The 28th Meeting of the Empowered Committee of Experts (Project Approval Board) (PAB) of National Mission on Education through Information and Communication Technology (NMEICT) was held on 26th June, 2014 at 15:00 hrs at Conference Room, 3rd Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhiunder the Chairmanship of Secretary, Department of Higher Education, Ministry of HRD.

The list of members who participated in the meeting is at Annexure-I.

The list of other participants is at Annexure-II.

Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary, PAB welcomed all the members of the PAB. Thereafter agenda items were discussed and following decisions were reached:

Agenda Item No.1

The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary, PAB, invited observations from the participants on the "Minutes of the 27th Meeting of the PAB." Since all the members agreed and no observations on the same were received, the "Minutes of the 26thMeeting of the Project Approval Board held on 19th March, 2014" were confirmed.

Agenda Item No.2

The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary reported to PAB that action has been taken as per the PAB's decision in its 27th meeting. The PAB noted the Action Taken Report.

Agenda Item No. 3

Proposal to make the BSNL Agreement of 1 GbpsConnectivity Coterminous with NKN.

The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary apprised the PAB that the Universities connected under NMEICT are being migrated to the NKN. Presently 338 Universities have been migrated and they are now part of NKN. Since, presently, the time frame of NKN is 10 years (up to December 2019), it is felt that the Connectivity provided to the Universities/ University Level Institutions under NMEICT should be coterminous with the NKN. With making it coterminous with NKN, there will be a saving of approximately Rs. 27 Crores which will be adjusted from the future bills of BSNL. BSNL will also be asked to refund the proportionate contribution of the Universities to them.

After deliberations,PAB approved the proposal to make the BSNL Agreement of 1 Gbps Connectivity provided to the Universities coterminous with NKN.

Agenda Item No. 4

Empanelment of Government Undertakings and State IT Organizations for installing LANs at Universities.

The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary apprised the PAB that apart from providing Connectivity to the universities, BSNL/ MTNL combine was also asked to implement a Local Area Network of up to 400 in each University connected under NMEICT. The funding pattern for the same is 75:25 [90:10 in case of NER states].We have been informed by BSNL that they had awarded the work to a vendor but later had to cancel the order due to its non-performance. Till now BSNL has implemented LAN in 50 Universities only. Now, in order to speed up the process of providing LANs to Universities, it is proposed that additional agencies like ERNET, NIC, NICSI, NISG, TCIL, State Government's IT Organizations (like Chips Chhattisgarh, BELTRON etc) etc. may be empanelled for the job. The Implementation-cum- Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has also recommended the proposal.

After detailed deliberations, the PAB approved the proposal for Empanelment of additional Government Undertakings like ERNET, NIC, NICSI, NISG, TCIL, State Government's IT Organizations (like Chips Chhattisgarh, BELTRON, etc.) for installing LANs in the Universities.

Agenda Item No. 5

Proposal	**:**	**Pilot on LAN for Universities**
PI	**:**	**Dr. V.V.S. Murthy, DDG (NIC)**
Implementing Agency	**:**	**NIC**

The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary, PAB, apprised that the Implementation-cum-Monitoring Committee of NMEICT in its meeting on January 24[th]2014 recommended that the design of the NMEICT network should be amended in such a manner that all Colleges should be connected to their affiliating Universities and the University be connected to the NKN network. The advantage of such a network is that University would take responsibility for all traffic to and from their affiliating Colleges and NMEICT/NKN would only manage the network up to the University. Since this redesign involves merging two disparate networks, it is proposed that the exercise be implemented as a Pilot at 7 Universities across India, wherein NIC will be asked to set up a LAN (same terms as BSNL). More importantly, NIC will also be asked to study the existing network architecture and redesign so that the recommendations of the Committee can be actualized. A MoU is in the process of being signed between NMEICT, NIC, NICSI and the University concerned. As of now, Barkatullah University and Martin Luther University have already signed the MoU. The MoU with Mahatma Gandhi Kashi Vidyapeeth and Rajiv Gandhi University, Itanagar are in the process of being signed.The Implementation-cum- Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has recommended the proposal.

After detailed deliberations, the PAB approved the Pilot proposal on LAN for 7 Universities and release of Rs.2.52 crores to NIC within the approved outlay for this activity by the Union Cabinet.

Agenda Item No. 6

Proposal:LAN Funding to NKN Universities and Institutions.

Joint Secretary (TEL) & Mission Director and Member Secretary, PAB apprised that under NKN Connectivity to nearly 835 Universities/ Institutions/ Organizations/ Laboratories has been provided. Among these, there are about 127 Universities/ University Level Institutions. But under NKN there is no provision of LAN. Since without LAN entire benefit of 1 Gbps Connectivity cannot be derived, so it is necessary to provide the LAN of up to 400 nodes also in these 127Universities/ University Level Institutions at the cost sharing ratio of 75:25 [90:10 in case of NER States] as provided under NMEICT scheme. The Implementation-cum- Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has recommended the proposal.

After deliberations, PAB approved the proposal and decided that LAN funding may be provided at the cost sharing basis of 50:50 to 127 Universities and Institutions connected under NKN. For Universities in Special Category States and North East Region, the funding pattern will be 65 : 35 (between NMEICT & University) within the approved outlay for this activity by the Union Cabinet.

Agenda Item No. 7

Proposal : **Creation of Common Computing Infrastructure (Release of 2nd Installment).**

PI : **Prof. Huzoor Saran**

Institute : **IIT Delhi**

Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised that the project was sanctioned by the PAB in March 2012 for setting up Common (Cloud) Computing Infrastructure for NMEICT Projects at a total cost of Rs. 40 Crores. The 30% of the funds amounting to Rs. 12 Crores have been released to IIT Delhi.

IIT Delhi has designed and implemented Baadal Cloud Computing Software so that such a common infrastructure can be used to offer multiple independent compute instances in a scalable manner based on individual project needs. A pilot deployment at IIT Delhi with 200 Compute Cores and 20TB of storage was set up and has been tested over past 6 months. Due to bandwidth constraints this is not accessible outside IIT Delhi currently. The pilot deployment has been made available to Virtual labs and some other local NMEICT projects in the testing phase. A pilot deployment at NIC Data Centre with 600 Computer cores is in an advanced stage of setup. This is expected to be functional in next two weeks. This deployment being in NIC Data Centre would be able to have good bandwidth access through NKN and hence will be able to host projects such as NPTEL and provide excellent bandwidth and compute. Equipment has also been ordered and has arrived for a larger 2000 core deployment. However since NIC Data Centre does not have adequate space to house the larger deployment, a suitable location is being examined by NIC. NIC has worked out a proposal to hire space

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from BSNL Data Centre in Ghaziabad. In a communication received from NIC, it has been mentioned that BSNL Data Center at Ghaziabad is being looked at for the feasibility of extending the existing NDC to get more rack space for the projects has been visited. The complete IT infrastructure will be from NIC, only the rack space, AC and UPS will be from the BSNL. Similar facility is also being created by Railtel in Gurgaon but that would take at least 3 months to start. The process to extend the NDC will take at least 2 months with BSNL so process should be initiated.

As NIC has to pay to BSNL @ Rs.11 lakhs per rack per year and that would approximately cost Rs. 6.6 Crores for three years for 20 racks, NIC has requested for a letter seeking assurance that MHRD would pay the above mentioned amount (tentative) whenever NIC enters into an agreement with BSNL or any others agency like Railtel etc. This way when the agreement materializes NIC would shift the MHRD services to the new location and pay also for the rack space hired for MHRD services. For enabling them to do initial discussion, in principal approval has been given by the Ministry. As the second Installment of the project "Creation of Common Computing Infrastructure" is due to IIT Delhi, Prof. Huzur Saran, PI of the project may be asked to pay the Rack Space Charges of Rs. 6.6 Crores for three years to NIC from the second installment of the project. For the larger deployment, since it will no longer be on the NIC site, additional funds will be needed for storage, additional networking and firewall, load balancing equipment and manpower. This is estimated to cost approximately Rs. 7.5 crores. It is therefore requested that the second installment of 30% of project sanction i.e. Rs. 12 Crores be released so that the full deployment can take place in the next 4 months.Funds will also be required for laying a

10GBPS Network link between NIC/NKN Data Centre at Shastri-Park and the BSNL Data Centre. Based on NIC empanelled rates the cost of the link is estimated at Rs. 1.25 Cr per annum. Permission is sought for direct payment of the above account to NIC from the Connectivity budget of the Mission to enable an early setup of this link along with the Data Centre space procurement. The Implementation-cum- Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has recommended the release of Second Installment of Rs. 12.0 Crores for the project. The Committee has also recommended that "Rack Space Charges" of Rs. 6.6 Crores for three years to NIC should also be paid from the second installment due to the project.

After detailed deliberations, PAB approved the following:

a) **Release of Second Installment of Rs. 12.00 Croresof the Project "Creation of Common Computing Infrastructure" within the approved outlay for this activity by the Union Cabinet.**

b) **Permit BSNL to provide 10 Gbps Connectivity between NMEICT Data Centre and NKN Central Node from the fund released for providing Connectivity to Universities till Dec, 2019, within the approved outlay for this activity by the Union Cabinet.**

Agenda Item No. 8

Providing 1+1 Redundancy to all Centrally Funded Institutions in North East and J & K States.

Joint Secretary (TEL) & Mission Director and Member Secretary, PAB apprised that the NMEICT is getting constant feedback from the userUniversity, particularly from Jammu & Kashmir and North East, regarding its dissatisfaction about reliability of Connectivity. This issue was deliberated extensively by the expert group of NMEICT on Connectivity. The group was of the view that providing 1+1 redundant path is the only solution. The issue of Connectivity has also been discussed in the conference of the Vice Chancellors of the Central Universities and of the Directors of the National Institute of Technology last year at RastrapatiBhawan, New Delhi. One the recommendation emerged from the Conference was to provide alternate, back-up links (from BSNL/ RailTEL/ Powergrid) and Telecom PSUs should ensure continuous availability of bandwidth.

Accordingly it has been envisaged to provide 1+1 Connectivity to the Centrally Funded Institutions of Special Category Statesand North Eastern States to 23 Universities/ University Level Centrally Funded Institutions in these States (3 in J&K and 20 in North Eastern States), where the Connectivity has been provided under NMEICT scheme till December 2019. As the NIC, under NKN scheme has already provided the Connectivity to the institutions and the Universities through RailTEL/ Powergrid and is having a MoU with them. It was proposed that NIC may be requested to take up the responsibility of providing the redundant connectivity on NKN Style to the Centrally Funded Institutions of MHRD of the Special Category States and North Eastern States on payment

basis. The Implementation-cum- Monitoring Committee of NMEICT during its meeting on 16.06.2014 has also recommended the proposal.

After detailed deliberations, the PAB approved the proposal of providing 1+1 redundancy to all Centrally Funded Institutions in Special Category Statesand North EasternStates at a cost of Rs. 13.8 Crores with NIC as an implementing agency. However, this will be provided to only those Institutions where the average usage is more than 100 Mbps. This will be funded within the approved outlay for this activity by the Union Cabinet.

Agenda Item No. 9

Proposal	:	**NKN/NMEICT Direct Peering with Google.**
PI	:	**Mr. R. S. Mani**
Implementing Agency	:	**NIC**

Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised that based on various statistical data collected over a period of time and also based on the feedback of Researchers from various Institutes, NKN /NMEICT noticed that the Users have been using various resources from Google extensively. The traffic from Google was about 7-8 Gbps and majority of the same is for YouTube, which has a plethora of knowledge contents including an NPTEL YouTube channel.

In order to reduce the cost involved in hiring Internet bandwidth for catering to the needs of Users and also to provide better user experience through speed and quality, Google Global Cache (GGC) has been implemented for use in NKN / NMEICT. GGC represents the final tier of Google's content delivery platform, and is closest to users. With

GGC, network operators and Internet Service Providers deploy a small number of Google servers inside their network to serve popular Google content such as YouTube. Google's traffic management system directs Users to the node that will provide the best performance for the User.

This concept is referred as direct peering and in this case it is with Google Data Centers. It is proposed to connect to Google Data Centers at Delhi & Chennai with 2x10Gbps links. NKN has three primary connectivity providers namely BSNL/MTNL ,Railtel&PGCILfor which rates have already been established.

On detailed deliberations, the PAB decided that initially NIC should explore the option of peering of Google with NICSI. In case, the proposal does not materialize, the Committee authorized the Chairman, PAB to take appropriate action for approval of the proposal.

Agenda Item No. 10

Proposal : **Special Permission to NIT Sikkim for 1 Gbps Connectivity.**

Implementing Agency : **BSNL**

JS (TEL) & Mission Director and Member Secretary, PAB apprised that the BSNL has provided Connectivity to the NIT Sikkim on 31.03.2012. Since the date of provisioning, various complaints have been received from NIT Sikkim in respect of the poor Connectivity of 1 Gbps link provided by BSNL under NMEICT. The case of NIT Sikkim has been discussed with BSNL,who was pursued to take all necessary action to improve the uptime of the 1 Gbps link provided to the NIT Sikkim. BSNL has suggested that if linear connectivity provided to NIT Sikkim is

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converted to a ring and some portion of the OFC route is repaired then uptime of the 1Gbps link can be increased to 75%. The overall cost involved for the above proposal is Rs. 291.527 lakhs.

After detailed deliberations, the PAB decided that it is the responsibility of BSNL to provide the satisfactory services as per the MoU signed with MHRD. The costs involved in making OFC ring for NIT Sikkim should be borne by the BSNL from its own resources and the entire activity be completed within 3 months. PAB further decided that uptime statistics of the Connectivity provided under NMEICT Scheme should be put in public domain by the BSNL.

Agenda Item No. 11

Proposal: 1 GbpsConnectivityto the New Private Universities.

Joint Secretary (TEL) & Mission Director and Member Secretary, PAB apprised that since last Cabinet approval to achieve the synergy between NMEICT and NKN, the number of the Universities in the country has increased. Further the NIC has not provided the ConnectivitytoPrivate Universities as they do not have mandate to connect the Private Institutions. There are some institutions of MHRD also where the connectivity is yet to be provided. Overall there are about 53 Central/ State Universities and 136 Deemed/ Private Universities. It is proposed that Connectivity to Central/State Universities and CFIs may also be considered to be provided under NKN and Connectivity to the Private Universities may be considered to be provided under NMEICT. The funding pattern to these Universities will remain the same as already approved for the respective schemes of NKN and NMEICT. In case of NMEICT Universities, NIC will be asked to implement the

Connectivity through the service providers like BSNL/ Railtel/ PGCIL as NIC has already MoU with them andthe MHRD will pay to the service providers as decided by the NIC. The expenditure involved in connecting the 136 Private Universities will be around Rs. 92 Crores. The Implementation-cum-Monitoring Committee of NMEICT during its meeting on 16.06.2014 has also recommended the proposal.

After deliberations, the PAB decided that the proposal for providing 1 GbpsConnectivity to any new University/ Institution should betaken up with due approval of the Cabinet.

Agenda Item No. 12

Proposal	**:**	**Develop an Online Joint Entrance Examination (Main) (JEE) Item Bank to Prepare Candidates for Developing the Skills that Underpin Performance on the JEE (Main) Construct.**
PI		**Mr.Vineet Joshi, Chairman CBSE, director@indiacaer.in, vineetgre@yahoo.co.inMob: +91-8527244005**
Organization	**:**	**Central Board of Secondary Education, New Delhi (through CBSE-CAER)**

Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised that the rationale and background of the proposal from CBSE-CAER for preparing students to develop the skills for JEE (Main) examination.

After deliberations, PAB approved the Project for 2 years with a total budget of Rs. 1.23 Crore. To have better linkage between School Education Department and Higher Education Department, CBSE may be asked to submit the implementation report of the Scheme of providing scholarship to the meritorious students who are joining Institutions of Higher Education through JEE (Main) Exam as already committed by it earlier in AIEE Meetings.

Agenda Item No. 13

Proposal	:	**Consulting work for preparing a Project Report for Creation of "Virtual University" in PPP model and draft "Virtual University Bill" for enactment by Parliament**
PI	:	**Mr. Siddhartha Das, Executive Director;**
		91-9831014940,91-124-4644000,
		Email: siddhartha.das@in.ey.com
Institution	:	**Ernst & Young LLP, Gurgaon.**

Joint Secretary (TEL) & Mission Director and Member Secretary PAB presented the agenda proposal and after subsequent deliberations, **the PAB approved for award of the Consulting Work as proposed, to M/s Ernst & Young at the total cost of Rs. 24.9 lakhs (including Out of Pocket Expenses) + Service Tax, with proposed payment schedule (40% payment on submission of the Detailed Project Report (DPR) for Creation of Virtual University in PPP model, and balance 60% on submission of the completed work). PAB however desired that before releasing the final installment of consultancy fee to M/s Ernst & Young, the report may be put before PAB for approval.**

Agenda Item No. 14

Proposal	:	**Consulting work forReview and Amendment of applicable UGC/AICTE Regulations for incorporating Technology Enabled Learning in Higher Education.**
PI	:	**Mr. AkshoyRekhi, Partner; Phone: 91-11-41633366/65/64**
Institution	:	**M/s. Abacus Legal Group, Advocates; New Delhi.**

PAB considered and approved the proposal for award of the Consulting job for Review and Amendment of applicable UGC/AICTE Regulations for incorporating Technology Enabled Learning in Higher Education, to M/s Abacus Legal Group Advocates at the total cost of Rs. 9 lakhs, with 20% Mobilization Advance on award of the job and remaining 80% after satisfactory completion of job.

Agenda Item No. 15

Setting up and providing VPN Connectivity to 200 ITIs under Director General, Employment and Training (DGET) Ministry of Labour and Employment (ML&E) Government of India.

PAB was apprised that Director General, Employment and Training (DGET), Ministry of Labour and Employment (ML&E) has decided to train the Trainers in distance learning mode and has requested the MHRD to provide Internet Connectivity to its Training Institutions numbering 200 spread across the Country.

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It was proposed to extend the NMEICT's Centrally Sponsored Scheme on Connectivity to Colleges, also to the Ministry of Labour and Employment and to provide at each of the 200 ITIs (i) 10 Mbps VPN connectivity and (ii) 512 Kbps X 20Modems for wi-fi Connectivity, with 75% share to be provided by the MHRD and 25% by the Ministry of Labour and Employment for Installation, Connectivity and Operations of VPN, for a period of ten years, at the rate that is prevailing under NMEICT.

The PAB deliberated and keeping in mind the importance of Skill Development and linking it to Education, approved the proposal of setting up and providing VPN Connectivity to200 ITI's under DGET, ML&E uptoMarch31, 2017, as is provided to Colleges under NMEICT Scheme at the cost ofRs.4.00Crores. PAB further decided that as they are already conducting programmes and courses for faculty of ITIs in their area, the funding for the same shall be through the four NITTTRs, falling in or near the geographical area of 200 ITIs.

Agenda Item No. 16

Office Space for Mission Secretariat of NMEICT.

The following premise has been found to be most suitable to cater to the requirements of NMEICT:

Block	Floor	Area	Remarks
1	5th Floor	526 sqm	DITP B Wing Side, DMRC IT Park, Shastri Park, Delhi 110053. [Previously occupied by Apollo Munich]

The proposed Office Building is almost in a ready to occupy State with some amountof refurbishing& redesigning of space. The space is readily available to cater for Conference Room, Meeting Room, Mission Director's Cabin, Work Stations for project personnel & Consultants, etc.The DMRC Ltd representative was present during the meeting of PAB and has confirmed the concurrence of DMRCLtd for the aforesaid office space at Shastri Park, New Delhi.

PAB authorized the Joint Secretary (TEL) &Mission Director (NMEICT) to take on lease the build-up space for following activities, subject to the condition that the Mission Director obtain rent reasonability certificate from Competent Authorities and also to ensure that the rent charged is less than or equal to the rates being charged currently from Government Organizations :

i) Office space for Mission Secretariat.

ii) Office space for DTH Project.

iii) Office space for proposed Virtual University.

iv) Office space for representatives of different projects.

Soon after the meeting, the site inspection of the above DMRC building at Shastri Park was also undertaken by few of the members of the Project Approval Board.

<u>Agenda Item No. 17.</u>

Budget Estimate for TSG-EdCIL& Mission Secretariat of NMEICT for the Financial Year 2014-15.

The PAB members were informed that the Budget Estimate proposed for the financial year 2014-15 for the TSG-EdCIL & Mission Secretariat of NMEICT is well within the overall ceiling of 1% of the total outlay fixedfor the project.

The Project Approval Board (PAB) approved overall "Budget Estimate" of Rs. 399.92 lakhs for the TSG-EdCIL & Mission Secretariat of NMEICT for the year 2014-15, as per the Budget Estimate provided and release of the 1ˢᵗ installment of Rs.199.96 lakhs (being 50% of the total Budget) after adjusting the unspent amount available with EdCIL.

Table Agenda No. 1

Proposal : Development of National, Digital Library of India, Towards Building a National Asset.

PI : Prof. Partha P. Chakrabarti, Director, IIT Kharagpur, director@iitkgp.ernet.in,ppchak@cse.iitkgp.ernet.in

Co-PIs : DrB Sutradhar. Librarian, IIT Kharagpur, Kharagpur721302India, Email: bsutra@library.iitkgp.ernet.in

Institute : IIT,Kharagpur

Prof. P.P.Chakrabarti, Director, IIT Kharagpur made a presentation before the PAB on the concept of National e-Library project. The PAB approved the project in principle and authorized Chairman PAB to approve the funding based on the recommendation of Standing Committee. However, the activities related to the project should be within the outlay approved by the Union Cabinet for the respective activity.

Table Agenda No. 2

Proposal	:	**Re-development of the MHRD website**
Project Coordinator	:	**Ms. V. Rajeswari, Sr. Technical Director, National Informatics Center (NIC).**
Implementation Agency	:	**National Informatics Centre Service Incorporated (NICSI)**

It has been constantly opined by the PAB members that the products of NMEICT are not getting disseminated among the stakeholders of higher education. All the relevant stake holders visit Ministry of HRD website (www.mhrd.gov.in). It has been proposed to redevelop MHRD website in such a manner that the products of NMEICT find a prominence on the website. Joint Secretary (TEL) & Mission Director (NMEICT) and Member Secretary, PAB apprised the Committee that the present web site of the MHRD has been designed and developed by the NIC. For enhancement, maintenance and to provide the support for the HRD Ministry's website for one year, NIC has submitted total estimate cost of Rs. 20,56,728/-. The proposal have been submitted through NICSI.

PAB considered and approved the proposals of NIC through NICSI for the Re-development of MHRD website at a total cost of Rs. 20,56,728/- .

<u>Table Agenda No. 3</u>

Providing Wi-Fi at the Department of Higher Education, Ministry of HRD.

Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised the Committee that the Department of Higher Education is one of the nodes of NKN as it has to frequently interact with the Universities and Regulators. It was also pointed out that in the near future there was no likehood of the Department of Higher Education, Shastri Bhawan would be fully made wi-fi enabled. The wired connectivity at the Department of Higher Education, Ministry of HRD Shastri Bhawan has been provided by NIC. For enabling all Wi-Fi enabled devices to access this connectivity, a network is also required to be in place covering all offices of the Higher Education Department at Shastri Bhawan. The proposal was discussed in detail in the meeting of the Implementation-cum-Monitoring Committee of NMEICT held on 16.06.2014; the Committee was of the view that as the Connectivity at Shastri Bhawan has been provided by NIC, it would be better if NIC takes up the responsibility of providing Wi-Fi at the Department of Higher Education, Ministry of HRD. It was also brought out that the NICNET Network running at Shastri Bhawan already has a secured centralized Wi-Fi system. To extend it to the Department of Higher Education, some equipment will need to be added. An advantage would be that since in the proposed Wi-Fi setup, the Access Points would report to the centralized controller equipment managed by NIC, issues like Security would be taken care of with the NIC Policy already in place. The NIC has also agreed for providing Wi-Fi at the Department of Higher Education, Ministry of Higher Education. The cost quoted by NIC for enabling Wi-Fi is Rs. 39, 65,354/- for which it has done the due diligence.

The PAB considered and approved the proposal of providing Wi-Fi at the Department of Higher Education, Ministry of HRD at a cost of Rs. 39, 65,354 with NIC as Implementing Agency.

Table Agenda No. 4

Proposal	**:**	**An Open Source Indian MOOCs Platform.**
PI	**:**	**Prof. Deepak B. Phatak**
Co-PIs	**:**	**1) Prof. Kannan Moudgalya, Chemical Engineering Department – IIT Bombay**
		2) Prof. Vikram Gadre, Head CDEEP, Convenor IDP Educational Technology – IIT Bombay
		3) Prof. Sridhar Iyer, CSE Department, and Associate faculty of IDP on ET – IIT Bombay
		4) Prof. Kameswari Chebrolu, CSE Department – IIT Bombay
Institute	**:**	**IIT Bombay**
Control No.	**:**	**DMA1606201413199**

Prof. D. B. Phatak, IIT Bombay made a presentation before the PAB on the Open Source Indian MOOCs Platform. The PAB approved the project in principle and authorized Chairman PAB to approve the funding based on the recommendation of Standing Committee. However the activities related to the project should be within the outlay approved by the Union Cabinet for the respective activity.

Table Agenda No 5

Proposal	**:**	**Design and Development of Web based portal for Centrally funded institutions**
PI	**:**	**Mr. P. K. Saha, Deputy Secretary, MHRD**
		pksaha2008@yahoo.com, 011-23073629,
		Mob: +91-9968428844
Implementing Agency	**:**	**National Informatics Centre Service Incorporated (NICSI)**

Background:

It has been constantly opined by few of PAB members that the products of NMEICT are not getting disseminated among the stakeholders of higher education. There is a proposal to develop common portal for all Centrally Funded Institutions on which linkage to projects of NMEICT will be provided. Apart from this, the Information/ data regarding various key parameters is essential to monitor and evaluate various policy and administrative decisions of Government of India. In absence of reliable Data Reporting System in place, the Monitoring, Analysis and Evaluation/ Effectiveness of Policy prescription of the Government becomes a meaningless exercise. Moreover, a lot of information is required not only for RTI but also for reporting it to various constitutional bodies including Parliament. The information is thus essential for effective decision-making. It is thus proposed to create a Web-enabled Information System for monitoring of significant aggregate parameters, which shall be available for monitoring and reporting as per required formats. The information would be available to all concerned including Minister's office, Secretary, Additional Secretary (TE), Directors, Section as well as to the concerned institutions. The information would be required from all the Centrally Funded Technical Institutes. Higher

Education sector has witnessed a tremendous increase in its institutional capacity in the years since Independence. The number of Universities/ University-Level Institutions has increased 18 times from 27 in 1950 to 504 in 2009. The sector boasts of 40 Central Universities, 243 State Universities, 53 State Private Universities, 130 Deemed Universities, 33 Institutions of National Importance (established under Acts of Parliament) and five Institutions (established under various State legislations). The number of Colleges has also registered manifold increase with just 578 in 1950 growing to be more than 30,000 in 2011.The Central Universities & Language Bureau of Department of Higher Education, Ministry of Human Resource Development deals with the Central Universities, which are 40 in number at present. These Universities are established by/ under Acts of Parliament which have provisions for their academic and administrative functioning. His Excellency the President of India is the Visitor of the Central University and his role in the Central University, among others, include appointment of Vice Chancellor, nominating persons as his nominee on various Authorities and Committees of the Universities.

Joint Secretary (TEL) & Mission Director and Member Secretary, PAB proposed to develop a Web Based System to deal with issues pertaining to the Central Universities to facilitate processing of the various requests from the Universities and requisite functioning under the Act.

The duration of the Software Development, Deployment & Training would be 4 months from the date on which the Ministry officially approves the project or from the date of release of payment by the Ministry. **The maintenance** phase of the Project would begin after the completion of Software Deployment for a period of 8 Months.

The total Cost of the Project Phase - I is estimated to be **Rs. 15,33,822/-,** (The above cost includes NICSI operating margin and Service Tax @12.36 % as applicable).The estimated cost for **Software Maintenance for a period of 8 months is included in cost.** The cost quoted above relates only to the cost to be paid by the Ministry to NICSI. In addition, the cost associated with the TA/DA of officials from NIC will also have to be borne by Ministry. The NIC has requested that the funds may be transferred in favour of NICSI, New Delhi as 100% in advance to ensure timely commencement & completion of the Project.

The PAB considered and approved the proposal of "Design and Development of Web based portal for all Centrally Funded Institutions and attached offices by NIC at a cost Rs. 15,33,822/- (Rs. Fifteen Lakhs Thirty Three Thousands Eight Hundred Twenty Two).

ATTENDANCE SHEET

(List of Members)

Meeting : 28thPROJECT APPROVAL BOARD (PAB) UNDER NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY.

Date/Time : 26th June, 2014 at 03.00 P.M.

Venue : Conference Room, 3rd Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhi.

S. No.	Name, Designation & Address	Phone No., Fax & Email
1)	Sh. Ashok Thakur, Secretary (HE) Ministry of Human Resource Development, ShastriBhawan, New Delhi.	Ph. : 011-23386451 Email : secy.dhe@nic.in Fax : 011- 23385807
2)	Sh. Praveen Prakash, JS (TEL) & Mission Director (NMEICT), MHRD, ShastriBhawan, New Delhi	Ph. : 011- 23387781 Email : praveen.prakash@sakshat.ac.in
3)	Prof. H. P. Khincha Chairman, Standing Committee NMEICT	Mob. No.: +91- 9845010476 Email: hpk1598@gmail.com hpk@ee.iisc.ernet.in
4)	Sh. Ashok Jhunjhunwala IIT, Madras	Mob No.: +91-9840016781 Email : ashok@tenet.res.in
5)	Prof. M. S. Ananth Visiting Professor, IISc Bangalore, (Former Director, IIT Madras)	Ph: 22933114 Mob.No.:+91-9008020793 Email: ananth@iitm.ac.in
6)	Prof. RajatMoona Deputy General, C-DAC	Ph : 020-25696565 Email :moona@cdac.in
7)	Prof AjitBalkrishnan, Chairman IIM, Kolkatta Chairman and CEO, Rediff.com India Ltd., Mahalaxmi Engineering Estate, L.J. Road, No. 1, Mahim (West) Mumbai – 400 016	Ph : 022-24449144 Email : ajitb@rediffmail.com chairman&ceo@rediffmail.com, chairman&ceo@india.com
8)	Prof. D. B. Phatak Prof. CSE IIT, Bombay, Mumbai-400076	Ph.: 25767747 Mob.: +91 9820017052 Email : dbp@it.iitb.ac.in
9)	Prof. S.V. Raghvan, Scientific Secretary,	Ph : 011 23022115 Email : sv.raghavan@nic.in

Meeting : **28thPROJECT APPROVAL BOARD (PAB) UNDER NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY.**

Date/Time : **26th June, 2014 at 03.00 P.M.**

Venue : **Conference Room, 3rd Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhi.**

S. No.	Name, Designation & Address	Phone No., Fax & Email
	O/othe Principal Scientific Advisorto the GoI.	
10)	Sh. R. P. Agrawal Former Secretary, MHRD, New Delhi	Ph : 0120-2395012 Mob : +91-9910823311 Email : rpa1949@gmail.com
11)	Sh. S.S. Mantha, Chairman, AICTE	Mob.No.:+91-9958881066 Email :ssmantha@vjti.org.in
12)	Sh. Pawan Agarwal Advisor (HE), Planning Commission, New Delhi	Ph : 011-23096631 Mob. No.: +91-981806606 Email : apawan08@gmail.com Fax : 011-23096631

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ATTENDANCE SHEET

(List of Other Participants)

Meeting : 28th PROJECT APPROVAL BOARD (PAB) UNDER NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY.

Date/Time : 26th June, 2014 at 03.00 P.M.

Venue : Conference Room, 3rd Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhi.

S. No.	Name, Designation & Address	Phone No., Fax & Email
1)	Dr. T.C. Saravanabaua DDG (AT), DGET, Ministry of Labour and Employment	Mob.No.: +91-9811795470 Email : ddgat.dget@nic.in Fax : 011-23718106
2)	Ms. SaritaManuja, Director, CAER CBSE	Ph : +91-8527244005 Email : manuja.sarita@indiacaer.org
3)	Sh. R. P. Sharma Consultant, CBSE	Mob No.: +91-9971386303 Email : suence.cbse@gmail.com
4)	Sh. Narendra Ahuja ITRA, Deity	Mob No.: +91-9810727533 Email : nahuja-itra@medicalubasia.in
5)	Sh. Anil Jain, CGM, BSNL	Mob No.: +91-9868887007 Email : akjain@bsnl.co.in
6)	P. Umalakshmi, Deputy Manager, BSNL New Delhi	Mob : +91-9868272344 Email : pumalakshmi2@gmail.com
7)	Sh. Raja Sekhar. K Addl G. M. BSNL Hyderabad	Mob No.: +91-9490000248 Email : dgmofchyd@gmail.com Fax : 040-23224544
8)	Sh. N. MeikantaManickam, G. M. BSNL BSNL C.O., New Delhi	Mob No.: +91-9444000950 Email: nmmanickam2000@yahoo.co.in
9)	Sh. AkshoyRekhi, Abacus Legal Group, New Delhi	Ph : 91-11-41633366/65/64 Mob No.: +91-9811043477 Email : abacus@abacuslegalgroup.net akshoy@vsnl.com
10)	Sh. Shishir KR Tyagi Deputy Chief Engineer (P D) PD Division, 2nd Lane Fire Brigade Lane, Barakhamba Road, New Delhi-110001	Ph : 011-23417910-12 Ext. 534392 Mob No.: : +91-98718224758 Email : shishir_dmrc@yahoo.com Tele/Fax: +91-11-23418312
11)	Sh. J.P. Meena Joint Director of Training DGET, New Delhi	Ph : +91-8826657900 Mob No.: 011-23320953 Email : meena.jagdish@nic.in Fax : 011-23320953

Meeting : **28ᵗʰ PROJECT APPROVAL BOARD (PAB) UNDER NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY.**

Date/Time : **26ᵗʰ June, 2014 at 03.00 P.M.**

Venue : **Conference Room, 3ʳᵈ Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhi.**

S. No.	Name, Designation & Address	Phone No., Fax & Email
12)	Sh. ChittanjanSamantaray, Consultant, DGET, Ministry of Labour& Employment.	Mob No.: +91-9654384669 Email : cs.dget@gmail.com
13)	Sh. Rahul Singh Senior Research Officer, Center for Assessment, Evolution & Research, New Delhi	Mob No.: +91-9686577086 Email : rahul.singh@indiacaer.in
14)	Sh. Arjun Bahadur, Deputy Director, CEAR	Mob No.: +91-852724077 Email : arjun.bahadur@indiacaer.org
15)	Sh. Sameer Jain Lead, IGS, KPMG	Mob No.: +91-8130791158 Email : sameerjain@kpmg.com
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17)	Dr. Saba Akhtar Scientist-D NIC.	Ph : 011-23381570 Mob No.: +91-9968314714 Email : saba@nic.in
18)	Prof. Arun B. Samaddar, Director, NIT Sikkim, Qtr 19, Type –III, NHPC Colony, Balutar, East Sikkim	Ph : 03592247034 Mob No.: +91-8902686524 Email : absamaddar@yahoo.com Fax : 03592247023
19)	Sh. NavinSoi, Director (Finance) MHRD,New Delhi	Ph : 011-23389247 Mob No.: +91-9968680014 Email : nsoi@nic.in
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21)	Prof. P. P. Chakrabarti, Director, IIT Kharagpur	Ph : 03222-282002 Mob No.: +91-9434013691 Email : ppchak@cse.iitkgp.ernet.in director@iitkgp.ernet.in Fax : 03222-282000
22)	Ms. V. Rajeshwari, Sr. Tech. Director Room No. 336 ShastriBhawan, New Delhi	Ph : 011-23381570 Mob No.: +91-9868107521 Email : rajeshwari@nic.in
23)	Sh. Anil Kumar, Scientist-D NIC	Ph : 011-22900336 Mob No.: +91-9868230415 Email : anil.panwar@nic.in
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Meeting : **28th PROJECT APPROVAL BOARD (PAB) UNDER NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY.**

Date/Time : **26th June, 2014 at 03.00 P.M.**

Venue : **Conference Room, 3rd Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhi.**

S. No.	Name, Designation & Address	Phone No., Fax & Email
25)	Dr. V. V. S. Murty Deputy General NIC	Ph :011 - 24361296 Mob No.: +91-9899932984 Email : vvsm@nic.in
26)	Sh. A K. Jain Sr. Tech. Director NIC	Ph :011-24363238 Mob. No.: +91-9312698123 Email : akjain@nic.in
27)	Sh. Meharban Singh Director, ERNET India	Ph: 011-23358249 Mob: +91-9810833870 Email: s_mehar@eis.ernet.in
28)	Sh. KeshavKanoria Sr. Consultant, Ernest Young	Mob: +91-9999572221 Email: keshav_kanoria@gmail.com
29)	Sh. Nikhil Rajpal Ernest Young	Email: nikhil.rajpal@in.ey.com
30)	Sh. Pritha Ghosh Manager	Email: pritha.ghosh@in.ey.com
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37)	Sh. Bharat Bhushan, Junior Consultant, NMEICT, ShastriBhawan, New Delhi	Mob.No.: +91-9811719601 Email : bharat.bhushan@nmeict.ac.in

Meeting : **28th PROJECT APPROVAL BOARD (PAB) UNDER NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY.**

Date/Time : **26th June, 2014 at 03.00 P.M.**

Venue : **Conference Room, 3rd Floor, Block No. 3, NKN, DMRC Building, Shastri Park, New Delhi.**

S. No.	Name, Designation & Address	Phone No., Fax & Email
38)	Sh. Mithun Dutta Senapati System Administrator, Room No. 121 A, C-Wing, ShastriBhawan, New Delhi	Mob.No.: +91 9810647042 Email : mithun@egyankosh.ac.in mithun@nmeict.ac.in
39)	Mr. Vaibhav Agrawal, Software Engineer, Sakshat Portal, NMEICT	Mob. No.: +91 9899770836 Email : vaibhav@egyankosh.ac.in, vaibhav@sakshat.ac.in

ACTION TAKEN REPORT

ON THE MINUTES OF 28th MEETING OF PROJECT APPROVAL BOARD (PAB) OF NATIONAL MISSION ON EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY (NMEICT) HELD ON 26th June, 2014.

Item	Action taken
Agenda Item No. 3 **Proposal to make the BSNL Agreement of 1 Gbps Connectivity Coterminous with NKN.** The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary apprised the PAB that the Universities connected under NMEICT are being migrated to the NKN. Presently 338 Universities have been migrated and they are now part of NKN. Since, presently, the timeframe of NKN is 10 years (up to December 2019), it is felt that the Connectivity provided to the Universities / University Level Institutions under NMEICT should be coterminous with the NKN. With making it coterminous with NKN, there will be a saving of approximately Rs. 27 Crores which will be adjusted from the future bills of BSNL. BSNL will also be asked to refund the proportionate contribution of the Universities to them. **After deliberations, PAB approved the proposal to make the BSNL Agreement of 1 Gbps Connectivity provided to the Universities coterminous with NKN.**	**The MHRD vide letter No. 16-28/2009-DL/TEL dated 7th July 2014 has requested BSNL to indicate the status regarding migration of each University Connectivity to NKN as ordered earlier by MHRD.** **As per status received from BSNL, out of 389 Universities connected through NMEICT, 356 have been migrated to NKN. The rest of the 33 Universities are in various stages of migration.** **Mission Director has taken close coordination meetings with respective stakeholders at frequent intervals to see that all Institutions targeted for migration could be completed in shortest possible time, in addition to other issued plaguing the system. The issue has been discussed in the recent meeting with BSNL and also reflected in the aforesaid request to BSNL for sending the status of progress in this regard.**

Agenda Item No. 4

Empanelment of Government Undertakings and State IT Organizations for installing LANs at Universities.

The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary apprised the PAB that apart from providing Connectivity to the Universities, BSNL / MTNL combine was also asked to implement a Local Area Network of up to 400 in each University connected under NMEICT. The funding pattern for the same is 75:25 [90:10 in case of NER states]. We have been informed by BSNL that they had awarded the work to a vendor but later had to cancel the order due to its non-performance. Till now BSNL has implemented LAN in 50 Universities only. Now, in order to speed up the process of providing LANs to Universities, it is proposed that additional agencies like ERNET, NIC, NICSI, NISG, TCIL, State Government's IT Organizations (like Chips Chhattisgarh, BELTRON etc) etc. may be empanelled for the job. The Implementation-cum-Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has also recommended the proposal.

After detailed deliberations, the PAB approved the proposal for Empanelment of additional Government Undertakings like ERNET, NIC, NICSI, NISG, TCIL, State Government's IT Organizations (like Chips Chhattisgarh, BELTRON, etc.) for installing LANs in the Universities.

In view of a meeting held by Principal Secretary to PM in December 2014, it has been decided to have Wi-Fi Connectivity in each of University Campuses. BSNL is being requested not to take up any more New LAN installations except for 48 cases, which are in various stages of completion, apart from 50 cases where LAN connectivity has been established by BSNL. For the rest of the 302 universities, policy is being devised for taking up Wi-Fi Connectivity through the UGC.

For the decision of PAB on these matters, a separate agenda item has been proposed separately.

<u>Agenda Item No. 5</u> **Proposal : Pilot on LAN for Universities** **PI: Dr. V.V.S Murthy, DDG (NIC)** **Implementing Agency: NIC** The Joint Secretary (TEL) and Mission Director (NMEICT) & Member Secretary, PAB, appraised that the Implementation - cum - Monitoring Committee of NMEICT in its meeting on January 24th 2014 recommended that the design of the NMEICT network should be amended in such a manner that all Colleges should be connected to their affiliating Universities and the University be connected to the NKN network. The advantage of such a network is that University would take responsibility for all traffic to and from their affiliating Colleges and NMEICT/NKN would only manage the network up to the University. Since this redesign involves merging two disparate networks, it is proposed that the exercise be implemented as a Pilot at 7 Universities across India, wherein NIC will be asked to set up a LAN (same terms as BSNL). More importantly, NIC will also be asked to study the existing network architecture and redesign so that the recommendations of the Committee can be actualized. A MoU is in the process of being signed between NMEICT, NIC, NICSI and the University concerned. As of now, Barkatullah University and Martin Luther University have already signed the MoU. The MoU with Mahatma Gandhi Kashi Vidyapeeth and Rajiv Gandhi University, Itanagar are in the process of being signed. The Implementation-cum- Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has recommended the proposal. **After detailed deliberations, the PAB approved the Pilot proposal on LAN for 7 Universities and release of Rs. 2.52 Crores to NIC within the approved outlay for this activity by the Union Cabinet.**	**Due to policy changes, provision of Wi-Fi Campus Connect in place of 400 nodes LAN, is being considered. Due action, after new policy decision, would be taken as per necessity. For a formal decision of PAB on these matters, a separate agenda item has been proposed separately.**

Agenda Item No. 6	
Proposal: LAN Funding to NKN Universities and Institutions.	**As per PMO recommendations currently 305 universities are being taken up for Wi-Fi connectivity. A fresh view may be taken up for provision of Wi-Fi connectivity to rest of the institutions.**
Joint Secretary (TEL) & Mission Director and Member Secretary, PAB apprised that under NKN Connectivity to nearly 835 Universities/ Institutions/ Organizations/ Laboratories has been provided. Among these, there are about 127 Universities/ University Level Institutions. But under NKN there is no provision of LAN. Since without LAN entire benefit of 1 Gbps Connectivity cannot be derived, so it is necessary to provide the LAN of up to 400 nodes also in these 127 Universities/ University Level Institutions at the cost sharing ratio of 75:25 [90:10 in case of NER States] as provided under NMEICT scheme. The Implementation-cum- Monitoring Committee of NMEICT in its meeting held on 16.06.2014 has recommended the proposal.	**A separate agenda item is being placed before PAB regarding policy on Wi-Fi Campus Connect in view of the decision of Principal Secretary to PM in a meeting held on 17th Dec. 2014.**
After deliberations, PAB approved the proposal and decided that LAN funding may be provided at the cost sharing basis of 50:50 to 127 Universities and Institutions connected under NKN. For Universities in Special Category States and North East Region, the funding pattern will be 65 : 35 (between NMEICT & University) within the approved outlay for this activity by the Union Cabinet.	
Agenda Item No. 7	
Proposal: Creation of Common Computing Infrastructure (Release of 2nd Installment). **PI: Prof. Huzoor Saran** **Institute: IIT Delhi.**	**Issues of connectivity with BSNL on campus connect to Universities and Colleges are required to be analyzed and resolved.**
Joint Secretary (TEL) & Mission Director and Member Secretary appraised that the project was sanctioned by the PAB in March 2012 for setting up Common (Cloud) Computing Infrastructure for	**Further, it is advisable to consider solution architecture first and level / stage of the**

NMEICT Projects at a total cost of Rs. 40 Crores. The 30% of the funds amounting to Rs. 12 Crores have been released to IIT Delhi.

IIT Delhi has designed and implemented Baadal Cloud Computing Software so that such a common infrastructure can be used to offer multiple independent compute instances in a scalable manner based on individual project needs. A pilot deployment at IIT Delhi with 200 Compute Cores and 20 TB of storage was setup and has been tested over past 6 months. Due to bandwidth constraints this is not accessible outside IIT Delhi currently. The pilot deployment has been made available to Virtual labs and some other local NMEICT projects in the testing phase. A pilot deployment at NIC Data Centre with 600 Computer cores is in an advanced stage of setup. This is expected to be functional in next two weeks. This deployment being in NIC Data Centre would be able to have good band width access through NKN and hence will be able to host projects such as NPTEL and provide excellent bandwidth and compute. Equipment has also been ordered and has arrived for a larger 2000 core deployment. However, since NIC Data Centre does not have adequate space to house the larger deployment, a suitably location is being examined by NIC. NIC has worked out a proposal to hire space from BSNL Data Centre in Ghaziabad. In a communication received from NIC, it has been mentioned that BSNL Data Centre at Ghaziabad is being looked at for the feasibility of extending the existing NDC to get more rack space for the projects has been visited. The complete IT infrastructure will be from NIC, only the rack space, AC and UPS will be from the BSNL, Similar facility is also being created by Railtel in Gurgaon but that would take at least 3 month to start. The process to extend the NDC will take at least 2 month with

project before taking a view about providing Connectivity. Assessment of requisite bandwidth and projection of future requirements to be taken into confidence for suitable scaling up dynamically as per the demand.

In recent developments for setting up of SWAYAM platform, the Sub-Committee chaired by Prof. S. V. Raghavan has suggested for entrusting the responsibility of setting up and operation of cloud in NKN Data Centre to NIC & CDAC and further action in this regard is in progress towards signing of MOU and completion of other formalities to bring them onboard of NMEICT.

BSNL so process should be initiated.

As NIC has to pay to BSNL @ Rs.11 lakhs per rack per year and that would approximately cost Rs. 6.6 Crores for three years for 20 racks, NIC has requested for a letter seeking assurance that MHRD would pay the above mentioned amount (tentative) whenever NIC enters into an agreement with BSNL or any others agency like Railtel etc. This way when the agreement materializes NIC would shift the MHRD services to the new location and pay also for the rack space hired for MHRD services. For enabling them to do initial discussion, in principal approval has been given by the Ministry. As the second Installment of the project "Creation of Common Computing Infrastructure" is due to IIT Delhi, Prof. Huzur Saran, PI of the project may be asked to pay the Rack Space Charges of Rs. 6.6 Crores for three years to NIC from the second installment of the project. For the larger deployment, since it will no longer be on the NIC site, additional funds will be needed for storage, additional networking and firewall, load balancing equipment and manpower. This is estimated to cost approximately Rs. 7.5 crores. It is therefore requested that the second installment of 30% of project sanction i.e. Rs. 12 Crores be released so that the full deployment can take place in the next 4 months. Funds will also be required for laying a 10GBPS Network link between NIC/NKN Data Centre at Shastri-Park and the BSNL Data Centre. Based on NIC empanelled rates the cost of the link is estimated at Rs. 1.25 Cr per annum. Permission is sought for direct payment of the above account to NIC from the Connectivity budget of the Mission to enable an early setup of this link along with the Data Centre space procurement. The Implementation-cum-Monitoring Committee of NMEICT in its meeting

held on 16.06.2014 has recommended the release of Second Installment of Rs. 12.0 Crores for the project. The Committee has also recommended that "Rack Space Charges" of Rs. 6.6 Crores for three years to NIC should also be paid from the second installment due to the project. **After detailed deliberations, PAB approved the following:** **a)** **Release of Second Installment of Rs. 12.00 Crores of the Project "Creation of Common Computing Infrastructure" within the approved outlay for this activity by the Union Cabinet.** **b)** **Permit BSNL to provide 10 Gbps Connectivity between NMEICT Data Centre and NKN Central Node from the fund released for providing Connectivity to Universities till Dec, 2019, within the approved outlay for this activity by the Union Cabinet.**	
<u>**Agenda Item No. 8**</u> **Providing 1+1 Redundancy to all Centrally Funded Institutions in North East and J & K States.** Joint Secretary (TEL) & Mission Director and Member Secretary, PAB apprised that the NMEICT is getting constant feedback from the user University, particularly from Jammu & Kashmir and North East, regarding its dissatisfaction about reliability of Connectivity. This issue was deliberated extensively by the expert group of NMEICT on Connectivity. The group was of the view that providing 1+1 redundant path is the only solution. The issue of	**1 Gbps Connectivity through NMEICT has been provided to individual Institutions. As per the latest monitoring report of peak bandwidth utilization, of some of the Institutions, as provided by the NKN, indicates, above 70% utilization by NIT, Silchar and Central University Tejpur.** **Further, NIT Imphal, NIT Agartala Assam University Silchar, Manipur University**

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Connectivity has also been discussed in the conference of the Vice Chancellors of the Central Universities and of the Directors of the National Institute of Technology last year at Rastrapati Bhawan, New Delhi. One the recommendation emerged from the Conference was to provide alternate, back-up links (from BSNL/ RailTEL/ Powergrid) and Telecom PSUs should ensure continuous availability of bandwidth.	Imphal, Nagaland University Kohima Central Agricultural University Imphal are using bandwidth less than 70% but above 100 Mbps, which is above 10% of the allocated bandwidth.
Accordingly it has been envisaged to provide 1+1 Connectivity to the Centrally Funded Institutions of Special Category States and North Eastern States to 23 Universities/ University Level Centrally Funded Institutions in these States (3 in J&K and 20 in North Eastern States), Centrally Funded Institutions of Special Category States and North Eastern States to 23 Universities/ University Level Centrally Funded Institutions in these States (3 in J&K and 20 in North Eastern States), basis. The Implementation-cum-Monitoring Committee of NMEICT during its meeting on 16.06.2014 has also recommended the proposal.	Efforts are on to allocate higher bandwidth if an institution exceeds bandwidth utilization of 70%.

NIT Silchar is being provided with additional bandwidth.

Redundancy is necessary as per standards for all institutions / universities connected. NKN also provided connectivity to all its institutions. It has provided connectivity through MTNL/BSNL and redundancy through Railtel. There is requirement of review of Connectivity provided by NMEICT afresh. A separate agenda item is placed for consideration of PAB. |
| **After detailed deliberations, the PAB approved the proposal of providing 1+1 redundancy to all Centrally Funded Institutions in Special Category States and North Eastern States at a cost of Rs. 13.8 Crores with NIC as an implementing agency. However, this will be provided to only those Institutions where the average usage is more than 100 Mbps. This will be funded within the approved outlay for this activity by the Union Cabinet.** | |
| <u>**Agenda Item No. 9**</u>

Proposal : NKN/ NMEICT Direct Peering with Google.
PI: Mr. R.S. Mani
Implementing Agency: NIC | **File under process. As desired, on file, justification for the requirement has been obtained from experts. Clarification is** |

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Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised that based on various statistical data collected over a period of time and also based on the feedback of Researchers from various Institutes, NKN /NMEICT noticed that the Users have been using various resources from Google extensively. The traffic from Google was about 7-8 Gbps and majority of the same is for YouTube, which has a plethora of knowledge contents including an NPTEL YouTube channel. In order to reduce the cost involved in hiring Internet bandwidth for catering to the needs of Users and also to provide better user experience through speed and quality, Google Global Cache (GGC) has been implemented for use in NKN / NMEICT. GGC represents the final tier of Google's content delivery platform, and is closest to users. With GGC, Network Operators and Internet Service Providers deploy a small number of Google servers inside their network to serve popular Google content such as YouTube. Google's traffic management system directs Users to the node that will provide the best performance for the User. This concept is referred as direct peering and in this case it is with Google Data Centers. It is proposed to connect to Google Data Centers at Delhi & Chennai with 2 x 10 Gbps links. NKN has three primary connectivity providers namely BSNL / MTNL ,Railtel & PGCIL for which rates have already been established. **On detailed deliberations, the PAB decided that initially NIC should explore the option of peering of Google with NICSI. In case, the proposal does not materialize, the Committee authorized the Chairman, PAB to take appropriate action for approval of the proposal.**	**awaited from NIC on certain comments.** **It is proposed to PAB that we may also have the views of Department of Electronics and Information Technology vis-à-vis policy of Government of India before the proposal at hand considered further.**

Agenda Item No. 10 **Proposal : Special permission to NIT Sikkim for 1 Gbps Connectivity.** **Implementing Agency: BSNL** JS (TEL) & Mission Director and Member Secretary, PAB apprised that the BSNL has provided Connectivity to the NIT Sikkim on 31.03.2012. Since the date of provisioning, various complaints have been received from NIT Sikkim in respect of the poor Connectivity of 1 Gbps link provided by BSNL under NMEICT. The case of NIT Sikkim has been discussed with BSNL, who was pursued to take all necessary action to improve the uptime of the 1 Gbps link provided to the NIT Sikkim. BSNL has suggested that if linear connectivity provided to NIT Sikkim is converted to a ring and some portion of the OFC route is repaired then uptime of the 1 Gbps link can be increased to 75%. The overall cost involved for the above proposal is Rs. 291.527 lakhs. **After detailed deliberations, the PAB decided that it is the responsibility of BSNL to provide the satisfactory services as per the MoU signed with MHRD. The costs involved in making OFC ring for NIT Sikkim should be borne by the BSNL from its ownresources and the entire activity be completed within 3 months. PAB further decided that uptime statistics of the Connectivity provided under NMEICT Scheme should be put in public domain by the BSNL.**	**BSNL has been requested for necessary provisioning and follow up with BSNL is being taken up in their meetings.** **Further in the agenda for the policy decision.**
Agenda Item No. 11 **Proposal: 1 Gbps Connectivity to the New Private Universities.** Joint Secretary (TEL) & Mission Director and Member Secretary, PAB apprised that since last Cabinet approval to achieve the synergy between	**A proposal is being taken for a decision of the Cabinet for providing 1 Gbps Connectivity to new Private University/ Institutions.**

NMEICT and NKN, the number of the Universities in the country has increased. Further the NIC has not provided the Connectivity to Private Universities as they do not have mandate to connect the Private Institutions. There are some institutions of MHRD also where the connectivity is yet to be provided. Overall there are about 53 Central/ State Universities and 136 Deemed/ Private Universities. It is proposed that Connectivity to Central/State Universities and CFIs may also be considered to be provided under NKN and Connectivity to the Private Universities may be considered to be provided under NMEICT. The funding pattern to these Universities will remain the same as already approved for the respective schemes of NKN and NMEICT. In case of NMEICT Universities, NIC will be asked to implement the Connectivity through the service providers like BSNL/ Railtel/ PGCIL as NIC has already MoU with them and the MHRD will pay to the service providers as decided by the NIC. The expenditure involved in connecting the 136 Private Universities will be around Rs. 92 Crores. The Implementation-cum-Monitoring Committee of NMEICT during its meeting on 16.06.2014 has also recommended the proposal. **After deliberations, the PAB decided that the proposal for providing 1 Gbps Connectivity to any new University/ Institution should be taken up with due approval of the Cabinet.**	**A separate Agenda Item for evolving policy to provide Connectivity to Institutions / Colleges is being placed for consideration.**
Agenda Item No. 12 **Proposal: Develop an online Joint Entrance Examination (Main) (JEE) Item Bank to Prepare Candidates for Developing the Skills that Underpin Performance on the JEE (Main) Construct.**	The project could not be awarded because of the non-availability of funds due to budget cut for F.Y.2014-15 by Ministry of Finance. Further, the PI (Mr. Vineet Joshi) had been relieved

PI: Mr. Vineet Joshi, Chairman CBSE.	from CBSE on completion of his tenure and nobody from CBSE has shown interest for taking up this project.
Mobile: +91-852724405	
Organization: Central Board of Secondary Education, New Delhi (through CBSE-CAER).	
Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised that the rationale and background of the proposal from CBSE-CAER for preparing students to develop the skills for JEE (Main) examination.	Hence, PAB may consider to withdraw the approval till interest is shown from CBSE as the PI's organization.
After deliberations, PAB approved the Project for 2 years with a total budget of Rs.1.23 Crore. To have better linkage between School Education Department and Higher Education Department, CBSE may be asked to submit the implementation report of the Scheme of providing scholarship to the meritorious students who are joining Institutions of Higher Education through JEE (Main) Exam as already committed by it earlier in AIEE Meetings.	
Agenda Item No. 13	
Project: Consulting work for preparing a Project Report for Creation of "Virtual University" in PPP Model and draft "Virtual University Bill" for enactment by Parliament.	The project could not be awarded as IFD/ MHRD pointed out non compliance to GFRs-particularly GFR-181 relating to invitation of Bids. As per this GFR, for estimated value of work or service above Rs. 10 Lakhs, the Ministry/ Department should issue advertised tender inquiry asking for the offers by a specify date and time, etc. in at least one popular largely circulated national newspaper and website of the Ministry/ Department.
PI: Mr. Siddhartha Das, Executive Director.	
Organization: Ernst & Young LLP, Gurgaon.	
Joint Secretary (TEL) & Mission director and Member Secretary PAB presented the agenda proposal and after subsequent deliberations, the PAB approved for award of the Consulting Work as proposed, to M/s Ernst & Young at the total cost of Rs.24.9 lakhs (including Out of Pocket Expenses) + Service Tax, with proposed payment schedule (40% payment on submission of the	

Detailed Project Report [DPR] for creation of Virtual University in PPP model, and balance 60% on submission of the completed work). PAB however desired that before releasing the final installment of consultancy fee to M/s Ernst & Young, the report may be put before PAB for approval.	In this particular case, this provision was not complied with.
Agenda Item No.14 **Proposal: consulting work for Review and Amendment of applicable UGC/AICTE Regulations for incorporating Technology Enabled Learning in Higher Education.** PI: Mr. Akshoy Rekhi, Partner. Phone: 91-11-41633366/65/64. Institution: M/s Abacus legal Group, Advocates; New Delhi. PAB considered and approved the proposal for award of the Consulting job for Review and Amendment of applicable UGC/ AICTE Regulations for incorporating Technology enabled Learning in Higher Education, to M/s Abacus Legal Group Advocates at the total cost of Rs.9 Lakhs, with 20% Mobilization Advance on award of the job and remaining 80% after satisfactory completion of job.	The project could not be awarded because of the non-availability of funds due to budget cut for F.Y.2014-15 by Ministry of Finance. Further, the PI has shown no interest for taking up this project. Hence, PAB may consider to withdraw the approval till interest is shown from CBSE as the PI's organization.
Agenda Item No. 15 **Setting up and providing VPN Connectivity to 200 ITIs under Director General, Employment and Training (DGET) Ministry of Labour and Employment (ML&E) Government of India.** PAB was apprised that Director General, Employment and Training (DGET), Ministry of Labour and Employment (ML&E) has decided to train the Trainers in distance learning mode and	**As per the Status Report of BSNL (Copy attached), against item X, it has been indicated that 186 ITIs out of 195 have been connected. For the rest 6, the VPN Connectivity to these Institutions is not technically feasible.**

has requested the MHRD to provide Internet Connectivity to its Training Institutions numbering 200 spread across the Country. It was proposed to extend the NMEICT's Centrally Sponsored Scheme on Connectivity to Colleges, also to the Ministry of Labour and Employment an d t o provide at each of the 200 ITIs (i) 10 Mbps VPN connectivity and (ii) 512 Kbps X 20Modems for Wi-Fi Connectivity, with 75% share to be provided by the MHRD and 25% by the Ministry of Labour and Employment for Installation, Connectivity and Operations of VPN, for a period of ten years, at the rate that is prevailing under NMEICT. **The PAB deliberated and keeping in mind the importance of Skill Development and linking it to Education, approved the proposal of setting up and providing VPN Connectivity to 200 ITI's under DGET, ML&E up to March 31, 2017, as is provided to Colleges under NMEICT Scheme at the cost of Rs. 4.00 Crores. PAB further decided that as they are already conducting programmes and courses for faculty of ITIs in their area, the funding for the same shall be through the four NITTTRs, falling in or near the geographical area of 200 ITIs.**	**Requisite action on major ITIs has been completed and the rest if any would be taken up with remaining Institutions and the Service Provider for the early accomplishment.**
Agenda Item No. 16 **Office Space for Mission Secretariat of NMEICT.** The following premise has been found to be most suitable to cater to the requirements of NMEICT: 	Block	Floor	Area	Remarks
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1	5th Floor	526sqm	DITP B Wing Side, DMRC IT Park, Shastri Park, Delhi110053.		**An alternate Office Space premises is proposed to be availed in IIT, Delhi to accommodate the Bureau official, Consultant and Support Staff of NMEICT. The space allocation to NMEICT by IIT Delhi is in the advanced stage.**

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The proposed Office Building is almost in a ready to occupy State with some amount of refurbishing & redesigning of space. The space is readily available to cater for Conference Room, Meeting Room, Mission Director's Cabin, Work Stations for project personnel & Consultants, etc. The DMRC Ltd representative was present during the meeting of PAB and has confirmed the concurrence of DMRC Ltd for the aforesaid office space at Shastri Park, New Delhi. PAB authorized the Joint Secretary (TEL) & Mission Director (NMEICT) to take on lease the build up space for following activities, subject to the condition that the Mission Director obtain rent reasonability certificate from Competent Authorities and also to ensure that the rent charged is less than or equal to the rates being charged currently from Government Organizations : i) Office space for Mission Secretariat. ii) Office space for DTH Project. iii) Office space for proposed Virtual University. iv) Office space for representatives of different projects. Soon after the meeting, the site inspection of the above DMRC building at Shastri Park was also undertaken by few of the members of the Project Approval Board.	
Agenda Item No. 17. **Budget Estimate for TSG-EdCIL & Mission Secretariat of NMEICT for the Financial Year 2014-15.** The PAB members were informed that the Budget Estimate proposed for the financial year 2014-15 for the TSG-EdCIL & Mission	1st installment of Rs. 199.96 Lakhs has already been released.

Secretariat of NMEICT is well within the overall ceiling of 1% of the total outlay fixed for the project. **The Project Approval Board (PAB) approved overall "Budget Estimate" of Rs. 399.92 lakhs for the TSG-EdCIL & Mission Secretariat of NMEICT for the year 2014-15, as per the Budget Estimate provided and release of the 1st installment of Rs.199.96 lakhs (being 50% of the total Budget) after adjusting the unspent amount available with EdCIL.**	
Table Agenda No. 1 **Proposal: Development of National, Digital Library of India, Towards Building Asset.** **PI: Prof. Partha P. Chakrabarti, Director, IIT Kharagpur.** **Email: director@iitkgp.ernet.in,** ppchak@cse.iitkgp.ernet.in **Co-PIs: Dr B Sutradhar, Librarian, IIT Kharagpur** **Email: bsutra@library.iitkgp.ernet.in** **Institute : IIT, Kharagpur** Prof. P. P. Chakrabarti, Director, IIT Kharagpur made a presentation before the PAB on the concept of National e-Library project. The PAB approved the project in principle and authorized Chairman PAB to approve the funding based on the recommendation of Standing Committee. However, the activities related to the project should be within the outlay approved by the Union Cabinet for the respective activity.	**First installment of the grants have already been released to IIT Kharagpur.** **ES, HE has further taken a Review Meeting on this project, with other experts on 9th April 2015 at MHRD.**

Table Agenda No. 2	
Proposal : Re-development of the MHRD website.	Rs. 18,51,055/- has been released as first installment i.e. 90% of the total approved grant-in-aid of Rs. 20,56,728/-
PI : Ms. V. Rajeswari, Sr. Technical Director, National Informatics or Centre (NIC)	
Implementing Agency: National Informatics Centre Services Incorporated (NICSI).	Project completed in accordance with specifications and the same has been tested by the concerned Bureau and all requisite actions completed. Modifications as needed from time to time could are required to be attended. Accordingly as per requirements the proposal would be initiated for regular maintenance and also updating the same as per requirement.
It has been constantly opined by the PAB members that the products of NMEICT are not getting disseminated among the stakeholders of higher education. All the relevant stake holders visit Ministry of HRD website (www.mhrd.gov.in). present web site of the MHRD has been designed and developed by the NIC. For enhancement, maintenance and to provide the support for the HRD Ministry's website for one year, NIC has submitted total estimate cost of Rs. 20,56,728/-. The proposal have been submitted through NICSI.	
PAB considered and approved the proposals of NIC through NICSI for the Re-development of MHRD website at a total cost of Rs. 20,56,728/- .	
Table Agenda No. 3	
Providing Wi-Fi at the Department of Higher Education, Ministry of HRD.	File is under progress. Financial Due Diligence as advised has been carried out and process for funds release is in progress.
Joint Secretary (TEL) & Mission Director and Member Secretary PAB apprised the Committee that the Department of Higher Education is one of the nodes of NKN as it has to frequently interact with the Universities and Regulators. It was also pointed out that in the near future there was no likelihood of the Department of Higher Education, Shastri Bhawan would be fully made Wi-Fi enabled. The wired connectivity at the	

Department of Higher Education, Ministry of HRD Shastri Bhawan has been provided by NIC. For enabling all Wi-Fi enabled devices to access this connectivity, a network is also required to be in place covering all offices of the Higher Education Department at Shastri Bhawan. The proposal was discussed in detail in the meeting of the Implementation-cum-Monitoring Committee of NMEICT held on 16.06.2014; the Committee was of the view that as the Connectivity at Shastri Bhawan has been provided by NIC, it would be better if NIC takes up the responsibility of providing Wi-Fi at the Department of Higher Education, Ministry of HRD. It was also brought out that the NICNET Network running at Shastri Bhawan already has a secured centralized Wi-Fi system. To extend it to the Department of Higher Education, some equipment will need to be added. An advantage would be that since in the proposed Wi-Fi setup, the Access Points would report to the centralized controller equipment managed by NIC, issues like Security would be taken care of with the NIC Policy already in place. The NIC has also agreed for providing Wi-Fi at the Department of Higher Education, Ministry of Higher Education. The cost quoted by NIC for enabling Wi-Fi is Rs. 39, 65,354/- for which it has done the due diligence.

The PAB considered and approved the proposal of providing Wi-Fi at the Department of Higher Education, Ministry of HRD at a cost of Rs. 39, 65,354 with NIC as Implementing Agency.

Table Agenda No. 4
 	
Proposal : An Open Source Indian MOOCs Platform.
PI: Prof. Deepak B. Phatak
Co-PIs :
  1) **Prof. Kannan Moudgalya, Chemical Engineering Department, IIT Bombay.**
  2) **Prof. Vikram Gadre, Head CDEEP, Convenor IDP Educational Technology, IIT Bombay**
  3) **Prof. Sridhar Iyer, CSE Department, and Associate faculty of IDP on ET, IIT Bombay**
  4) **Prof. Kameswari Chebrolu, CSE Department , IIT Bombay**
 	
Institution : IIT Bombay
Control No.: DMA1606201413199
 	
Prof. D. B. Phatak, IIT Bombay made a presentation before the PAB on the Open Source Indian MOOCs Platform. The PAB approved the project in principle and authorized Chairman PAB to approve the funding based on the recommendation of Standing Committee. However the activities related to the project should be within the outlay approved by the Union Cabinet for the respective activity.
	As desired by Standing Committee based on the approval of PAB, Financial Due Diligence of the project has been carried out and subsequently proposal has been moved for further processing and currently file is with IFD for the approval and release of requisite budget.

Table Agenda No 5
 	
Proposal : Design and Development of Web based portal for Centrally funded institutions.
PI : Mr. P.K. Saha, Dy Secretary, MHRD
     Email :**pksaha2008@yahoo.com**
     Ph: 011-23073629.
     Mobile: +91-9968488844
Implementing Agency: National Informatics Service Incorporated (NICSI)
	Rs. 13,80,439/- has been released as first installment i.e. 90% of the total approved grant-in-aid Rs. 15,33,822/-
	
	Web Portal Development as per specification has been complete in accordance with the review carried out by the

Background:	respective user group.
It has been constantly opined by few of PAB members that the products of NMEICT are not getting disseminated among the stakeholders of higher education. There is a proposal to develop common portal for all Centrally Funded Institutions on which linkage to projects of NMEICT will be provided. Apart from this, the Information/ data regarding various key parameters is essential to monitor and evaluate various policy and administrative decisions of Government of India. In absence of reliable Data Reporting System in place, the Monitoring, Analysis and Evaluation/ Effectiveness of Policy prescription of the Government becomes a meaningless exercise. Moreover, a lot of information is required not only for RTI but also for reporting it to various constitutional bodies including Parliament. The information is thus essential for effective decision-making. It is thus proposed to create a Web-enabled Information System for monitoring of significant aggregate parameters, which shall be available for monitoring and reporting as per required formats. The information would be available to all concerned including Minister's office, Secretary, Additional Secretary (TE), Directors, Section as well as to the concerned institutions. The information would be required from all the Centrally Funded Technical Institutes. Higher Education sector has witnessed a tremendous increase in its institutional capacity in the years since Independence. The number of Universities/ University-Level Institutions has increased 18 times from 27 in 1950 to 504 in 2009. The sector boasts of 40 Central Universities, 243 State Universities, 53 State Private Universities, 130 Deemed Universities, 33 Institutions of National Importance (established under Acts of	

Parliament) and five Institutions (established under various State legislations). The number of Colleges has also registered manifold increase with just 578 in 1950 growing to be more than 30,000 in 2011.The Central Universities & Language Bureau of Department of Higher Education, Ministry of Human Resource Development deals with the Central Universities, which are 40 in number at present. These Universities are established by/ under Acts of Parliament which have provisions for their academic and administrative functioning. His Excellency the President of India is the Visitor of the Central University and his role in the Central University, among others, include appointment of Vice Chancellor, nominating persons as his nominee on various Authorities and Committees of the Universities.

Joint Secretary (TEL) & Mission Director and Member Secretary, PAB proposed to develop a Web Based System to deal with issues pertaining to the Central Universities to facilitate processing of the various requests from the Universities and requisite functioning under the Act.

The duration of the Software Development, Deployment & Training would be 4 months from the date on which the Ministry officially approves the project or from the date of release of payment by the Ministry. **The maintenance** phase of the Project would begin after the completion of Software Deployment for a period of 8 Months.

The total Cost of the Project Phase - I is estimated to be **Rs. 15,33,822/-,** (The above cost includes NICSI operating margin and

Service Tax @12.36 % as applicable).The estimated cost for **Software Maintenance for a period of 8 months is included in cost.** The cost quoted above relates only to the cost to be paid by the Ministry to NICSI. In addition, the cost associated with the TA/DA of officials from NIC will also have to be borne by Ministry. The NIC has requested that the funds may be transferred in favour of NICSI, New Delhi as 100% in advance to ensure timely commencement & completion of the Project. **The PAB considered and approved the proposal of "Design and Development of Web based portal for all Centrally Funded Institutions and attached offices by NIC at a cost Rs. 15,33,822/- (Rs. Fifteen Lakhs Thirty Three Thousands Eight Hundred Twenty Two).**	

Proposal on "Creating Digital-learning Environment for Design in India (e-kalpa) - Phase II".

PART-I Information relating to Department/Institute

Project Category: e-Content

1. Name of Institute with complete address:
- Principal partners

a.
Industrial Design Centre
Indian Institute of Technology, Powai
Mumbai 400 076, Maharashtra
Telephone : 022 2576 7801
Fax : 022 2576 7803

b.
National Institute of Design

Action Center for the project:
R&D Campus,
No.12, HMT Link Road
Bangalore 560 022
Phone: (080)2337 3006 / 3276
Fax: (080)2337 3086

Administrative Center for the Project:
Heritage Campus,
Paldi, Ahmedabad 380 007
Phone: (079) 2662 3692
Fax: (079) 2662 1167

c.
Department of Design
Indian Institute of Technology Guwahati
North Guwahati
Guwahati 781039, Assam
Phone: (0361) 2582500, 2582451
Fax: (0361) 2690762

Associate partners:

a.
Design Programme
Indian Institute of Technology Kanpur
Kanpur 208016, India
Tel: +91-512-2597048

b.
Industrial Design Programme
Instrument Design and Development Centre
Indian Institute of Technology, Delhi
IIT Delhi, Hauz Khas,
New Delhi 110016 India
Tel: 011-666979
c.
Department of Industrial Design, N Delhi
School of Planning & Architecture,
4,Block-B, I.P.Estate,
New Delhi - 110002, India
Phone: 011-3318387, 011-3311074

d.
Centre for Product Design and Manufacturing,
Indian Institute of Science,
Bangalore 560012 India
Tel: 091-80 - 2293 2359

e.
Srishti School of Art, Design and Technology
P.O. Box No. 6430, Yelahanka New Town,
Doddabalapur Road, Opp. Wheel & Axle plant
Bangalore-560 064, India
Phone: 91.80.28462506/07/08, 28560238.
TeleFax: 91.80.28560240

f.
MAEER's MIT Institute of Design, Pune
"Rajbaug", Loni-Kalbhor,
Pune-412201, Maharastra, India
Phone: +91 - 20 39210183/ 91 20 39210122, 9850994211/9822462155

g.
Sir J J School of Applied Arts
Dr.D.N. Road
Bombay - 400 001

h.
Faculty of Applied Art
M S University of Baroda
Vadodara – 390002

i.
Kala Bhavan
ViswaBharti University
Shantiniketan-731235
j.
Design Program,
Indian Institute of Information Technology, Design and Manufacturing,
Dumna Airport Road, Khamaria, Jabalpur, Madhya Pradesh 482005

2. Title of the Research Project:
Creating Digital-learning Environment for Design in India (e-kalpa)- Phase II

3. Department/ Broad Area:
under the following heads (with focus on Design Knowledge):

 'Developing suitable pedagogical methods for various classes, intellectual calibres and research in e-learning'

'Spreading Digital Literacy and bridging the Digital Divide in teaching learning community in Higher Education'

'Support for Generation of e-content and digitization'

'Provision of e-books and e-journals free to the learners'

4. Major areas of research in the Department:
The major disciplines for research and applications are: Industrial/Product Design, Communication Design, Interaction Design, Transportation/Mobility Design and Animation Design.

Besides application and project oriented research with an India centric focus, the faculty's research interest include perception and cognition, visual semantics, Communication theory, Information Visualisation, collaborative learning environments, Social Networks, Eco- sustainable design, Product Interfaces, Physical computing, ergonomic investigation, studies inIndian product and visual tradition, Bamboo material finishes, type and Indian languages, etc.

With an overarching investigations into the conceptual and theoretical foundations of design process and methodologies, the department has made significant contributions to the way design is being thought and practiced in India. Investigations into social and cultural aspects have had an influence on design of many of the products and applications that have been undertaken in the department.

5.Names & Designation of Principle Researchers in the major areas and list of publications during last 5 years based on work done in the Department:

1.Ravi Poovaiah
Professor and past HOD,
IDC, IIT Bombay
Mobile: 098191 70809
Phone : (022) 2576 7801, 2576 7820
Fax : (022) 2576 7803
E-mail : ravi@iitb.ac.in

2. Dr. B. Baral
Head, Research
R & D Campus
National Institute of Design
#12 HMT Link Road, Off Tumkur Road
Bangalore 560 022
Mobile: 09632242474
Phone: (080) 2357 9054
Fax: (080) 23373086
E-mail :bibhudutta@nid.edu

3. Ravi Mokashi-Punekar
Professor and Past HOD,
DOD, IIT Guwahati
Mobile: 09954029136
Phone: (0361) 2582500, 2582451
Fax: (0361) 2690762
E-mail : mokashi@iitg.ernet.in

6. Is it Inter-disciplinary Project?

Yes

7. Is it Inter-Institutional Project?

Yes

8 .Is any Industry/User agency participating?

Yes

9. Brief of completed and or ongoing research projects supported by MHRD/ AICTE in the Department during last 5 years.

. CreatingDigital-learning Environment for Design in India (e-kalpa)- Phase I
. 'Experience driven Public Spaces' by Ministry of Human Resources (MHRD), N Delhi

PART-II Information relating to Department/Institute

10. Principal Investigator Details

Professor Ravi Poovaiah is a member of faculty in 'Interaction Design', 'Visual Communication' and 'Product Design' at the Industrial Design Centre (IDC), Indian Institute of Technology (IIT) Bombay. He was heading the department (Till end May 2009) and has brought in many initiatives including major modifications in the 'Master of Design' curriculum to make it flexible and cross-disciplinary, strengthening the Ph D program and co-ordinating the B Des program which should get implemented by 2015-2016. He has also helped IDC conduct and organize several events (Seminars, Workshops, Meets). All these have led IDC to be ranked as being in the top 50 design schools in the world in the last two years by Business-world International.

His current pedagogic as well as research and design interests are in areas related to Collaborative learning environments, Way finding systems, Interaction devices, Visual data bases, Information visualisation, Designing for children and in Corporate strategy and Retail design. At present, 4 doctoral students researching in some of the above mentioned fields work with him.

He has started the initial phase of building a digital resource base related to 'Folk Tales', 'Interactive Systems', 'Designing for Children', 'Design of Way-finding Systems' and 'Design in India' with access to networked information. He is also involved with experimenting and creating an experience driven collaborative environment for children.

Recently, he was involved with developing 'Collaborative Learning Environments' and 'Communications Environment on Television' for Microsoft Corporation as a professional consultancy project.
Prof.Poovaiah was also the co-author of the project proposal on NPTEL which has been funded by MHRD.

2006 – 2009:	Head, Industrial Design Centre, IIT Bombay
1997–2006:	Co-ordinator, Visual Communication programme
1997 – 2002:	Head, Educational Technology Centre, IIT Bombay
1990 – present:	Incharge of Digital Media Studio at IDC (including development)
1886 – 2000:	Incharge of Video Studio at IDC (including development)

Teaching, Research and Design Practice in the following areas:

- Design for Learning, Digital Resources for Learning,

- Designing for Children, Collaborative Environments,

- Information Visualisation and Structuring, New Media Design and Interaction Design,

- Visual Language and Communication Design

- Wayfinding, Signage, Identity and Information Systems

10A. Partner Investigator Details

a. 2. Dr. B. Baral

Dr. Bibhudutta Baral graduated in political science and sociology from Utkaluniversity, Orissa, India.

He studied Philosophy for his post graduation and also did a second masters in English literature. He studied in Utkal University for both of his masters degrees. He did his PhD in cognitive science from Indian Institute of Technology, Delhi.

He has been teaching in the broad areas of research methods, ethnography, cognitive psychology, communication studies, cognitive ergonomics, E-learning, Human-computer/machine-interaction, usability engineering, interface and interaction design, socio-technology, web based application design etc.

He has handled projects and assignments in the areas of traffic guidance system, Managerial cognition, industrial psychology, Engineering psychology, Web usability, Auto simulator design, Intelligent control system design, Philosophy of technology, HCI, Visual design, Photo ethnography, Mass rapid transit system, Museum information design, Cognitive ergonomics, Air traffic control, Pilot cognition, Signage design, Web semantics, enterprise software usability, information visualization and GIS based application design etc.

He is currently in the editorial board of an international journal titled 'Information Design Journal' published from Netherlands. For the last seven and half years he has been teaching at National Institute of Design (NID), Ahmedabad. He has more than 15 years of teaching and research experience.

b. Ravi Mokashi-Punekar
Professor and Past HOD,
DOD, IIT Guwahati
Mobile: 09954029136
Phone: (0361) 2582500, 2582451
Fax: (0361) 2690762
E-mail : mokashi@iitg.ernet.in

Experience:

5 years Professional Design Practice in Indian Industry

1985 - 2000   Design Teaching at National Institute of Design, Ahmedabad

2005 – 2008   Head, Department of Design, IIT Guwahati
2000 - Present   Professor in the Department of Design,IT Guwahati.

Research Interests:
                    * Form Studies
                    * Design Pedagogy
                    * Design and sustainability

                    * Material Culture and Society

Ravi MokashiPunekar is a Product Designer. He is currently Professor at the Department of Design, IIT Guwahati. He has a degree in Mechanical Engineering, a Masters degree in Industrial Design and a Ph.D in Design.

After a stint of working in Industry with Godrej and Boyce Ltd, Mumbai and Kelvinator of India, Faridabad, he joined the National Institute of Design, Ahmedabad and was teaching in the Faculty of Industrial Design.

As a Design Researcher and academician his fields of interest are Design Pedagogy, Material Culture and Design, Form Studies, Product Semantics and Craft Studies and Design.

He has publications in design journals and has actively participated in National and International conferences. Prof. Punekar has rich academic, administrative experience. He is widely travelled and takes a keen interest in sports and Indian music.

11. In case it is a joint project with other Institution, research labs and industries, names(s) of participating investigators

Partner Investigators:

a.Ravi Poovaiah
Professor and past Head
IDC, IIT Bombay

b. Dr. B. Baral
Head, Research
R & D Campus

c. Ravi Mokashi-Punekar
Professor and Past HOD,
DOD, IIT Guwahati

Collaborative partners:

a.
Manoj Mathur
Professor and Head
Department of Industrial Design, School of Planning, Delhi

b.
Jyoti Kumar
Assistant Professor
IDDC, IIT Delhi
c.
Dr. Satyaki Roy
IIT Kanpur

d.
Saleem Ahmed
Assistant Professor
CPDM, I ISc, Bangalore

e.
KumkumNadig
Head, Visual Communications
Sristi School of Art and Design, Bangalore

f.
Sanjay Jain
Director
Meers MIT Institute of Design, Pune

g.
SantoshKshirsagar
Sir J J School of Applied Arts, Mumbai

h.
Malti A Gaekwad
Senior Faculty
School of Applied Arts, M S Unversity, Baroda

i.

K.K Balakrishnan
Faculty, Design Program
IIITDM, Jabalpur

12. In case industry/user agency is participating, whether a MOU has been signed or letter of intent given.

The design firms will be involved later during the phase II period. MOU has not yet been signed.

13. Present commitments of the Principal Investigators

Mainly involved in the phase I of the e-kalpa Project. And the sabbaticalby Professor Ravi Poovaiahjust got over,where he spent time at NUS in Singapore working on developing Social Media Applications – so looking forward to doing research projects.

13A. Present commitments of the Partner Investigators

Prof. Baral is a faculty and Research head of NID's R and D campus in Bangalore. He has both administrative as well as academic responsibilities. He has enough time to devote to this project.

Prof Ravi Mokashi was heading the Department of Design at IIT Guwahati 6 years back. He is also looking forward to spending his time on research projects such as this.

14. Other members of the Research Group to work on proposed Projects:

All the faculty members from three of the participating institutes would be the subject experts for creation of 'Digital-learning Environment for Design in India (e-kalpa)' as has been for the phase I of the project.

We would also require to tap experts from outside our institutions to provide the expertise:

Domain Experts - external:

1. Professor S Nadkarni
   Retd. Faculty and HOD, IDC, IIT Bombay and
   DOD, IIT Guwahati
2. Professor VikasSatwalekar
   Retd. Faculty and Director, NID
3. Professor Mahendra Patel
   Retd. Faculty,NID
4. Professor ManojMathur
   Head, Department of Design, SPA, Delhi
5. Sri SudarshanDheer
   CEO, Graphic Communication Concepts, Mumbai
6. Professor Satyaki Roy
   Head, Design Program, IITKanpur
7. Professor MaltiGaikwad
   Faculty, Baroda School of Arts
8. Professor Amit Ray
   Retd. Faculty, IIT Kanpur
9. Chandita Mukherjee
   Director, Comet Foundation, Mumbai
10. Dr. V Vidwans
    Faculty, Falme School of Communication
11. Professor Kumar Vyas
    Retd.Faculty, NID
12. Professor L K Das
    Retd. Faculty, IDDC, IIT Delhi
13. Dr. Ajanta Sen
    Director, Solar Project, Mumbai
14. SatishGokhale
    Director, Design Directions
15. Professor SantoshKshirsagar
    Faculty, Sir J J School of Arts
16. Professor S. Balaram
    Retd. Faculty, NID

-- More names to be included

PART-III About Research Project

15. (a) Summary of the project (brief):

Key Themes of the project:

1.   Continue with Digital online content for learning Design by creating Digital Design Resource Database including the craft sector

2.   Focus on Outreach and Dissemination programmes by conducting workshops, quizzesand competitions to enhance the effectiveness and reach at a wider scaleto the formal educational and non-formal educational sectors.

3.   Partner and collaborate with national educational bodies to commence distance online e-Learning programs on Design for a larger audience participation

4.   Design inputs for products of National Mission in Education through ICT

This proposal presents four initiatives – providing digital online content for design, focus on outreach and dissemination, starting on online courses and providing design inputs for various products developed under this mission. The proposal would focus on knowledge accumulation, storing and dissemination and education in four sectors - university, industry, government and the informal sector.

The overall objective is the creation and development of new learning environments related to design that will provide greater access and enhancement to acquisition of critical knowledge, skills, and abilities for economic and social development in our country.

These initiatives will be based on the use of information and communications technology.

This initiative 'e-kalpa' will be collaboratively developed by the three institutions - IDC at IIT Bombay, NID at Bangalore and DOD at IIT Guwahati.

(b) Justification, importance of projects:

With renewed focus on innovation for economic growth of the nation, there is a serious attempt being made by the government to accelerate the initiative by taking on board educational institutions of national importance in planning the content and delivery through ICT enabled means. The Design educational programs in particularhave drawn special focus for having inculcated this spirit of creativity and innovation into their curricula. The recently drawn Design manifesto has gone a step further in proposing a 'Design spine' to be incorporated across all engineering programs to rekindle a spirit of innovation through ' Learning by Doing'. This initiative on the part of GoI, through its MHRD, is a unique initiative in the world, to have initiated a mission project such as NMEICT with the aim of delivering educational content to its people. This project aims to contribute in a significant manner to meet these national goal of education for all.

At present, in education of design, there are around 40 design institutes and over 100 commercial art colleges in India. This number is expected to grow exponentially in thenext few years. It is probable that India will have over 300 design colleges by 2020 and over 1000 by 2030. (Compared to over 300 full design institutes and over 3000 supporting institutes in China at present)

There are physical and financial constraints on the capacity increase in these institutions by way of face-to-face traditional education. This proposal represents a viable community of institutions that is motivated to create innovative learning environments that can deal with the kind of growth in the design sector in the coming years. This initiative is designed to nurture, grow and develop this community.

The outcome of this project should also expose the non-formal sector of the society about quality consciousness through the fundamental understanding of design.

(c) Details of the work already done by Principal Investigator in this area:

Prof Poovaiah headed the Educational Technology Centre at IIT Bombay for 6 years and during this period was also the co-author of the project proposal on NPTEL which has been funded by MHRD. He has been in-charge of Media Studio, Interaction Design and Video at IDC IIT Bombay and has handled projects in these areas.

1997–2006:   Co-ordinator, Visual Communication programme

1997 – 2002:   Head, Educational Technology Centre, IIT Bombay

1990 – present: Incharge of Digital Media Studio at IDC (including development)

1886 – 2000:   Incharge of Video Studio at IDC (including development)

16. Total amount required:

Estimate:

Non Recurring for:	1,05,00,000
Recurring for 2014-2015:	2,45,00,000
Recurring for 2015-2016:	2,45,00,000
Recurring for 2016-2017:	2,45,00,000
Total	**8.40crores**

17.(a) Recurring budget (not more than 30%) of the proposal along with item-wise breakup (Man power, Contingency, Consumable, Travel, Miscellaneous year wise breakup).

Recurring: (per participating Institute for (2014-2015)	in lakhs
i. Consumables for each year - CD's, Video, Slides etc	20
ii. Maintenance and recurring expenses	5
iii. Manpower	150
a.Programmers, Technical staff, documentation staff (40)	
b.Administrative staff (10) (to be paid as per IIT Norms)	
v. Organising workshops and meets	40
v. Travel expenses for documentation, etc. – 30 x 1lakhs	30
Total for the 3 Institutes	**245**

(b) Detailed breakup of non-recurring items (with the equipment to be procured along with cost).

Non- Recurring:	in lakhs
i. Media-Video production facility (tracking digital cameras, control panel, non-linear editing set-up, digital projector, etc.)	45
ii. Audio to digital(MP3), Video – digital (MPEG) Speech – digital, video to video	15
iii. AC, Sound proofing, Lighting, ISDN line, etc lab modification	15
iv. Computers, software, digital storage	30
Total for the 3 institutes	**105**

18   SUMMARY SHEET :

1. Name of the Institution: **Participating Institutions**:
   1.   Indian Institute of Technology, Bombay
        (IIT Bombay)
   2.   National Institute of Design, Ahmedabad
        (NID Ahmedabad)
   3.   Indian Institute of Technology, Guwahati
        (IIT Guwahati)

2. Title of the Project: **Creating Digital Learning Environment for
   Design in India ('e-kalpa')**

3. Name of the Department: **Participating Institutions**:
   1.   Industrial Design Centre,
        Indian Institute of Technology, Bombay
        (IDC IIT Bombay)
   2.   National Institute of Design, Ahmedabad
        (NID Ahmedabad)
   3.   Department of Design
        Indian Institute of Technology, Guwahati
        (DOD IIT Guwahati)

4. Cost of the Project:
Non Recurring:	1,05,00,000/-
Recurring for 2014-2015:	2,45,00,000
Recurring for 2015-2016:	2,45,00,000
Recurring for 2016-2017:	2,45,00.000
Total	8.4crores

5. Amount released earlier if any: none for phase II

6. Utilization position in respect of grants released earlier (upto-2014) for various projects
(Details to have given project wise)

(i) Fully spent :   e-kalpa project, all UC are submitted

(ii) Unspent, proposal to utilize it : NA

7. Reasons for unspent balance :   NA

8. Name of the Principal Investigator responsible for implementation of the Project:

   1.   Ravi Poovaiah
        IDC, IIT Bombay

   2.   Dr. Baral
        NID, R & D Campus, Bangalore

   3.   Ravi Mokashi-Punekar
        DOD, IIT Guwahati

Detail Project Report:

19. Objective

This proposal presents four initiatives – providing digital online content for design, focus on outreach and dissemination, starting on online courses and providing design inputs for various products developed under this mission. The proposal would focus on knowledge accumulation, storing and dissemination and education in four sectors - university, industry, government and the informal sector.

The overall objective is the creation and development of new learning environments related to design that will provide greater access and enhancement to acquisition of critical knowledge, skills, and abilities for economic and social development in our country.

These initiatives will be based on the use of information and communications technology.

This initiative 'e-kalpa' will be collaboratively developed by the three institutions - IDC at IIT Bombay, NID at Bangalore and DOD at IIT Guwahati.

Key Themes of the project:
1.   Continue with Digital online content for learning Design by creating Digital Design Resource Database including the craft sector

2.   Focus on Outreach and Dissemination programmes by conducting workshops, quizzes, competitions to enhance the effectiveness and reach at a wider scale

3.   Collaborate and partner with National Educational Institutions to commence distance online e-Learning programs on Design for a larger audience participation

4.   Design inputs for products of National Mission in Education through ICT

19.1   Continue with Digital online content for learning Design by creating Digital Design Resource Database including the craft sector

The main activities under this heading would be to create online content for design learning:
a. Continue Digital online content for learning Design with e-Learning programs on Design and build scalability
b. Continue Digital Design Resource Database including the craft
c. Continue Case Studies of good design projects by professions and students

This would involve documentation of lectures, design exercises, design explorations, problem solving activities, design process, design projects and design of craft products.

Continue with the documentation of existing knowledge of design and crafts both in the formal as well as in the informal sector through video, photos, documentaries, interviews, case studies, sketches, digital mappings, etc.
Continue with creating access to this information – which will become the knowledge source for

research and further development in the field of design.

The digital design resource database will make information available to more numbers of people located in different places as well as enabling the access of this information at different times. Termed as a "virtual" or "digital" design resource database, this will have the capacity to allow the user access to information in multiple formats and media, independent of their physical location or ownership. In an efficient way it could help in the transformation, the generation, the storage, the dissemination and the management of knowledge.

The content creation would be a joint initiative taken by co-ordination of the three partner institutes. A list of essential content topics that are yet to be documented would be identified and a plan of action drawn up for carrying out the project activities.

19.2 Focus on Outreach and Dissemination programmes by conducting workshops, quizzes, competitions to enhance the effectiveness and reach at a wider scale

The main activities under this heading would be to:
a. Conduct workshops/video conferences to promote use of e-kalpa content

b. Conduct Training programs for Design Teachers in content generation, Website administration and content evaluations amongst identified Art and Design institutes.

The project team needs to think of different ways to enlarge the awareness about the project and be able to engage the users in the learning process.

19.3 Start distance online e-Learning programs on Design for a larger audience participation
The main activity under this heading would be to:
a. Conduct online Courses through MOOC using the content from D'source as reference and resource content.

For this, we need to create or make use on existing networking platform for design learning. This environment should have the potentials to get students interested in creating and building an environment for exchange of information with respect to design learning

We need to create systems for online learning through distance education and the dissemination of knowledge could be thorough the internet with access to many media formats – video, documents, etc. The same platform could be used to create problem solving topics with both the teacher to students, students to students and teachers to other teachers being able to interact collaboratively.

The benefits of collaborative learning are widely known but rarely practised. Ted Panitz (1997) has listed 67 distinct benefits - academic, social, and psychological - that can be expected from the use of group work. These include such factors as building self-esteem, reducing anxiety, encouraging understanding of diversity, fostering relationships, and stimulating critical thinking.

The Internet seems to provide an ideal environment for new forms of collaborative learning to be explored. Students are expected to form social networks to connect with

each other. Students can form groups even if they are geographically located thousands of miles from one another.

The project intends to research, experiment and build an online collaborative environment for learning applications on the net applicable for higher education and in this context design learning.

19.4   Design inputs for products of National Mission in Education through ICT
The main activities under this heading would be to:

a.   The core strength of the participating design institutes can be utilised to provide design inputs to the various products of the mission – these could be design of webspace 'Sakshat', product design of low cost computing device for the masses, design formats and guidelines for web and video courses, etc.

b.   The various inputs could be from the point of view of Product Design, Visual Communication Design and Interface/Interaction Design.

20. Methodology

1.   Creating Digital Learning Environment for Design in India ('e-kalpa')in a coordinated and collaborative fashion combining the strengths of the three institutions - IDC at IIT Bombay, NID at Bangalore and DOD at IIT Guwahati.

2.   To conduct research in the teaching-learning processes as applicable to design education and to develop suitable formats for creating a learning environment using digital technology.

3.   To prepare suitable teach-ware and learn-ware for courses in design, create a social environment on the internet for knowledge sharing, creating a resource database on design in India, focus on outreach and dissemination and offering design inputs to products and services of National Mission in Education through ICT.

4.   To develop procedures and create system for generation and dissemination of the teach-ware and learn-ware.

The project implementation process would be:

1. The already set up centers for conducting research and applications under this mission at each of the Institutes would continue with the work. Each of the centres has a faculty co-ordinator as mentioned above to drive the project with dedication. At the IIT's it is located within the department of Design.

2. The existing dedicated manpower forexecuting and implementing the project objectives of the phase II of the project along with creation of resources. The team includes faculty members as subject experts and experimenters, Design associates to research and create digital resources, conduct workshops along with media staff who can handle video, audio, interactive medias and the internet.

3. Additional equipment needed to implement the project would be purchased in a phased manner so that the activity can be scaled up.

4. The team would plan on different ways of disseminating awareness about the resource by conducting workshops and competitions.

5. These learning material and resources generated need to be tested for effectiveness and feedback solicited from the learners.

6. The feedback will beintegrated and the project scaled up to generate content in a

phasedco-ordinated manner between the institutions such that the breadth and depth of the design as a subject is covered.

7. Systems need to be created to carry forward the project so that there is a continuous revitalization of the programs being generated.

8. The team will prepare to conduct online courses using the content from D'source as reference and resource material.

21. Deliverables year wise and its possible contribution to major objectives of mission.

First Year:
Feedback on projects and implementation in a phased manner in all the four focus areas:

1.   Digital online content for learning Design with distance e-Learning programs on Design
– atleast 25 courses, 50 resources, 15 videos, 25 case studies, 150 galleries from the 3 centres

2.   Outreach and Dissemination programmes by conducting workshops, quizzes, competitions
- atleast 12 workshops, 6 quizzes and 2 competitions

3.   Distance online e-Learning programs on Design
- atleast 2 full courses on Design

4.   Design inputs for products of National Mission in Education through ICT
- Visual Design support to web spaces, identities, etc.
- other design support to other activities of the mission project

Second Year:
Further feedback on projects and implementation in a systematic manner in all the four focus areas so that this activity becomes an ongoing activity.
1.   Digital online content for learning Design with distance e-Learning programs on Design
– atleast30 courses, 50 resources, 15 videos, 30 case studies, 150 galleries from the 3 centres

2.   Outreach and Dissemination programmes by conducting workshops, quizzes, competitions
- atleast 12 workshops, 6 quizzes and 2 competitions

3.   Distance online e-Learning programs on Design
- atleast 3 full courses on Design

4.   Design inputs for products of National Mission in Education through ICT
- design support to other activities of the mission project

Third Year:
Further feedback on projects and implementation in a systematic manner in all the four focus areas so that this activity becomes an ongoing activity.

1.   Digital online content for learning Design with distance e-Learning programs on Design
– atleast30 courses, 50 resources, 15 videos, 30 case studies, 200 galleries from the 3 centres

2.   Outreach and Dissemination programmes by conducting workshops, quizzes, competitions
- atleast 12 workshops, 6 quizzes and 2 competitions

3.   Distance online e-Learning programs on Design
- atleast 4 full courses on Design

4.   Design inputs for products of National Mission in Education through ICT
- design support to other activities of the mission project

22. Time schedule (year wise):

The project could be implemented in the following time frame:

Year One: 2014-2015   1 year
- the project needs to be tested and reviewed for
effectiveness and the recommendations implemented
 for all the four components of the project

Year Two: 2015 - 2016   1 year
- continue with the project needs to be tested and reviewed for
effectiveness and the recommendations implemented
 for all the four components of the project

Year Three: 2016 - 2017   1 year
- develop a stable mechanism-system to make
sure the project continues

23. Details of permanent assets to be procured from the project with estimated cost.

i.	Media-Video production facility (tracking digital cameras, control panel, non-linear editing set-up, digital projector, etc.)	45
ii.	Audio to digital(MP3), Video – digital (MPEG) Speech – digital, video to video	15
iii.	AC, Sound proofing, Lighting, ISDN line, Lab modification	15
iv.	Computers, software, Storage Connectivity	30
	Total for the 3 institutes	**105**

24. Details of financial outlay in year wise for recurring and non-recurring funds.

Recurring:(for participating Institutes for 3 years)in lakhs

	First Year	Second Year	Third Year
i. Consumables (includes DV Tapes, DVD's, Paints, Backdrops)	20	20	20
ii. Maintenance	5	5	5
iii. Manpower (Includes Video Cameraman, Editor, Audio engineer, Programmers, Layout designers, Text editors, Translators, Photographers) (to be paid as per existing IIT norms for hiring manpower)	150	150	150
v. workshops (For e-content generation – meets or workshops with 15 faculty members)	40	40	40
v. Travel expenses (For design resource documentation to travel to other places)	30	30	30
Total	**245**	245	245
Grand Total			**735 lakhs**

Non- Recurring:(for the participating institutes)in lakhs

	First Year	Second Year	Third year
i. Media production	30	15	0
ii. Audio	10	5	0
ill. AC, Lab Modif.	10	5	0
iv. Computers, etc	15	10	5
Total	**65**	**35**	**5**

Grand Total			105 Lakhs

25. Management of Deliverables & IPR etc.

The project would build its own webspace which will become part of the larger 'Sakshat' webspace. The webspace has different functions – be a depository of lectures, demonstrations, case studies, studio exercises and examples of best practices. It would also have a resource database of design examples and applications in the Indian context.The webspace will have free access to learners wanting information and knowledge in the field of design.

The IPR issue is as under Creative Commons: Attribution-NonCommercial-NoDerivs =-CC BY-NC-ND

This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.

26. Justification of the projection with clear cut statement about outcomes if the project contributing to mission objective.

The activities undertaken under 'e-kalpa' in the above mentioned 4 focus areas would contribute towards satisfying many of the mission objectives:

'e-kalpa' Focus Areas	Mission Objectives
1. Continue with Digital online content for learning Design by creating Digital Design Resource Database including the craft sector	'Developing suitable pedagogical methods for various classes, intellectual calibres and research in e-learning'
2. Focus on Outreach and Dissemination programmes by conducting workshops, quizzes, competitions to enhance the effectiveness and reach at a wider scale	'Provision of e-books and e-journals free to the learners' 'Support for Generation of e-content and digitization'
3. Start distance online e-Learning programs on Design for a larger audience participation	'Spreading Digital Literacy and bridging the Digital Divide in teaching learning community in Higher Education'
4. Design inputs for products of National Mission in Education through ICT	'Development of ultra low cost access devices for wider coverage of learners & production for poor students'

27. Financial Justification

27a. Cost of the Project:

.	Non Recurring:	1,05,00,000/-
.	Recurring for 2010-2011:	2,45,00,000
.	Recurring for 2011-2012:	2,45,00,000
.	Pilot (first six months):	3,45,00.000
	Total	**8.4crores**

27b. Justifications against the deliverables:

	IDC, IIT Bombay (2014 to 2017)	NID, Ahmedabad and Bangalore (2014 to 2017)	DoD, IIT Guwahati (2014 to 2017)	Total	Total Cost
i. Full Courseware of design subjects with course duration of 12days x 6hrours = 72 hours	45 subjects	20 subjects	20 subjects	85 subjects	85 x 5 lakhs = 425 lakhs
ii. Full resource documentation of fine examples of Design, crafts and arts + Workshops with Experts	50 topics	50 topics	50 topics	150 topics	150 x 2.0 lakhs =300 lakhs
iii. Full Case Studies of Design Projects	45 subjects	20 subjects	20 subjects	85 subjects	85 x .6 lakhs = 51 lakhs
iv. Video Lectures of eminent designers and case studies	15 lectures	15 lectures	15 lectures	45 lectures	45 x .1 lakhs = 4.5 lakhs
v. Show case of Design establishments	15 Studios	15 studios	10 studios	40 studios	40 x .25 lakhs = 10 lakhs
vi. Student documentation of design process from around the	200 topics	150 topics	150 topics	500 topics	500 x 2000 = 10 lakhs

countryeach in 12 images x12 words					
vii. Student and Faculty interactions over design learning (workshops, Quizzes and Competitions)	12 workshops 6 Quizzes 2Competitions	12 workshops 6 Quizzes 2 Competitions	12 workshops 6 Quizzes 2 Competitions	36workshops 18 Quizzes 6Competitions	60 x 1.5 lakhs = 40 lakhs
Overall Total					840 lakhs

27c. Item wise Costing:

i. Full Courseware of design subjects with course duration of 12days x 6hrours = 72 hours:

(full courseware of 48 hours of Lectures and demonstrations with 28 hours of problem solving contains e- content in form of lectures, subject notes, design examples, slideshows, video demonstrations, lectures, Q and A, Interactive sessions, bibliography, links, etc.)

1a. Cost of Production (Consumables)	25,000.00
1b. Cost of Audio-Visual Production	2,25,000.00

(Equipment – video + Camera + Audio + Computers + Travel)
2 cameraman + 1 Audio person + editor + Manager (paid as per IIT norms)

1c Cost of E content production	1,50,000.00

(2 Programmers + 2 Designers)

1d. Cost of content Editing	25,000.00
Total Cost for full course ware for each subject	**4,25,000/-**

ii. Full resource documentation and workshops on fine examples of Design, crafts and arts:

(full resource documentation contains e- content in form of subject notes, design examples, materials and processes, photographs, slideshows, video documentation, talks, bibliography, links, etc. + workshops with experts and students in generating and documenting design resources)

1a. Cost of Production (Consumables)	25,000.00
1b. Cost of Audio-Visual Production	1,00,000.00

(Equipment – video + Camera + Audio + Computers + Travel)
2 cameraman + 1 Audio person + editor + Manager (paid as per IIT norms)

1c Cost of E content production	50,000.00

(2 Programmers + 2 Designers)

1d. Cost of content Editing	25,000.00
Total Cost for Resource Documentation for each topic	**2,00,000/-**

iii. Full Case Studies of Design Projects

(full Case study documentation contains e- content in form of design process subject notes, design examples, slideshows, video documentation, links, etc.)

1a. Cost of Production (Consumables)	10,000.00
1b. Cost of Audio-Visual Production	30,000.00

(Equipment – video + Camera + Audio + Computers + Travel)
2 cameraman + 1 Audio person + editor + Manager (paid as per IIT norms)

1c Cost of E content production	20,000.00
Total Cost for Resource Documentation for each lecture	**60,000/-**

iv. Video Lectures of eminent designers and case studies:
   (full Video documentation contains e- content in form of interviews, opinions, questions and answers)

1a. Cost of Production (Consumables)   5,000.00
1b. Cost of Audio-Visual Production   5,000.00
   (Equipment – video + Camera + Audio + Computers + Travel)
   2 cameraman + 1 Audio person + editor + Manager (paid as per IIT norms)
Total Cost for Resource Documentation for each lecture   10,000/-

v. Documentation of design process from around the country each in 12 images x12 words
   (Design students around the country are encouraged to document fine examples of design, crafts and practices in 12 images and each with 12 words)

1a. Cost of Production (E content)   2,000.00
   Total Cost for each Gallery   10,000/-

vi. Show case of Design establishments
   (full Show Case of well established Design Firms through documentation - contains e- content in form of design process design office, examples of design projects, slideshows, video documentation, links, etc.)

1a. Cost of Production (Consumables)   5,000.00
1b. Cost of Audio-Visual Production   10,000.00
   (Equipment – video + Camera + Audio + Computers + Travel)
1c Cost of E content production   10,000.00
   Total Cost for each Gallery   25,000/-

vii. Student and Faculty workshops, competitions over design learning
   (Meetings and workshops to generate and plan student faculty interactions over design learning through interactive spaces)

1a. Cost of Organisation   50,000.00
   (2 Programmers + 2 Designers) (paid as per IIT norms)
1b. Cost of Meets and workshops   1,50,000.00
   (2 to 3 faculty members, 2 to 3 project staff+ hospitality +Travel)
Total Cost for organizing workshops, etc for   2,00,000/-

27d.List of Design Courses and Resources:

List of Courseware of design subjects - to be done during Phase II:	List of Resources to be documented - to be done during phase II:
. Applied Ergonomics	. AutoRickshaw
. Sketching for Designers	. Cycle Rickshaw
. Digital Video Communication	. Vehicle Graphics
. Visual Design Advanced	. Indian Identity Signs
. Art, Design and Society	. Indian Textures
. Reproduction Methods and Technology	. Basics of Indian Aesthetics
. Human Perception	. Indian Layout
. Information Graphics	. Wooden Trays
. Advanced Typography	. Street Sounds
. Story and Narrative	. Decoration
. Advanced Digital Video Communications	. Banjara Textiles
. Studies in Human Computer Interaction	. Dhurrie Weaving
. Semantics and Communications Theory	. Indian Musical Instruments
. Visual Culture	. Indian Matchbox label design
. Design Process and Methodology	. Indian Cinema Poster Design
. Human Computer Interaction	. Wood Carvings
. Sensory, Cognitive and Social Interactions	. Indian Mandala Diagrams
. User Studies. Usability Evaluation	. Boat Making
. Prototyping Techniques	. Candle Making
. Animation Principles And History	. Modern Corporate Symbols
. Anatomy and Drawing	. Indian Colours
. Life Drawing	. Cycle attachments
. Sound and Camera	. Eri Silk Textiles (Assam)
. Ergonomics in design	. Cane Haversacks (Coiled Cane Hats)
. Complex product design (CPD)	. Loin Loom Weaving(Nagaland)
. Form & Modeling	. Thongjao Pottery (Manipur)
. System design	. Puan Weaving (Mizoram)
. Illustration and Story boarding	. Pressed Clay work of Melaghar (Tripura)
. Design semantics	. Bamboo Craft (Tripura)
. Design thinking	. Choktse Tables (Sikkim)
. Word and Image	. Konglan- Stitched Booths(West Bengal)
. Visual metaphor in design	. Shola Pith craft (West Bengal)
. Elements of moving images	. Sitar Makers (West Bengal)
. History of design	. ChandiTarkashi- silver filigree (Orissa)
. Information graphics	. Ritual floor painting (Uttaranchal)
.Design concepts and concerns	. Tibetan Carpets (Uttaranchal)
. Space- form and structure	. Sikki crafts (Bihar)
. Hand-held product design	. Tribal Jewellry (Jharkhand)
. Universal design fundamentals	. Marble carving (Uttar Pradesh)
. Design of emotional design	. Glass work (Uttar Pradesh)
. Automotive styling design	. Pulla Embroidery footwear (Himachal Pradesh)
. Automotive HMI design	. Chamba painting (Himachal Pradesh)
. Design and Environment	. Processed Bamboo Furniture of NorthEast
. Product Detailing	. Master craft persons and their works
. Gestalt's Laws of visual perception	. Traditional musical instrument design
. Colour Interaction	. Stone work of Rajasthan
. Principles of visual Composition	. Design from animal horn
. Lighting Design	. May weaving
. Graphic Representation techniques	. Earthen ware

. Animations Fundamentals	. Traditional shoe making
Creative furniture design	. Traditional embroidery
. Professional Practice in product design	. Traditional wood household items
. Anthropometry for furniture design	. Sambalpurisaree- Orissa
. Plastics and composites in Product Design	. Design of rural agricultural equipments
. Craft design	. Rural ornamental designs and motifs
. New Media Studies	. Tibetan carpets- Dehradun
. Modeling and Simulations techniques	. Conch shell craving
. Design for Environmental Sustainability	. Black terracotta
. System Design for Eco Efficiency	. Bamboo based furniture/decoration products
. Methods for Environmental Sustainability	. Chanditarakashi (silver filigree)- Orissa
. Systems Approach in Product Design	. Straw craft- Orissa
. Professional Portfolios of Designers	. Lacquer ware
. Visual Design Thinking and creativity	. Handmade paper products
. Creativity and Problem Solving	. Silk garland making- Tamil Nadu
. Visual Maths for designers	. Root carving craft
. Physics for Designers	.Bronze casting craft
. Chemistry for Designers	
. Graphic Arts – critical analysis	
. Game Design	
. Auto Form Styling	

Project proposal for
National Mission in Education through ICT

For

Entrepreneurship Development for the Educated Youth in India
E-Content Generation for Under Graduate students and Aspiring Entrepreneurs

Submitted to

Ministry of Human Resource Development
Shastri Bhavan, New Delhi

By
Prof. Prem Chander
Chairperson, CIIE,
Indian Institute of Management Ahmedabad

With

Submitted on 16 July, 2014

Executive Summary

India needs millions of new jobs for its burgeoning youth over the next decade. Several things may have to change in the immediate future to generate new valuable jobs for the educated youth. A critical factor is to **prepare Indian educated youth** to be more **entrepreneurial** in their **skills** and **attitudes**. Evidence in India and elsewhere shows that not only do entrepreneurial skills and attitudes enable company formation sooner after graduation, but that such young people are regarded as highly employable by industry. However, **quality entrepreneurship education at scale in higher education** is **not easy**. Our experience demonstrates that it calls for sustained mindshare and resources from management of academic institutes as also highly skilled and entrepreneurially exposed faculty and industry professionals. All of the above being in short supply in higher education makes it a **challenge** for **scaling entrepreneurship education** in India.

To overcome the above challenge, and to scale access to **high quality and consistent entrepreneurial learning, networks and resources** to young educated youth across the country, Ministry of Human Resources Development **(MHRD),** Indian Institute of Management Ahmedabad **(IIM A),** Wadhwani Foundation's – National Entrepreneurship Network **(WF-NEN)** and Indian Institute of Technology Bombay **(IITB)** have discussed developing and making available **e-learning content on entrepreneurship**.

This document outlines a proposal to deliver
- 10 Entrepreneurship Education Courses in E-Content format over a two year period, which will include **video courses, webinars and online clinics, exercises and activities**
- Test and validate the content and share the **feedback, outcomes and a content gap analysis** with MHRD to ensure that learnings from this are available for future use

The E Learning content will be in open source, and targeted for the following outcomes
- **Scale access to quality entrepreneurial learning in India** – potentially reach, engage and train **100,000+** students - aspiring and new entrepreneurs
- **Institutionalize entrepreneurship education across 1000+** institutions enabling them to improve employability of their students

The Partnership proposed in the project between IIM A, WF-NEN, IIT B brings together expertise and relevant knowledge of pedagogy, e-content development and validation, for entrepreneurship skill building and venture. WF-NEN has also successfully launched and is investing in an online Entrepreneur Academy to support learning and mentoring for existing entrepreneurs. The platform today supports 12,000 registered users and has had 250,000 unique visitors to it in a single year and would form the basis and foundation of building this new e-content.

Funding support of 3.2 crores will enable this group to setup, establish and manage this program for a period of two years.

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(including lectures, research project responsibilities etc)

1. **Title of the Project**
   Entrepreneurship Development for the Educated Youth in India
   E-Content Generation for Under Graduate students and Aspiring Entrepreneurs

2. **Management of the Project**
   a) Principal Investigator
   1. Prof. Prem Chander,
   Visiting Professor, IIM Ahmedabad
   Chairperson, CIIE, IIM A

   2. Prof Rakesh Basant
   Faculty, Centre for Innovation Incubation and Entrepreneurship CIIE
   Indian Institute of Management, Ahmedabad

   b) Co-Investigators
   1. K Srikrishna
      Executive Director, WF-NEN

   2. Vikram Gadre
   Head, Centre for Distance Engineering Education Programme (CDEEP)
   & Professor, Department of Electrical Engineering, Indian Institute of Technology Bombay

3. **Duration of the Project**
   Two years from the date of the sanction

4. **Total Budget of the Project**
   Rs. 3.2 Crores

5. **Background, context and need**
   The world over entrepreneurship knowledge & skills is increasingly cited as a critical factor for success in 21st century. Young people with entrepreneurial abilities and skills take initiative, focus on problem solving, are resourceful and not easily fazed by lack of current resources including money, and knowledge. It turns out that such people not only start new companies strengthening private sector and job creation but are highly coveted corporate employees and leaders.

   Separately, it has also been debated, researched and established that entrepreneurial skills are largely learned and therefore can be taught. However, effective learning programs need strong education systems, high quality faculty, and educational programs deeply integrated with the entrepreneurial community. All of these are in short supply in the Indian education system precluding large scale adoption of entrepreneurship development.

The Government of India has in its 12th Five Year Plan focused on entrepreneurship and innovation as an important trigger for economic development in the country. As a way to promote that, a wide spectrum of support is planned by different ministries of the government to promote entrepreneurship development. The Ministry of Human Resource Development (MHRD), through its Department of Higher Education aims to **create access to high quality entrepreneurship education** and learning to larger number of young students across the country. The National Mission on Information and Communication Technology (NMICT) has a clear focus on a proper balance between **content generation**, research in critical areas relating to imparting of education and connectivity for integrating our knowledge with the advancements in other countries.

In the light of the above needs and current conditions within a large segment of higher education, we believe that a **fundamental requirement is to make high quality e-content** available **for entrepreneurship education.**

This content must be easily accessible and must be useful and effective for 2 critical target audiences:
1) **Directors & faculty members of 1000s of academic institutes** who want to bring entrepreneurship education to their students – the goal is to inspire new students to regard entrepreneurial career options and build relevant knowledge and skills
2) **Students and aspiring entrepreneurs from anywhere in India** or outside: these are already inspired aspiring entrepreneurs who would be seeking good quality entrepreneurship content

6.   Scope and Objectives of the Project
MHRD, WF-NEN, IIM A and IIT B have discussed generating high quality content to enable **hundreds of thousands of students** across the country to access effective, e-entrepreneurship learning (via MOOCs). The goal is to create entrepreneurially skilled manpower able to be gainfully employed. Additionally, we expect this will lead to the creation of larger numbers of new entrepreneurs leveraging new opportunities around the country.

We envisage that the bouquet of courses that we will develop will enable the rapid scaling of entrepreneurship education across 1000s of academic institutions with a much stronger assurance of high quality. The impact of these courses will be on millions of students, hundred thousand of faculty members and members of management teams of academic institutions. These will also enable continuous improvement of content and delivery mechanism keeping the target audiences abreast with the latest learning trends from around the world and India, thereby bringing the best to its audience.

This proposal thus outlines the objectives as below and its effectiveness can be viewed along 2 sets of **objectives - business & learning**

Business objectives:
1) Enable higher reach of students to high quality entrepreneurship education
2) To provide guidance and support to student entrepreneurs who may already be running their companies while studying

3) Provide Directors and faculty of academic institutes the opportunity to conduct group classes for students in entrepreneurship development through the use of MOOCs without themselves being the experts in entrepreneurship education

Learning objectives for individual students
4) To enable individual learners to
   o Pick up information, and build knowledge and skills through the courses
   o learn at their own pace
   o be able to choose both the relevant topics that they want to explore and also the level of depth that is most relevant for them
   o be able to self evaluate understanding of the subject matter at the end of the course
   o selectively be able to be certified in the subject matter

7. Project Deliverables

The proposed E –content is conceived as one that will provide massively open online courses (MOOCs) in entrepreneurship development for students and young aspiring entrepreneurs and to the institutions who are interested to take this further in the academic systems. This will mean that the content and its orientation to improve, grasp and enhance learning will have to be ensured through interactive and personalized content mechanism, multi dimensional content generation, learning evaluation and assessment techniques, supplementing of multi dimension contents with multimedia, tools and videos. So using the 4 Quadrant approach of e-content, e-tutorial, web resources and self-assessment, we are proposing the following deliverables for two years of the project:

Deliverables:	Year 1	Year 2	Description
1	Develop 5 courses	Develop 5 courses	Creating of 10 courses over 2 years with 120 modules of video courses, 20 webinars and 10 clinics, exercises and activities associated with these course topics This is estimated to be between 420-450 hours of content.
2	Creation of discussion forums	Creation of discussion forums	Creation of discussion forums for each course and setting up FAQ's for each course. Leveraging public sources.
3	Indexing and tagging of all video and web courses	Indexing and tagging of all video and web courses	Indexing and tagging of all video and web courses to enable content and keyword search by third party engines on all topics in Entrepreneurship development for under graduate students and aspiring entrepreneurs
4	Do a field testing and validation	Develop and share **feedback and outcomes and Content Gap Analysis report**	Develop and share **feedback and outcomes and Content Gap Analysis report with MHRD** to ensure that learnings from the E-content on entrepreneurship development is available for future purposes based on a small group of testing end users (Sample size of min 100)

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8. **Likely end users**
   - Directors, faculty of institutes – who will take this to their students to get them interested and knowledgeable about e-ship
   - End users (students or professionals) who are already interested and seeking content on entrepreneurship

9. **Expected outcomes**

Major outcome of a project of this dimension would be formation of teams, groups, and institutes that would continue to contribute to the knowledge economy of our education system. Interconnectivity among the universities and colleges will not only facilitate exchange of courses, seminar, conferences and specialized lectures by national and international experts but also enable resource sharing. Some outcomes that we expect to see include:

   a) Larger numbers of employable youth
   b) Young people starting companies when they are on campus
   c) Students joining start-ups
   d) Young people starting up within a few years of graduation

10. **Organizations likely to participate in the Project**

In the building of the project expert members of this group – IIM A, WF-NEN and IIT B - will be heavily engaged. Apart from these, educators from several academic institutions around the country that WF-NEN has already trained and skilled, entrepreneurs, investors and mentors from various organizations will also be involved in various capacities. We expect to engage them as advisors as well as consultants around content, technology development, design etc. as the need may be.

11. **Project Methodology**

The project has several key components each of which need to be successfully deployed for this project to have the necessary impact.

   i. **Content design for highly effective online learning**

   This includes creating a highly interactive blended form of learning mechanism. Blended learning would include video course modules with delivery of lectures, frameworks, and conceptual tools interspersed by live forums like webinars and clinics. These webinars and clinics would be panelled with practitioners including entrepreneurs, investors and professionals. Additionally, students at regular intervals during the course would be required to practice or 'do' entrepreneurship through exercises, games, discussions and presentations. Each course would have to be thoughtfully designed to make for an interesting and impactful learning experience for the user.

   ii. **Development of digital modules using learning management tools**

   Once we have the content designed, each course module would have to be diligently produced with high quality images, sound, transcripts and titles and sub-titles. Each of these is important to generate and maintain interest of the user (attention span being the biggest risk in online engagement)

   iii. **Development of usable and effective assessment and evaluation tools**

One of the current challenges in online education is the ability to deliver effective assessment and evaluation tools. This will require us to thoughtfully develop and test various kinds of assessment tools to help users and learners to measure progress of the learner

Content development platform

All e-content produced as a result of this project will be in open source and is meant to be available for wider use by the community including the various partners in this partner – IIM A, IIT B and WF-NEN. Therefore, all course material will be developed based on SCORM (shareable content object reference) Model to minimize proprietary tool or platform dependence. Standards based output be it Flash or HTML 5 , from commercial tool such as Articulate or Adobe will be used for course development, Raptivity for interactions - which in turn will incorporate standard content formats such as PowerPoint or other docs, graphics, video. The content development platform will provide portability across multiple LMS.

A set of all e-content developed through this project with appropriate branding of the parties leading and supporting this initiative will be handed over for deployment on an existing e-content platform that MHRD is already supporting.
In order for ease of portability, this group will expect MHRD to support close coordination between its other project leads who may be developing the platform for deploying e-content and this team. This will ensure that there is synchronization between the platform and the open source e-content technology and design for seamless transition on the platform.

12. **E Content structure and Instructional Strategy**
We anticipate that the E- content portfolio will cater to a wide range of students with diverse learning needs. So for example, there may be students who will start to think of entrepreneurship for the first time. At the same time it is highly likely that there may be student entrepreneurs who are already running small businesses. So we will need to cater to both these kinds of students and everybody in between.

Essentially what that means is that E-content will be mapped to the life-cycle of an emerging entrepreneur. To begin with we may have students from Engineering, Management or Arts and Commerce backgrounds. The way we may render learning to an engineering student may be somewhat different from how it may be rendered to a non- engineering one. Also based on the level of learning, language and terminologies will be managed.

An e-course will be based on the standard 4 quadrant framework and will leverage a variety of media like audio, video, visual, animations, and simulations and so on to keep the learners engaged. These will be further complemented with content like e-books, demonstration videos, PDF documents and webinars and clinics etc. as required for highest effectiveness.

To support further exploration and engagement we will provide access to open content, various case studies, and links to articles on subject matters and so on. The e-content will also feature an assessment system that will ensure that the learners have met the learning objectives.

A typical e-course will be approximately 40-42 hours in its duration. Please see annexure for an illustrative breakdown.

The goal of this e-learning module will be not only to help learners achieve a robust understanding of the subject matter but also to enable them to use the acquired knowledge to solve real world problems with no or very little support.

The E-Courseware instructional methodology:
Research has shown that a learning experience is most effective when it combines a blend of media and context.

- **Knowledge:** The relevant content needs to be presented in format that be retained by a learner easily and applied when necessary.
- **Supportive Information:** Information that is supportive to the learning and performance of nonrecurring aspects of learning tasks needs to be presented along with the core content. It will help to further strengthen a learner's grasp on the subject matter.
- **Task Practice:** Practice items needs be provided to learners in order to reinforce learning.
- **Transfer to Job:** An environment to apply the knowledge acquired with real life data for nonstandard tasks using individual judgment.
- **Assessments:** Assessments built into the various stages of the e-learning module to ensure practice and knowledge retention.
- **Just in Time Support:** The learners' needs to be supported by a system that resolves any query or doubt by means of expert advice.

Keeping the profile of the target learners we have selected the following elements which will ensure that learning takes place effortlessly.

- **Modular courseware**

  Courses on the Student Entrepreneur Academy would be modular in nature and sets of these modules would enable an individual to gain understanding and mastery of a topic or subject matter. The design of the courses and the learning objectives of each module would enable learner as Rebecca Hogue, an online learner and facilitator says,

  > "a) to stay **Focused** through the vast amounts of information available
  >
  > b) remain **Open** to multiple interpretations, such that learners can find their own 'answers' and
  >
  > c) be **Accessible** to learners with varying levels of experience or understanding of the topic."

- **Webinars**

  Appropriate subject matter webinars by practitioners and experts will form a complimentary set of offerings for the online courseware. They will be designed to add further insights to the learner around the different topics and functional training in the modular courseware. These webinars will be run by practising experts, entrepreneurs and innovation professionals to add high value to the learner

- **Online Mentoring Clinics**

  As the learner advances from being a casual explorer to becoming more seriously engaged in entrepreneurship, other high value opportunities like being mentored on their business model or plan from a panel of experts might be made available to the selected few learners.

- **Advanced resources on the topics**

  Additional advanced reading in the form of articles, blog posts and other videos would be offered to the learner based on the topic and the depth of learning required.

Please note the offerings will be designed to focus completely on maximizing learning for the learner and to bring in as much practice into the process as possible particularly as the learner advances. The nature of the offerings as the learner advances will go from the generic and broad level content to more specific and personalized level content. The formats of the offerings and the combinations of them that may go together will be determined based on how advanced the student is and how they may learn best.

Peer Learning and connecting groups
  o A Key learning factor for students is the peer connects and learning with each other. Learners help each other with doubts, with additional insights and with experiences that enhances learning for everyone engaged. Therefore, the content generation will aim to promote a peer connecting of groups in the best possible manner where people may pose questions and answers to each other. Such connects in online forums are today promoted through Google or Yahoo groups, Google hangouts as well as through the web community connect.

Evaluation
  o **Formative assessment**: Any serious learning program must enable students to self test their learning through easy to use online evaluation tools like quizzes. So every course topic will provide such an evaluation tool so the learners can self assess progress. Based on progress made by the learner, the platform may suggest further reading or application.

  o **Summative assessment**: Each course would have a final assessment which will be cumulative of all the formative assessments as well as the final assessments largely based on practice of the learning and associated submissions.

  o **Certification**: A learner may have the option of being certified for some of the courses based on depth and advancement of learning required. This project will provide

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recommended minimum requirement for certification. Individual institutions may choose to offer different level of certification based on the recommended minimum requirements.

Such certification may require detailed submissions by the student based on exercises and application required outside of the online platform. An academic institute may choose to facilitate such in-person engagement of groups of students in the required exercises.
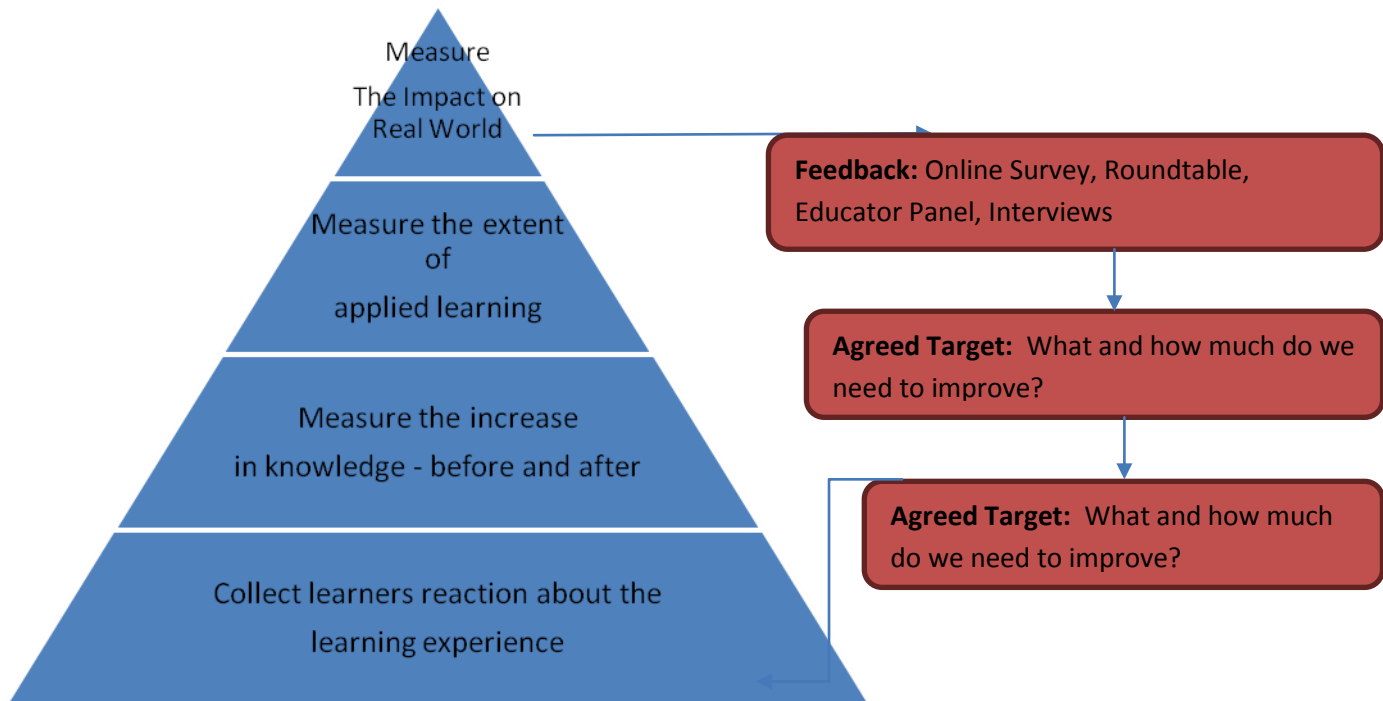
13. Internal monitoring and evaluation systems of the Project & its deliverables

Monitoring the project against its deliverables as well as against the key development milestones will be very important. The project teams aims to do this through multiple ways. Some of the key methods would include

- Setting up an advisory board for the key deliverables example – content design and development, testing and validation, certification etc. this board would help to both review the progress of the project but also qualitatively evaluate progress
- The project team would chalk out a bi-monthly plan of progress and milestones and track its own progress along it
- The project team would also record half yearly reports and share it with MHRD as well as internal project team to ascertain that they can stay on track

14. Field Testing, Feedback and Content Gap Analysis:

- **Field Testing and Validation:** Each course will be offered by at least one or more institutions across engineering and management disciplines in tier 1 and 2 cities. This will be done in institutions in existing entrepreneurship programs as well those are starting up. The institutions in turn will share their feedback on the value of such programs- topics and courses which will be further analysed and shared with MHRD.
- **Survey and Feedback** Based on the content generation, we will be reaching out to the end users/learners on a yearly basis. On Year 1, we will be taken the feedback from a sample group of minimum 100 learners and a minimum of 5 educators.
- **Content Gap Analysis:** This will further be strengthened by a content roundtable that we propose to hold in Year 2 based on all the testing and feedback. The content experts and practitioners will help us develop a Content Gap Analysis which will capture all the learnings from both years. Based on the recommendations of the Content Experts we will develop and share the report on the gaps identified. Refer to the illustration below:

Field Testing, Feedback and Content Gap Analysis

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Measure
The Impact on
Real World

Measure the extent
of
applied learning

Measure the increase
in knowledge - before and after

Collect learners reaction about the
learning experience

Feedback: Online Survey, Roundtable, Educator Panel, Interviews

Agreed Target: What and how much do we need to improve?

Agreed Target: What and how much do we need to improve?

15. Overall Budget with Breakup

Overall Budget Breakup

Sr. No.	Budget Heads	Budgetary amounts (INR lakhs)
1	Digital content development *(relevant topics from inspiration to starting up)*	107
2	Field Testing, Feedback and Content Gap Analysis	22
3	Software and Equipment Costs	53
4	Travel and related costs	37
5	Program Management	33
6	Contingency	15
	Sub totals	**266**
6	Overheads	54
	Total project Budget	**320**

Year wise breakup without the overheads

Year wise breakup without the overheads

S No.	Budget Heads	Budgetary amounts		
		Year I (INR Lakhs)	Year II (INR Lakhs)	Total
1	Digital content development *(relevant topics from inspiration to starting up)*	51	56	**107**
2	Field Testing, Feedback and Content Gap Analysis	10	12	**22**
3	Software and Equipment Costs	33	20	**53**
4	Travel and related costs	16	21	**37**
5	Program Management	16	17	**33**
6	Contingency	8	8	**15**
	Subtotal	132	134	266
	Overheads	**27**	**27**	**54**
	Total	159	161	320

16. Project Timeline

Broadly speaking the below illustrates the project timeline and focus on a year to year basis

Activities	YEAR 1	YEAR 2
	E- Content Generation Develop E – content for 5 Courses on Entrepreneurship development for Undergraduate students and aspiring entrepreneurs.	**E- Content Generation and Content Gap Analysis and Assessment** Develop E – content for 5 Advanced Courses on Entrepreneurship development for Undergraduate students and aspiring entrepreneurs.
	Develop partnerships with the educational institutional and other academic consultants, partners and advisors for continuous development of new content and methodology taking into account contemporary technology platforms.	Test and Feedback on the Courses/Content from the end users.
	Test and Feedback on the Courses/Content from the end users	Based on Testing and Feedback of the E – Content, a Content Gap Analysis will be proposed back to MHRD after a Content Roundtable.

17. Competence of Partner organizations in Project Area

o **IIM Ahmedabad:** The Indian Institute of Management Ahmedabad is a premiere institute of India with strong expertise in education, developing content and innovative teaching and learning methodologies. Additionally, IIM A is a pioneering institute in entrepreneurship development having ventured into both teaching and supporting new entrepreneurs. Owing to its various areas of expertise and interest apart from being the PI of the project, IIM A will play a key Knowledge role in review of the pedagogy and content design. Additionally they bring their unique strengths and expertise in as a high quality educator to help develop evaluation techniques and verified certification methodologies for the platform.

o **WF-NEN:** The Wadhwani Foundation's National Entrepreneurship Network is India's largest entrepreneurship network and organization. For over a decade WF-NEN has played a transformational role in building robust entrepreneurship development capacity within academic institutions working with over 500 of them around the country including the IITs and IIM. IIM A and IIT B are both Founding Institutions of the WF-NEN network. WF-NEN's work in entrepreneurship development has created a culture for entrepreneurial leadership amongst the young people in the country resulting in more student entrepreneurs on campus as well as 1000s of new entrepreneurs being created from the NEN member campuses. The core competencies that WF-NEN brings to this project include entrepreneurship content, teacher training, aspiring entrepreneur training and

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mentoring and online delivery of programs to diverse kinds of target audience. Additionally, WF-NEN has access to the knowledge and technology base of the Wadhwani Foundation's other online training programs including those in Skills development in the USA and India.

o **IIT Mumbai:** The Indian Institute of Technology, Bombay is India's top technology institute excelling in technical and engineering education. Additionally, IIT Bombay has also pioneered Distance Education program (DEP) using VSAT based live and interactive lectures to students/ teachers/ working professionals from multiple Remote Centres in the country. This innovative model has enabled tens of thousands of students to receive quality education no matter where they may be. The Centre for Distance Engineering Education Program (CDEEP) now handles all the distance education related activity in IIT Bombay. The centre has set up studio plus classroom infrastructure for live recording and transmission of courses. IIT B is also one of the pioneers in entrepreneurship development having been the earliest institutes to successfully establish a Technology Business Incubator. The combination of expertise between technology education, distance education and entrepreneurship development will enable IIT B to be a critical reviewer and field testing partner for this project.

18. **Brief Bio-data of Chief Investigator and Co-Investigators**
a) **Principal Investigator**

1. **Prof. Prem Chander**
   Visiting Professor, IIM Ahmedabad
   Co-Chairperson, CIIE, IIM A

   Email: premc@iimahd.ernet.in
   Contact # + 91 79 6632 4857

Professor Prem Chander is a faculty and the current Chair of Centre for Innovation Incubation and Entrepreneurship at IIM Ahmedabad. He has over 17 years experience in Industry and Academics. His areas of interest include Management Accounting, Management Control Systems, Banking and Capital Markets. He has been actively engaged in research and projects ranging from Organizational Systems for Planning and Control, Personnel Systems, designing Organizational Structure and building a project team, besides appraising total credit and bank facilities' requirements of large corporate borrowers. He has conducted several in-house programmes in Working Capital Management and Project Appraisal.

2. **Prof. Rakesh Basant**
   Faculty, Centre for Innovation Incubation and Entrepreneurship CIIE, IIM Ahmedabad

   Email: premc@iimahd.ernet.in
   Contact # + 91 79 6632 4857

Professor Rakesh is a faculty at IIM Ahmedabad in the Economics Area and is the Chairperson of CIIE Initiatives. His current teaching and research interests focus on public policy & regulation. His recent work has focused on competition policy, inter-organizational linkages for technology development (especially academia-industry relationships), strategic and policy aspects of intellectual property rights, linkages between public policy and technological change, industrial clusters, economics of strategy and the small scale sector in India. His sectorial focus of research has been on Pharmaceutical, IT,

Electronics and Auto-component industries. He has been a recipient of the Ford Foundation Post-Doctoral Fellowship in Economics and has spent two years at the Economic Growth Center, Yale University, USA as a Visiting Research Fellow. He has also worked as a consultant to several international organizations. He was a member of the Indian Prime Minister's High-Level Committee (also known as Sachar Committee) to write a report on the Social, Economic and Educational Conditions of Muslims in India.

b) Co-Investigators

1. Dr. K Srikrishna

Executive Director, WF-NEN

Email: ksrikrsna@gmail.com/ http://ksrikrishna.com/
Phone# +91-98809-33793

Internationally experienced C-level executive with a proven track record of cross-border company building, revenue generation, business development & product marketing in both for-profit and non-profit sectors. Angel investor, mentor and board member at multiple start-ups. Built and managed teams in India and the US from bootstrap through exit. Hands-on marketer and high- energy evangelist of new technology adoption. Domain expertise in entrepreneurship education, semiconductor, software and wireless technologies. More than two decades of major account management and B2B sales experience. One US patent and 14 refereed publications. Writes on entrepreneurship and leadership at the Wall Street Journal, Mint, Hindu Business Line

2. Prof. Vikram Gadre
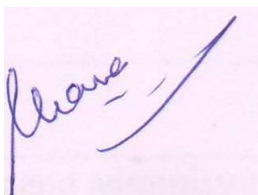
Head, Centre for Distance Engineering Education Programme (CDEEP) & Professor, Department of Electrical Engineering, Indian Institute of Technology Bombay

Email: head.cdeep@iitb.ac.in, dean.acr.office@iitb.ac.in
Phone # 91-22-2576-7426

Professor Vikram Gadre is a specialist in communication and signal processing, with emphasis on multi-resolution and multi-rate signal processing, especially wavelets and filter banks: theory and applications. He is B.Tech (1989) from Electrical Engineering (CGPA 9.90 on scale of 10), Indian Institute of Technology, Delhi and a Ph.D in 1994 from Electrical Engineering, Indian Institute of Technology, Delhi. He has held several professional positions including being a Member, Technical Staff at the Centre for Development of Advanced Computing, Pune.

Sd/-

Prof. Premchander	Dr Sri Krishna	Prof Vikram Gadre
Principal Investigator		Co- Principal Investigators

Annexure 1

Illustrative list of course topics during the 2 years

Year 1 Pre Venture Stage : Students new to e-ship	Year 2 Aspiring Entrepreneurs
Discover the Leader in You: Being entrepreneurial - Inspired leadership, moving from good to great, key skills for achieving success in your career - resourcefulness, building and leading teams, organizational skills , communication and selling yourself, Entrepreneurial career opportunities & its role in your success - starting up, joining a startup, intrapreneur	**Acquiring customers for your Startup - sales & marketing**: Validating the value proposition, product development- how much R and how much D, Pricing basics - how much is too much; who is your customer and how many customers do you need? identifying and segmenting your micro market; sales; marketing strategy including online and offline marketing ; a Getting to Market Plan
Entrepreneurship 101 Part I: Entrepreneurial leadership a way of life, Creativity and Innovation - idea generation, out of the box thinking , innovation processes, systematic innovation and other techniques, Innovation in products and services, design thinking. Practising innovation and entrepreneurship - ways to do that and what you stand to gain	**Building Start-up teams**: How many founders is too many? Why you cannot do this alone and why do you need a team, who should you team up with? Hiring and Retaining talent in start-ups, Role of a leader in building startup culture
Entrepreneurship 101 Part II: venture life cycle; Identifying a new business idea; all ideas are not opportunities; Market analysis - MVP, generating a business model; basics of a business plan	**Basics of Startup Finance**: Boot Strapping your startup vs. Raising money ; Break Even Analysis - how much sales do you need to stay afloat? Revenue Model - where does the money come from? Back of the Envelope Calculations - a quick way to know if your business can create value; understanding financial statements - key numbers for entrepreneurs
Idea to Reality: Starting a Product Venture vs a Services Venture - Key fundamentals and critical challenges in each	**Nuts and Bolts of Starting up**: company formation and compliances, legal terms and procedures, accounting and tax formalities
Starting up - a deliberate action: Risks and rewards for an entrepreneur, Failure and its implications, taking the road less travelled, creating value for yourself and others; When are you ready - Starting young or with experience - risks and benefits of each.	**Why write a Business Plan? :** Do business plans hold up in real life? How is not writing a plan is planning to fail, what's in a great b-plan? Translating your business model into a winning business plan that help you attract partners, team members and resources. What do investors look for in a business plan, Tips for presenting a business plan

Illustrative description of some course topics and their relevance

1. Entrepreneurial leadership - what is it and why does it matter?

Audience: anybody who may be willing to explore entrepreneurial leadership

Goal: Inspiration and engagement

Description:
This course would focus on making entrepreneurial leadership highly attractive to an average student. It would use interesting video modules of current and new generation young entrepreneurs talking about their experiences; it would have students who are working with start-ups articulate their work experience and growth prospects. It would feature employers speaking about what they look for in prospective employees; participants and leaders of entrepreneurship programs and clubs on campuses talking of their employment experiences and the gains that they have had from their engagement and learning.

It would also provide examples of the kind of activities and learning that might be valuable for different kinds of people given their goals and how they may access those from the Student Entrepreneur Academy.

2. Entrepreneurship 101 - fundamental knowledge and skills

Audience: those keen on developing entrepreneurially & understanding venture creation

Goal: Develop understanding of process of venture creation; pick up key entrepreneurial skills

Description:
This course will be focused on imparting key skills and experiences in ideation, creativity and innovation, in scoping opportunities around oneself. Students would be able to pick up important frameworks for business modelling, understand how to read cash flow and profit and loss statements, experience the thrill of sales through simple to do classroom exercises which they can run easily by themselves. Additionally, there will be a great deal of emphasis on communicating with clarity, team work and working with few resources. In the form of assessment students may be required to pit their ideas with each other. There will be demo videos and lessons to give them a sense of good presentation vs not so good presentation. In their final assessment for the course, they may have to present a business idea and its viability to an external panel of experts.

Building a Product vs Services company – fundamental requirements and tackling key challenges in early stage

Audience: this is for an advanced audience and may be most relevant for student entrepreneurs and those students who become intent on entrepreneurial careers

Goal: would be to familiarize the students with the typical requirements of different kinds of business models, including product and services companies.

Description: The course would showcase different kinds of business models, outline the typical development cycles of each kind of company. It will further go into the depth of each kind of model – product vs services. Based on their own interest and or inclination, students would be able to take one or other of the modules to go into the depth of understanding challenges and issues in each kind of model and successful ways of over-coming them. Some students may choose to learn of both the business models which is also fine.

Nuts and bolts of starting up - legal, accounting and others

Audience: this is for an advanced audience and may be most relevant for student entrepreneurs and those students who are just starting a company

Goal: would be to familiarize the students with the compliance requirements for a new company

Description:
The course would outline the key compliance needs in different kinds of companies and focus on why those may be important to handle at different times of establishing and growing the company. It will use different kinds of case studies to illustrate the advantages of complying. It would also focus on the entrepreneur and the practical information and knowledge about taxation, accounting etc that the entrepreneur may need to have in order to take critical business decisions.

Annexure 2

Illustrative Breakup of an e-course

Name of the e-Course: Marketing for Start-ups

Course Modules

1. Introduction to Marketing for Start-ups
2. Validating the Value Proposition
3. How many customers do I need?
4. Who is my customer?
5. Identifying Micro Markets
6. Reaching Micro Markets
7. Selling
8. Creating marketing content
9. Online and Offline Marketing
10. Pricing Basics
11. Creating a GTM Plan
12. Review and Updating the GTM Plan

Weekly sessions

The course will be spanned over duration of 12 weeks. Each week will have 1 sessions; each session is of 3.5 hours duration.

Here is an illustrative example demonstrating learning activities for 4 weeks.

Activities for week 1*:*
Module 1: Introduction to Marketing for Start-ups

Learning Objectives:

- Identify the key challenges start-ups face when it comes to marketing.
- List the commonly practiced anti-startup marketing habits one should avoid.
- Identify the real problem marketing solves

Session details	What a student needs to do	Duration (minutes)
Introduction to Marketing for Start-ups	Individual, self-paced learning Log-in and go through the LMS and go through the e-tutorial	60

Assessment	Individual, self-paced learning Log-in and go through the LMS and complete the self-assessment.	30
Activity	Group/individual activity Discuss with your group and come up with a list of commonly practiced ant-start-up marketing tactics.	60
Further Reading	Individual, self-paced learning Links to external articles for further exploration.	60

Activities for week 2*:*

Module 2: Validating the Value Proposition

Learning Objectives:

- Differentiate between needs, wants, challenges and problems
- Understand why customers purchase
- List the tactics for staying in touch with customers
- Apply strategies for making a sale happen

Session details	What a student needs to do	Duration (minutes)
Validating the Value Proposition	Individual, self-paced learning Log-in and go through the LMS and go through the e-tutorial	60
Assessment	Individual, self-paced learning Log-in and go through the LMS and complete the self-assessment.	30
Activity	Group/individual activity Download the blank template provided and fill up the required columns to reflect your understanding.	60

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Session details	What a student needs to do	Duration (minutes)
Further Reading	Individual, self-paced learning Link to external videos for further exploration.	60

Activities for week 3*:*

Module 3: How Many Customers Do I Need?

Learning Objectives:

- Learn how to move from goals to capacity
- Explain why building capacity takes time
- Understand resource driven planning

Session details	What a student needs to do	Duration (minutes)
How Many Customers Do I Need?	Individual, self-paced learning Log-in and go through the LMS and go through the e-tutorial	60
Assessment	Individual, self-paced learning Log-in and go through the LMS and complete the self-assessment.	30
Activity	Group/individual activity Go through the case study provided and suggest how many customers the company needs in order to survive. Explain the rationale behind your choice.	60
Further Reading	Individual, self-paced learning Link to Wikipedia articles to understand further application of the concept.	60

Activities for week 4*:*

Module 4: Who is My Customer?

Learning Objectives:

- List the categories of customers
- Identify who is your primary customer
- Create customer profiles

Session details	What a student needs to do	Duration (minutes)
Who is My Customer?	Individual, self-paced learning Log-in and go through the LMS and go through the e-tutorial	60
Assessment	Individual, self-paced learning Log-in and go through the LMS and complete the self-assessment.	30
Activity	Group/individual activity Conduct a web survey to understand who your customer is. Post the findings in the course forum.	60
Further Reading	Individual, self-paced learning Link to articles and videos on creating the right customer base.	60

Annexure 3

Detailed CV of the Principal Investigators and Co- Principal Investigators
Principal Investigators

Prof Prem Chander

Experience:

<u>Visiting Professor</u>, **Indian Institute of Management, Ahmedabad**
January 2009 – Present (5 years 6 months)

Finance and Accounting Area,Vice President Operations**, Mu Sigma Business Solutions**
2007 – 2008 (1 year)

<u>Senior Vice President</u>, **IL&FS Education and Technology Services Ltd.**
March 1999 – December 2002 (3 years 10 months)

<u>Senior Vice President</u>, **Schoolnet India Limited**
March 1999 – December 2002 (3 years 10 months)

Was looking after HR and Corporate Education Activities
<u>Senior Vice President</u>, **ILFS Limited**
September 1997 – April 1999 (1 year 8 months)

Looking after the M&A Team
<u>Associate Professor</u>, **Indian Institute of Management, Bangalore**
1988 – 1997 (9 years)

Area of Expertise:

- interest in entrepreneurship, venture capital and private equity
- Credit appraisal in State Bank of India Ahmedabad Main Branch
- Management Consultant - Reliance Consultancy Services
- SVP - IL&FS Limited and Schoolnet India Limited (now IL&FS Educational Services Ltd)
- VP - Mu Sigma Ltd
- About two decades of industry experience
- For almost two and half decades teacher and trainer in Finance Control and Organisation Building
Areas of Interest Mergers Acquisitions and Restructuring; Valuation; Management and Valuation of
Intellectual Property, Project Finance, Management Control Systems, Leadership and Governance
- Developing Organisation systems and processes for commercial and not for profit organisations

Prof Rakesh Basant

Professor of Economics at IIM - Ahmedabad, Chairperson - Center for Innovation and Entrepreneurship
(CIIE) at IIM, Ahmedabad

Educational Qualifications
•   Ph.D. Economics (Gujarat University, Ahmedabad, India, 1990) •   M.Phil. Applied Economics (Jawaharlal Nehru University, New Delhi, India, 1981)

•   M.A. Economics (Rajasthan University, Jaipur, India, 1979)

Academic Affiliation

- Chairperson, Centre for Innovation, Incubation and Entrepreneurship (since 2003)
- Coordinator, Small and Medium Enterprise Programme (SMEP) (since 2002)
- Member, Faculty Recruitment Committee, RJMCEI (2001 onwards)
- Member, FPM Executive Committee (since 2002)
- Member, Management Development Programmes Committee (since 2002)
- Faculty Advisor, IIMACTS (2001 onwards)
- Faculty Advisor, Entre Club (2001 onwards)
- Faculty Advisor SOMA (2001 onwards)

Professional Affiliation

- Member, Board of Trustee, Institute for Development, Education and Learning (IDEAL) (since 1999)
- Member, Governing Body, Society for Promotion of Rational Thinking (SPRAT) (since 2002)
- Member, Research Advisory Committee of CREED, Entrepreneurship Development Institute of India, Ahmedabad (since 2002)
- Member, International Advisory Board for UO-MBA, University of Geneva (since 2003)

Area Of Research

- Technology Change and Management, Intellectual Property Rights (IPRs), Industrial Organization, Public Policy (especially competition & technology policies), Inter-firm Alliances, Industrial Clusters and Labour Markets.

Current Research – Economics

- Research work funded by the Department of Science and Technology (DST), Government of India to understand innovation and capability building processes in a few IT and electronic clusters in India.

- Research funded by the Wadhwani Foundation on the Emerging Intellectual Property Policy Needs in India. Taking the modified IP legislation as a starting point, the work focuses on the on pharmaceuticals, biotechnology, information technology and auto-component sectors to analyze if further modifications are required to facilitate the growth of these sectors in India.
- Research work for the World Bank (in collaboration with Jean Lanjouw of Yale University) focuses on the impact of IPRs on the pharmaceutical Sectors in India and Pakistan. Apart from other issues, this research explores the impact of IPRs on prices of pharmaceutical products. The earlier hypothesis was that that the prices of pharmaceutical products are high in Pakistan because they permit product patents. Recent cases at the WTO, however, contradict this view.

The study analyses the role of industrial structure, technological capability, imports and multinational activity to explain the price differentials between India and Pakistan.

- Continuation of work on Competition Policy in Liberalizing Economies with special reference to India. This research analyses the role of competition policy in the context of macro and other economic policies that a liberalizing economy adopts. It also involves a detailed understanding of entry barriers in such economies.

- Another ongoing research interest relates to the determinants of inter-firm alliances. More recently, the focus of work in this area has been the IT sector. Implications of such alliances on capability building and the labour market are being explored.

Publications/ Articles/ Cases

- Agricultural Activities in Gujarat: An Exploratory Analysis. A preliminary report of the Industrial Development Bank of India project, prepared at the Gujarat Institute of Development Research, Ahmedabad, India, 1991.

- Technology Diffusion in an Agrarian Economy: A Study of Agro Mechanical Technology in Gujarat, Ph.D. Thesis Submitted to the Gujarat University, Ahmedabad, India in February, 1989.

- Agro Mechanical Technology in a Developed Area: A Study of Its Diffusion, Report of an Indian Council of Social Science Research project prepared at The Gujarat Institute of Development Research (erstwhile Gujarat Institute of Area Planning), Ahmedabad, India, 1988.

- Diffusion of Agro Mechanical Technology in a Backward Region, Report of an Indian Council of Social Science Research project (Jointly with K.K. Subrahmanian), prepared at Sardar Patel Institute of Economic and Social Research, Ahmedabad, India, 1987.

- Attached Labour in Indian Agriculture, M.Phil Thesis, Jawaharlal Nehru University, New Delhi, India, 1981.

- **D) Select Other Papers**

1.   "Role of Small Scale Industries in the Age of Liberalisation" (Co-author Sebastian Morris). Paper presented at the Second Technical Workshop of the Policy Group on Trade and Industry of the Asian Development Bank. Indian Institute of Management, Bangalore, January 24-25, 2005.

2.   "Determinants of Entry in the Indian Manufacturing Sector" (Co-author: Subhendra Nath Saha), Working Paper No.2005-01-01, January 2005.

3.   "Empirical Assessment of Coherence in Information Technology Firms", (Co-author: Karthik, D.), Working Paper No.2004-12-01, December 2004.

4.   "Labour Market Deepening in the Indian Information Technology Industry: An Exploratory Analysis", (co-author Uma Rani) Working Paper No 2004-06-06, Indian Institute of Management Ahmedabad, June (2004).

5.   "Communication Standards Adoption in Developing Economics: Issues and Options for India", (Co-author: GR Ramadesikan), Working Paper No. 2003-02-03, IIMA, February 2003.

6.   "Commercialization of Traditional Knowledge Based Technologies by Small Entrepreneurs: An Exploration of Strategic and Policy Options", (Co-authors: Dheeraj Awasthy,

Vivek Gupta), Working Paper No. 2003-02-02, IIMA, February 2003.

7.   "Investment for Development: The Case of Seven Economies in Transition", May 2002 (With Sebastian Morris), Mimeo. A synthesis paper prepared for Consumer Unity and Trust Society (CUTS), Jaipur.

8.   "Knowledge Flows and Industrial Clusters: An Analytical Review of Literature", Working Paper No 2002-02-01, Indian Institute of Management, Ahmedabad, February 2002. (Also published in the East-West Center Working Paper Series, No 40, February 2002).

9.   "Development and Administrative Dimensions of Competition Policy: An Analysis of Seven Developing Countries", December 2001. A synthesis paper prepared for CUTS, Jaipur.

10.   "Pharmaceutical Industry in Pakistan", Indian Institute of Management, Ahmedabad and the World Bank, 2001 Mimeo.

11.   "Technology Strategy of Indian Firms: Searching for the Role of Complementary Assets and Technology Supply Chains" (jointly with Pankaj Chandra), Working Paper No. 98-12-01, Indian Institute of Management, Ahmedabad, November 1998. (This paper was also presented at the Second International Symposium on Management of Technology at Hangzhou, China during November 26-28, 1998)

12.   "Strategic Partnering in Telecom Software: Northern Telecom's Technology Network in India" (jointly with Pankaj Chandra and Lynn K. Mytelka), Working Paper No. 98-07-01, Indian Institute of Management, Ahmedabad, March 1998.

13.   "Sectoral Patterns of R&D and Patenting in Indian Industrial Sector", Yale University, 1992 (Mimeo).

14.   "Inter Regional Variations in Rural Non Agricultural Employment in Gujarat, 1961 81", (Jointly with R. Parthasarathy), Working Paper No. 36, The Gujarat Institute of Area Planning, Ahmedabad, March 1991.

15.   "Non Agricultural Employment in Rural Gujarat : A Review of Evidence. Working Paper No. 28, The Gujarat Institute of Area Planning, Ahmedabad. (Key paper prepared for the 20th Conference of the Gujarat Economic Association, Ahmedabad, March 17 18, 1990).

16.   "Development and Diffusion of Agro Mechanical Technology: Some Evidence on Farmers' Experimentation from Gujarat, India". Paper presented at a Workshop on Farmers' Experimentation, On Farm Research, Risk Adjustment and Traditional Wisdom organized as a part of an International Symposium on Natural Resources Management for Sustainable Agriculture, New Delhi, February 6 10, 1990.

17.   "The Urban Informal Sector: A Critical Review" (Jointly with Tirthankar Roy), Working Paper No. 27, The Gujarat Institute of Area Planning, Ahmedabad. Revised version of a paper presented at Raj Krishna Memorial Seminar on Labour and Employment, New Delhi, February 12 13, 1990.

18.   "Indigenous Knowledge and Technology Diffusion: A Case Study of Agro Mechanical Technology in Gujarat, India", Working Paper No. 16, The Gujarat Institute of Area Planning, Ahmedabad, India, March, 1988. (Revised version of a paper prepared for the session on Indigenous Knowledge and Technology Diffusion, organized as the VII Section of the Seventh World Rural Sociology Congress at Bologna, Italy during June 26 30, 1988).

19.   "Some Aspects of Agro Mechanical Technology Diffusion", Paper prepared for the Agricultural Development Forum on "Equipping Poor Farmers", organized by the

Intermediate Technology Development Group at Rugby, UK during June 19 20, 1987.

20.   "Trends in Agro Mechanical Technology in Gujarat: A District Level Analysis", Working Paper No. 12, The Gujarat Institute of Area Planning, Ahmedabad, India, 1987.

21.   "Agro Mechanical Technology in Gujarat Before Independence: A Survey of Literature", Working Paper No. 8, The Gujarat Institute of Area Planning, Ahmedabad, India, 1987.

22.   "The Diffusion of Agro Mechanical Technology: An Exploratory Analysis", Working Paper No. 3, The Gujarat Institute of Area Planning, Ahmedabad, 1986.

23.   "Agricultural Technology and Employment in India: A Survey of Recent Research", Working Paper No. 1, The Gujarat Institute of Area Planning, Ahmedabad, India, 1985.

E) Cases

24.   Standard Automotive Batteries (B) (jointly with Pankaj Chandra), Indian Institute of Management, Ahmedabad, 1998.

25.   Standard Automotive Batteries (A) (jointly with Pankaj Chandra), Indian Institute of Management, Ahmedabad, 1998.

26.   Patel Brass Works (jointly with Pankaj Chandra), Indian Institute of Management, Ahmedabad, 1997. A short film accompanies the case on the company.

F) Teaching Notes and Case Studies

27.   "TRIPS and Opportunities for the Indian Pharmaceutical Firms: The Viagra Conundrum", Indian Institute of Management, Ahmedabad, 1998.

28.   "Samsonite Corporation versus Vijay Sales, Blowplast India Ltd and VIP Industries Limited" Indian Institute of Management, Ahmedabad, 1998.

29.   "Protecting Intellectual Property in Computer Software: Issues Emerging from the Lotus Case", Indian Institute of Management, Ahmedabad, 1998.

30.   "The Market for Electives", Indian Institute of Management, Ahmedabad, 1998.

31.   "Market Failure and Government Failure", Indian Institute of Management, Ahmedabad, 1998.

32.   "Intellectual Property Rights: A Note" Indian Institute of Management, Ahmedabad, 1996 (Revised 1998).

33.   "Macro-economic Policies and Development of Technology", Indian Institute of Management, Ahmedabad, 1996.

G. Select Book Reviews

34.   Richard Heeks, India's Software Industry: State Policy, Liberalisation and Industrial Development, New Delhi: Sage Publication, 1996, pp. 428. Reviewed for The Journal of Entrepreneurship, 7, 1 (1998), Sage Publications, New Delhi.

35.   Hans-Peter Brunner, Closing the Technology Gap: Technological Change in India's Computer Industry, New Delhi: Sage Publications, 1995, pp. 219. Reviewed for The Journal of Entrepreneurship, 5, 2 (1996), Sage Publications, New Delhi.

36.   "Poverty, Informal Sector and Labour Market Segmentation in Urban Areas", a review of Urban Poverty and the Labour Market: Access to Jobs and Incomes in Asian and Latin American Cities, edited by Gerry Rodgers; International Labour Office, Geneva, 1989; pp XV + 257. Reviewed for Economic and Political Weekly, July 14, 1990.

37.   Devendra B Gupta, Upgrading of Technology in Rural Industries in India: A

Review of Experience, New Delhi, Asian Employment Programme Working Papers, ARTEP, International labour Organisation, 1988. Reviewed for The Indian Journal of Social Science, Vol. 2, No. 2 (1989), Sage Publications, New Delhi.

H. Case Analysis

38.   Rakesh Basant, Case Analysis I, an analysis of a case titled, "TI Cycles: New Product Strategy (A)" by Mukund R Dixit and Abhinandan K Jain. Vikalpa, Volume 28, No. 3 July-September 2003.

Co- Principal Investigators

 Dr Sri Krishna

Executive Summary

Internationally experienced C-level executive with a proven track record of cross-border company building, revenue generation, business development & product marketing in both for-profit and non-profit sectors. Angel investor, mentor and board member at multiple start-ups. Built and managed teams in India and the US from bootstrap through exit. Hands-on marketer and high- energy evangelist of new technology adoption. Domain expertise in entrepreneurship education, semiconductor, software and wireless technologies. More than two decades of major account management and B2B sales experience. One US patent and 14 refereed publications. Writes on entrepreneurship and leadership at the Wall Street Journal, Mint, Hindu Business Line

Experience and Skills

Revenue Generation Built revenues from zero base to multi-million dollars in multiple organizations and roles. Direct sales experience with software, services and semiconductor, based out of North America and India, targeting India, Japan and North America markets. Most recently raised $1M+ annually for National Entrepreneurship Network over multiple years

- Drove a boot-strapped Bluetooth startup through a breakeven and 100% revenue growth in subsequent year ($2M in 2006) prior to selling it for $15M
- Achieved an industry record $50M revenue run rate in the first year of an EDA product – Physical Compiler at Synopsys Inc. (2000)
- Negotiated and concluded contracts in Japan worth $2M in FY1997-8 (Sasken)

Organizational Leadership in CXO roles: The last fifteen years been on the management team of every organization I have been part of, twice as CEO, once each as India managing director and executive director.

- Founded two companies, based in Bangalore and lead them as CEO from startup through revenue generation, profitability, fund-raising, and subsequent sale (in my first startup).
- As managing director of SiRF India helped the team through two acquisitions, growing the team to 200+ and drove company's strategy as part of the extended corporate management team.
- As member of management team in two other India-based startups, Sasken in technology services and Microcon, in industrial control helped drive strategy, build teams, create and sustain cultures.

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✎ Multiple times had primary ownership for closure and exit of specific business units including re-deployment of resources. Led HR organizations & initiatives in all instances.

Business & Market Development Identified strategic businesses and markets that would lead to quantum revenue growth. Built and ran the business units to address these strategic markets, identified the appropriate technology, corporate and university partners for these businesses and executed partnerships & Memoranda of Understanding. Did extensive direct marketing and selling for customers in Japan and the United States. Handled internal and external corporate communications and public relations including print and multimedia.

✎ Defined the strategy for SiRF, the global leader in GPS to drive adoption of its chipsets in consumer markets including digital cameras, MP3 players and handheld gaming devices.
✎ Drove the execution of strategy and building a revenue stream and major account base for SiRF in Japan (2007-08) including with Sony and Toshiba
✎ Developed the strategy and go-to-market for MobileTV chipsets at SiRF (2008)
✎ Executed multiple strategic partnerships, negotiated licensing contracts with major accounts including Broadcom, Logitech, Smart Modular and Sony Ericsson (2004)
✎ Initiated, staffed and generated revenues for new divisions - VLSI Design, Embedded Software, and Multimedia (1996-9) Bluetooth+GPS (1999-2007)

Prof . Vikram Gadre
Head, Centre for Distance Engineering Education Programme (CDEEP)
& Professor, Department of Electrical Engineering
Indian Institute of Technology Bombay
IIT Powai, Mumbai – 400 076
Phone: +91-22-2576-7426
Email: head.cdeep@iitb.ac.in

Specialist in communication and signal processing, with emphasis on multi-resolution and multi-rate signal processing, especially wavelets and filter banks: theory and applications.

Academic Background

- B.Tech in 1989 from Electrical Engineering (CGPA 9.90 on scale of 10), Indian Institute of Technology, Delhi.
- Ph.D in 1994 from Electrical Engineering, Indian Institute of Technology, Delhi.

Work Experience

- Professional Positions held: starting with current position, in reverse chronological order:
  - Professor, Department of Electrical Engineering, IIT Bombay, from 28 March 2005.
  - Associate Professor, Department of Electrical Engineering, IIT Bombay: 19 February 2001 to 27 March 2005.
  - Assistant Professor, Department of Electrical Engineering, IIT Bombay: 27 July 1994 to 18 February 2001.
  - Member, Technical Staff at the Centre for Development of Advanced Computing, Pune for 5 months from February 14, 1994 to July 22, 1994

Awards and Honours

- President's Gold Medal from the Indian Institute of Technology Delhi in 1989: for cumulative performance during B.Tech.
- Adarsh Ratna Bhagat Award from National Service Scheme (1992), IIT Delhi.
- Student Journal Award of the IETE: announced in IETE Annual Technical Convention 1994.
- Based on some work done on speech morphing by a team of four students guided by the nominee using the facilities set up in the Texas Instruments Digital Signal Processing Laboratory, the Third Prize was awarded to the team at the National Level in the Texas Instruments DSP Design Contest 1997.
- Award for Excellence in Teaching from IIT Bombay in September 1999.
- INAE Young Engineer Award from the Indian National Academy of Engineers (INAE) for the year 2001.
- Award for Excellence in Teaching from IIT Bombay in September 2004.
- 11th IETE Prof K Sreenivasan Memorial Award in recognition of distinguished contribution in the field of teaching electronics and telecommunication engineering during the past five years, in September 2004.
- Sixth SVC Aiya Memorial Award for Telecom Education from IETE Pune Centre (2005).
- Felicitation from Society for Cancer Research and Communication (SCRAC), India for the Doctoral Thesis work of PhD student, Shri Ajay Deshmukh, supervised by Prof V M Gadre, done in collaboration with members of the society in the medical profession (14 January 2006).
- Award for Excellence in Teaching from IIT Bombay in September 2009.
- IIT Bombay Research Paper Award for the Year 2008 for the paper: Sudarshan Shinde and Vikram M. Gadre, "An Uncertainty Principle for real signals in the fractional Fourier Transform domain", IEEE Transactions on Signal Processing, November 2001.
- SSI Varshney Award 2011 from the Systems Society of India (SSI), conferred at the Inaugural Function of XXXV National Systems Conference 2011 (NSC 2011) at IIT Bhubaneshwar on December 9, 2011.
- Ashish Vanmali, PhD Student of Vikram M Gadre, authored an award winning paper in the 14th ERSI India User Conference from 10-12 December, 2013 at New Delhi, India, together with Saket Porwal (M. Tech. Student, EE, IIT Bombay), Anshuman Gupta, Laveesh Bhandari, Vikram M. Gadre on the subject of fractal dimension based analysis of urban data. This paper was adjudged the best student paper in the conference and recognized with a citation and trophy.

Other Responsibilities

- Convenor, Postgraduate Academic Performance Evaluation Committee (PGAPEC), IIT Bombay - 2006, 2007, 2008.
- Associate Dean, Academic Programmes, IIT Bombay from 22 October 2008 to 30 November 2011.
- Head of Department, Centre for Distance Engineering Education Programme (CDEEP) from 9 July 2013.

Educational Outreach: Continuing and Distance Education Programmes

- In addition to the regular academic courses taught as a part of his duties as a faculty member at IIT Bombay, Prof V M Gadre has made a number of efforts to organize, and participate in, continuing education programmes for the industry and for other research organizations

Continuing education programmes (CEP) and short-term courses conducted for industry and other institutions:

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- CEP Course on Digital Signal Processing from September 18-20, 1996.
- CEP Course on Advanced Topics in Digital Signal Processing and its applications from August 19-21, 1997.
- CEP Course on Digital Signal Processing and VLSI for Duettech, Noida in July 1999.
- IEEE Short-Term Course on Digital Signal Processing in April 1998.
- Short-term course on the use of Digital Signal Processors on behalf of Texas Instruments, India, in October 1998.
- CEP Course on Digital Signal Processing and Processors in April 2000.
- In-house Training programme in Digital Signal Processing for PACE Technologies in September 2000.
- CEP Course under the TeQIP Programme at College of Engineering, Pune, on Digital Signal Processing, in June 2006.
- CEP Course under the TeQIP Programme for L.D. College of Engineering and other network institutes of Gujarat State in May 2007.

Centre for Distance Engineering Education (C-DEEP) and Distance Education Programme: (DEP): Prof V M Gadre has offered/ developed the following courses under C-DEEP and the Distance Education Programme (DEP) at IIT Bombay:

- A complete course on Digital Signal Processing and its applications in the Autumn Semesters of 2002, 2003, 2004.
- A complete course in "Teach Only Mode" on Signals and Systems in the Spring Semester of 2003, which has been offered as a Full Course in Spring Semester 2004, 2005.
- A complete course entitled "Introduction to Digital Signal Processing and Wavelets" in the Autumn Semester of 2005.
- Coordinated the development of a complete web-based course on Signals and Systems, under the C-DEEP NPTEL initiative (Phase-I), which is now available on the C-DEEP web-page together with the recorded lectures in the subject - for engineering education initiatives.
- The Departmental Graduate Course EE 603 - Digital Signal Processing and its Applications, offered during the Autumn Semester of the Academic Year 2007-08, has been recorded under the Distance Education Facility at KReSIT, and a set of video lectures is being created out of these.
- The Departmental Graduate Course EE 678 - Wavelets, offered during the Spring Semester of the Academic Years 2007-08 and 2008-09, has been recorded under the Centre for Distance Engineering Education (CDEEP) Facility at KReSIT, and a set of video lectures is being created out of these.
- NPTEL Phase II - Created a video course on 'Advanced Digital Signal Processing - Multirate Processing and Wavelets' which has been included as a part of the national open resource made available under Phase II, National Programme on Technology Enhanced Learning (NPTEL) in the Discipline of Electronics and Communication Engineering.

Sponsored Research Projects (as Principal Investigator)

- Currently Principal Investigator of the Knowledge Incubation under TEQIP (KIT) Initiative of the Ministry of Human Resources (MHRD) at IIT Bombay, operated through the Centre for Distance Engineering Education Programme (CDEEP) and the Continuing Education Programme (CEP).
- Sponsored Project from Board for Research in Nuclear Sciences (BRNS) based on Wavelet based methods in Proteomics, November 2010 to March 2014 with an outlay of Rs. 12 lakhs.
- Sponsored Project from AICTE entitled: "Using wavelets in system identification, data representation and compression" with a total outlay of Rs.8 lakhs (1996-1999).

- Sponsored Project from Naval Research Board (NRB) entitled: "Wavelets in Transient Detection"- Principal Investigator from 1999 2002 with a total outlay of Rs. 20 lakhs.
- Sponsored Project from Central Research Laboratory (CRL), Bangalore on Discrete Wavelet Multitone Modulation (DWMT) with a total outlay of Rs. 4 lakhs.

Doctoral Theses Supervised

- Sudarshan Shinde, "New Results in Signal Detection and Representation" (Ph.D. awarded during Convocation, August 2002).
- H.L. Shashidhara, "Novel approaches to wavelet based neural networks", (Ph.D. awarded during Convocation, August 2003).
- Murali Krishna, "New approaches to broadband teletraffic modeling", (Ph.D. awarded during Convocation, August 2003)
- Sanjiv V. Bonde - supervised jointly with Prof Suresh Devasahayam, School of Biosciences and Bioengineering - "Single Trial Estimation of Visual Evoked Potentials in Time-Frequency Domains", (Ph.D. awarded during Convocation, September 2005).
- Ajay V. Deshmukh - "Novel Transform Methods for Processing Sequences of Images in Magnetic Resonance Imaging", (Ph.D. awarded during Convocation, August 2006).
- Pushkar Gajanan Patwardhan - "New Results in Two-Dimensional Non-Separable Multirate Filter Banks", (Ph.D. awarded during Convocation, August 2008).
- Kushal R. Tuckley - "Feature Extraction Techniques for the Echoes from Distributed Radar Targets", (Ph.D. awarded during Convocation, August 2009)
- Bhushan D. Patil - "Novel Approaches to the Design of One-dimensional and multidimensional two channel filter banks", (Ph.D. awarded during Convocation, August 2009).
- Ganesh D. Bhokare - "Novel Image Compression Algorithms Based on Embedded Zerotree Coding in the Discrete Wavelet Transform", (Ph.D. awarded during Convocation, August 2010).
- Anant Malewar, "Improved approaches to rate control for video compression based on the H.264 standard and its extensions", (Ph.D. awarded during Convocation, August 2012).
- Qutubuddin Saifee, "New Results and Design Approaches in Three-Dimensional Multirate Systems", (Ph.D. awarded during Convocation, August 2013).

Books Written

- Murali Krishna P., Vikram M. Gadre, Uday B. Desai, "Multifractal Based Network Traffic Modeling, Kluwer, 2003, ISBN $1 - 4020 - 7566 - 9$.
  (This book has been reviewed in the IEEE Communications Magazine, March 2005, pp.12-14; and in IEEE Distributed Systems Online 1541-4922 C 2006 Published by the IEEE Computer Society Vol. 7, No. 3, March 2006)
- Ajay V. Deshmukh, Vikram M. Gadre, "Functional Magnetic Resonance Imaging - Novel Transform Methods", Narosa Publishing House, New Delhi, ISBN 978-81-7319-865-6, 2008; a book brought out through the support of, and dedicated to, the Society for Cancer Research and Communication, as a research report of the Doctoral Thesis work of Ajay Deshmukh, supervised by Vikram M. Gadre.
- E. Chandrasekhar, V. P. Dimri, V.M. Gadre (Editors and Authors of several of the chapters), "Wavelets and Fractals in Earth System Sciences", CRC Press, Taylor and Francis Group, ISBN-13: 978-1-4665-5359-0 (Hardback), December 2013.

List of Journal Publications

- V.Gadre and R.K.Patney, "Some novel multirate architectures for filter realization with reduced multiplicative complexity", IEEE Transactions on Signal Processing, September 1994, Vol. 42, no.

9, pp. 2492-2495.

- V.Gadre and R.K.Patney, "Using multirate architectures in realizing Quadratic Volterra Kernels", IEEE Transactions on Signal Processing, November 1996, pp. 2891-2895.
- Seema Kulkarni, V. M. Gadre and Sudhindra V. Bellary, "Nonuniform M-Band Wavepackets for Transient Signal Detection", IEEE Transactions on Signal Processing, June 2000, pp. 1803-1807.
- S. Shinde, V.M. Gadre, "An Uncertainty Principle for real signals in the Fractional Fourier Transform Domain", IEEE Transactions on Signal Processing, November 2001, pp. 2545-2548.
- P Murali Krishna, Vikram M. Gadre and Uday B Desai, "Modelling and control of broadband traffic using multiplicative multifractal cascades", Sadhana, Vol. 27, Part 6, December 2002, pp. 699-723.
- Harsh Singhal, Anand Agarwal, V M Gadre and Nalin Pithwa, "Density Evolution for Multiple-Channel Scenarios", IETE Journal of Research, March-April 2005, Vol. 51, No. 2, pp. 163-170.
- P. G. Patwardhan and V. M. Gadre, "Design of Near-Perfect Reconstruction Two-Parallelogram Filter-Banks", IEEE Signal Processing Letters, August 2006, Volume 13, No. 8, pp. 489-492.
- Uday Khankhoje and V. M. Gadre, "Optimal Fractional Fourier Domains for Quadratic Chirps", IETE Journal of Research, January-February 2006, Volume 52, No. 1, pp. 65-70.
- Nirmesh Mehta and Vikram M. Gadre, "A Simple Exposition to Impossibility of Simultaneous Time and Frequency Compactness", IETE Journal of Research, July-August 2006, Vol. 52, No. 4, pp. 271-274.
- P. G. Patwardhan and V. M. Gadre, "On Filter Symmetries in a class of Tree-Structured 2-D Nonseparable Filter Banks", IEEE Signal Processing Letters, October 2006, Vol. 13, No. 10, pp. 612-615.
- P. G. Patwardhan and V. M. Gadre, "Preservation of 2-D Signal Symmetries in Quincunx Filter-Banks", IEEE Signal Processing Letters, January 2007, Vol. 14, No. 1, pp. 35-38.
- P. G. Patwardhan and V. M. Gadre, "Design of 2-D M-th Band Lowpass FIR Eigenfilters With Symmetries", IEEE Signal Processing Letters, August 2007, Vol. 14, No. 8, pp. 517-520.
- Patwardhan P G, Patil B, Gadre V M, "Polyphase Conditions and Structures for 2-D Quincunx FIR Filter Banks Having Quadrantal or Diagonal Symmetries", IEEE Transactions on Circuits and Systems II: Express Briefs, Volume 54, No. 9, Sept. 2007, pp.790 - 794.
- Abeesh C. Basheer, Uday A. Dabade, Suhas S. Joshi, V.V. Bhanuprasad, V.M. Gadre, "Modeling of surface roughness in precision machining of metal matrix composites using ANN", Journal of Materials Processing Technology, Elsevier, 197 (2008), pp. 439 - 444.
- Chirag Pujara, Ashok Bhardwaj, Sourabh Khire and Vikram M. Gadre, "Secure watermarking in Fractional Wavelet domains", IETE Journal of Research, November-December 2007, Vol. 53, No. 6, pp. 573 - 580.
- Bhushan D. Patil, Pushkar G. Patwardhan, and Vikram M. Gadre, "On the Design of FIR Wavelet Filter Banks Using Factorization of a Halfband Polynomial", IEEE Signal Processing Letters, Vol. 15, 2008, pp. 485-488.
- Q.Saifee, P.G. Patwardhan, V.M.Gadre, "On Parallelepiped-Shaped Passbands for Multidimensional Nonseparable Mth-Band Low-pass Filters", IEEE Transactions on Circuits and Systems II: Express Briefs, August 2008, Volume 55, Number 8, pp.786 - 790.
- Patil, B. D.; Patwardhan, P. G.; Gadre, V. M., "Lifting Structures for Quincunx FIR Filter-Banks With Quadrantal or Diagonal Symmetry", IEEE Signal Processing Letters, Vol. 15, 2008, pp. 749-752.
- Bhushan D. Patil, Pushkar G. Patwardhan, and Vikram M. Gadre, "Eigenfilter Approach to the Design of One-Dimensional and Multidimensional Two-Channel Linear-Phase FIR Perfect Reconstruction Filter Banks", IEEE Transactions on Circuits and Systems - I: Regular Papers, Vol. 55, No. 11, December 2008, pp. 3542-3551.
- Ganesh Bhokare, Ujjwal Kumar, Bhushan Patil, Vikram Gadre, "Efficient coding of sparse trees using an enhanced-embedded zerotree wavelet algorithm", Signal, Image and Video Processing,

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Springer Journal, published in July 2010, ISSN 1863-1703 (Print) 1863-1711 (Online), DOI 10.1007/s11760-010-0172-x

- Qutubuddin Saifee, Pushkar G. Patwardhan, Aniruddha Adiga, Vikram M. Gadre, "Design of 3D Nonseparable Mth Band Eigenfilters with the 48-Hedral Symmetry", IETE Journal of Research, Vol. 56, Issue 3, May-June 2010, pp. 156-162.
- Namrata Bandekar, Anant Malewar and Vikram M. Gadre, "A Perceptually Tuned Model for Just Noticeable Distortion Estimation for Videos", IETE Journal of Research, Vol. 57, Issue 2, Mar-Apr 2011, pp. 125-131.
- Anant Malewar, Aniket Bahadarpurkar, Vikram Gadre, "A linear rate control model for better target buffer level tracking in H.264", Signal, Image and Video Processing, Springer Journal, published online 21 June 2011, DOI:10.1007/s11760-011-0235-7.

National Consultation on Educational Technology
at
SNDT Women's University, Mumbai

Control no: DMA2408201413226

PART-V Detail Project Report

1. Objective
- ❖ To track ET initiatives in Higher Educational institutions in India
- ❖ To bring experts in ET together for centralized efforts towards effective and efficient higher education
- ❖ To suggest activities and programmes for developing global citizenship to Indian Education institutions of higher learning
- ❖ To establish the need of research in the field of Educational Technology
- ❖ To propose National policies in the interest of Indian Education e.g. OER Policy of the Nation

2. Methodology

Consultation meet

3. Deliverables year wise and its possible contribution to major objectives of mission.

- ❖ A concrete plan for establishing a National-level network of experts, faculty and students of Educational Technology
- ❖ Suggestive Guidelines for a common portal of OER India
- ❖ A suggestive plan to collaboratively publish online research journal to share research findings in the field of ET as well as best practices at national and international level
- ❖ Drafts for National level policies in the field of Educational Technology in India e.g. OER Policy, ICT Policy for Higher Education, etc

4. Time schedule (year wise)

 Within 3 months after the Consultation

5. Details of permanent assets to be procured from the project with estimated cost.
   NIL

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6. Details of financial outlay in year wise for recurring and non-recurring funds.

Budget

Sr. No	Item	Rate	Days	Persons	Amt in Rs
1	Travel of outstation delegates	20000		45	900000
2	Travel of local delegates	1000	2	5	5000
3	Hospitality	500	2	60	60000
4	Accommodation	5500	2	45	495000
5	Local conveyance	2000	2	10	40000
6	DA	500	2	50	50000
7	Consultation kit	500		50	25000
8	Sitting allowance	1500	2	50	150000
9	Honorarium for editing and finalising reports	5000		5	25000
10	Technology support for video-audio-recording, auditorium, etc.				50000
11	Contingencies				50000
					18,50,000
					50
	Cost per expert				**37000**

(Rs Eighteen lakhs fifty thousand only)

7. Management of Deliverables & IPR etc.

As directed by the Mission

Major thought-processing, discussions, negotiations will happen in the workshops planned in the 2-days consultation. The reports, guidelines, draft policies planned as the outcomes will be finalized and submitted to NMIECT within the 3 months time.

8. Justification of the projection with clear cut statement about outcomes if the project contributing to mission objective.

The consultation will plan to bring efforts of different interested agencies working in the field of e-learning under one umbrella and establish logical linkages between various activities; will design guidelines for the extensive use of OER being in the country; will plan for 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, ie Integrating ICT in Higher Education.

Project proposal

on

e-Training Environment for Training Technical (Polytechnic) Teachers & Students (Phase – I)

MHRD File Number	16-126/2009-DL
Pilot Project Control No.	Se-06090910277

under
National Mission on Education through ICT [NMEICT]

NMEICT

Principal Investigator
The Director, NITTTR Chennai

Submitted by
**NATIONAL INSTITUTE OF
TECHNICAL TEACHERS TRAINING & RESEARCH
CHENNAI – 600 113
&
BHOPAL, CHANDIGARH AND KOLKATA**

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Executive Project Summary

Project Title   :   **e-Training Environment for Training Technical (Polytechnic) Teachers & Students   (Phase-I)**
(Standing Committee Approval - 19-September-2013)

Project Period   :   June 2014 – March 2017

Budget   :   **Rs. 13.56 crores** (for four NITTTRs)

Partner Institutions   :   NITTTR, Chennai along with
                                                           NITTTR – Bhopal, Chandigarh and Kolkatta

Beneficiaries   :   All polytechnic college teachers / students in India.

Pilot Project   :   *"Establishing e-training environment for training technical teachers and students" by NITTTR, Chennai*

MHRD File Number	16-126/2009-DL
Pilot Project Control No.	Se-06090910277

Project goal:

In continuation to the pilot project on *"Establishing e-training environment for training technical teachers and students" by NITTTR, Chennai,* it is proposed here to develop e-content for the 750 courses of different branches of the polytechnic curriculum by Four NITTTRs and Polytechnic College Teachers (as per the Standing Committee suggestion – 19th September 2013). Initially in the first phase as per the recommendation NMEICT Standing Committee and subsequent meeting with Joint Secretary, MHRD and Mission Director NMEICT, it has been decided to develop e-content for 80 courses using AICTE model curriculum by four NITTTR's. Each NITTTR will develop contents for 20 courses in the identified two disciplines of polytechnic and the course content will be developed by integrating learning principles of digital era (Connectivism, Behaviorism, Cognitivism, and Constructivism). NITTTR Chennai will coordinate the entire project. NITTTR Chennai and NITTTR Kolkatta will develop for 20 courses in English with possible subtitles in Hindi, similarly NITTTR Chandigarh and Bhopal develop for 20 courses each in Hindi with possible subtitles in English. The

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developed courseware will serve as knowledge repository for teachers and students, it will be intertwined to the class room teaching, and it can be used for flipped classroom teaching model. The first phase for the project will be for 18 months including the phase of validation and dissemination.

Subsequently, in the second phase, e-content for remaining 120 courses of 16 different branches of polytechnic college curriculum will be developed by four NITTTRs in association with polytechnic faculty members. The courseware will be uploaded in the online learning portal (*Sakshat*) and act as a repository for MOOCs. It will provide conceptual knowledge to the teachers and students of polytechnic colleges in all branches. Developed course contents will manifest themselves in the ways students learn, the ways teachers teach, and the ways any person think about teaching and learning.

Project Deliverables:

1. Pedagogically designed e-content courseware for 80 polytechnic subjects (Theory and Practical) in accordance with the four-quadrant approach with AICTE common curriculum will be developed.

2. Technical teachers and students will be empowered by providing redefined teaching-learning repository for the polytechnic courses.

3. Developed courseware can used by students to learn at their own pace and integrated into the MOOC.

4. The developed courses will have extensive library of content, videos, interactive challenges, assessments, discussion forums and FAQs.

5. Internal infrastructure of four NITTTRs will be upgraded and standardized for developing e-content courses for technical subjects.

6. A distributed deployment model will be designed for the deployment of the e-content.

7. All courses will be indexed and powerful open search engines will be used to enable content and keyword search on all topics developed under this project.

Budget Proposed: Phase – I

a) Budget for the coordinating Institute - NITTTR, Chennai   -   Rs. 4.50 Crores
b) Budget for NITTTR, Bhopal   -   Rs. 3.02 Crores
c) Budget for NITTTR, Chandigarh   -   Rs. 3.02 Crores
d) Budget for NITTTR, Kolkatta   -   Rs. 3.02 Crores

Total budget for four NITTTRs   -   **Rs. 13.56 Crores**

Detailed Project Proposal

1. Rationale:

Technical education is instrumental in making a remarkable contribution to economic growth of our country by way of augmenting the technical manpower need of the industries, society and the global need as a whole. The Government Mission's basic objective is to create a trained Skilled Manpower of at least 500 million persons by 2020.To produce contemporary skilled manpower & technocrats suited to the present era, strengthening of polytechnic education is the need of the hour. Hence, polytechnic education needs to restructured and tuned in order to respond to challenges of industrialization for self-reliance, as well as meeting international demands. Polytechnic system offers three year generalized diploma courses in conventional subjects and also diversified to circuit branches. The increase in number of polytechnic institution over the period of time is shown in figure 1. There is a 235% increase in the number of polytechnic from 1203 in 2001 - 02 to 4037 in 2013- 14 (Source: AICTE, India), however, the increase in demand needs to be nurtured properly in order to produce globally marketable knowledge society. At present existing polytechnic institutions seem to struggle for survival. Over the years the diploma courses have lost the skill components and are perceived as diluted version of degree education. In addition, technical education in India needs to develop entrepreneurial abilities or entrepreneurs, who can create products and organisations. Polytechnic education aims to create a pool of skilled manpower to support shop floor and field operations It is the most appropriate time to revamp the polytechnic education by dovetailing with NMEICT funded courseware compatible to MOOCs.
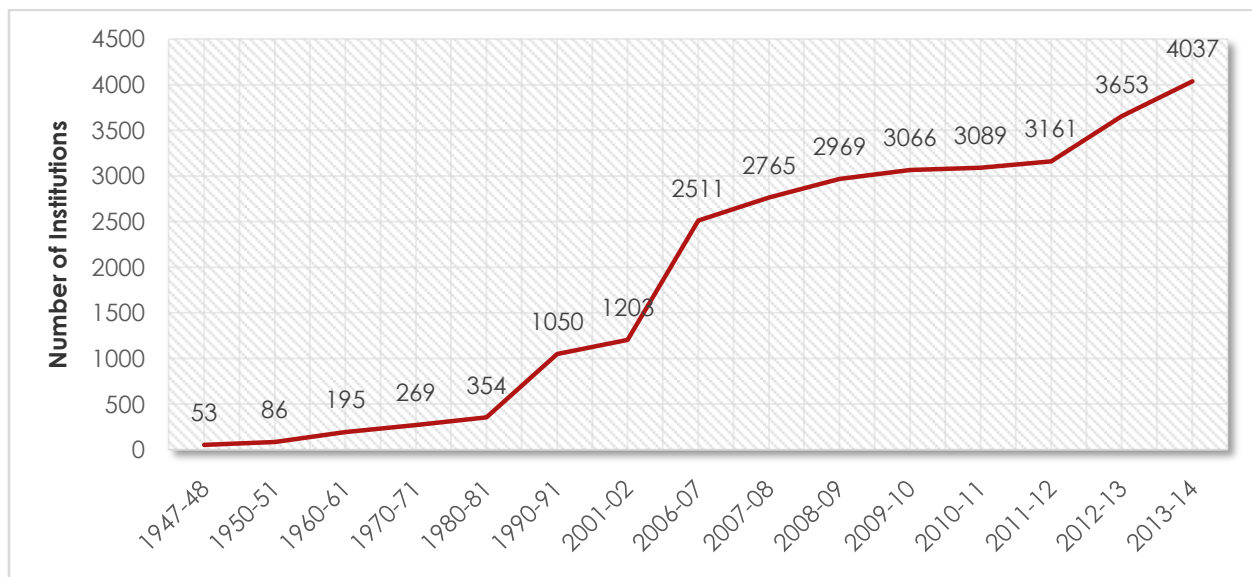

Figure 1: Number of Polytechnic Institutions in India (Source: AICTE, India)

The Eleventh Plan addressed several issues including static curricula, poor industry interface, lack of flexibility to respond to needs, obsolescence of equipment, lack of trainers, and inadequate funding. Ministry of Human Resource Development, GoI launched "Submission on Polytechnics" scheme to (i) Assist the establishment of 1,000 new polytechnics by the State Governments throughout the Country (ii) provide assistance for construction of women's hostels in 500 existing polytechnics to augment the facilities, (iii) provide assistance for construction of women's hostels in 500 polytechnics and (iv) start a renewed community Polytechnic scheme in 1,000 polytechnics in order to promote community. Since Ministry is focusing towards strengthening technical education, it would be the right time to strengthen the education system through redefined teaching learning process using ICT tools.

2.   Role of NITTTRs in empowering technician education:

National Institute of Technical Teachers' Training and Research (NITTTRs), Chennai is involved in promoting excellence in technical education through their training and research activities. Their mandate is to engage in i) Faculty Development Programmes (ii) Curriculum Revision and Development (iii) Instructional Material Development (iv) Extension Services and (v) Sponsored Research and Consultancy Services for the technical education system of the country. In this project active collaboration between all four NITTTRs (Southern – Chennai; Northern – Chandigarh; Western – Bhopal and Eastern – Kolkatta) is envisaged for creating a common pool of learning materials. The NITTTRs apart from the facilities in the Headquarters, have established extension centres in several states in their respective regions. The NITTTRs have mechanisms to carry out need analysis of the technical institutions, design, schedule and organize training programmes, workshops and seminars at their own facilities and at client locations. Technical Universities, Engineering Colleges and Polytechnics have benefited from NITTTR's programmes, projects and expertise. The institutes strive continuously and vigorously to further enhance their sensitivity to environmental changes and reach greater heights of excellence through active collaboration with national and international agencies on Projects and Programs aimed at quality improvement of technical education systems. From its inception, NITTTR Chennai has played a pivotal role in redefining polytechnic education of the country through representation in various committees viz., Damodran Committee, Kelkar Committee etc.,

Every year NITTTR system provides training to polytechnic and engineering college faculty members. Approximately around 10,000 faculty members from polytechnic stream are provided technical and pedagogical training by NITTTR. In addition to the faculty development programme, NITTTRs are actively

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involved in revision and developing curriculum for the polytechnic system of our country. NITTTR family intertwined its activity towards development and redefining polytechnic education of our country, in terms of following projects (a) sub mission of polytechnics, (b) offering technical expertise towards improving the infrastructure of the polytechnic and (c) community development through polytechnic scheme. Among four NITTTR, southern region have maximum catchment for polytechnic and engineering institutions. NITTTR Chennai has trained all the polytechnic faculty members in the state of Karnataka, Andhra Pradesh and Kerala in basic pedagogy. Faculty members are well equipped in handling courses by incorporating the teaching learning principles. There exists a synergy between the polytechnic education and NITTTR, hence it will be highly relevant and timely to develop the e-content for the polytechnic system through NITTTR.

3.   Current status of Polytechnic Education System

In recent years there has been serious criticism of the system of polytechnic education by educationists, representatives of industry, professional bodies and employers. The common points of criticism are as follows:

- ✓ The diploma courses in our polytechnics are mostly theoretical with very little practical bias. Too much emphasis on theoretical inputs and no correlation with world of work, lead to inadequate quality of pass outs as per industry.
- ✓ The diploma courses are a poor imitation of the degree courses, and as such do not really serve the purpose of training middle level technical personnel.
- ✓ Faculty members lack practical knowledge which is most important in technical education and which results to inefficient delivery of knowledge-mechanisms.
- ✓ Non-standardized testing pattern in technical education is assessed towards theoretical examination with little weightage to practical's.
- ✓ The diploma courses, as conducted at present are in the broad fields of civil engineering, mechanical engineering, electrical engineering, metallurgy, etc. No attempt has been made towards specialization in any one particular branch of a subject field in which specialist technicians are required.
- ✓ Technicians graduating from diploma courses opt for higher engineering programmes rather than pursue jobs.
- ✓ Inability to craft self-employment or develop entrepreneurship.

These and several other factors that have been causing concern to persons responsible for the development of technical education. The above mentioned educational weaknesses may be addressed with the advent of growth of technology in education, such as- ease of professional grade video production, availability of

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computer hardware and software, internet, streaming of videos, animation and image processing software, and online examination/certification. Some these growth factors provide strength to the system. Already technology innovation infused into the technical teaching through various available resources such as (a) availability of EDUSAT (b) availability of infrastructure for narrowcasting using DD (Doordarshan) HPT (High Power Transmitter) & LPT (Low Power Transmitter) (c) falling cost of hardware (d) rapidly expanding Optical Fibre Cable network for terrestrial broadband connectivity (e) falling cost of bandwidth and (f) a high growth in mobile density.

It is a significant occasion for all teachers and industry experts in the country to pool their collective wisdom for the benefit of every Polytechnic learner and, thereby, reducing the digital divide, i,e. inequalities between groups, broadly construed, in terms of access to, use of, or knowledge of information and communication, etc. The institutions having infrastructure and interest and along with colleges having experienced teachers may join together, to standardize subjects, their content, and delivery through videos and e-content. Since no institute or college is well-equipped and resourceful to produce videos and e-content materials for entire disciplines, institutes and colleges have to work together in collaborative mode. Some of the challenges are-

a) The lead institute has to ascertain and mobilize partner institutes, and set norms for efficient and effective progress, and output.

b) The lead institute along with partner institutes will standardize subjects based on curricula in the country, develop their content, and delivery for videos and E content, manage production, quality control, and output in desired form.

c) The lead institutes along with partner institutes will identify subject teacher as experts, industry experts, who have necessary experiences and willing to contribute, this is a difficult task.

d) Every person has to exert extra hours each day to deliver this extra works of participating in workshops for development of subject content for videos and E content, manage production, deliver outputs, etc.

e) The various identified industries should cooperate to prepare videos by shooting in their industries.

The lead institute and partner institute faculty will have to remove obstacles, facilitate with resources, monitor and motivate people to deliver outputs within time schedule.

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4. Need for Technician education through ICT

Fortunately, ICT as a tool in education is available to us in great detail at this juncture and we wish to fully utilize it to enhance the current enrollment rate in Higher Education.   Ministry of Human Resource Development, Government of India has formed a mission for sanctioning projects related to ICT under the National Mission on Education through ICT (NMEICT). It is a momentous opportunity for all the teachers and experts in the country to pool their collective wisdom for the benefit of every Indian learner and, thereby, reducing the digital divide.   Under this Mission, a proper balance between content generations, research in critical areas relating to imparting of education and connectivity for integrating our knowledge with the advancements in other countries is to be attempted. For this, what is needed is a critical mass of experts in every field working in a networked manner with dedication. Although disjointed efforts have been going on in this area by various institutions / organizations and isolated success stories are also available, a holistic approach is the need of the hour. This Mission seeks to support such initiatives and build upon the synergies between various efforts by adopting a holistic approach. It is obvious that emphasis on ICT is a crying need as it acts as a multiplier for capacity building efforts of educational institutions without compromising the quality. The Mission is also necessary to sustain a high growth rate of our economy through the capacity building and knowledge empowerment of the people and for promoting new, upcoming multi-disciplinary fields of knowledge.

5. Objectives of the project

The objectives of "e-Training Environment for Training Technical (Polytechnic) Teachers & Students" –
Phase – I are to provide quality training to technical teachers and students using the online e-content material.

   a. To design and develop e-learning environment, which exploits the capabilities of the Internet and multimedia to provide on-line learning opportunities to polytechnic teachers and students.

   b. To create 150 e-content courses for the Polytechnic College curricula from different branches of diploma initially.

   c. To develop interactive video-based courses in different branches of diploma, in streaming video lecture format for use in e-content.

   d. To train a large number of technical teachers through workshops.

   e. To provide e-learning opportunities to students from rural and backward areas as well within a reasonable period of time.

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6.   Project summary (maximum 500 words)

Under NMEICT of MHRD, a pilot project on ""Establishing e-Training Environment for Training Technical Teachers and Students" (Creation of 4 Courses) was sanctioned and the project has been completed by NITTTR, Chennai. The courseware is designed to provide detailed information for learning the content. The content is presented with a combination of various multimedia elements (Text, Graphics, Animation, Audio & Video). The navigational features provided enable the learners to browse through the content seamlessly. Self-tests are embedded at appropriate instants after content coverage with respect to one or a set of objectives. With this, the learner would be able to make a self-assessment of their learning. Based on this, they would be able to revisit the content if required.

 The course is introduced by an expert through a video based lecture demonstration. In addition to the above, audience is taken through a guided tour of how to use the courseware through a video presentation. The four-quadrant approach was adopted for the course developed under this project.

- ➢   Identification of courses
- ➢   Content structuring
- ➢   Content development for the 4 courses
- ➢   Presentation design
- ➢   Customization with Moodle
- ➢   Providing web link
- ➢   Quality control
- ➢   Content updating mechanism
- ➢   Testing by target group
- ➢   Outcomes of the project

As per the instructions of the Standing Committee(19th September, 2013), creation of e-content for 80 courses of different disciplines of Polytechnic college curricula will be developed mapping AICTE curriculum by nodal centre (NITTTR, Chennai) along with other three NITTTRs at Bhopal, Chandigarh and Kolkatta.

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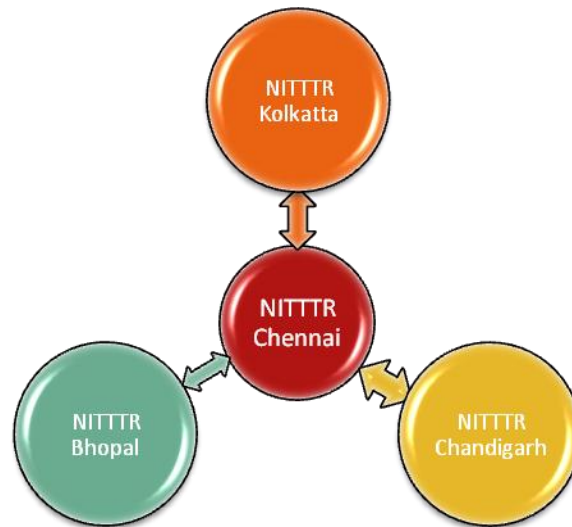
There are around 750 polytechnic subjects to be prepared from more than 40 disciplines from different states of India listed in Table 1. There has been a phenomenal increase in the technical institutions (both at degree and diploma levels) in the country resulting in larger number of students intake and faculty requirement. It is also a unique exercise in which four NITTTRs will work together to deliver for a common cause, namely, improve current polytechnic education in India and at the same time, provide for any student in the world to undertake a systematic and self-study of engineering concepts. Many different styles and pedagogies have to be accommodated using a few simple guidelines for faculty contributors to adopt in content creation through the video and the web. The web based contents will be registered with Google Analytics and the statistics provided by Google will be used to study the effectiveness of this programme regularly.

Initially in the Phase-I, 80 courses will be developed by each NITTTR, from their respective branches listed in Table 2. However, each NITTTR will share its expertise and NITTTR Chennai will act as a nodal centre for coordinating the entire project and repository of the entire course material.

Table 1: List of polytechnic branches (Source: AICTE, India)

Sl.No.	Course	Sl.No.	Course
1	Diploma in Automobile Engineering	21	Diploma in Agricultural Technology
2	Diploma in Chemical Engineering	22	Diploma in Instrumentation and Control Engineering
3	Diploma in Civil Engineering	23	Diploma in Textile Technology
4	Diploma in Electrical and Electronics Engineering	24	Diploma in Textile Processing
5	Diploma in Electronics and Communication Engineering	25	Diploma in Applied Arts and Crafts (Fashion and Apparel Design)
6	Diploma in Electronics(Robotics) Engineering / Mechatronics	26	Diploma in Textile Technology (Man made fiber)

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Sl.No.	Course	Sl.No.	Course
7	Diploma in Computer Engineering	27	Diploma in Textile Marketing and Management
8	Diploma in Computer Networking Engineering	28	Diploma in Textile Technology (Knitting and Garment Technology)
9	Diploma in Mechanical Engineering	29	Diploma in Garment Technology
10	Diploma in Mechanical Engineering (Machine Tools Maintenance & Repair)	30	Diploma in Fashion Technology
11	Diploma in Mechanical Engineering (Tool & Die)	31	Diploma in Textile Technology(Knitting)
12	Diploma in Mechanical Engineering (Ref. & A/C)	32	Diploma in Apparel Technology
13	Diploma in Mechanical Engineering (Foundry)	33	Diploma in Textile Technology (Textile Design and Weaving)
14	Diploma in Production Engineering	34	Diploma in Petro-Chemical Engineering
15	Diploma in Information Technology	35	Diploma in Polymer Technology
16	Diploma in Architectural assistantship	36	Diploma in Sugar Technology
17	Diploma in Environmental and Pollution Control Engineering	37	Diploma in Ceramic Technology
18	Diploma in Biomedical Engineering	38	Diploma in Leather Technology
19	Diploma in Metallurgy	39	Diploma in Mining Technology
20	Diploma in Marine Engineering	40	Diploma in Printing Technology

Table 2: List of polytechnic branches opted by NITTTR for course content creation

S.No	Courses
NITTTR CHENNAI	
1	Diploma in Civil Engineering
2	Diploma in Textile Technology
NITTTR BHOPAL	
1	Diploma in Chemical Engineering
2	Diploma in Computer Engineering
NITTTR CHANDIGARH	
1	Diploma in Electrical and Electronics Engineering
2	Diploma in Information Technology
NITTTR KOLKATA	
1	Diploma in Mechanical Engineering
2	Diploma in Environmental and Pollution Control Engineering

7.   Creating courseware in different disciplines

The existing organizational structure of discipline coordinators and Principal Discipline Coordinators will be extended to ensure that there is overall coordination in each of the above subjects. The detailed list of courses will be prepared after the committees are constituted in each of these branches. It is proposed that the faculty expertise available outside of Polytechnic education system and retired

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faculty will be utilized in both the formation of these monitoring committees and in seeking SMEs for content development.

Course contents to be developed in these areas will have the following as the main guiding principles. E-Learning material in the form of web supplements are being created so that it can be expanded and updated continuously. Initially it will consist of one or more of the following:

- Localization of examples

- Elaboration of key concepts and theorems to facilitate clearer understanding

- Case studies to provide more comprehensive design experience than that offered by simple numerical examples

- Examples that require the use of different categories of engineering knowledge under different sets of assumptions.

- Question banks to assist instructors to design good tests and examinations

- Additional reading material for underperforming students, especially those with difficulties with English

- Simulation of concepts through graphical interfaces standardized within a course using open source tools and plugins

- Animations of concepts using two and three dimensional tools in engineering and science and in an output form that does not require commercial or proprietary software tools

- Additional reading material for over-achievers

- Historical information and anecdotes related to specific topics

- Creation of the e-learning material in those formats which ensure that the content creation and course management platforms are decoupled.

- Simple course management packages that provide features like e-mail queries by students, bulletin boards and Frequently Asked Questions (FAQ) are being incorporated.

- Every module to be prepared preferably by a team of faculty.

- The material to be suitably organized to create CDs/DVDs to meet the needs of students of different universities.

- The same material can be suitably restructured for printing if needed.

  (Source: Proposal by NPTEL 2009, NMEICT)

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8. Methodology for Project

The lead institution NITTTR, Chennai initially plans to execute this work as per the following figure and described here with, however new dimensions and sequencing of activities may change.

1. The work flow chart by NITTTR, Chennai for execution shows initial activities, like- Formation of Apex committee under Project Director for planning and monitoring project , setting/hosting web site for fast communication, forming norms, procedures, guidelines for content development, targets for development of video & E content, etc.

2. Organize lead institute faculty workshops for discussions & training them to accept responsibilities of subject coordinators experts, validations as well as organization & facilities for video production and E content development.

3. Lead center will simultaneously create a web site, which will be used for communication of information among lead center, partner institutes, subject coordinators, subject experts, industry experts, subject validation experts, other colleges, experts & colleagues across globe. Thus, this portal will bring together the best experts in the country and abroad in their respective fields and available knowledge resources on the web in the public domain.

4. The lead institute will organize workshops to identify partner institutes, who have certain facilities and interests to share the project responsibilities. Preference will be given to Govt. or Govt. funded institutions. The project targets, process, quality parameters, etc, will be set as per Apex Committee recommendations, and as well as any decisions taken at Workshop level. The responsibility of partner Institute will be to provide subject coordinators, studio facilities for video production, computer & server facilities for e-content development, monitoring of progress of allotted subject material development and production, etc.

5. Once partner institutes are identified, faculty will meet in workshop mode in lead center for the entire process - monitoring project targets, forming norms, procedures, guidelines for content development, targets for development of video & E content, etc.

6. Video production organization and infrastructure at lead institute & partner Institutes will be planned supplied, installed and commissioned.

7. Subject coordinators will be trained based on above decisions, agreements between lead & partner institutes on the entire process monitoring such as project targets, norms, procedures and guidelines

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for content development, targets for development of video & e-content, selection of subject teachers and industry experts for content decisions and writing for video & e-content, etc. Each subject coordinator will be responsible for development of curriculum for subject, selection of teachers & industry experts for content detailing & writing for videos & e-content development, managing productions, delivering produced videos, e-content, etc.

8. Workshops will be conducted at lead & partner institutes to identify subject content experts and validation experts. They will identify and referee the content, and will be trained for writing to produce videos and e-content. Here, the team should ensure that materials been already developed are used by entering into MoUs (Memorandum of Understanding) with the concerned IPR (Intellectual Property Rights) holders, to further build the system and then to add value for achieving the desired goals. Here, attempts should be made to avoid reinventing of wheels or duplication of efforts.

9. In workshop mode, content modules, treatment and development for videos & e-content will take place in lead center/partner institutes and at individual locations as per format and style decided by lead centre.

10. The written content will be validated at lead & partner institutes by validators, and will be approved by subject coordinator,

11. After the approval of subject coordinator, the development of video and e-content will be done at those respective centers.

12. Prepared outputs of video production & e-content development will be validated by subject content experts and validation experts.

13. The final outputs will be circulated among teachers & learners to get feedback; the productions will be modified accordingly and distributed as DVDs or uploaded in portal for viewing.

Users will be encouraged to submit queries and discussions into a repository of frequently asked questions (FAQ) with appropriate answers. Providing a direct, interactive response to user queries is the first and foremost exercise in encouraging the use of the contents. The whole process for each branch can also be moderated by a separate group of faculty members from among the retired faculty whose experience in teaching and learning environments of user institutions can be a valuable supplement.
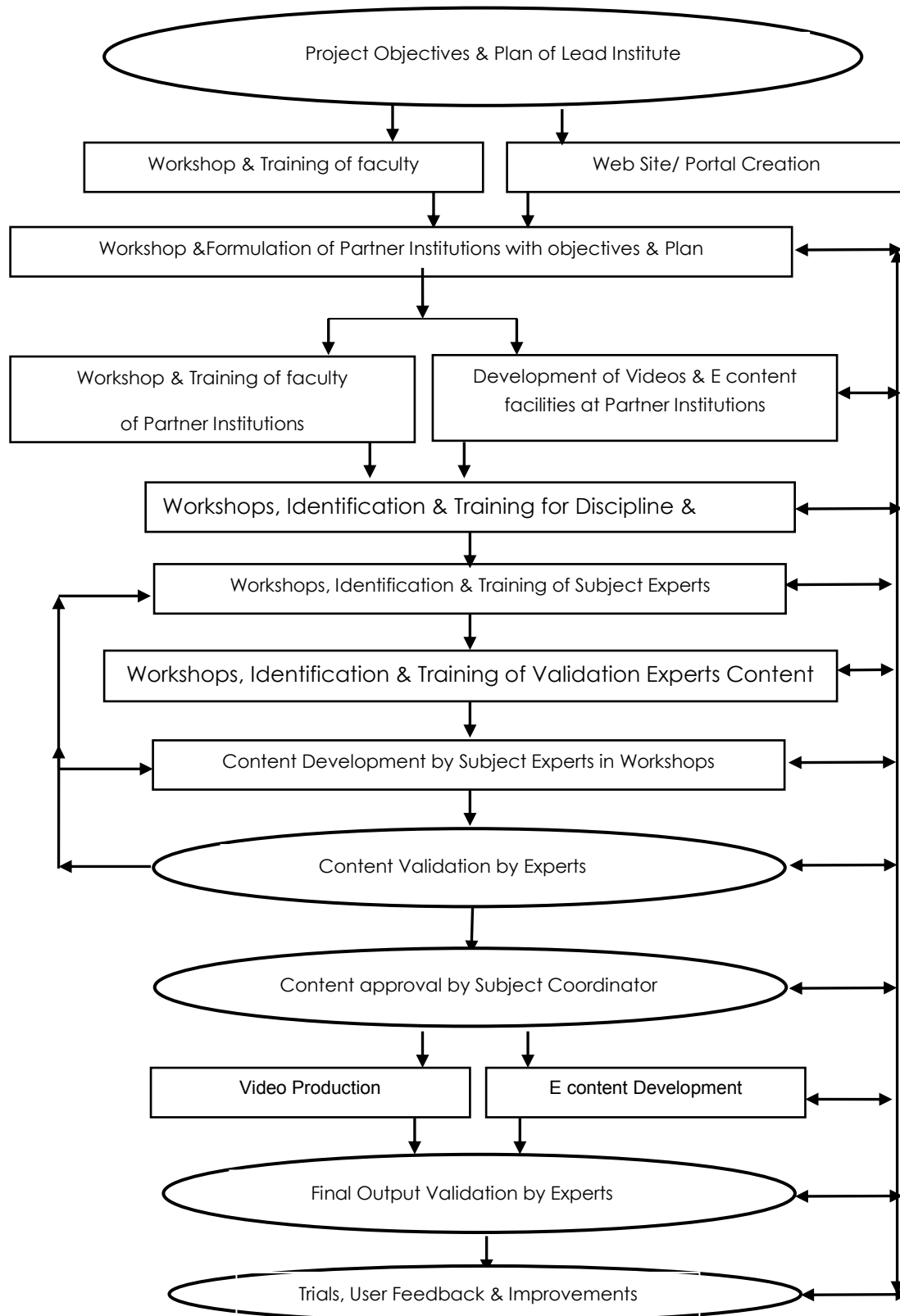
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Different levels of teacher training workshops will be conducted for each course. Each PI will be encouraged to identify principal user (nodal) institutions in his/her region and will offer intensive training to the faculty in all of the course contents, and encourage, adaptation of the contents to their teaching requirements and also make new modules for their own environment. The technology for doing this needs to be made available to them for a short period at least until the nodal institutions themselves set up the necessary infrastructure. Institutions will be encouraged to host the contents in their own mirror sites and will be encouraged to offer training to faculty from institutions in the vicinity. The process will have to be carried out for all the courses to be developed.

SMEs (Faculty) will be requested to design detailed online and face-to-face feedback from users of specific courses, which might include inputs and expectations of the users (differentiated as teachers, students or professionals) and request the users to identify the specific strengths/weaknesses of every course. The parameters that may be considered are primarily the following:

- Content level and clarity
- Content presentation styles
- Difficulty level for users (categorized as above)
- Adaptability of the course to the environment of the users
- Adequacy of question banks
- Adequacy of case studies
- Relevance of contents to Final examinations and towards professional examinations for higher studies
- Relevance of content toward career placement
- Relevance of contents towards industrial practices in the area
- Suggestions for improvement

In video courses, in addition to the above, the quality of the video, the suitability of the video as substitute for expert teaching that may not be available in the user institution etc. must also be assessed. The feedback must be done for all the courses with different samples and the data collected must be analyzed in a cumulative fashion. One of the most important parameters for effective utilization of coursework of any kind is the design of questions and examinations which are relevant from the user's perspective. In the present instance, the relevance of course content to final examinations will be addressed, even though from the outset, it must be recognized that course contents are not examination

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centric. They are in principle, designed for technology enhanced learning and for providing uniform and standard modules for polytechnic college curriculum in India. However, use of the contents of this project by students and teachers in affiliated institutions is unlikely to have a major impact unless the process includes well-designed question templates and a sufficient number of question banks for each course. In fact, such questions can be used as models for final examinations over a period of time as the Polytechnics revise and update curricula. The course contents must be used as a major source of learning/preparation for the other examinations, to begin with. In addition, question templates must be made available, with solution manuals wherever possible to benefit college teachers for their internal use in improving the quality of their students. Online examinations will be useful to test the user ability anytime.

Project Objectives & Plan of Lead Institute

Workshop & Training of faculty

Web Site/ Portal Creation

Workshop &Formulation of Partner Institutions with objectives & Plan

Workshop & Training of faculty

of Partner Institutions

Development of Videos & E content facilities at Partner Institutions

Workshops, Identification & Training for Discipline &

Workshops, Identification & Training of Subject Experts

Workshops, Identification & Training of Validation Experts Content

Content Development by Subject Experts in Workshops

Content Validation by Experts

Content approval by Subject Coordinator

Video Production

E content Development

Final Output Validation by Experts

Trials, User Feedback & Improvements

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9.   Proposed Activities for the Project (Summary)

The following activities are proposed to be carried out during the project period (for a period of 18 months) for video production & e-content materials development.

a) **Identification of experts:** A wide circulation to all polytechnic colleges, industries and associations will be carried out to publicize and identify experts and outdoor shooting locations. Personal visits will also be made to interact with and motivate faculty and industry to contribute for development of videos and e-learning materials. Based on responses, or evaluations of works done or presentation skills, subject matter experts will be chosen and invited to contribute lecture/ demonstration based video programmes. Services of industry experts will be availed of wherewere possible taken to develop content of scripts for industry based programmes.

b) **Setting up physical infrastructure in each NITTTR**: A permanent team in each NITTTR for ensuring quality of content as per internet standards will be identified. The storage requirement for video files (raw is about 75-100 terabytes for a total of about 600 terabytes. The raw files are of broadcast quality and enable us to prepare files for the Internet in different bandwidths to cater to the variations in broadband connectivity worldwide. It is important to make the video files accessible in different formats in order to ensure wide reach and availability. Hence the storage requirement is a must.

c) **Development of Content: Creating 80 e-content courses (Phase – I) in a number of disciplines** and widening the intellectual, open access resource base of the NITTTRs to ensure the role as global players in the knowledge dissemination process. The pilot course base will cover the most widely known disciplines for which a diploma is offered by the Polytechnic colleges in India. The content will be developed by identified faculty and industry experts as the case may be. The content should have simple language, interactivity, exercises, and assignments with solutions for self-check. The prepared contents will be validated by content and education technology experts. If documentary format videos are to be prepared, the scripts will be prepared based on industry obtained contents. The content will be developed in PowerPoint, Illustrator, and in design software using other software as well like- Adobe CS5, solid edge, etc. PowerPoint's will be used for development of video lecture, while Illustrator and in-design could be used for e- Content development. These final computer based materials will be validated by group of faculty comprising of content developer, validation thorough another content expert and faculty from media.

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d) **Video production & Uploading in server:** Video lectures will be prepared in studio using on line inputs, like presenter audio-video, PowerPoint, animations, visuals, video clips, etc. The video will not only show talking faculty, but also efforts will be made to present real life visuals, animations, video clips to support the explanations of concepts, principles and methods. The high quality videos will be compressed to suitably distribute as DVDs and as streaming media content. For documentary format videos, based on script and identified industry and field locations, video shoots can be done externally. For e-learning materials, content will be converted into web based content such as PDF or through html 5.

e) **Providing a range of web enabled services to the courses** developed under this project with associate partners and enabling development of IT tools for online dissemination of contents.

f) **Conducting 12 course specific workshops** for all courses developed in this project with teachers throughout the country and using the feedback for improvement.

g) **Feedback & Improvement** – These teaching learning materials would be improved based on feedback from students and other teachers.

10. Budget requirements for the proposed project

NITTTR Chennai will act as a coordinating institute for this project along with three other NITTTR's in developing pedagogical e-content for the polytechnic courses. The contents can be assessed using one or more suitable platforms being made available through MOOC. Table 3, gives the budget outlay for the entire project inclusive of participating and coordinating institute. Table 4 provides budgetary requirement for the coordinating nodal institute NITTTR Chennai. Table 5 provides amount required by the participating institutes.

Table 3: Budget split up for Coordinating and Participating NITTTRs in Phase - 1

Head	Amount (Rs. In Lakhs)
Content Development	
Creation of 80 e-content courses for Polytechnic curricula in different disciplines Rs. 12.4 lakhs per course (Each course contains 40 lectures of one hour duration each and for each one hour the cost of production videos and e-content is worked out as Rs.29,000/- and Rs.2000 for transcription).	992.00
Infrastructure Up gradation	
Infrastructure up-gradation of the video studios (AV Mixer, Studio Camera, Splitter etc. / Media server, set up web server for web studios / AMC + Spare parts, Additional Media hardware / Media OEM software (Rs.50 Lakhs per institute)	200.00
Permanent Storage of e-content / Backup / Maintain log details / Content Distribution External HDD 160 TB. Establish Network Architecture to provide adequate intranet / VPN bandwidth to users on demand including security System	50.00
Workshops, Honoraria & Travel	
Travel, Honoraria and the conduct of 12 workshops in One and half years for approximately 50 participants in each workshop (duration 2-3 days) Rs. Four Lakhs per workshop.	48.00
Travel cost and Nodal Centre Office with Project Director and Coordinator Honoraria	50.00
Total budget for the project	**1340 .00**

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Table 4: Budget split up for Coordinating NITTTR Chennai for Phase - 1

Head	Amount (Rs. In Lakhs)
Content Development	
Creation of 20 e-content courses for Polytechnic curricula in different disciplines Rs. 12.4 lakhs per course	248.00
Infrastructure Up gradation	
Infrastructure up-gradation of the video studios (AV Mixer, Studio Camera, Splitter etc. / Media server, set up web server for web studios / AMC + Spare parts, Additional Media hardware / Media OEM software (Rs.50 Lakhs per institute)	50.00
Permanent Storage of e-content / Backup / Maintain log details / Content Distribution External HDD 160 TB. Establish Network Architecture to provide adequate intranet / VPN bandwidth to users on demand including security System	50.00
Workshops, Honoraria & Travel	
Travel, Honoraria and the conduct of 12 workshops in One and half years for approximately 50 participants in each workshop (duration 2-3 days) Rs. Four lakhs per workshop(approx..)	48.00
Travel cost and Nodal Centre Office with Project Director and Coordinator Honoraria	50.00
Total budget for the coordinating NITTTR Chennai	**446.00**

Table 5: Budget split up for Participating NITTTRs for Phase – 1

Head	Amount (Rs. In Lakhs)
Content Development	
Creation of 60 e-content courses for Polytechnic curricula in different disciplines Rs. 12.4 lakhs per course	744.00
Infrastructure Up gradation	
Infrastructure up-gradation of the video studios (AV Mixer, Studio Camera, Splitter etc. / Media server, set up web server for web studios / AMC + Spare parts, Additional Media hardware / Media OEM software (Rs.50 Lakhs per institute)	150.00
Total budget for the participating NITTTR's	894.00

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SOCIAL WORK EDUCATION NETWORK

A Proposal to Establish the Learner's Network on Behalf of the Schools of Social Work in the Country

Submitted by

Tata Institute of Social Sciences

Contents

PART-I Personal Details

1.	Name	S. Parasuraman
2.	Designation	Director TISS
3.	Organisation	Tata Institute of Social Sciences
4.	Postal Address	Tata Institute of Social Science (TISS) (Opp. Deonar Bus Depot), V.N. Purav Marg, Deonar, Mumbai 400088, Maharahstra
5.	City	Mumbai www.tiss.edu
6.	State	Maharashtra
7.	Phone	022 25525000
8.	Fax	022 25525050
9.	Email	sparasuraman@tiss.edu
10.	Mobile	9223214951
11.	Project Category	Network Facility

PART-II Information relating to Department/Institute

1. Name of Institute with complete address:

Tata Institute of Social Science (TISS),
V.N. Purav Marg, Deonar
Mumbai 400088
Maharahstra

2. Title of the Research Project:

Social Work Learner's Network

3. Department/Broad Area:

School of Social Work

4. Major areas of research in the Department

Human development, Health and Mental Health, Childhood development, Adolescent nutrition, Ageing, Gender, Women's issues, Ethnic politics, Social exclusion, Governance to Agricultural science, and Knowledge networks

5. Names & Designation of Principle Researchers in the major areas and list of publications during last 5 years based on work done in the Department:

List of Research Projects in progress in 2013–14 and publications done in 2013–14 by the faculty of the School of Social Work are given in Annex 1.

6. Is it Inter-disciplinary Project?

Yes

7. Is it Inter-Institutional Project?

Yes

8. Is any Industry/User agency participating?

Yes – Support from Tata Consultancy Services will be availed

9. Brief of completed and or ongoing research projects supported by MHRD/AICTE in the Department during last 5 years.

1. AICTE and TISS signed an agreement in 2012 to set up the TISS School of Vocational Education. The AICTE sanctioned Rs. 10 cr to develop world standard curriculum on a range of skill areas and make available the curriculum in the public domain; demonstrate skill development, quality maintenance, assessment and certification.

2. Department of Higher Education, MHRD, and TISS have signed an agreement setting up of the Technical Support Group for Rashtriya Ucchatar Shiksha Abhiyan (RUSA).

The broad objectives of RUSA are as follows:

(i)   Improve the overall quality of existing state higher educational institutions by ensuring their conformity to prescribed norms and standards and adoption of accreditation as a mandatory quality assurance framework;

(ii) Usher transformative reforms in the state higher education system by creating a facilitating institutional structure for planning and monitoring at state level, promoting autonomy in state universities and improving governance in institutions;

(iii) Ensure governance, academic and examination (and evaluation) reforms in the state higher educational institutions and establish backward and forward linkages with school education on one hand and employment market on the other hand;

(iv) Make funding under RUSA, norm based, transparent and linked to key reforms;

(v)   Expand the institutional base by creating additional capacity in existing institutions and establishing new institutions in un-served and underserved areas, to achieve enrolment targets and to address critical regional and social gaps;

(vi) Create opportunities for states to undertake reforms in the affiliating system;

(vii) Ensure adequate availability of quality faculty in all higher educational institutions and ensure capacity building at all levels of higher education;

(viii) Create an enabling atmosphere in the higher educational institutions to devote themselves to research and innovations;

(ix) Integrate the skill development efforts of the government with the conventional higher education system through optimum interventions;

(x) Correct regional imbalances in access to higher education in rural & semi-urban areas, by setting up institutions in un-served & underserved areas;

(xi) Improve equity in higher education by providing adequate opportunities of higher education to socially deprived communities; promote inclusion of women, minorities, and differently abled persons.

PART-III Information relating to Institute

10(a). Principal Investigator Details

- Dr. S Parasuraman, Professor and Director, TISS

10(b). Co-Principal Investigator Details

1. Dr. Helarius Beck, Professor and Dean, School of Social Work (SSW)

2. Dr. Manish Jha, Professor and Chairperson, Centre for Community Organisation and Development Practice (SSW)

3. Dr. Vijayaraghavan, Professor and Chairperson, Centre for CCJ (SSW)

4. Dr. Sandhya Limaye, Associate Professor and Chairperson, Disability Studies, SSW

5. Dr Ruchi Sinha, Associate Professor and Head, TISS Delhi Centre

6. Dr. Suryakant Waghmare, Associate Professor

7. Dr. Anjali Dave, Professor and Chairperson, Centre for Women (SSW)

8. Dr. Asha Bhanu, Associate Professor and Chairperson, Centre for Health and Mental Health, SSW

9. Dr. Swathi Banerjee, Associate Professor and Chairperson, Centre for Livelihoods and Innovation, SSW

10. Ms. Monika Sakrani, Associate Professor and Chairperson, Centre for Social Justice and Governance, SSW

11. Dr. Kalpana Desai, Professor and Dean, School of Social Work, Guwahati Campus

12. Dr. Rohit Jain, Associate Professor and Chairperson, School of Social Work, Tuljapur Campus

13. Other faculty members of the School of Social Work participate in various processes related to the network.

11. In case it is a joint project with other Institution, research labs and industries, names(s) of participating investigators

- Jamia Milia Islamia, School of Social Work, Delhi (Northern Region)

- Vishwa Bharati, School of Social Work, Shantiniketan (Eastern Region)

- Loyola College, Department of Social Work, Chennai (Southern Region)

- TISS, Guwahati Campus, Guwahati (North-Eastern Region)

- M S University, College of Social Work, Baroda (Western Region)

12. In case industry/user agency is participating, whether a MOU has been signed or letter of intent given.

- TISS has ongoing MoU with TCS for supporting M&E system

13(a). Present commitments of the Principal Investigators

- 5% time of Principal Investigator

13(b). Present commitments of the Co-Principal Investigators

- 15% time of each of the Co-Principal Investigators is reallocated for the network tasks.

14. Other members of the Research Group to work on proposed Projects:

- Working Groups with faculty members from TISS's School of Social Work and regional partners formed for each of the subject areas.

I   Rationale, Goal and Objectives of Social Work Education Network

The nature of Social Work education has normally been consistent with development stage of the concerned nation. Indian Social Work Education borrowed much of its curriculum and literature from the United States and United Kingdom. The issues these nations were dealing with are very different from the issues of concern in the country. Many established Social Work institutions have developed and accumulated indigenous teaching – learning materials. The number of Schools of Social Work has increased from 40 in 2000 to 300 in 2014. These institutions lack qualified teachers, quality teaching – learning materials, and the quality of graduates is generally poor.

In recent years, as part of the 11th and the 12th Plans, there has been an significant increase in social sector investment spending through schemes such as the NREGA and NRLM that promote people's participation and build capacities of community based organisations for sustainable development. In addition, the Rural Development sector (such as Agriculture and allied work, Animal Husbandry and Fisheries, Food Security, Water and Sanitation, Education, Health) requires millions of professionals that have specific sectoral competence and skills.

This has lead to an exponential demand for Social Work Professionals with relevant and specific capacities that can facilitate the range of development and social programmes at various levels of society and government (Panchayat, Tehsil, District, State and National). Such professionals must be strongly grounded in their inner values, equipped with strong knowledge and skills; capable of shifting complex systems such as community, government and business sectors; and managing development programmes at various levels of strategy, planning and implementation and review levels; to deliver tangible results.

To meet this need in society, a fresh cadre of trained Social Work Professionals are needed who are accredited (certificate, diploma, degree, and are qualified to carry out research in the field); through commonly established professional standards of excellence in teaching and practice. Second, there is a need to build capacities of personnel already employed in the social sector from the panchayat to the global level to plan, manage and deliver various development programmes across sectors. It is in this context that the need to fundamentally transform Social Work institutions located in universities and colleges assumes importance.

Excellence in Social Work profession has been historically guided from universal values of human dignity, human rights and social justice; that promote agency, people's participation and self determination, and peaceful and thriving societies. Since the inception of the first Social Work School in the country, the Sir Dorabji Tata Graduate School of Social Work (presently the Tata Institute of Social Sciences) in 1936; there has been a tremendous expansion of social work courses in the country, with over 400 schools/ departments of social work established across the country.

Social Workers are now working with all aspects of social and economic development in various organisations ranging from the government, non-profit sector, development organisations, companies and international organisations. Social work education and research has contributed significantly in the growth of civil society actors, people centred social movements, and social action; as well as it has provided valuable inputs into law and policy at regional and national and development for pro-people development.

For the Social Work Education in the country to transform and take the next quantum leap, it must address some key gaps and issues in the provision of Social Work Education. Currently there is an acute shortage of good quality teachers in Schools of Social Work across the country. Further, the privatisation of education including Social Work education has resulted in rent seeking forms of commercialisation without adequate teaching – learning provisions, and poor quality distance learning. Also, there is no regulating professional Social Work body in India to regulate quality and relevance in the expansion of Social Work educational institutions

It is in this context, there is urgent need to develop a framework to improve quality of Social Work education in the country. Thus, the SWLN aims to fundamentally transform Social Work Education by establishing professional standards of Social Work Practice; and by generating and building capacities of various actors in the Social Work Education sector including Universities and Colleges, Teachers and Students.

Goal of the Network

The broader Goal of the Social Work education Network is to facilitate contemporary Social Work Education to become emancipatory and transformative in its approach in order create and sustain inclusive and just societies by:

(i) Creating fresh cadres of professionals graduating with nationally accredited certificate, diploma, under-graduate, post-graduate and research programmes using indigenously developed cutting edge curriculum and practice in Social Work; and

(ii) Building capacities of existing professionals in Social Sector from panchayat to national level to address immediate conditions of poverty and deprivation in a principled, strategic and results based manner, work towards building a just and inclusive society.

Objectives of the Network

(i)   Develop the National Curriculum Framework in Social Work;

(ii)   Establish a Knowledge Hub to share knowledge and learning resources – students located in any part of the country;

(iii)   Use e-network for sharing of knowledge and learning resources.

(iv)   Create a Quality Assessment and Accreditation Framework for Social Work Education and guidance service to students

(v)   Regional Faculty Development Hubs to facilitate innovation in research, teaching and practice.

Trajectory of Work towards establishing Social Work Education Network

Through 2012 and 2013 all Schools of Social Work have been consulted. A Social Work Learner's Network with 100 Social Work Institutions as members has been formed. At this stage, in addition to the nation network, Regional Network in each of the five regions has been formed. Each regional network has a Convenor from Nodal Institution to take forward the activities.

(i)   Inception of the SW Leaner's Network

The vision of the Network was seeded with the establishment of a Social Work Education and Practice Cell in 1992. At this time, it continued to provide consistent leadership in the development of social work education in the country through curriculum development, refresher courses for faculty and other need-based capacity building programmes, research and dissemination of knowledge.

In 2005, keeping in view the exigencies in the external environment, the mushrooming of social work educational programmes, self-financed and private colleges and universities offering degrees in social work, the Social Work Education Cell, TISS with the support of the UGC, formed a Steering Committee of Heads of Social Work Education institutions to develop a network of Social Work teaching institutions all over the country with the objective of enhancing quality of social work education and practice.

During the TISS restructuring process in 2004-2006, a School of Social Work was constituted and the work of the cell was gradually absorbed within the overall activities of the School of Social Work; which created a Learning and Teaching Support Network to develop strategies to enhance the quality of Social Work Education and Practice. As part of this, various regional networks of social work programmes were formed and regional and national level consultations organised to work with generating in-depth contemporary Social Work Curriculum, Teaching Pedagogy including Field Work, as well as Research and Training.

(ii)   Establishing the Network

- From September 2011, TISS worked in a more focused way to establish the Network. These were the following outputs that it has generated in the subsequent years.

- A Rapid Assessment of Status of SWE through Regional meetings of Heads of Social Work Departments from the Universities/Colleges was conducted between September 2011 and April 2012.

- The Network nature, purpose and strategies was presented to the Planning Commission in Delhi on the May 29, 2012 and by December 2012, the Minimum Curriculum Framework was developed.

- One key insight that emerged the development of the Minimum Curriculum Framework and the rapid assessment was that an intensive capacity building of Social Work Educators was immediately required, particularly related to the evolution of contemporary theory and practice. To respond to this need, a Working Group has been set up within the School of Social Work at TISS in 2013; and proposed a series of workshop-cum-refresher courses and roundtables that could facilitate the process for the first year (2014-15).

- Regional Networks and Convenors were established and the following activities have been in the period between September 2012 and August 2013 by TISS and the Regional Conveners.

1. National and Zonal Consultations

2. Survey of SWE in India

3. Formulation of the Council of National Network

4. In August 2013, the following pilot institutions were identified :

   o TISS, North Eastern Region Campus at Guwahati

   o Departments of Social Work at Jamia Milia Islamia and Delhi University

   o Loyola College, Chennai

   o National Institute of Social Work and Social Sciences, Bhubaneshwar

   o TISS (Mumbai) and College of Social Work, Mumbai

Simultaneously, the following tasks and processes will be completed to strengthen the network: June to December 2014.

- Undertake Rapid Assessment of Status of SWE through Regional meetings of Heads of Social Work Departments from the Universities/Colleges

- Establish due diligence of institutions to be included in the pilot phase

- Revisit pilot list of social work departments and Social Work Programmes (100 institutions), and conduct Regional Meetings to share with each of these institutions about the way ahead

- Digitise courses, knowledge resources to generate e-learning resources; and create the dissemination model of these courses

- Create an e-platform for imparting basic courses and specialised courses, and for student sharing with peers and experts.

Implementation Timeframe

• **Finalise name for network**	**July 2014**
• **Formalise Streeing Committee**	**July 2014**
• **finalise the list of pilot institutions and review infrastructure available and to be created to deliver the courses by 2015**	**Aug.2014**
• **Working Groups to finalise curriculum and e- content for each of the Module**	**Dec. 2014**
• **Set up e-learning classrooms by Pilot Institutions**	**March 2015**
• **ToT for Teachers of partner institutions**	**4 months**
• **Generate M&E Framework for E- content, infrastructure, Training or Trainers, e- learning sessions**	**March 2015**
• **Social Work Learner's Network operational**	**June 2015**
• **Monitoring, Review, Strengthening, expanding**	**2015- 2017**

II Methodology: Network Operational Strategies

A two pronged strategy (i) focusing on generation of curriculum and course materials; and (ii) creating access to and use of courses by students, and (iii) creating an enabling environment for transforming professional Social Work in the Country.

Establishing the Network
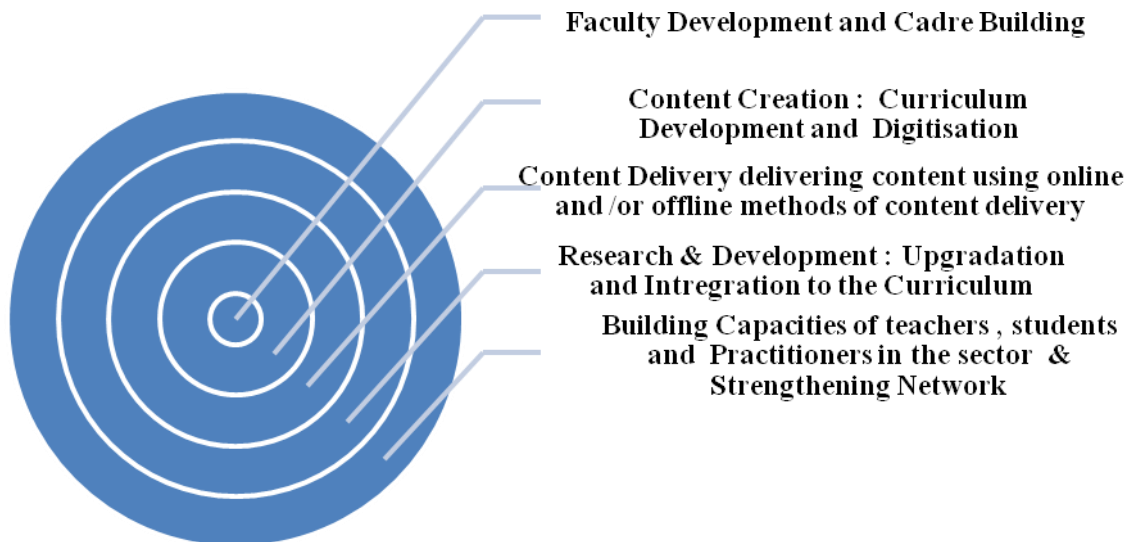
The Social Work Learner's Network shall gear its resources towards five major tasks to achieve the project outcomes.

- Faculty Development and Cadre Building
- Content Creation : Curriculum Development and Digitisation
- Content Delivery through technology enabled platform
- Research & Development : Upgradation and Integration to the Curriculum
- Building Capacities of learners (teachers, students and Practitioners) in the sector & Strengthening Network

Considering that a considerable progress has been made in connecting and collaborating with partner institutions who will be the perspective members of the network, it is essential to note that the network shall anchor three primary functions:

a) **Content Creation:** A team of subject experts including academicians, practitioners, and members of civil society shall be included along with the TISS team in developing and finalising the curriculum.

b) **Content Delivery:** The project shall be delivering content using online and /or offline methods of content delivery in a decentralised model of outreach to education institutes in six regions including Eastern Region, Western Region, Southern Region, Northern Region, North Eastern and Central Region. The project shall focus prominently to create opportunities for the institutions in remote areas to get engaged in the process.

c) **Research and Development:** The project promises to consolidate the learning from

multiple perspectives and realities to the core curriculum of Social Work. Continuous consolidation of learning and creation of resource materials in regional languages will be facilitated through research and development by participating institutions.

d) **Capacity Building of the learners (teachers, students and practitioners in the sector):** The project also creates spaces for engaging with learners from university and practitioners from the sector, it draws in resources and channelise it to build capacity of the professionals contributing to the development sector.

e) **Faculty Development and Cadre Building:** The project proposes to engage in scholarly along with creating a cadre of professionals who would contribute to enhance research, contribute to theory and build on the practice by constantly engaging with the field realities.

2.1. New Generation Professional Social Workers

The Network seeks to build the capacities of both students of Social Work Educational Courses, as well as the existing professionals from *Panchayat* to national level in various government, business and civil society organisations through several courses offered at different levels and specialisations.

The courses to Professionalise Social Work Practice will be aimed at building student capacity as well as capacity building of personnel and professionals from various sectors relevant in the current context to respond to the needs of the various social security programmes and development interventions by the government, civil society organisations and businesses.

2.2 Sustainable Knowledge Creation and Sharing
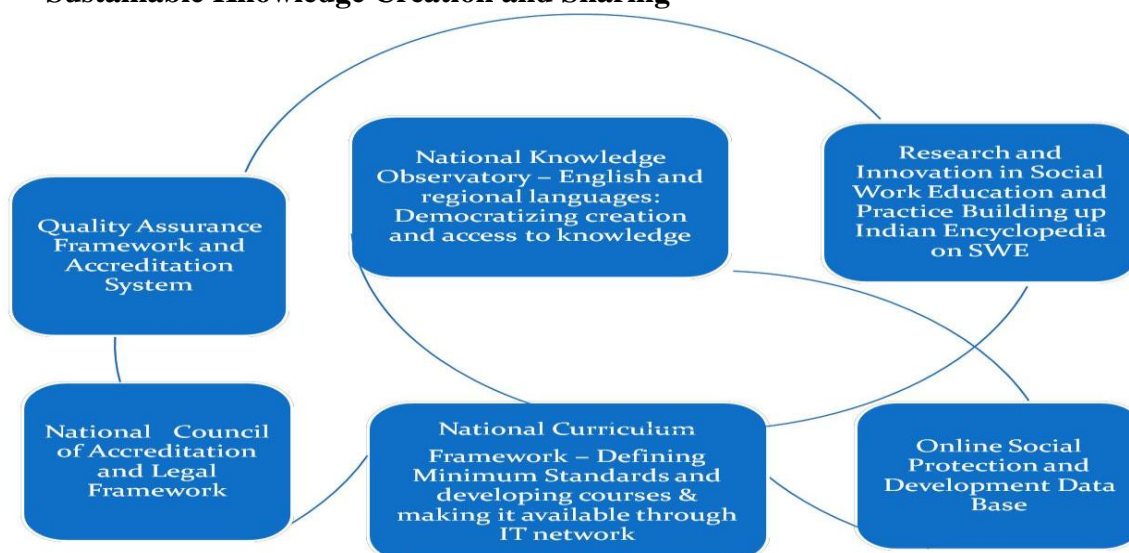
2.3   Conceptual Framework for Social Work Curriculum
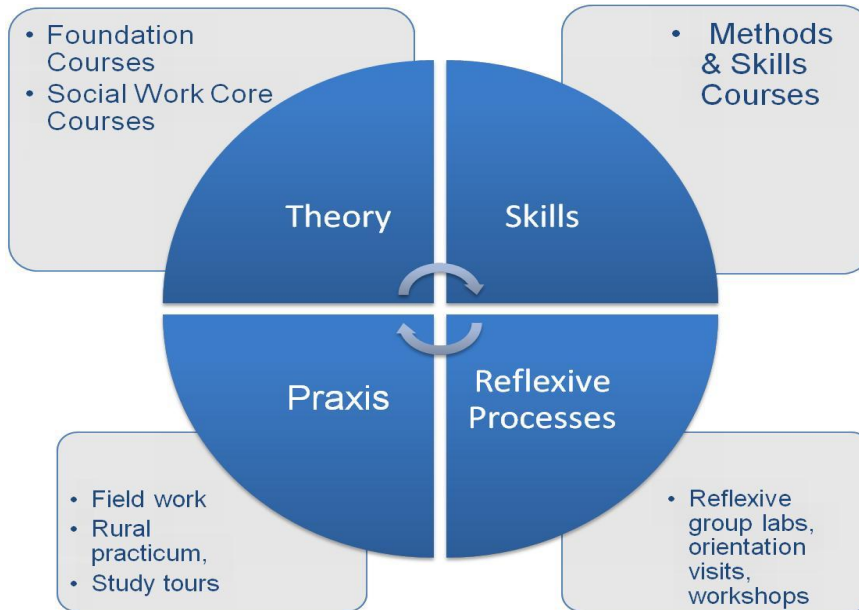
Social Work Learner's Network: Key Strategies
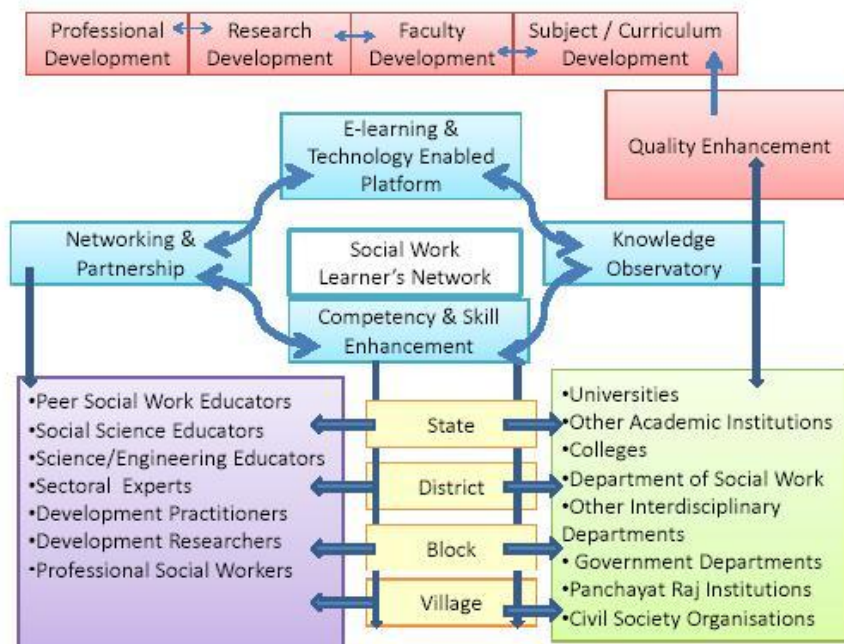
2.4   Student Knowledge Observatory

With the advances made in ICT, it is possible to make available high quality Social Work Education resources in core and diverse subjects, research and praxis (online information, e-learning platforms) for students located in any part of the country. To democratise student access and use of these material, an open knowledge repository will be created that will be networked regionally and nationally. The course material will be digitised, in English and Regional Languages, with a self-learning version, general and specific, to democratise the access and use of knowledge.

2.5   ICT Infrastructure for National Social Work Network

The contribution Information and Communications Technology has been making to improve teaching-learning methods, making education more accessible, increasing outreach is well known. Without doubt, realising a Social Work Network at the national level will be impossible without ICT. Hence having a good ICT infrastructure is important.

The ICT initiatives for SWLN will include:

A) **Media Lab** would be a facility situated at TISS which will gear the following activities :

- Video Recording of Lectures of selected teachers located in institutions across the country.

- The footage collected from the above task will be curetted as short videos and will be mapped to various lessons that are part of social work curriculum.

- Digitising existing courses and transforming them in such a way that online delivery of the courses becomes possible.

- Customise existing MOOC platforms if required

- Provide technical and academic support through online forums.

- Translating course materials into different Indian languages.

- Continuously harvesting and curetting open educational resources required for social work education and publish them on the collaborative platform.

- The media lab will be located at TISS.

- 'The media lab will also host web applications. The lab will customise, develop or use software developed using free and open source software only.

B) Simulation Lab

- The simulation lab will be engaged in designing learning situations to develop student's field practices.

- This will include designing learner interactive platforms with interactive case studies, problem analysis and problem posing exercises and enhancement of spatial skills and visual analytics.

- This will also mean that contextualised and interactive virtual labs and tutorial workshops are designed.

- The simulation lab will be located at TISS.

- The lab will customise, develop or use software developed using free and open source software only.

C) Resource Centers with e-classrooms

- Across the country 180 resource centers will be identified
- One classroom in every resource center will be converted into an e-classroom.
- The e-classroom will be primarily used to remotely train the teachers as well as the students.

2.6 Technology Design and Implementation

The success of the Learners' network will depend on continuous innovation in Technology Design and its implementation. Some of the initiatives in this regard will be

(i) Course Compendiums from Lecture Videos: The lectures by experts at TISS will be video recorded and then converted to reading materials, essays, and course compendiums. These will be then digitised in the context of the six regions and will be provided along with the videos.

(ii) Developing Active Learning (AL) Strategies to Improve Technology Pedagogy and Content Knowledge (TPACK): The Technological Pedagogical Content Knowledge (TPACK) framework will be used to enable the capacities of the Social Work Trainers in applying ICT solutions for problem they face while teaching social work in the class and in the field. Trainers will be offered a blended learning environment,by which they will have access to online portals with different tutorials and examples, with opportunities to meet with different experts at different points of time.

(iii) Designing Learning Situations to Develop Student's Fieldwork Practices: This will include in designing learner interactive platforms with interactive case studies, problem analysis and problem posing exercises and enhancement of spatial skills and visual analytics. This will also mean that contextualised and interactive virtual labs and tutorial workshops are designed.

(iv) Developing Assessment Instruments: This will also include developing appropriate assessment instruments for different course components.

Professionals employed in the project will undertake fulltime research in the above mentioned aspects. Doctoral scholars will be encouraged to take up interdisciplinary projects in this regard.

III and IV   Deliverables Year Wise and its Possible Contribution to Major Objectives of Mission

		Social Work Learner's Network: Deliverables			
Region		**Phase 1 (Year I)**	**Phase 2 (Year II)**	**Phase 3 (Year III)**	**Output: At the end of 3 years**
1. Eastern	**Number of RCs**	6	18 (including 6 RCs from Ist Phase)	36 (including 18 RCs from Ist & II nd Phase)	36
2. Western	**Number of Colleges**	30	90 (30 +60)	180 (90 +90)	180
3. Northern	**Number of Trainers**	100	200	200	500
4. South	**Number of Students**	2000	4000	4000	10000
5. Central	**Academic Writing**	50	50	50	150 - Working Papers / Case Studies / Wiki papers
6. North Eastern	**South Asian Social Work Network**		2 South Asian Countries		

TOTs		**At TISS**	**At RCs**	**At College Clusters**	**# With Resources: 2-35 colleges. The Modules shall be disseminated through TOTs. And e - classrooms**
	Level 1	**November - December**	**January - February**	**June - July**	**## Without Resources: 100-120; Rest of the Colleges where the Modules shall also be disseminated through AKASH Tablets & ToTs for the SW Teachers**
	Level 2	**January - February**	**June - July**	**November - December**	**### Outreach Colleges: 125 approximately**
	Level 3	**June - July**	**November - December**	**November - December**	
Training Domain & Credits		**Foundation Courses** **Perspectives Research Methodology**	**Core Courses Skill-based Courses Research Methodology**	**Fieldwork & Social Innovation Labs**	**Electives shall be offered online only**

National Curricular Framework for Social Work Learner's Network

Courses	Components	Credits	Teaching Hours	Modules	CC/ DTH	Resource Persons	Time Duration for Preparation of TLM
Foundation Courses (FC)	1.1) Introduction to Society: Basic Concepts in Economics, Sociology, Psychology and Political Science.	2	60	5	CC	4	120
	1.2) Understanding Society, Population and Development in the Indian Context	2	60	5	CC	4	120
	1.3) Poverty, Exclusion and Environmental Sustainability	2	60	6	CC	4	120
	1.4) Introduction to India's Development Interventions	2	60	4	CC	3	120
	Total Credit Allotment &Resources	**8**	**240**	**20**		**15**	**480**
Core Courses (SWCC)	2.1) Introductory Courses (IC)						
	2.1.2) History and Philosophy of Social Work	2	60	4	CC	2	90
	2.2) Perspectives				CC		
	2.2.1) Critical Social Theories	2	60	9	CC	4	120
	2.2.2) Development Theories	2	60	6	CC	2	120
	2.2.3) Social Policy and Planning	2	60	7	CC	3	120
	Total Credit Allotment &Resources	**8**	**240**	**26**		**11**	**450**
Methods & Skill-based Courses	3.1) Working with Individuals, Groups and Communities	4	180	12	CC	6	150
	3.2) Advanced Methods of Practice - Social Action and Advocacy, Advanced community Organisation , Conflict Resolution and Transformation	2	60	6	DTH	4	120
	3.3) Tools for Socio- Economic and Institutional Analysis	2	60	4	CC	3	120
	3.4) Project Planning and Management	2	60	5	CC	4	120
	Total Credit Allotment &Resources	**10**	**360**	**27**		**17**	**510**
Research Methodology	4.1) Philosophy and Perspectives of Research	2	60	4	CC	2	90
	4.2) Quantitative Research	2	60	4	CC	2	90
	4.3) Qualitative Research	2	60	4	CC	2	90
	4.4) Mixed Methods	2	60	3	CC	2	90
	4.5) Action Research	2	60	5	CC	3	110
	4.6) Tools and techniques - Dev Info, SPSS, Atlas ti , etc	2	60	5	DTH	3	120
	Total Credit Allotment &Resources	**12**	**360**	**25**		**14**	**590**
Field Work	5.1)Trainers - workshop	NGA		5	CC	3	120
	5.2) Students - Learning Outcomes			5	CC	4	120
	5.2.1) Rural Practicum / camp	NGA					
	5.2.2) Study Tour and exposure visits	NGA					

Courses	Components	Credits	Teaching Hours	Modules	CC/DTH	Resource Persons	Time Duration for Preparation of TLM
	5.2.3) Concurrent Field Work	12					
	5.2.4) Internships / Block Field Work	NGA					
	Total Credit Allotment &Resources	**12**	**450**	**10**		**7**	**240**
Streams (The student can opt any one of the stream)	6.1) Community Organisation & Development Practice	6	180	20	CC	4	240
	6.2) Criminology and Justice	6	180	20	CC	4	240
	6.3) Women Centered Practice	6	180	20	DTH	4	240
	6.4) Disability Studies and Action	6	180	20	DTH	4	240
	6.5) Health and Mental Health	6	180	20	CC	4	240
	6.6) Social Justice and Governance	6	180	20	CC	4	240
	6.7) Social Innovation	6	180	20	DTH	4	240
	6.8) Livelihoods and Social Entrepreneurship	6	180	20	CC	4	240
	6.9) Peace Building and Conflict Resolution	6	180	20	CC	4	240
	6.10) Disaster Management	6	180	20	DTH	4	240
	6.11) Environment&Sustainable Development	6	180	20	DTH	4	240
	6.12) Social Impact Assessment	6	180	20	DTH	4	240
	6.13) Water & Sanitation	6	180	20	DTH	4	240
	6.14) Law and Governance	6	180	20	DTH	4	240
	6.15) Human Rights and Education	6	180	20	DTH	4	240
	6.16) Labour Welfare and collective Action	6	180	20	DTH	4	240
	6.17) Counselling	6	180	20	DTH	4	240
	6.18) Rural Development	6	180	20	CC	4	240
	6.19) Urban Policy and Governance	6	180	20	DTH	4	240
	6.20) Media Studies	6	180	20	DTH	4	240
	6.21) Education	6	180	20	DTH	4	240
	6.22) Child Rights	6	180	20	CC	4	240
	6.23) Livelihoods, Law and Governance	6	180	20	CC	4	240
	6.24) Natural Resource Management	6	180	20	CC	4	240
	6.25) Climate Change & Environment	6	180	20	CC	4	240
	6.26) Financial Inclusion and Peoples Action	6	180	20	CC	4	240
	6.27) Food & Nutrition Security	6	180	20	CC	4	240
	6.28) Decentralisation & Grassroots Planning	6	180	20	DTH	4	240
	6.29) Work & Employment	6	180	20	CC	4	240
	6.30) Maternal & Child Health	6	180	20	DTH	4	240

Courses	Components	Credits	Teaching Hours	Modules	CC/DTH	Resource Persons	Time Duration for Preparation of TLM
	6.31) ICT for Development	6	180	20	CC	4	240
	6.32) Agriculture and Environment	6	180	20	CC	4	240
	Total Credit Allotment &Resources	**6**	**5760**	**640**		**128**	**7680**
Dissertation / Project	7.1) Dissertation or			15	CC	6	450
	7.2) Project Work			15	Contact/ Virtual	6	450
	Total Credit Allotment &Resources	**10**	**330**	**30**		**12**	**900**
		(4+6)	(150 + 180)				
Total		**66**	**7740**	**778**		**204**	**10850**
Therefore, approx. 784 Modules are created by 206 Resource persons shall prepare investing 10940 hours approx							

NOTES

1. **20 Modules (on an average) are required to offer 6 credit of optional stream where each of the optional streams shall require approx. 4 Resource Persons to develop the course. The module preparation shall involve an investment of around 240 working hours from each of the stream.**

2. **Approx. Number of RPs and the approx. time required to compile the Modules per stream.**

3. **Dissertation includes 4 credits for FW and 6 credits for learning and writing Dissertation/ project.**

4. **Field work is calculated on the basis of 1 credit equivalent to 37.5 hours.**

V Details of Permanent Assets to be Procured from the Project with Estimated Cost

Sr. No	Item	No. of Units	Cost/ Unit	Total	Cost to the SWLN
1	Projector	1	50000	50000	25000
2	Projector Screen	1	10000	10000	5000
3	Personal Computer	1	50000	50000	25000
4	Video-camera/Handy-cam	1	25000	25000	12500
5	Tripod	1	3000	3000	1500
6	Video Capture Card	1	13000	13000	6500
7	Wireless MIC	2	15000	30000	15000
8	Audio Mixer	1	15000	15000	7500
9	Amplifier	1	15000	15000	7500
10	Speakers	2	7000	14000	7000
11	Cables and connectors	-	20000	20000	10000
12	UPS and batteries	1	15000	15000	7500
13	Maintenance cost	-	100000	100000	50000
14	Total				180000

Notes: The Technical Equipment cost is contribution based where in the partner institution will bear 50% of the expenditure.

Total cost to SWLN proposed by MHRD (cost for one resource center * 180) : 32400000

Training of Trainers				
S.No	Budget Head	Unit	Unit Cost	Total
1	Travel	500	5000	7500000
2	Accommodation	500	1000	1500000
3	Food	500	500	750000
	Total			9750000

It is estimated that the teachers from the partner institutions shall undergo at least three trainings - TOT during the project cycle of three which will help in building capacities of the teachers, contextualising the curriculum and build in a cadre of professionals to support the project outcomes.

VI Year-wise Details of Financial Outlay for Recurring and Non-Recurring Funds

Project Management Team

Head	No.	Unit Cost	Year I	Year II	Year III	Total
Project Co-ordinator	1	120000	1440000	1443600	1483308	4366908
Programme Manager	1	100000	1200000	1236000	106000	2542000
Program Officers	2	60000	1440000	1483200	1526400	4449600
Programme Assistants	10	40000	4800000	4944000	5088000	14832000
Administrative and Accounts officers	3	30000	1080000	1112400	1144800	3337200
Senior System Administrator	1	80000	960000	988800	1017600	2966400
Junior System Administrator	3	60000	2160000	2224800	2289600	6674400
Attendant / Support Staff	2	10000	240000	247200	254400	741600
Total						**3,99,10,108**

Creation of Knowledge base in regional languages

1.	**Support to partner universities and institutions to develop knowledge base in new streams in social work, development, field immersion practices**	50	300000	**1,50,00,000**
2.	**Research team to create Social Work encyclopaedia**	10	30000	**1,25,20,000**
Total cost				**2,75,20,000**

Total Budget for the Social Work Learner's Network

Task	Unit Cost	Year	Number of Units	Cost
	31300	2014-15	2000	62600000
1. Content Creation and Digitisation		2015-16	2000	62600000
		2016-17	470	14711000
2. Content Delivery				
2.1 Creation of E-Classrooms	180000	2014-15	30	5400000
		2015-16	60	10800000
		2016-17	90	16200000
2.2 Tablets	6000	2014-15	500	3000000
3. Training of Teachers from the colleges and universities	15,00,000/ Regional Centre	2014-15	5	75,00,000
		2015-16	5	7500000
		2016-17	5	7500000
4. Core Team of Specialists and system functionaries located in Mumbai and travelling to 5 regional centres and colleges		2014-15		1,00,00,000
		2015-16		1,00,00,000
		2016-17		1,69,10,108
5. Core Research Team Team to create new knowledge base and consolidate knowledge base for encyclopaedia of Social Work		2014-15		7500000
		2015-16		10000000
		2016-17		12500000
6. Consumables: (Stationary , cartridges, communication charges)		2014-15		1000000
		2015-16		2000000
		2016-17		2000000
7. Total 1 to 6		2014-17		269721108
		2014-15		97000000
		2015-16		102900000
		2016-17		69821108
8. Administrative Charges - 10% of (7)		2014-17		2,69,72,110
		2014-15		9700000
		2015-16		10290000
		2016-17		6982110
9. Audit fees - 1% of (8)		2014-17		26,97,211
		2014-15		970000
		2015-16		1029000
		2016-17		698211

11. TOTAL 2014-17 29,93,90,429

Social Work Education Network Proposal: Submitted by TISS

VII   Management of Deliverables & IPR etc.

All modules developed, reviewed, approved by the Academic Council of TISS made available in digitised form will be in public domain. The NMEICT's Policy on IPR will be applicable to the resources developed and knowledge generated.

VIII   Justification of the Projection with Clear cut Statement about Outcomes if the Project Contributing to Mission Objective

Social Work Education Knowledge Network promises to create world-class knowledge base and theories indigenously developed and deployed to facilitate progress and development all people. The quality social work education needs to be enhanced substantially:

- Social Work graduates with limited knowledge and skills and largely unemployable in the social sector

- Acute shortage of good quality teachers in Schools of Social Work across the country.

- This problem is compounded by rent seeking form of commercialisation of social work education without adequate teaching – learning provisions

- This problem is compounded by incompatible and poor quality distance education leading to poor quality graduates

- Expansion of social work educational institutions without a regulatory body – National Social Work Council

This initiative proposes to address all these issues:

- Development of knowledge modules having the right content to take care of the aspirations and to address to the personalised needs of the learners located in different social, economic, political and geographical contexts with varied levels of access to quality teaching – learning materials and resources;

- Research in the field of pedagogy for development of efficient learning modules for disparate groups of learners;

- Standardisation and quality assurance of contents to make them world class;

- Building connectivity and knowledge network among and within institutions offering Social Work and Social Sciences Education with a view of achieving critical mass of teachers, researchers and professional social workers;

- Create and make available e-knowledge contents, free of cost to all Indians and all forms of institutions;

- Spreading digital literacy for teacher empowerment

- Experimentation and field trial in the area of performance optimisation of low cost access/devices for use of ICT in education;

- Providing support for the creation of virtual knowledge depository accessible to all;

- Creation of National Council of Social Work Education to ensure quality in education and ethical practice. Create, test and certify competencies of the human resources acquired either through formal or non-formal means and the evolution of a legal framework for it; and

- Developing and maintaining the database with the profiles of teachers, trainers, practitioners in service of furthering Social Work and Social Development Education.

IX   Strengthening Social Work Education

The resources created and network established are meant to strengthen Social Work Education through Universities and Colleges. This would strengthen access to and availing of quality Social Work Education at the Under-Graduate, Post Graduate and doctoral levels and open up knowledge base for all.

One of the most important services from the knowledge network is the interface with a few million existing personnel in the Social Sectors.

The key sectoral courses will include the following themes: Panchayat Raj Institutions, Rural Development and Governance, Education, Child Rights and Women Empowerment, Disability Studies, Water and Sanitation, Employment and Livelihoods, Public and Mental Health, Law, Conflict and Society etc.

For the courses offered to existing development professionals, TISS will establish a Social Work Consortium drawn from the Social Work Network to prepare and standardise course curricula. In the Pilot Phase, TISS would design and coordinate the number and nature of courses. For this, universities and colleges, in addition to their regular student courses, will offer accredited courses through contact and online mode to Social Sector Personnel at various levels.

Stages of Course Competencies

- The courses will foster inner wisdom, build competencies and skills in three levels of personnel and professionals.

- At the Grassroots Level, capacity building of community workers will focus Principled Action, Soft Skills, and Digital and financial literacy.

- At the Block Personnel Level(interfacing with College Clusters), professional capacity building will focus on Principled Action, Programme and Project Planning and Implementation.

- At the District Level (interfacing with Resource Centres), professional capacity building will focus on Principled Leadership; Strategy and Management of Projects; Monitoring, Evaluation and Review; and Programme Convergence for Impact.

- At the State Level, (interfacing with the Hub at TISS) professional capacity building will focus on Principled Stewardship, Identification of Key Strategic Interventions; Review of Action.

In addition, qualifying students can also apply to specific specialisations to attend courses in any of the Social Sector areas to gain Certificate / Diploma / degree.

X   Management and Review Systems
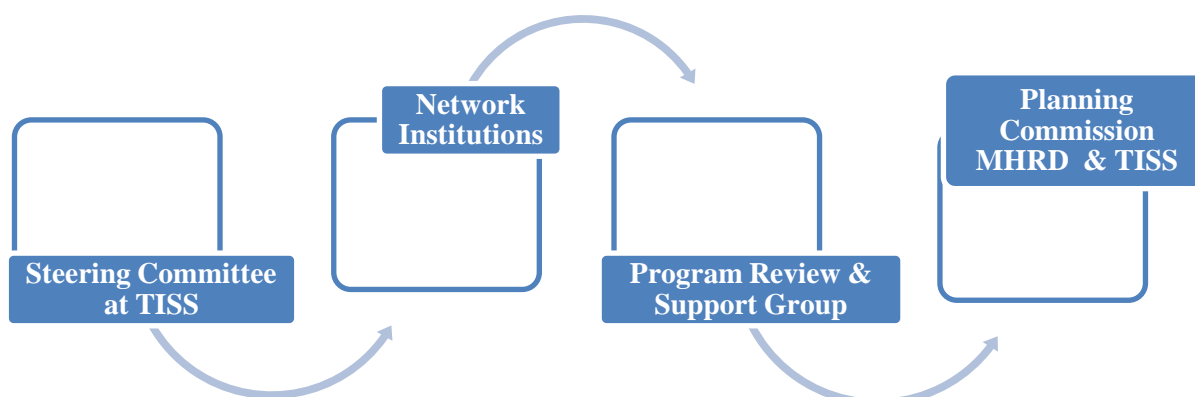
10.1 Steering Committee at TISS

TISS will constitute a program steering committee consisting of 11 faculty experts who will engage in the process of activating partnerships; anchoring project activities in the institute; co-ordinate with the members of partner institutions; collaborate with external experts, practitioners and members from civil society to strengthen the network and contribute to make it inclusive. The Steering committee will share a monthly report on the progress made towards the various activities of the project. The committee will have at least one meeting bimonthly to review the process, gear the areas which need support and initiate proactive measures towards achieving the project outcomes.

10.2 Network Institutions

In the context of building partnership and collaborative efforts, TISS has already initiated the processes of engaging with institutions which are working on curriculum and shall be partners in delivering the courses. The Steering committee at TISS will manage the partnership with the network institutions. The regional conveners of the network who would also include representatives from partner institutions shall be instrumental in anchoring the process in co-ordination with the steering committee at TISS to engage in curriculum consolations, content delivery, capacity building of educators, collaborative research and updating and contextualising of curriculum. The operational strategies shall be constantly modified and contextulise based on suggestions and feedback from the network institutions to make the process inclusive.

10.3 Program Review & Support Group

TISS shall also form an 11 member Program Review & Support Group (PRSG) team which will include five members nominated by TISS and six external members who will be eminent scholars, practitioners and members of civil society who would be reviewing the project progress and shall support with constructive suggestions to take the process forward.

10.4 Planning Commission, MHRD & TISS

A quarterly update shall be shared with Planning Commission, Ministry of Human Resource and Development (MHRD), Government of India (GoI) MHRD. Reports of the PRSG will also be shared.

10.5 Other Institutions and Government Departments

The project shall also collaborate with other institutions like Indian Institute of Technology (IIT) Mumbai, IRMA. The project shall also engage with Government Departments to strengthen efforts towards sectoral support to professionals.

A full time project team shall be engage to operationalise the content delivery and manage the project activities to achieve the desired outcomes.

10.6 Monitoring and Evaluation Processes

Since the social work network is spread across the country, there will be need for an MIS to keep track of the trainers, resource centers, students, finance and accounts etc.

The **Project Review and Support Group (PRSG)** will be reviewing the progress on the planned activities on quarterly basis to gear the process towards desired outcomes.

XI   Establishing Standards of Excellence in Social Work Education: Arrangements for Quality Control.

11.1   Varied Ownership

The Network will be established as a constellation; with varied ownerships by different Social Work Institutions that work together in a democratic manner. The members of these Constellations include the following:

- Departments of Social Work at the State funded Universities and affiliated colleges (aided and private)

- Departments of Social Work at Central Universities and Centrally funded institutions

- State Government funded Social Work Institutions

- Departments of Social Work located in Medical Institutions

- Courses of Social Work taught in Social Science Departments in a State or Central University

- Social Work degree offered by Open Universities

- Private & Deemed Universities.

11.2   Social Work Education Council

The Social Work Council will be accountable to the Network Members; and will work with all stakeholders at the Centre and in the States to establish the Accreditation and Quality Strengthening Framework for Social Work Course Curriculum Development and Administration. With a focus for continuous improvement in quality to remain responsive and consistent, it will prepare a Quality Assurance Framework and Accreditation System.

11.3   National Curriculum Framework in Social Work

The Network will develop the National Curriculum Framework in Social Work for creating social sector professionals at all levels. A Draft National Curriculum Framework that defines Minimum Standards and Course Development was developed in December 2012 through groups constituted to for each component of the framework. Concurrently the Course Curriculum Framework for Social Work Learner's Network will be reviewed and finalised in concurrent workshops in April 2014.

Thus, a National Curriculum Framework in Social Work for Learner's Network and course materials for each of the courses will be ready by June 2014. Thereafter the framework, course outlines and reading materials will be digitised.

11.4   Partnerships for Course Delivery

The learner's network will foster national and regional partnerships with various Social Work Education Institutes (Universities and Colleges) to build course generation and delivery capacity; as well as take responsibility to generate and implement relevant courses to build capacity building of Social Sector personnel and Teachers; to meet the increasing demand for professional Social Workers.

In the Pilot phase, Universities and colleges will partner with TISS and select institutions in six regions of the country - North-East, North, East, West, Central and South India - for administration of varying courses.

The teachers at each of the 100 institutions included in the network will facilitate offering of courses in remote classrooms and learning through tutorials after the lecture. All local teachers will be introduced to the curriculum framework and content of the courses to enable them to facilitate learning as well as to provide inputs into the courses based on local realities.

11.5   Faculty Development Centre

Faculty Development Centre in Social Work Education in each of the five Regional Hubs

(1). North – East: TISS Guwahati Campus; 1. North – Jamia Milia Islamia and Delhi University; 3. East - National Institute of Social Work and Social Sciences, Bhubaneswar; 4, West – TISS, Mumbai; South – Loyala College, Chennai) will be developed to foster Social Work Educators with integrity and competence. The FDC will ensure capacity building of teaching professionals to generate and administer courses in topics that are relevant to local and global realities.

It will generate a digital platform at the University / College Level to train teachers of Social Work. Their learning will be facilitated by specially trained teachers from within and outside the university system. In addition, it will conduct Refresher Courses and Training of Teachers (ToT); through a blended approach of live and e-learning.

11.6 Research and Development Cell

The Network will constitute a Research and Development Cell for continuously generate research, knowledge and course resources to inform innovation and capacity building in Social Work Education and Practice with following outputs:

• Generation of an Indian Encyclopedia of SWE

• Undertaking research to inform social sector policy development and change, and inform Social Work curriculum

• Maintain an online Social Protection and Development Database

11.7 Communities of Professional Excellence

To establish communities of good practice, networking with various Social Work Education and other institutions will be undertaken through generative and results based consultations at the national, regional and state level to address specific SWE concerns. To begin with a database of all learning and research materials generated by Schools of Social Work in the country.

11.8 Review Mechanism

Frequency of review - Quarterly

Reviewers Suggested

1. Dr Anjali Gandhi
Professor of Social Work,Deptt. of Social Work,
Jamia Millia Islamia, New Delhi-110025
011 26985178 agandhi@jmi.ac.in

2. Prof. Aruna Khasgiwala,
Faculty of Social Work
M S University, Fatehgunj, Vadodara - 390002.
Telephone : 0265-2791411, Fax : 0265 – 2794212,

3. Dr. Gautam N. Yadama
Professor, George Warren Brown School of Social Work
Director of International Programs
Washington University, St. Louis

4. Dr. Vandana Chakraborthi
Pro Vice Chancellor and Professor of Social Work
SNDT Women's University,
Churchgate, Mumbai 400 001

5. Dr. Geeta Balakrishnan
Professor of Social Work and Principal
College of Social Work, University of Mumbai, Churchgate, Mumbai 400 001

6. *Dr. Kannan*
Professor, Indian Institute of Technology Bombay

7. Dr Deepak B Pathak
Professor, Department of CSE, IIT Bombay,
dbp@cse.iitb.in, dbp@iitb.ac.in, 022 25767747

8. Dr. Janak Pandey
Professor of Psychology, Allahabad University

9. Dr. Abey Pathey
Professor of Economics, Institute of Economics
Mumbai University, Kalina Campus,

10. Dr. Deep Joshi
Chairman, Institute of Rural Management
Anand 388001. 02692 - 260 391 / 260 181; Fax: 02692 - 260188

11. *Dr. Lise Grande,*
UN Resident Coordinator and UNDP Resident Representative
United Nations Development Programme (UNDP)
55 Lodhi Estate, New Delhi 110 003
Tel: 91 11 46532333. Fax: 011 24627612; Email: lise.grande@undp.org

12. Ms. Frederika Meijer
UNFPA Representative, 55 Lodi Estate New *Delhi* 110003, 011 46532224.
Fax: 011 24628078

ANNEXURE 1

Research/Other Projects

Title of Project	Sponsor	Date of Sanction/ Commencement	Present Position	In-Charge
CENTRE FOR COMMUNITY ORGANISATION AND DEVELOPMENT PRACTICE				
Department Research Support on Poverty, Marginalisation and Forced Migration	University Grants Commission (UGC)	Jun. 2009	Completed	Prof. Mouleshri Vyas, Prof. Manish K. Jha an Prof. H. Beck
Traversing Bihar: Politics of Social Justice and Development	Research Council, TISS	Mar. 2012	Completed	Prof. Manish K. Jha an Prof. Pushpendra Kum Singh
Social Innovation and People Centred Development	University of Roskilde	Apr. 2012	Initiated	Prof. H. Beck
Good Practices in Overcoming Deprivation in India and London	UK India Educational Research Initiative (UKIERI) – British Council	Jun. 2012	Report Writing	Prof. Manish K. Jha
Educational Status of Scheduled Tribes: Achievement and Challenges in Chhattisgarh	ICSSR- Delhi	Jun. 2012	Ongoing	Mr. H. Beck
CENTRE FOR CRIMINOLOGY AND JUSTICE				
Evaluation of Magic Bus C4C Programme	Magic Bus India	Aug. 2012	Report Writing	Dr. Ruchi Sinha
Making Street Children Matter: A Study of Mumbai City	Action Aid India	Nov. 2012	Completed	Prof. Vijay Raghavan, Dr. Asha Mukundan, Dr. Ruchi Sinha, Ms. Roshni Nair, and Ms. Sharon Menezes
A Study of Minority Communities Among the Nomadic and De-notified Tribes in Maharashtra	Research Council, TISS	Apr. 2013	Report Writing	Prof. Vijay Raghavan
CENTRE FOR DISABILITY STUDIES AND ACTION				
Mental Health Problems in Leh District	Research Council, TISS	Mar. 2011	Report Writing	Dr. Srilatha Juvva
Constructing Disability as an Identity	Global Grant University of Minnesota	Jan. 2014	Onging	Dr. Sandhya Limaye
Micro Level Planning of Disability in M-Ward	Research Council, TISS	Jan. 2014	Ongoing	Dr. Vaishali Kolhe
CENTRE FOR ENVIRONMENT, EQUITY AND JUSTICE				
Marginal Populations, Social Mobilisation and Development	British Council	Jan. 2012	Report Writing	Dr. Suryakant Waghmore
Socioeconomic Status of Katkaris in Maharashtra	Rest of Maharashtra Development Board	Jun. 2013	Report Writing	Dr. Suryakant Waghmore
CENTRE FOR EQUITY FOR WOMEN, CHILDREN AND FAMILIES				
Quest for Justice: A Study on Implementation of Protection of Women From Domestic Violence Act 2005	Ministry of Women and Child Development , Govt. of India	Nov. 2011	Completed	Ms. Trupti Panchal

Title of Project	Sponsor	Date of Sanction/ Commencement	Present Position	In-Charge
A Study of 'Assurance Letters': An Assessment of the Strategy at Special Cells	TISS and Govt of Maharashtra	Jun. 2012	Completed	Ms. Anjali Dave
Trends in Consumer Protection and Awareness with Special Reference to Insurance and Health Services: A Study of Surat City and its Surrounding Areas	Ministry of Consumer Affairs, New Delhi	Jul. 2012	Ongoing	Prof. B. Devi Prasad
SARASWATI: Waste Water Treatment and Re-use Technologies	DST and EU	Jan. 2013	Initiated	Ms. Josephine Anthor
Developing Field Capacity for Management of Gender Based Violence in Humanitarian and Fragile Contexts in the Asia-Pacific Region	APRO, UNFPA	Mar. 2013	Completed	Ms. Anjali Dave
State Perspective Plan and Implementation Plan-NRLM, Chhattisgarh, Social Exclusion and Mobilisation Patterns: Strategies for Inclusion and Livelihood Innovation (A Gendered and Intersectional Perspective)	Govt. of Chhattisgarh	Apr. 2013	Ongoing	Dr. Shewli Kumar
Changing City, Changing Forms of Violence: Non-domestic Intimate Relationships Forming and Violating Women's Aspirations for Autonomy in Urban Life: A Study of the Experiences of Special Cell in Mumbai City	TISS, Max Plank Institute and Pukar	May 2013	Ongoing	Ms. Anjali Dave
Gender Audit of Navsarjan	Christian Aid and Navsarjan	Jun. 2013	Completed	Dr. Shewli Kumar
Ageing, Art and Well-Being: Older Adults Associated with a Voluntary Arts Promotion Program	SECAM	Jul. 2013	Ongoing	Dr. Samta Pandya
Social Audit of YMCA, Andheri	YMCA	Aug. 2013	Report Writing	Dr. Samta Pandya
Maharashtra State Rural Liveli-hood Mission—Thematic Area: People's Institutions for Liveli-hood Promotion and Strategies for Social Mobilisation (A Gen-dered Approach) & Child Labour in Maharashtra: Implications for Maharashtra Rural Livelihood Programmes	Govt. of Maharashtra	Aug. 2013	Ongoing	Dr. Shewli Kumar
Life After Retirement for Highly Qualified Professionally Achieving Women	Research Council, TISS	Sep. 2013	Ongoing	Dr. Samta Pandya
Assessment and Implementation of PESA in Schedule-V Areas: A Study of Six States	ICSSR, and Min. of HRD, Govt. of India	Sep. 2013	Ongoing	Prof. B. Devi Prasad

Title of Project	Sponsor	Date of Sanction/ Commencement	Present Position	In-Charge
CENTRE FOR HEALTH AND MENTAL HEALTH				
Departmental Research Support, UGC-SAP	UGC	Feb. 2011	Ongoing	Prof. Surinder Jaswal, Prof. Shubhada Maitra Dr. Ashabanu Soletti Ms. Brinelle D'Souza Ms. Ketki Ranade, Dr. Mitu Pathak and Dr. Subharati Ghosh
Gender Equity Movement in Schools: Advocacy and Scaling up in Mumbai	ICRW, New Delhi	Sep. 2011	Ongoing	Prof. Shubhada Maitra
Understanding Familial Responses to their Adult Gay and Lesbian Sons and Daughters	Research Council, TISS	Feb. 2012	Completed	Ms. Ketki Ranade
Internet-based HIV prevention for MSM in India	NIH-ICMR	Jun. 2012	Ongoing	Dr. Ashabanu Soletti
Evaluation of Magic Bus C4C Programme	Magic Bus India	Aug. 2012	Report Writing	Dr. Ashabanu Soletti
Developing Field Capacity for Management of Gender Based Violence in Humanitarian and Fragile Contexts in the Asia-Pacific Region	APRO, UNFPA	Mar. 2013	Completed	Prof. Shubhada Maitra
Divorce Trends in Mumbai and Thane	Bombay Community Public Trust, and TISS	Jul. 2013	Ongoing	Prof. Shubhada Maitra
A Mixed Method Study of Caregiving For Older Adults in India	Global Spotlight International Research Seed Grant, University of Minnesota, Twin Cities, USA	Jan. 2014	Initiated	Dr. Subharati Ghosh
CENTRE FOR LIVELIHOODS AND SOCIAL INNOVATION				
Department Research Support on Poverty, Marginalisation and Forced Migration	UGC–DRS	Jun. 2009	Completed	Dr. Swati Banerjee
Early Warning Systems in Disaster Risk Reduction: A Study on the Role of Local Knowledge among Coastal Fishing Communities in Kerala	ICSSR	Sep. 2011	Completed	Dr. Sunil Santha
State Perspective Plan and Implementation Plan-NRLM, Chhattisgarh, Social Exclusion and Mobilisation Patterns: Strategies for Inclusion and Livelihood Innovation (A Gendered and Intersectional Perspective)	Govt. of Chhattisgarh	Apr. 2012	Ongoing	Dr. Swati Banerjee, Dr. Sunil Santha, and Ms. Arti Upadhyay
Social Innovation and People-Centred Development in the Global Knowledge Economy	Danish Agency for Science, Technology and Innovation, Denmark	Jul. 2012	Ongoing	Dr. Swati Banerjee and Dr. Sunil Santha

Title of Project	Sponsor	Date of Sanction/ Commencement	Present Position	In-Charge
Jammu and Kashmir State Disaster Management Plan	Govt. of Jammu and Kashmir	May 2013	Ongoing	Dr. Sunil Santha
Vulnerability and Livelihood Strategies of Natural Resource Dependent Communities	UGC–DRS	May 2013	Report Writing	Dr. Swati Banerjee and Dr. Sunil Santha
The Uttarakhand Disaster: Impact Assessment Report	Himmotthan	Jul. 2013	Completed	Dr. Sunil Santha
FP 7: Social Innovation — Driving Force of Social Change	European Union	Jan. 2014	Initiated	Dr. Swati Banerjee and Dr. Sunil Santha
Profiling and Conceptualising Social Enterprises: A Study on Sustainability, Innovation and Change-making Strategies in Mumbai	TISS-MPI Fellowship	Mar. 2014	Ongoing	Dr. Sunil Santha
Right Livelihood	Right Livelihood College	Apr. 2014	Initiated	Dr. Swati Banerjee and Dr. Sunil Santha
Jammu and Kashmir State Rural Livelihood Mission	Govt. of Jammu and Kashmir	Apr. 2014	Just initiated	Dr. Swati Banerjee and Dr. Sunil Santha

CENTRE FOR SOCIAL JUSTICE AND GOVERNANCE

Title of Project	Sponsor	Date of Sanction/ Commencement	Present Position	In-Charge
Quest for Justice: A Study on Implementation of Protection of Women From Domestic Violence Act 2005	Ministry of Women and Child Development , Govt. of India	Nov. 2011	Completed	Ms. Monica Sakhrani
Marginal Populations, Social Mobilisation and Development	British Council	Jan. 2012	Report Writing	Dr. Bipin Jojo
Educational Status of Scheduled Tribes: Attainment and Challenges in Maharashtra	ICSSR	Mar. 2012	Report Writing	Dr. Bipin Jojo
Good Practices in Overcoming Deprivation in India and London	UKIERI – British Council	Jun. 2012	Report Writing	Dr. Bipin Jojo
A Study of the History of the Democratic Rights Movement in Mumbai	Max Planck Urban Aspirations Project	Mar. 2013	Ongoing	Ms. Monica Sakhrani
Situating Violence Against Women Within Gender System: A Study Among the Tribes of North East India (Assam, Arunachal Pradesh, Manipur and Meghalaya)	ICSSR	2013-04-01	Ongoing	Dr. Alex Akhup and Mr. Biswaranjan Tripura
Socioeconomic Status of Katkaris in Maharashtra	Rest of Maharashtra Development Board	Jun. 2013	Report Writing	Dr. Bipin Jojo
Pardhis in Maharashtra	BARTI	Jul. 2013	Completed	Dr. Bipin Jojo
In the Name of Law: A Study of Terror Cases	TISS	Sep. 2013	Ongoing	Ms. Monica Sakhrani
Status Report on the Girl Child in India	Save the Children	Sep. 2013	Ongoing	Ms. Monica Sakhrani

Title of Project	Sponsor	Date of Sanction/ Commencement	Present Position	In-Charge
INCUBATION OF SOCIAL WORK INITIATIVES				
Departmental Research Project, Poverty, Marginalisation and forced Migration	UGC	Jun. 2009	Ongoing	Prof. Surinder Jaswal
Departmental Research Project	UGC	Apr. 2012	Ongoing	Prof. Surinder Jaswal
SOUTH ASIA CENTRE FOR STUDIES CONFLICT PEACE AND HUMAN SECURITY				
Department Research Support on Poverty, Marginalisation and Forced Migration	UGC	Jun. 2009	Ongoing	Prof. P.K. Shajahan
Conflicts, Development and Livelihoods among Dal communities in Srinagar, Kashmir, India	UGC	Apr. 2012	Completed	Prof. P.K. Shahjahan
Good Practices in Overcoming Deprivation in India and London	UKIERI	Aug. 2012	Completed	Prof. P.K. Shahjahan
Social Innovation and People-Centred Development	University of Roskilde	Apr. 2013	Initiated	Prof. P.K. Shahjahan and Dr. Farrukh Faheem
International Comparative Research on Social Enterprises Models (ICSEM)	EMES - European Research Network on Social Enterprises	Jun. 2013	Initiated	Prof. P.K. Shahjahan

Publications

CENTRE FOR COMMUNITY ORGANISATION AND DEVELOPMENT PRACTICE

Prof. Manish K. Jha

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- Peace, Justice and Governance. In R. Samaddar (Ed.), *Government of Peace: Social Governance, Security, and the Problematic of Peace*, London: Ashgate, 2014. (co-author)

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Prof. Pushpendra Kumar Singh

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CENTRE FOR CRIMINOLOGY AND JUSTICE

Dr. Asha Mukundan

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Ms. Sharon Menezes

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Prof. Vijay Raghavan

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CENTRE FOR ENVIRONMENT, EQUITY AND JUSTICE

Dr. Suryakant Waghmore

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CENTRE FOR DISABILITY STUDIES & ACTION

Dr. Srilatha Juvva

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Ms. Anjali Dave

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Prof. B. Devi Prasad

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Establishing Social Work Education Network on Behalf of the Schools of Social Work in the Country

Financial Due Diligence - KPMG Report

November 2014

Social Work Education Network (SWLN) - TISS
Project Background

Project Need	The nature of Social Work education has normally been consistent with development stage of the concerned nation. The number of Schools of Social Work has increased from 40 in 2000 to 300 in 2014. These institutions lack qualified teachers, quality teaching – learning materials, and the quality of graduates is generally poor. It is in this context, there is urgent need to develop a framework to improve quality of Social Work education in the country. Thus, the SWLN aims to fundamentally transform Social Work Education by establishing professional standards of Social Work Practice; and by generating and building capacities of various actors in the Social Work Education sector including Universities and Colleges, Teachers and Students.
Proposed Benefits	• Creating fresh cadres of professionals graduating with nationally accredited certificate, diploma, under-graduate, post-graduate and research programs using indigenously developed cutting edge curriculum and practice in Social Work; and • Building capacities of existing professionals in Social Sector from panchayat to national level to address immediate conditions of poverty and deprivation in a principled, strategic and results based manner, work towards building a just and inclusive society.
Project Scope	• Develop the National Curriculum Framework in Social Work; • Establish a Knowledge Hub to share knowledge and learning resources – students located in any part of the country; • Use e-network for sharing of knowledge and learning resources. • Create a Quality Assessment and Accreditation Framework for Social Work Education and guidance service to students • Regional Faculty Development Hubs to facilitate innovation in research, teaching and practice.
PI	Dr. S. Parasuraman (PI), Prof. Aarti Upadhyay (Co – PI)
Project Duration	1 Year

Budget	Proposed Budget for Year 1	Revised Budget for Year 1
	INR 10.76 Cr	**INR 9.45 Cr**

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
ICT Infrastructure – (MOOCs Platform)	■ The program proposes to leverage open source EdX **MOOCs platform** to develop, digitize and disseminate curriculum for social sector education. ■ The program will establish a Knowledge Hub to share knowledge and learning resources – students located in any part of the country; and use e-network for sharing of knowledge and learning resources.	■ There are few other proposals related to MOOCs based education imparting to provide access and quality to students (and practitioners) across country (for ex: IITB – India MOOCs, NITTTR Kolkata IFL Project, etc.) ■ NMEICT should evaluate whether an integrated cloud based platform (or at least a reference architecture) should be developed to eliminate the need for multiple silo platforms. With this approach the focus should be more on course content and delivery. This will also ensure standardization of course delivery and infrastructure.
Budget Management (Course Creation)	■ On a recommended budget of INR 31,000 per 1-hour module, the total proposed budget (content creation and delivery) is driven by a **multiplier** based on number of hours/units (2000) in scope (for Year 1)	■ At planned milestones, NMEICT should review the project output (modules + quality) to ensure actual output and resulting budget consumption alignment, as content creation is a major cost component in addition to manpower.
Manpower	■ A team of 23 resources has been identified for platform development and maintenance, with the entire team required full-time.	■ As manpower cost makes up for the largest budget component, it is recommended that NMEICT should publish guidelines on remuneration based on industry standards. ■ **Similar for Travel, Consumables, Contingency, Audit, Operational Costs etc**.

Social Work Education Network- TISS
Project Financials

Budget Breakup for Year 1 (INR Lakhs)			
# Component	Proposed Budget	Revised Budget	KPMG Comments
1 **Content Creation and Digitization**	626	620	■ Content creation for 2000 hours realigned to the NMEICT approved rate of **INR 31,000 per hour** (refer CEC)
2 **Creation of e-Classrooms at Partner Institutions**	54	54	■ Cost includes the e-classroom setup (Technical Equipment Cost) at Partner Institutions (**30 in Year 1 @ INR 1,80,000**). KPMG performed a market assessment for the market price and found it aligned to proposed budget. ■ Rationalized Cost elements with proper expenditure budget classification
3 **Tablets (for Teachers)**	30	6	■ While the original proposed budget accounted for purchase of all 500 tablets in Year 1, only 100 tablets are needed in Year 1 (**@ INR 6,000/ tablet**), ■ As no formal Akash procurement policy (including on subsidy exists, KPMG performed market assessment and found Aakash tablet (7Cz) with reasonable specifications available) at **INR 3,999/ tablet**. Any accessories shall be covered as part of consumables. ■ While the revised budget calculates the tablet budget at INR 6,000/tablet, KPMG recommends that an Akash tablet with required specifications can be procured at ~INR 4,000 to 4,500/tablet (not including any further subsidy) that may be available *(see attached slide)*
4 **Training of Teachers (Train the Trainer)**	75	19	■ Budget rationalized in line with the number of teachers planned for training in Year 1 (100 Teachers x INR 19,000/ teacher) ■ Expenses relating to accommodation, travel and food as per UGC- MHRD, GoI norms

Social Work Education Network- TISS
Project Financials

#	Component	Proposed Budget	Revised Budget	KPMG Comments
5	**Core Team**	100	100	■ Core Full-time team of 23 resources for platform development and maintenance ■ KPMG feels that the proposed remuneration (based on job description) is on the **higher side** of the industry standards. Based on inputs from KPMG IT Advisory and other NMEICT proposals using similar technology/ location, KPMG has recommended to TISS, <u>however, at this time the original proposed rates have been used in the revised DPR.</u> ■ Please refer to the attached slide on KPMG's recommendations on remunerations
6	**Knowledge base and Encyclopedia**	75	48	■ Budget rationalized in line with the number of partner institutes and courses planned for language translation in Year 1 (10 Institutions and 1 Course)
7	**Consumables**	10	10	■ Consumables include stationary , cartridges, communication charges, mini storage devices
8	**Administrative Charges (Operational Costs)**	97	79.7	■ Original budget computed costs at a flat rate of 10% on overall Project budget ■ Rationalized to compute operational costs on **relevant cost items only**
9	**Audit fees**	9.7	8.57	■ Adjusted calculation error, which was computing audit fee as 10% of Administrative Fee instead of 1% as is stated in the DPR ■ Revised budget, however, changed the basis of estimates for the audit fees (now 1% of total Project Cost), vis-à-vis the original budget which computed audit fess at 1% of Administrative Charges only ■ <u>KPMG has recommended to TISS to retain the original basis of estimates for the audit fees (1% of Administrative Charges) as it is an '**established practice**'. However, TISS has used the new basis of estimate (1% of total Project Cost) in the revised budget</u>
	Total	**1076.7**	**945.27**	■ **Total savings of ~INR 131.43 Lakhs after the project review & due diligence by KPMG**

Social Work Education Network- TISS
Basis of Rationalization of Salary for Core Team

The following table provides a comparative analysis of the Salary for the Core Team as per TISS, alongside KPMG proposed Salary, which has been arrived at based on inputs from KPMG IT Advisory practice on relevant experience and qualification and review of other NMEICT DPRs requiring similar technology infrastructure.

#	Roles	Experience	Original	Recommended
1	**Programme Coordinator**	PhD. With 8 years of experience	120,000	100,000
2	**Programme Manager**	Post Graduate with 8 years of work experience	100,000	80,000
3	**Senior Systems Administrator**	BE or MSc. with 11 years of experience	80,000	75,000
4	**Junior Systems Administrator**	Preferred BSc. with 3 years of work experience	60,000	50,000
5	**Programme Officers**	Post graduate with 4-5 years of experience	60,000	50,000
6	**Programme Assistants**	Post Graduate with experience as an asset	40,000	30,000
7	**Administrative and Accounts officer**	Graduate with 2 years of experience	30,000	25,000
8	**Attendant/Support staff**	-	10,000	10,000

Basis of Comparison for Salary Structure of Core Team of Specialists			
Project	Open Source MOOC Platform (IIT Bombay)	Joint Entrance Examination Platform (CAER New Delhi)	Production of Courseware E Content Development (CEC)
Basis	Comparable Technology and Location	Comparable Technology	Comparable Technology

Based on KPMG analysis, the UbiSlate 7CZ Tablet includes specifications that suit requirements of the Project. The following table summarizes specifications of the UbiSlate Tablets. Analyzing market rates, the highest specification tablet – UbiSlate 7Cz is also available at INR 4,000 or less.

Model	UbiSlate 7Ci	UbiSlate 7CX (EDGE)	UbiSlate 7Cz (Dual Sim)
Type	Tablet	Smartphone Tablet (Phablet)	Smartphone Tablet
Touch Panel	7.0 inches, Capacitive Touchscreen	7.0 inches, Capacitive Touchscreen	7.0 inches, Capacitive Touchscreen
Processor	Cortex A8; 1Ghz	Cortex A8; 1Ghz	Dual Core A7; 1.2GHz
RAM	512MB	512MB	512MB
Resolution	800x480 px	800x480 px	800x480 px
Android OS	4.0.3 (Ice Cream Sandwich)	4.0.3 (Ice Cream Sandwich)	4.2.2
Camera	Front – VGA	Front – VGA	Front/Back – VGA/2.0 MP
Network	WiFi	WiFi & EDGE	WiFi & EDGE & BT
Audio	Audio out: 3.5mm jack	3.5mm jack /audio in: 3.5mm jack	3.5mm jack /audio in: 3.5mm jack
Video Player	Yes, Multi Format Video Player	Yes, Multi Format Video Player	Yes, Multi Format Video Player
Storage	Internal Memory:4GB Extendable: 32GB	Internal Memory:4GB Extendable: 32GB	Internal Memory:4GB Extendable: 32GB
Price	**INR 3,000 approx.**	**INR 3,500 approx.**	**INR 4,000 approx.**

Source: Amazon, Fllipkart, Snapdeal, MySmartPrice

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Thank you

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Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India

Financial Due Diligence - KPMG Report

November 2014

Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India
Project Background

Project Need	In order to consolidate and develop appropriate digital tools and knowledge resources in the arts and humanities, the Project proposes to build an institutional network and online knowledge repository with the long term aim of contributing to the creation and dispersal of knowledge on humanistic and cultural studies across different regions and disciplines in India.
Proposed Benefits	This project will help in • Restoring Indian heritage in the field of thought to be able to inform the conceptual framework for education in India, while encouraging cross-disciplinary thinking • Learning from indigenous techniques of academic inquiry to be able to enrich educational practice • Communicating to the world the core values that underlie Indian intellectual heritage to create a new cadre of interpreters of cultural heritage.
Project Scope	• Building networks of universities and systems for sharing academic and teaching resources, as well as pedagogic approaches and techniques • Building cultural resources by creating synergies between universities and centers for the fine arts and performing arts; locating archives of these centers within wider academic discourse; collating and curating existing documents and reference resources by genre, subject, year, theme, to streamline access to educational and research material • Using these resources in educational planning; developing modules for the teacher to incorporate local history; institutionalizing local-level participation and contribution; systematizing multi-lingual content generation • Developing electronic teaching materials (interactive, multimedia modules) • Establishing standards and guidelines for the development and access to quality content; preparing meta-data and time-based indexes for educational audio-video content; preparing models for projects to be taken up by students, e.g., on local history or translation
PI	Professor Navjyoti Singh
Project Duration	4 months

Budget	Proposed Budget	Recommended Budget
	INR 0.4372 Cr	INR 0.3391 Cr

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Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India
Key Observations

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
Course Development and Hosting	■ The project proposes to develop a virtual knowledge repository through creation of 11 content modules and 3 proof of concept ■ The 11 content modules differ in terms of output as well as methodology of creating content.	■ As per the understanding from the PI, courses constitute development of multimedia modules, tutorials, collaboratory projects and templates for student research apart from MOOC courses ■ The per course budget ranges from INR 2 lakhs to INR 4 lakhs, the basis of estimates for which has been captured and reviewed.
Budget Management	■ The proposed budget is associated with content creation and is divided into manpower, consultation, documentation, travel and honorarium	■ At planned milestones, NMEICT constituted PRSG should review the project output (course + quality) and resulting budget consumption, since the entire budget corresponds to course creation.
Software and Equipment	■ Software development shall be open source as per IIIT-H policy. Equipment and server shall be shared with CEH at IIIT-H ■ The courses developed shall be hosted on the server at the Center for Exact Humanities at IIIT-H	■ Since existing equipment and server shall be used for development and hosting, no additional costs have been provisioned for the same.

Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India
Project Financials

		Budget Breakup (INR Lakhs)		
#	Component	Proposed Budget	Recomm ended Budget	KPMG Comments
1	**Research and Project Team**	18.4	12	■ Team consists of 9 resources. ■ Increased granularity through additional information on resource type, role and experience requirements ■ **Rationalized salary of research assistant** (@INR 30,000 pm) as per KPMG's market assessment of industry standards and SC recommendations
2	**National Consultation**	4.94	4.94	■ Consultation workshop to be conducted in Delhi. ■ Rationalized costs for accommodation (INR 3,000 per person), food (INR 300 per person per day)and travel (INR 20,000 for airfare) as per **UGC – MHRD / GOI norms** ■ PI has proposed a revised budget of **INR 5.21 lakhs** to align budget in line with representatives from 11 institutions vis-à-vis the 9 institutions in the original budget.
3	**Travel**	0.62	0.62	■ Travel costs are as per UGC, MHRD/ GOI norms ■ PI has proposed a revised budget of **INR 2.22 lakhs** to include travel to anchor institutions for the purpose of monitoring progress, originally not captured in the original DPR
4	**Remuneration**	6	5.35	■ Increased granularity through breakdown of cost into honorarium and stipend ■ Budget rationalized in line with the number of partner institutions. ■ Honorarium computed at approximately 6% of cost (@INR 25,000 per partner institution) ■ Stipend for students in line within industry standards (@INR 5,000 per person per month)

	Budget Breakup (INR Lakhs)			
#	**Component**	**Proposed Budget**	**Recommended Budget**	**KPMG Comments**
5	**Documentation**	10	10	■ Increased **granularity** through itemization of documentation costs per course, as per Standing Committee recommendation ■ KPMG's analysis based on inputs provided by PI on requirements of documentation based on past experience in similar projects ■ PI has proposed a revised budget of **INR 14.5 lakhs** owing to detailed due diligence and inclusion of **transcription costs @ INR 2,000 per** hour of content development
6	**Contingency**	1	1	■ Computed at approximately **2% of Project Cost**
7	**Overheads**	8.02	-	■ Overheads were removed as a separate component of the budget as mission projects are advised not to have an overhead component
	Total	**49 ***	**33.91**	■ **After the project review & due diligence, KPMG recommends a budget of INR 33.91 lakhs.**

* In the absence of breakdown of the Standing Committee recommended budget of INR 43.72 lakhs, KPMG has conducted financial due diligence on the budget of INR 49 lakhs presented by PI to the Standing Committee on July 1, 2014. The recommended budget of INR 33.91 lakhs is based on the recommendations of the Standing Committee and review and due diligence conducted by KPMG.

Thank you

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Pilot Project for COMMTEL for Commerce Education at National Level

Financial Due Diligence - KPMG Report

November 2014

Pilot Project for COMMTEL for Commerce Education at National Level
Project Background

Project Need	There are a number of projects and thrusts that the NMEICT program has undertaken in Technology Enabled Learning (TEL) for knowledge enablement and human resource development through ICT. In continuation with existing projects like NPTEL, OSCAR, QEEE (Quality Enhancement in Engineering Education), this project aims to evolve a parallel system for Commerce education in the country to build an online repository of courses for the Commerce stream.
Proposed Benefits	This Project shall be able to implement Technology enabled Learning in Commerce Education with an aim to enhance the quality of education and empower teachers with ICT and pedagogy skills for commerce teaching.
Project Scope	• Development of a seamless system of pedagogy in Commerce, by embedding a COMM-TEL through pervasive computing by creating and broadcasting video enriched lectures (Live Plus) and an Integrated Knowledge Management System (IKMS) that promotes a multi-lingual learning platform that pervades through a four layered structure: National, Regional, Zonal, Local. • The following shall be the main verticals integrated in COMMTEL project. ➢ Development of Live-Plus Video lectures ➢ Development of e-Learning Object Repository (e-LOR) ➢ Development of Transcript of Live Plus Lectures as meta data and searchable tags ➢ Development of Question bank ➢ Workshops and Training
PI	Prof. K.V. Bhanu Murthy
Project Duration	1 Year

Budget	Proposed Budget	Recommended Budget
	INR 1.3446 Cr	INR 0.6936 Cr

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
Budget Amount Mismatch	■ Recommendations of the SC Committee Meeting held on July 1, 2014 has approved budget of INR 1.34 Crores for the Project. ■ However, the PI has proposed an overall revised budget of INR 4.9 crores for the Project due to higher complexity of e-LORs and initial setup of require infrastructure and equipment for the project	■ KPMG has based its analysis on the approved budget and budget components as reviewed by the standing committee
CEC approved rate for e-Content Development	■ For the purpose of course development, the Standing Committee has recommended the PAB approved rate* @ INR 29,000 per module of e-content development which in principle, includes costs associated with manpower, equipment and multimedia in the 4 quadrant approach of content creation in addition to INR 2,000 for transcription.	■ As per the PI, since this is a Pilot Phase, and since PI's institute has no existing set up of equipment for e-content development, additional costs for infrastructure and manpower have been included in the budget owing to higher complexity and lack of economies of scale. *(Annexure I)*

* As per the Project Approval Board (PAB) meeting held on March 19, 2014, the PAB approved the unit cost of INR 31,000 **per module of content development** for CEC e-content development (INR 29,000 + INR 2,000 as **transcription** charges)

Pilot Project for COMMTEL for Commerce Education at National Level
Project Financials

	Budget Breakup (INR Lakhs)			
#	Component	Proposed Budget	Recommended Budget	KPMG Comments
1	Video Plus Lecture – Development Cost	45.24	45.24	■ Content creation for 156 lectures/modules in line with the NMEICT approved rate of **INR 29,000 per module**
2	Development of e--Learning Object Repository	52.5	12	■ PI has requested development of e-LORs @ **INR 35,000 per e-LOR** for 300 LORs (INR 105 Lakh) ■ Based on quotations received by PI, KPMG recommends evaluation of the lowest quote of **INR 4,000** for fitment to requirements *(Annexure II).* KPMG's recommendation is based on the assumption that the vendor quoting INR 4000 / e-LOR is meeting the quality requirements
3	Transcription of LivePlus Lectures	3.12	3.12	■ Transcription for 156 lectures/modules in line with the NMEICT approved rate of **INR 2,000 per module**
4	Development of Question Bank	-	-	■ Costs shared from other verticals.
5	Workshop/ Training	33.6	9	■ Workshop cost revised based on joint due diligence exercise
	Total	134.46	69.36	■ **After the project review & due diligence, KPMG recommends a budget of INR 69.36 lakhs.**

PI has proposed an overall revised budget of **INR 496 lakhs** due to higher complexity of e-LORs, initial setup of infrastructure and manpower requirement for this project, development of e-Learning environment.

Justification for COMMTEL sub-head

First and foremost this project is an invited project by the erstwhile, Mission Director NMEICT, MHRD. The philosophy laid down by the Director was that while a lot is being done in science and technology space, nothing has been done in Commerce. We have convinced the Director and the Standing Committee on three occasions that we need a fresh approach to Commerce, for various reasons, which we cannot repeat here.

In this COMMTEL pilot project, the five verticals are not stand alone entities. It is a Meta Project with 6 verticals (with two of the earlier ones, viz., Transmission and Research being removed from the purview) that are integrated with each other to provide a high quality virtual teaching-learning environment and high quality multimedia enriched videos, e-LOs, interactive quizzes, transcripts and more. Our project is not comparable any in the past. The complexity is across verticals in terms of levels, elements and sub-elements, learning systems, pedagogy, embedded functions and generation of quality. Here, we wish to point out enough though has not been given by extant approaches to laying down the parameters, processes and the general framework for quality generation. Our approach cannot be straight jacketed with extant approaches. Some of the details of all of the above entail intellectual property issues. In a DPR, there only that much that we can detail out. Still, our argument is that, crucially the entire costing that has been done in the DPR is still based on extant approaches that are much simpler. They involve less of stages, less of though, less of production values, less of accent on delivery, and so on. Most of all they do not exploit the electronic medium that is germane to e-learning. And, finally, there is hardly any emphasis on pedagogy. All of this needs to be carefully thought out, nurtured and executed.

This requires time, effort, ideas and finance. The yardsticks of finance are not well developed so as to enable them to carry of a 'fair valuation' of a project of this nature. In the light of this the pragmatic approach that we have adopted is to benchmark our costing on existing NMEICT projects which nevertheless are much less complex. Secondly, our philosophy is that, with the exception of 2D/3D animation, all the rest is being done in-house. In all other NMEITC projects, they entirely out-source everything, including conception, production and publishing. The implication is that we need to have additional human resources and establishment costs, in addition to what other project purport. Our project has been forcedly curtailed by the standing committee by reducing the scale. Originally, we were supposed to cater to 200 colleges across the country. The implication of this has been conveyed in the 27th May 2014, meeting to Prof. Mangal Sundaram (in Chair). It implies that Fixed Cost is bound to be much more disproportionate, at present, in the Pilot Stage. Unlike IIT's we do not have the infrastructure to begin with. With the subsequent expansion in Stage II, the infrastructure and per unit cost will come down.

A. e-LORs

Of these the e-LOR, i.e., the e-Learning repository shall be a searchable data base of complete learning objects tagged which shall explain the concept with the help of audio, video and animations (2D/3D). **The *de-novo* understanding that we have developed on e-LORs:**

The coinage of e-LOR is exclusively ours. An 'object' qualifies to be one only if it is designed as an 'object' (*a la* OOPs).

A common definition of Learning Objects:

"Adapting a definition from the Wisconsin Online Resource Center, Robert J. Beck suggests that learning objects have the following key characteristics:

- Learning objects are a new way of thinking about learning content. Traditionally, content comes in a several hour chunk. Learning objects are much smaller units of learning, typically ranging from 2 minutes to 15 minutes.
- Are self-contained – each learning object can be taken independently
- Are reusable – a single learning object may be used in multiple contexts for multiple purposes
- Can be aggregated – learning objects can be grouped into larger collections of content, including traditional course structures
- Are tagged with metadata – every learning object has descriptive information allowing it to be easily found by a search".

The existing LORs by definition do not encapsulate functions. This defeats the purpose of e-learning whose implementation is in a digital medium. That is why we have redefined LOR's as eLORs. Object oriented philosophy entails encapsulation which is not a mechanical job. All instances that exist do not do justice to the concept of 'Objects' as has been defined in software design and the philosophy of computer languages. That is, in Object Oriented Programming.

Steps in e-LO Development

The tagging shall be done for 300 e-LOs shall to cover 20 papers of B. Com (H), with around 15 e-LOs per paper. The development of e-LOs shall consist of the following main steps:

1. Template development for e-LOs : Pedagogy and academic Instructional designing shall be done by PI
2. Template development for e-LOs: The technical layout (GUI) of the e-LO for uniformity and navigation to meet the subject and pedagogy requirements. It shall be done by Co-PI with the technical team.
3. Paper coordination – For each of the 20 papers, a paper coordinator shall coordinate the development of e-LOs with the help of authors and reviewers; and ensure uniformity for development of e-LOs in terms of the depth of topic, terms, notations being used, etc.
4. For each paper, Conception and identification of 15 topics for e-LO development shall be done collectively by the team of script authors, paper coordinator and reviewer.
5. Instructional designing –ID for Learning outcomes of the selected topic for the e-LO shall be evolved by senior academicians, tagging and keywords shall be evolved along with other tags for search function.
6. Script development- Thescript of e-LO shall be written by eminent subject person as script author.
7. Review of script- The script shall be reviewed for correctness of content, depth and scope as desired for UG level commerce student.
8. Instructional designing - The reviewed script shall be transformed into ID document (IDD) of the e-LO.
9. The ID document shall be converted into story-board - for entire layout which shall consist of sequencing of the various elements of the script into small components as to how the multimedia enrichment can be done for each of these components.
10. Story-board - for animation and interactivity. Out of the overall story-board, each of the smaller components shall be further elaborated as story board of animation and the interactions to be build.

11. English editing of script shall be done to ensure language simplicity and correctness keeping a below average student in mind.
12. Audio recording shall be done for each of the small component. The clarity, diction, modulation etc. in audio
13. Story-board - for video recording shall be created for the outdoor video shooting / indoor activity to describe a small component of the entire e-LO. E.g the market situation to introduce the concept of negotiation in sales.
14. Video recording assistance from academic person shall be desired while getting the video recording and editing done. The video shall be recorded by technical team in live or chroma background or even blend of both as desired for different concepts.
15. Expert validation of IDD – The IDD document shall be validated by two stage validation: by expert and by student; and the inputs shall be incorporated after consultation with the paper coordinator and script author.
16. Animation development - 2D/3D: Based on the story board of the animations for the small components, 1-2 animations per e-LO of 2-4 min duration shall be developed. Each animation can be of various level of complexity viz., simple, average, complex. Further each can be developed as 2D or 3D animation with as character based animation or otherwise. They can be a mix blend of video with character based animation or video with
17. Remaining e-LO development- shall consist of enhancing the visual appeal creation of graphics and narration script of each of the small component to make it a continuous sequence and complete learning object.
18. Publishing - compilation of animation and remaining e-LO. Using appropriate technical tools like flash, captivate, java etc., the different components i.e., text, visuals, graphics, edited video, audio,
19. Testing shall be done for different aspects of the e-LO: i.e. senior subject person (Expert validation), technical testing (technical validation) and student testing (face validation).

B. LivePlus Video Lectures
The following are envisaged for video creation and budgeting for each has been evolved @ Rs 29000 as per the following details:

S.No.	Stages in development of Live Plus Video Lecture	Estimated cost per Lecture
1	Template development for LivePlus Lecture: Pedagogy and academic Instructional designing shall be done by PI	0
2	Template development: The technical specifications of the Live Plus Lecture as video shall be worked out for uniformity for all the video lectures. It shall be done by Co-PI with the technical team. Prototype shall be developed.	0
3	Paper coordination – For each of the 6 papers (2 B.Com and 4 add-on courses), a paper coordinator shall coordinate the development of Live plus video lectures (52 for each commerce paper and 13 for each add-on courses.	1000
4	For each paper, the syllabus shall be divided into 52 topics/sub-topics and combinations for liveplus lecture development of 30 min or more. This shall be done collectively by the team of script authors, paper coordinator and reviewer, etc.	0

S.No.	Stages in development of Live Plus Video Lecture	Estimated cost per Lecture
5	Instructional designing –ID for Learning outcomes	1000
6	Dummy video run by eminent speaker- The eminent academician as content writer shall deliver the video in video studio as he/she does in a conventional classroom.	1000
7	Script development- The script of Liveplus video lecture shall be written by eminent subject person as author/content writer based on this dummy run.	1000
8	Review of script- The script shall be reviewed for correctness of content, depth and scope as desired for UG level commerce student.	500
9	Instructional designing - The reviewed script shall be transformed into ID document (IDD) taking the help of the dummy run video and the reviewed script.	500
10	The ID document shall be converted into story-board - for entire layout which shall consist of sequencing of the various elements of the script into small components as to how the multimedia enrichment can be done for each of these components.	1000
11	Story-board - for animation and interactivity. Out of the overall story-board, each of the smaller components shall be further elaborated as story board of animation and the interactions to be build.	1000
12	English editing of script	1500
13	Graphic creation shall be done by the technical team. Its proof-reading and checking shall be done by academic in-house team.	1000
14	Story-board - for outdoor video recording / indoor activity as a part of the main Live plus video lecture.	1000
15	Video recording assistance from academic person for outdoor video shooting	1000
16	Expert validation of IDD	1000
17	Animation development - 2D/3D	5000
18	Interactive board element development	1000
19	Interactive ICT tools creation as examples for explain concept (like spreadsheet. Etc)	1000
20	Screen capture of interactive element as example explanation.	500
21	Final video lecture recording using the multimedia elements created.	1000
22	Post editing	1000
23	Publishing - compilation of animation and remaining video lectures. Using appropriate technical tools like flash, captivate, java etc., the different components i.e., text, visuals, graphics, edited video, audio,	5000
24	Testing shall be done for different aspects of the e-LO: i.e. senior subject person (Expert validation), technical testing (technical validation) and student testing (face validation).	1000
25	Corrections and uploading along with key words, etc.	1000
Total		**29000**

Centre for e-Learning
SRI GURU TEGH BAHADUR KHALSA COLLEGE
UNIVERSITY OF DELHI, DELHI-110007

Comparative Statement for Evolving Rate Contract for Multimedia enrichment
(Static content conversion to multimedia)

Date 23/07/14

ITEM NO.	JOB TITLE AND DESCRIPTION	Adwaves	Edutech	Indus Learning	Pathik	SEQUEL	Veda foundation	Learning Stock	AISECT	Ab-initio	Kreativistas	Saicharan	Range for selecting vendor for empanelment	Final Rate for Rate-contract
1	PUBLISHING OF MODULE : (In Captivate 7) having the following components in integrated manner as per CFEL Team's designed output Template (Per Module)	150000	65000	7000	6000	98000	5000	5200	33695	5000	5500	5200	5000-7000	5000
2	GRAPHICS RECREATION (per Module) (predominantly 2D with some 3D graphic recreation in Photoshop/Coreldraw)	25000	19500	1800	1000	7000	1000(2D) 3000(3D)	2000	17250	1000(2D) 2500(3D)	1000	1500	1000-2000	1000
3	Audio Recording and editing- per 30 min (per Module)	17000	4550	4000	4500	4000	4500	3000	8050	5000	4000 5000	4000	3000-5000	3000
4	Video Recording and editing- Per Hour shooting for final output of not less than 5-10 min	40000	6500	15000	8000	9500	8000	10000	11500	8000	7000	10000	6500-8000	7000
5	Animation recreation –per Animation (In Flash for 2D and 3D Max or Maya for 3D)													
	Animation for 0 – 30 sec without audio (2D)	24000	13000	2500	2500	950	3000	2500	900	2800	2500	2500	3000 or below	2500
	Animation for 0- 30 sec with audio (2D)	48000	15600	5000	5500	1400	5000	5000	1020	6000	5000	5500	5500 or below	5000
	Animation for 0- 30 sec with audio (3D)	60000	32500	15000	12000	2200	12000	15000	3600	12500	12000	12000	15000 or below	12000
	Animation for 31 sec - 2 min with audio (2D)	1500/sec = 46500 - 180000	39000	22000	18000	2100	20000	15000	4800	20000	18000	18000	22000 or below	18000
	Animation for 31 sec - 2 min with audio (3D)	1900/sec = 58900 - 228000	91000	30000	32000	4000	30000	30000	14400	35000	35000	30000	35000 or below	30000

The item-wise finalized rate contract to be followed by all the empanelled companies/vendors (Annexure-I) and The list of companies/vendors empanelled (Annexure-II) are enclosed.

Dr G S Sodhi
(Member, Purchase Committee) 23/07/14

Prof H C Pokhriyal
(Member, Purchase Committee) 23/7/14

Dr Jatinder Bir Singh
(Convener, Purchase Committee)

Approved

Deputy Director 23/7/14

Executive Director

Chairman/Vice-Chairman 25/7

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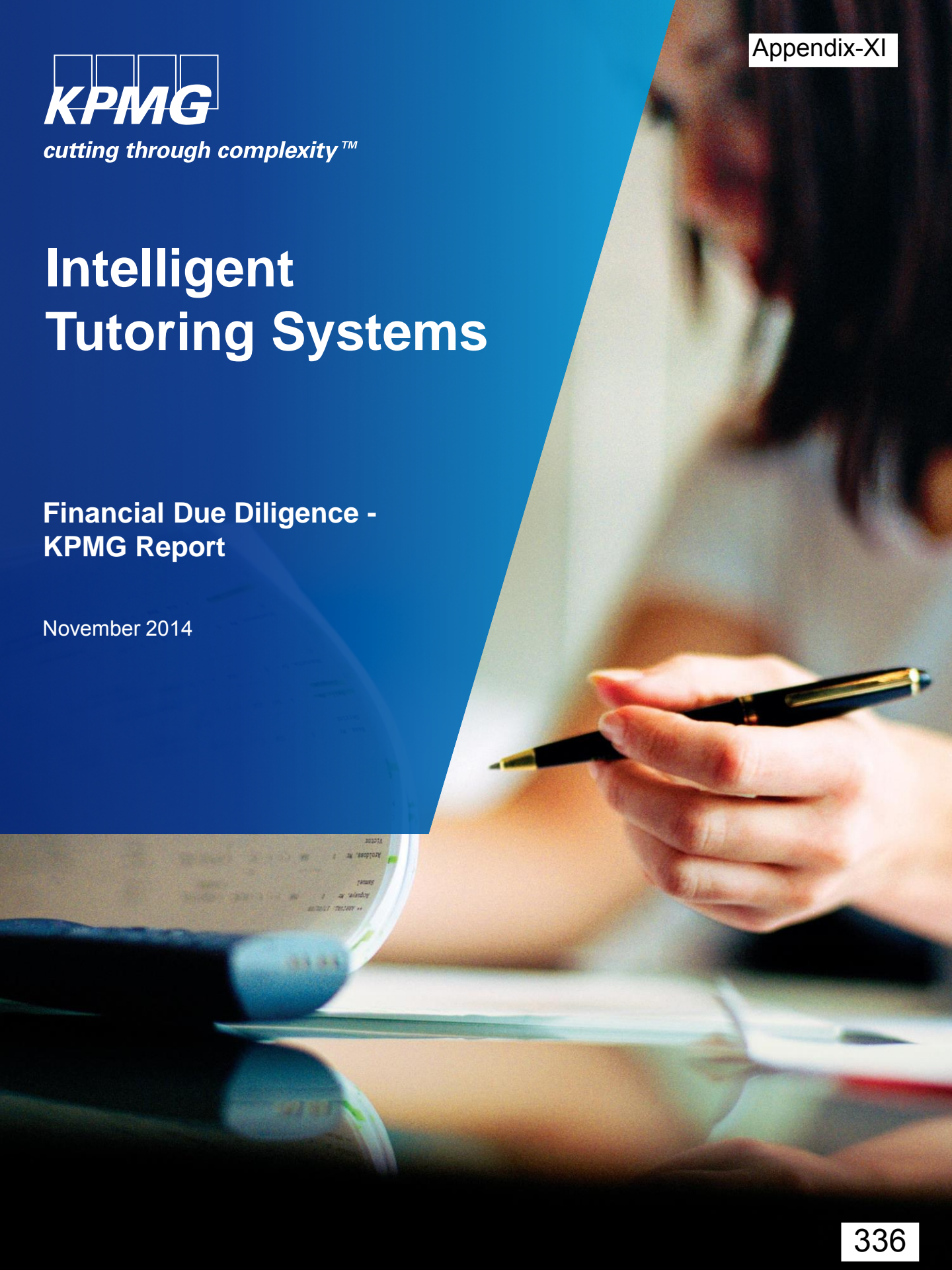Manager, Government Advisory, IGS
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Intelligent Tutoring Systems

Financial Due Diligence - KPMG Report

November 2014

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Intelligent Tutoring Systems
Project Background

Project Need	While there are various ICT interventions in primary and secondary education with the gamut of online courses available, these courses still requires human intervention for problem solving, creation of new problems, grading. In order to cater to the need of having an automated tutoring system this project proposes to develop a tool to control the pace of tutoring based on the performance of a student.
Proposed Benefits	• An automated intelligent tutoring system that will help the student to explore a course based on his skills and learning speed. • Instructors will be able to run their courses more effectively and customized to individual students without putting too much extra efforts. • Tool will cater both traditional and web based courses.

Project Scope	• Available for primary and secondary school subjects like Math, Physics, Chemistry and engineering courses with targeting Indian population.
	• Available under open source license to end user as web applications and apps on Aakash tablets and smartphones.
	• Students would explore a course based on their skills and learning speed. In particular, it is planned to develop automated tools for the following areas:
	   ➢ Problem solving
	   ➢ Problem generation
	   ➢ Grading
	• Customization of grading and evaluation for introduction to computer programming course
	• System modified to support a new course and reuse the components from one course (domain) to other.

PI	Prof. Amey Karkare
Project Duration	3 Years

Budget	Proposed Budget	Recommended Budget
	INR 0.6 Cr	**INR 0.4845 Cr**

Intelligent Tutoring Systems
Key Observations

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
Technology Development	■ The Project proposes to develop an automated intelligent tutoring system to help the student to explore a course based on his skills and learning speed ■ The tool can be accessed using a browser on a desktop/laptop or it can be deployed as an app on a tablet or a smart phone.	■ This will be a significant value add, as it can facilitate future expansion (in terms of students and courses) ■ Stakeholders should focus on Technology and Process Standardization at this stage ■ Opportunity to setup a centralized knowledge base for to share code and subject matter expertise

Intelligent Tutoring Systems
Project Financials

Budget Breakup (INR Lakhs)			
# Component	Proposed Budget	Recommended Budget	KPMG Comments
1 Equipment	3	2.5	■ Equipment include PCs and laptop for employees, smartphones/tablets to deploy and test the software, and printer, scanners and other office equipment ■ **Cost of laptops was rationalized** based on specifications suited for the Project *(Annexure I)*
2 Software and Services	2.4	2.1	■ Proposed Budget included Windows OS installation for PCs and webserver hosted on cloud (Windows Azure) ■ **Windows OS installation cost was rationalized** on the understanding that laptops and desktops shall come with preinstalled OS *(Annexure I)*
3 Manpower	35.1	35.1	■ Manpower consists of 5 employees. ■ Increased granularity through additional information on resource type, role and experience requirements ■ KPMG recommends rationalized resource loading for manpower over the three years, since monitoring and evaluation in subsequent years can be conducted with a smaller team / part-time resources
4 Travel and Related	6	5.25	■ Increased granularity through detailed cost breakdown, purpose of travel and number of trips ■ Aligned basis of estimates for accommodation (INR 3,000 per person), food (INR 300 per person per day)and travel (INR 25,000 for airfare) as per **UGC – MHRD / GOI norms**
5 Consumables	1.5	1.5	■ Costs associated with printing supplies, storage media, books, stationery, computing expenses etc.
6 Contingency	2	2	■ Computed at approximately **4% of Project Cost;** for covering the costs of equipment add-ons and repairs, publicity, project interviews, discussions and training
7 Overheads	10	-	■ Overheads were removed as a separate component of the budget as mission projects are advised not to have an overhead component
Total	60	48.45	■ **Budget Rationalization of INR 11.55 Lakhs after the project review & due diligence by KPMG**

Based on our analysis, KPMG has identified laptops with specifications that suit requirements of the Project. The following table summarizes specifications and market price of such Laptops. Analyzing market rates, the highest specification laptop HP Pavillion M4- 1012TX 14" Notebook is also available within INR 45,000. Therefore, based on this analysis, the laptop cost has been rationalized to INR 45,000 from INR 75,000

Model	HP Pavilion M4-1012TX 14" Notebook	Lenovo Idea Pad G50 (59413719) Notebook	Dell Inspiron 15 3000 Series
Specification	• Intel Core i5-3230M • 2.6 GHz Processor • 4 GB DDR3 RAM • 500 GB Hard Disk • Windows 8 64 bit OS	• Intel Core i3-4010U • 1.7 GHz Processor • 8 GB DDR3 RAM • 1 TB Hard Disk • Windows 8.1 64 bit OS	• Intel Pentium 3558U processor (2M Cache,1.7 GHz) • Windows 8.1 (64 bit) • 15.6 inch LED Backlit display with true life and HD resolution (1366*768) • 4 GB Ram • 500 GB 5400 rpm SATA hard Drive
Price	INR 42,899 approx.	INR 41,690 approx.	INR 28,390 approx.

* Source: Officials Website for respective brands, Chroma, Reliance Digital

As can be seen, since the aforementioned laptops come with preinstalled Windows OS, this software cost is included in the price of laptops and hence shall not be budgeted for separately.

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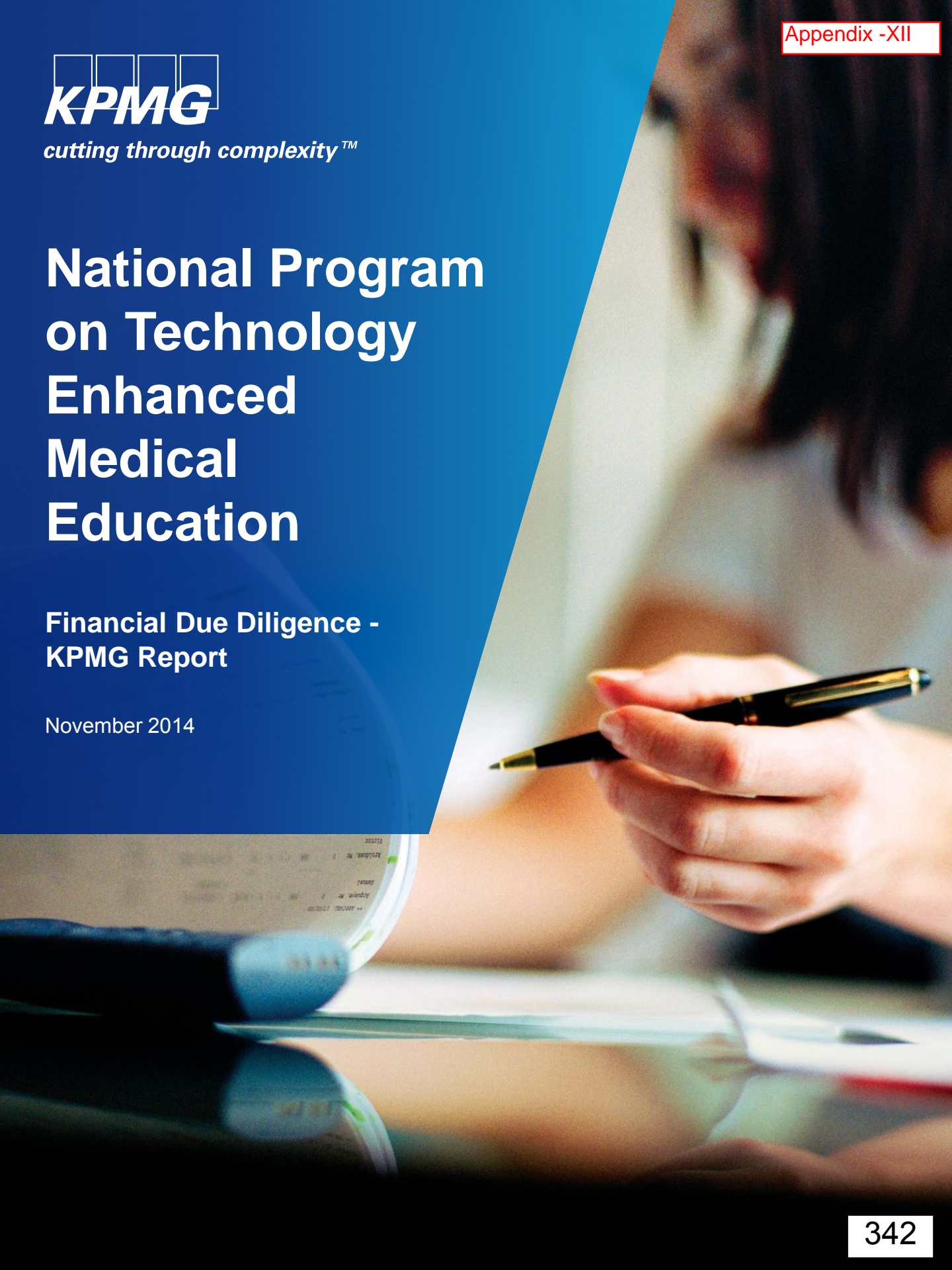KPMG
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National Program on Technology Enhanced Medical Education

Financial Due Diligence - KPMG Report

November 2014

National Program on Technology Enhanced Medical Education
Project Background

Project Need	While experiential learning is must for medical education, most such technologies are frantically imported, costing a significant FOREX for our nation. Additionally, these products are not custom-made for Indian curriculum. Hence, this generates the need of developing expertise in-house to tackle the aforementioned issues, which the Project proposes to do.
Proposed Benefits	• The products imported from abroad are not custom-made for Indian curriculum. Any repair in the instruments needs costly replacements or service charges. Since these expertise are being developed in-house, this problem will be avoided. • At the high level, patient-safety will be ensured. Medical errors will be reduced. • Dependence on experts guidance will be reduced. Therefore students can be trained at anytime anywhere. • Dependence on animal for training will be avoided. • Some of the rare procedures will be simulated and the simulators will be used to provide such exposure of the rare procedures to the students at anytime anywhere. • This will strengthen medical education in India.
Project Scope	• To develop prototypes of basic medical education ICT tools, comprising a haptic feedback device, sensors and actuators and computer/network/multimedia equipment. • To develop prototypes of mannequin based medical education tools, comprising a dummy mimicking a patient, sensor and actuators and computer/network/multimedia equipment.
PI	Dr. M. Manivannan
Project Duration	6 months

Budget	**Proposed Budget**	**Recommended Budget**
	INR 0.992 Cr	**INR 0.7867 Cr**

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National Program on Technology Enhanced Medical Education
Project Financials

				Budget Breakup (INR Lakhs)
#	Component	Proposed Budget	Recommended Budget	KPMG Comments
1	**Salary/Wages**	19.2	19.2	■ Manpower consists of 4 employees for each of the two deliverables ■ Increased **granularity** through additional information on resource type, role and experience requirements
2	**Consumables**	9	6.3	■ Consumables include mechanical materials, electronic components, stationery and printing ■ KPMG analysis based on **quotations** of consumables provided by PI ■ Adjusted **calculation error**, which recorded consumables for workshop at INR 3 lakhs instead of INR 30,000
3	**Travel**	24	17.17	■ Travel costs include travel for workshop to be conducted at partner institutes. ■ Increased **granularity** through detailed cost breakdown, purpose of travel and number of trips ■ **Aligned basis of estimates** for accommodation (INR 3,000 per person), food (INR 300 per person per day) and travel (INR 25,000 for airfare) as per **UGC – MHRD / GOI norms** ■ **Rationalized conveyance** related budget
4	**Contingency**	8	6	■ Computed at approximately **7% of Project** ■ **Rationalized cost** by removing contingency charged on workshop costs
5	**Overhead**	9	-	■ Overheads were removed as a separate component of the budget as mission projects are advised not to have an overhead component
6	**Equipment**	30	30	■ Equipment include mannequin, laparoscopic device and haptic feedback device ■ KPMG analysis based on **market quotations** provided by PI ■ <u>PI has requested for **INR 42 lakhs**, owing to manufacturing cost (INR 12 lakhs) associated with **machining and electronic fabrications,** originally not captured in the original DPR.</u>
	Total	**99.2**	**78.67**	■ **After the project review & due diligence, KPMG recommends a budget of INR 78.67 lakhs.**

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Running Online Courses for Polytechnics and Skill Development

Financial Due Diligence - KPMG Report

November 2014

Running Online Courses for Polytechnics and Skill Development
Project Background

Project Need	The project proposes to envision Massive Open Online Courses (MOOCs) platform through National Mission on Education through Information and Communication Technology (NMEICT) funding for running online courses for Polytechnics. In order to visualize the complexity and to identify various tools and techniques appropriate for such a mammoth activity, a pilot run of the project is proposed for realization of various critical issues
Proposed Benefits	• Establish a virtual degree providing institute for the country • Meet the demands of industries by extending reachability • Incorporate flexibility • Provide need-based, industry oriented programs
Project Scope	• Appropriate e-content to be developed by subject experts from the entire country at different levels. All the 4 NITTTRS will coordinate and NITTTR Kolkata will be the Nodal Centre (NC). • MOOC and other similar platforms will be used. • Each NITTTR will have facilities for conversion/development of e-contents matching with the platforms being used. Every NITTTR shall have Evaluation cell for awarding certificate /diploma/ degree etc.
PI	Dr. Phalguni Gupta
Project Duration	6 months

Budget (Pilot Phase)	Proposed Budget	Recommended Budget
	INR 5 Cr	**INR 4.60 Cr**

Running Online Courses for Polytechnics and Skill Development
Key Observations

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
ICT Infrastructure – (MOOCs Platform)	■ The Project proposes to set up the Massive Open Online Courses (MOOCs) platform under NITTTR Kolkata as an extended arm of MHRD as its Nodal Agency ■ Primary objective of the Phase I project is to visualize the complexity and to identify various tools and techniques appropriate for such a mammoth activities of the main project of IFL.	■ There are few other proposals related to MOOCs based education imparting to provide access and quality to students (and practitioners) across country (for ex: IITB – India MOOCs, SWLN – TISS Project etc.) ■ NMEICT should evaluate whether an integrated cloud based platform (or at least a reference architecture) should be developed to eliminate the need for multiple silo platforms. With this approach the focus should be more on course content and delivery. This will also ensure standardization of course delivery and infrastructure.
Budget Management (Course Creation)	■ On a budget of INR 5,000 per 1-hour of e-content creation, the proposed budget (content creation and delivery) is driven by a **multiplier** based on number of hours (2000) in scope (for the Pilot Phase)	■ At planned milestones, NMEICT constituted PRSG should review the project output (modules + quality) to ensure actual output and resulting budget consumption alignment. ■ KPMG recommends alignment of the course creation budget to the CEC content structure, as seen fit by the Committee.

Running Online Courses for Polytechnics and Skill Development
Project Financials

	Budget Breakup (INR Lakhs)			
#	Component	Proposed Budget	Recommended Budget	KPMG Comments
1	Content Development	60	60	■ Budget for content development computed **@ INR 5,000 per hour** assuming 200 hours of content creation for each course (for a total of 6 courses) which includes video lectures, extended explanation, additional study sets, problem sets, etc. ■ KPMG recommends leveraging CEC content structure for associated budget for e-content creation in this project **(@ INR 12.4 Lakhs per course** of content creation including transcription). This will ensure a consistent approach to content creation and budget estimations.
2	Augmentation of Existing Studio	60	60	■ KPMG recommends that upon alignment with the CEC course creation budget, studio augmentation cost should be omitted from the budget, since the PAB approved budget for CEC approved content structure includes equipment cost associated with content creation. ■ IF the CEC module were to be adopted, the budget for content creation can be rationalized to INR 74.4 lakhs (INR 12.4 lakh X 6 courses) vis-à-vis INR 120 lakhs (Content development Cost + Studio Augmentation Cost)
3	Equipment (Server and Others)	250	210	■ **Rationalized equipment** budget through alignment of Infrastructure costs with market rates. *(Annexure I and II)* ■ PI is advised to identify opportunity to leverage existing equipment/ infrastructure at NITTTR and NMEICT to further optimize infrastructure costs (for example, NKN, Cloud, etc.)
4	External Resource	100	100	■ External Resources include costs associated with expert consultants hired to leverage experience and obtain expert advice for MOOCs, Virtual Labs, etc. ■ As there are ongoing initiatives in MOOC / e-content (IIT Bombay, IIT Madras), KPMG recommends **coordinating with such institutions** in order to leverage their open source platforms and reference architecture. This will prevent the need of hiring external resources and hence lead to budget rationalization.
5	Manpower	16	16	■ PI has requested a revised budget of INR 48 lakhs, owing to need for additional resources (costs computed for a full year)
6	Travel Cost & Others	14	14	■ PI has requested a revised budget of INR 19 lakhs for travel cost and others, upon due diligence
	Total	500	460	■ **KPMG recommends that the PI identifies opportunities to rationalize course creation, equipment and external resource budget**

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Running Online Courses for Polytechnics and Skill Development

Annexure I: Basis of Rationalization of Workstation Costs

Based on our analysis, KPMG has identified Workstations with specifications that suit requirements of the Project. The following table summarizes specifications and market price of such Workstations. Based on the market analysis, the per unit Workstation costs has been rationalized to INR 1.5 lakhs from INR 2 lakhs

Model	HP ZBook 14 Mobile Workstation	HP Z230 Tower Workstation
Specification	• Operating system Windows 7 Professional 64 (available through downgrade rights from Windows 8.1 Pro) • Chipset Chipset is integrated with processor • Processor Intel® Core™ i5-4300U with Intel HD Graphics 4400 (1.9 GHz, up to 2.9 GHz with Intel Turbo Boost Technology, 3 MB cache, 2 cores)Intel® Core™ i5 with vPro technology • Memory upgrade Upgradeable to 16 GB • Memory, standard 8 GB 1600 MHz DDR3L SDRAM (1 x 8 GB) • Hard drive description 500 GB 7200 rpm SATA • Expansion slots 1 Secure Digital; 1 Smart Card Reader • Wireless Intel Dual Band Wireless-N 7260AN 802.11a/b/g/n (2x2) WiFi and Bluetooth® 4.0 Combo • Network interface Intel I218-LM GbE (10/100/1000 NIC)	• Operating system Windows 7 Professional 64 (available through downgrade rights from Windows 8.1 Pro 64) • Chipset Intel® PCH C226 • Processor Intel® Xeon® E3-1225v3 with Intel HD Graphics P4600 (3.2 GHz, 8 MB cache, 4 cores) • Memory upgrade Upgradeable to 32 GB • Memory, standard 4 GB 1600 MHz DDR3 ECC Unbuffered RAM (1 x 4 GB) • Hard drive description 500 GB 7200 rpm SATA • Network interface Intel® I217LM PCIe GbE controller • Expansion slots 1 PCIe Gen3 x16; 1 PCIe Gen2 x4 (x16 connector); 1 PCIe Gen2 x1 (x4 connector); 1 PCIe Gen2 x1; 1 PCI
Price	**INR 1,22,096 approx.**	**INR 1,15,597 approx.**

* Source: Amazon, Fllipkart, Snapdeal, MySmartPrice

Running Online Courses for Polytechnics and Skill Development

Based on our analysis, KPMG has identified equipment for the Data Center with specifications that suit requirements of the Project. The following table summarizes specifications and market price of such equipment. Based on the market analysis, the budget for the Data Center has been rationalized to INR 70 lakhs from INR 100 lakhs

Equipment Type	20KVA UPS	DG SET (Dedicated Generator Set)	Biometric Device
	APC Smart UPS VT SUVTP20KHS 20KVA UPS Emerson Liebert ITA Series UHA3R 0200L 20KV UPS	Mahindra Powerol 41425 GC 100 KVA Generator Mahindra Powerol 41225 GC 85 KVA Generator	Zerowire Z-HZ-TK100C-I10 / Z–E-S20-I11 ZeroWire Z–E-X990-I10
Price per unit	INR 2,50,000 approx.	INR 5,50,000- 600,000 approx.	INR 20,000 approx.

Gmail by Google

PHALGUNI GUPTA <pg.nitttr.kol@gmail.com>

FW: Data Center Tender Reference
1 message

ranjan <ranjandasgupta@hotmail.com>   Fri, Nov 14, 2014 at 3:15 PM
To: PHALGUNI GUPTA <pg.nitttr.kol@gmail.com>

Forwarded as discussed.

RDG

From: abhijit@dataconsystems.com
To: ranjandasgupta@hotmail.com
Subject: Data Center Tender Reference
Date: Thu, 6 Nov 2014 17:59:42 +0530

Dear sir,

The attached tender for your redy reference for your data center.

The Emerson smart row data center solution.

1.   4 nos 42URACK with all data center feature wit 4 nos of rack base Emerson 20 KVA on line ups Rs.65 Lakh

2.   3 nos 42URACK with all data center feature wit 2 nos of rack base Emerson 20 KVA on line ups Rs.45Lakh

Thanks and regards,

Abhijit Dutta

Business Manager

09830016840

An ISO 9001 : 2008 Company

VEXIL

Datacon Systems Pvt.Ltd.
9/12 Lalbazer St| 2nd Floor |E-Block |Marcantile Building | Opp-Lalbazer Police Station |Kolkatta-700001| India

Phone No:- 91-33-64502976 | 22104805 |

Website   :- www.dataconsystems.com

NETWORKING | Networking Audit | SERVER | Storage Back Up Solution | Virtualization-Server,PC |Security-UTM Firewall,AV |
Surveillance-CCTV,IP camera |Software Support | Power Solution- On Line UPS | Facility Management(FMS) | AMC| Remort Support |

![KPMG logo]

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Thank you

Contact Person:
Sameer Jain
Manager, Government Advisory, IGS
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Email: sameerjain@kpmg.com

Sanskrit PG e-Content Creation for Shastraic Disciplines

Financial Due Diligence - KPMG Report

November 2014

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Sanskrit PG e-Content Creation for Shastraic Disciplines
Project Background

Project Need	Given the fact that Sanskrit as a language, also serves as a medium of expression of high-level thought in multiple disciplines like Vedas or cosmic principles, there is a need for NPTEL-like effort in Sanskrit to help adoption to all constitutional languages and development of online Sanskrit academic/ curricular studies. In this regard, the Project aims at Curricular Content generation in Humanities – languages, for UG and PG level; school level for Sanskrit (and regional languages)
Proposed Benefits	• Standards for creation of content for any specific system, text, mode etc. • Large suite of tools and utilities for better access and study extension to all Indian languages • Many multi-lingual, multi-media CD titles planned on Heritage, culture etc. • Repository of original treatises, manuscripts and information content for posterity

Project Scope	• Offer interdisciplinary academic programs for Sanskrit/Vedic scholars and computer scientists on Sanskrit informatics, computational linguistics,Manuscriptology (advanced) etc., undergraduate and postgraduate levels.
	• 4-quadrant e-content for seven disciplines of PG courses of Sanskrit Universities under UGC, covering:
	  ➢Veda and Veda bhashya
	  ➢Vyakaranam
	  ➢Nyaya
	  ➢Mimamsa
	  ➢Vishishtadvaita Vedanta
	  ➢Sahitya [Kavya-varga] and
	  ➢Manuscriptology
	• Creation of 7 papers uploaded online for each of the 7 disciplines in Year 1

PI	Dr P. Ramanujan
Project Duration	1 Year *(Financial Analysis conducted for Year 1 only as per Standing Committee Meeting inputs)*

Budget	Proposed Budget for Year 1	Recommended Budget for Year 1
	INR 3.29 Cr	**INR 3.29 Cr**

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Sanskrit PG e-Content Creation for Shastraic Disciplines
Key Observations

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
Budget Management (Course Creation)	■ On a recommended budget of INR 7 lakh per paper, the total proposed budget (content creation) is driven by a multiplier based on number of disciplines (7) and papers/ courses per subject (approximately 7) for the first year	■ At planned milestones, NMEICT constituted PRSG should **review the project output** (paper + quality) and resulting budget consumption, since the project cost is determined by a multiplier based on number of course and related content modules/units. ■ In alignment to the standardization of costs, PRSG should also ensure that the **output requirement** for each of the courses generated **are standardized** in order to ensure par quality across all papers/courses.

Sanskrit PG e-Content Creation for Shastraic Disciplines
Project Financials

Budget Breakup for Year 1 (INR Lakhs)			
# Component	Proposed Budget	Recommended Budget	KPMG Comments
- Cost per Paper/ Course	7	7	■ Cost per paper/course has been computed at the NMEICT/ UGC approved rate of INR 7 lakh (**INR 17,500 per module** for a 40 module per paper/course). All manpower, hardware and software infrastructure related costs have been built into the proposed budget.
- Average Paper/ Course per Discipline	~7	~7	■ As per discussions between NMEICT and the PI, the courses shall be **hosted on the Information and Library Network Centre**, Gandhinagar, approved by NMEICT. **No additional cost** provisioned for the same.
- Total Disciplines	7	7	■ **Workshop costs** to be conducted for finalization of course content are built into the per paper cost. ■ KPMG analysis is based on the understanding from the PI that papers/courses across all subjects shall have on average **same level of effort and complexity** ■ The Committee if sees fit may revise the budget to INR 12.4 lakhs per paper/course for this Project as per the revised CEC content guidelines.
Total	**329**	**329**	■ **No explicit budget rationalization at this time, however, increased granularity of Project Scope and output found in the Annexure**

While the Annexure attached to the Report provides additional granularity, KPMG recommends that such details be documented as part of the DPR baseline. Such an exercise shall allow this Project to be used as reference for other similar projects or for future scope expansion.

Sanskrit PG e-Content Creation for Shastraic Disciplines
Annexure I: Pis Input on Project Components and Implication on Budget
Clarification of Budget Computation via Email

✉ 💾 ↰ ↻ ↑ ↓ 📧 ⌄ Re: MHRD - NMEICT - Tarkshya Pro... ? ⤓ — ☐

FILE   MESSAGE

Tue 11/4/2014 5:42 PM
Ramanujachar P <ramanujachar@gmail.com>
Re: MHRD - NMEICT - Tarkshya Proposal - Finalization of Budget

To   ☐ Singh, Shristi

Cc   ☐ Jain, Sameer; ☐ pradeep kaul

Yes.
You may go ahead.

On Tue, Nov 4, 2014 at 5:07 PM, Singh, Shristi <shristisingh@kpmg.com> wrote:

Dear Dr. Ramanujan,

Thank you for clarifying the details of the proposal over the call. In order to ensure that we have understood the key points that were discussed in the call, I am summarizing them in this email.

1. The budget for the Project is computed using the multiplier of INR 7 lakh per course creation. This figure for course creation has been referred to by NMEICT as per NMEICT/UGC guidelines for course creation for the purpose of this Project.

2. In terms of output as is expected for each course created, it is understood that the output will match the requirements based on which the budget of INR 7 lakhs has been reached.

3. Lastly, since the hosting all the courses shall take place on Information and Library Network Centre, Gandhinagar, as approved by NMEICT, there are no additional costs related to this heading.

May we request you to please accept the aforementioned understanding, which will then form the basis for our report. We will be taking the revised DPR shared by you as the final DPR from your side incorporating changes suggested by the SC Committee Meeting.

Thank you

Contact Person:
Sameer Jain
Manager, Government Advisory, IGS
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Email: sameerjain@kpmg.com

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Learning by Doing (LBD) based Course Content Development in areas of CS and ECE

Financial Due Diligence - KPMG Report

November 2014

Learning by Doing(LBD) based Course Content Development in areas of CS and ECE
Project Background

Project Need	The project aims to develop digital content in the CS and ECE field using the Learning by Doing (LBD) approach so that students are able to learn, appreciate and apply the concepts learnt in a class by applying them in real life. Doing the tasks will involve the student and thus the student will be able to understand the concepts better by applying them to a real world problem.
Proposed Benefits	• Digital courseware can be made (simultaneously) accessible to all interested learners across the population. • The learner may "attend" the course at various timings of his/her choice. • Repeatability of courses is easy and lossless. • Visualizing concepts such as stress patterns in materials, molecular structures of chemicals or the Internet traffic patterns of information packets etc. is made simpler digitally. • Learner to choose (or create) his/her own examples for illustration. • Periodically up gradation of digital content. • Related questions of the learners can perhaps be answered in a timely fashion. • Courseware may act as an academic-networking platform.
Pilot Phase Details	• The Pilot Phase of the Project included content development for 2 courses namely 1) Principles of Information Security and 2) Data Structures. It also included design of an "AI based automatic text evaluation tool" for a total budget for INR 30 lakhs
Project Scope	• To develop E-courseware for core areas of the computer science undergraduate curriculum • To facilitate dissemination of the content via powerful ICT-based means like websites, CD's, e-mail based guidance • To encourage simulation/virtual reality based environments where students can learn concepts/skills via hands-on (yet risk-free) experiences and failures. • To organize workshops for discussions and feedback on the content
PI	Professor Sandhya Kode
Project Duration	1 Year *(Financial Analysis conducted for Year 1 only as per Standing Committee Meeting inputs)*

Budget	Proposed Budget for Year 1	Recommended Budget for Year 1
	INR 1.116 Cr	**INR 1.116 Cr**

Learning by Doing(LBD) based Course Content Development in areas of CS and ECE
Key Observations

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
Budget Management (Course Creation)	■ On a recommended budget of INR 31,000 per paper of e-content in four quadrants and additional of INR 2,000/- for transcription, the total proposed budget (content creation) is driven by a multiplier based on number of courses (9) for the first year	■ At planned milestones, NMEICT constituted PRSG should review the project output (paper + quality) and resulting budget consumption, since the project cost is determined by a multiplier based on number of course and related content hours/units. ■ In alignment to the standardization of costs, PRSG should also ensure that the output requirement for each of the courses generated are standardized and as per the approved 4 quadrant approach in order to ensure par quality across all courses.
Technology Development	■ The technology focuses on simulation/virtual reality based environments where students can learn concepts/skills via hands-on (yet risk-free) experiences and failures	■ This will be a significant value add, as it can facilitate future expansion (in terms of students and courses) ■ Stakeholders should focus on Technology and Process Standardization for a consistent module delivery. Content creation will benefit from standard technical component, process and documents.
Training for Teachers	■ In order to ensure that teachers adapt to the content delivery in LBD fashion, the SC Meeting has recommended training of teachers including Prof. Phatak's 10K training program to scale up further. This would require additional budget, as per the PI.	■ While the SC Meeting Minutes recommends trainings, the Committee has not approved a budget for the same. ■ <u>Therefore, as per the decision of the Committee, a separate budget for training may be approved.</u>

Budget Breakup for Year 1 (INR Lakhs)			
# Component	Proposed Budget	Recommended Budget	KPMG Comments
- **Cost per course**	12.4	12.4	■ Cost per paper has been computed at the NMEICT/ UGC **approved rate of INR 31,000** per module including INR 2,000 for transcription as approved by the SC Committee Meeting. All manpower, hardware and software infrastructure related costs have been built into the proposed budget.
Modules per course	12-20	12-20	■ As per discussions with the PI, each course would be **60 hours** in duration with approx. 12 - 20 modules per course (as against standard 40 modules of 40 hours duration). <u>Funds may be released proportionately (if the total hours are less than 40) at the established rate or as seen fit by the PAB as the case may be</u>.
Average hour of content development per course	60	60	
- **Total Courses**	9	9	■ As confirmed by PI, hosting shall take place on the Institute website; www.enhanceedu.iiit.ac.in/mhrdportal as approved by NMEICT. **No additional costs** provisioned for the same. ■ Workshop costs to be conducted for finalization of course content, are built into the per module cost. ■ KPMG analysis is based on the understanding from the PI that courses across all subjects shall have on average **same level of effort and complexity**
Total	**111.6**	**111.6**	■ **No explicit budget rationalization at this time, however, increased granularity of Project Scope and output**

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Thank you

Contact Person:
Sameer Jain
Manager, Government Advisory, IGS
KPMG
Email: sameerjain@kpmg.com

DRAFT TENDER DOCUMENT FOR Wi Fi CAMPUS CONNECT

-----------------------University/Institution

No. ----

Dated: --------------

Due Date: ------------------ &Time: --------------------

Opening of Bids – Date: --------------&Time: --------

Subject: Supply, Installation and Commissioning of Active and Passive network components towards the Establishment of Campus Area Network for ------------University/ Institution.

1. **University Details:**

2. Sealed tenders are invited from the reputed manufacturers (OEMs) or their authorized System Integrators (authorization from OEMs to be submitted) for **Supply, Installation and Commissioning of Active and Passive network components for Establishment of Wi Fi Campus Area Network for the university/Institution.**

3. The bidders will submit the bids (explained further in 3.1.7) in two parts. Part I will comprise of technical bids along with complete Bill of Materials and 'make and model nos of each item to be used for the solutions offered by them. Also the bidder shall submit a detailed architecture along with network diagrams for their proposed solutions. Part II will be the Financial Bid as further given in 3.2.

4. The detailed bill of quantity and technical specifications of equipment are enclosed in Annexures- I and II respectively.

5. To have better understanding of the exact solution requirement bidders may visit the University Institution location before submitting their respective offers / bids.

6. **The following instructions should be carefully noted:**
    GENERAL CONDITIONS

a. The bidder must be a reputed manufacturer (OEM) or the authorized representative/System Integrator of the type of products offered. The authorization against the tender enquiry from the manufacturers/OEMs must be submitted along with the bid. **The bids received without authorization against the tender enquiry will liable to be rejected.**

b. Quotations should be submitted in two separate sealed covers. First cover indicating, **"COVER**

c. **FOR TECHNICAL SPECIFICATIONS"** should consist of only technical specification of the system offered along with literature, pamphlets, etc. including detailed Bill of materials and network diagrams for the proposed solutions. Technical Bid should contain complete technical specifications, make and model of the items, and commercial terms etc. of the system offered. Price column in this cover should be kept blank. Second cover indicating, **"COVER FOR PRICE BID"** should consist the same details of first cover as well as price details also. **Both the covers should first be sealed separately**, and then both the covers should be kept **in a single sealed bigger cover.** This cover addressed by name to the officer signing this enquiry should be submitted before due date and time.

7.   Contents of Tender

7.1 Tender would have two parts. Part I contains Pre-qualification, EMD and Technical Bids and Part II will have Financial Bids.

Part-I will contain: -

7.1.1   The Compliance Statements completed in all respects against all the Sections of the tender as per **clause2 – Section-B.**

7.1.2   Power of Attorney/ Authorization on the name of the person signing the bid document with company seal on it. Such authorization can only be given by the person authorized by the company owner or broad for issuing such documents. (Documentary proof may be submitted)

7.1.3   Tender fee and Earnest Money Deposit (EMD) – as mentioned in this tender.

7.1.4   Valid Income Tax Clearance Certificate (ITCC).

7.1.5   Detailed technical offer.

7.1.6   Tender document duly signed and stamped by the bidder.

7.1.7   The technical offer should comprise of following:-

   a.   Detailed technical description of the offered solution architecture in accordance with tender requirements.

   b.   Complete network diagram detailing proposed connectivity flow.

   c.   Complete Technical Solution including lay-out, design and architecture of the network.

   d.   Bill of material with exact quantity details and their specific make & model details.

   e.   Data Sheet, Product Brochures, leaflets, manuals etc. of the offered products cross-referenced with the tender specifications and technical solution requirements to prove the bidder's solution compliance. (Generic data sheet of models quoted will not be acceptable)

   f.   **Delivery and implementation schedule with exact milestones achieved on per week basis in accordance with tender requirement till the final commissioning and acceptance of the solution and project as a whole.**

   g.   Compliance with each of the terms and conditions indicating deviation clearly, if any.

   h.   Comprehensive warranty details. (Mention clearly the services included in this). Also information regarding availability of help desk support, email address, Toll free contact no. etc. for use of University/Institution under this project.

   i.   If the technical bid contains any price information the bid will be summarily rejected.

   j.   List of Deliverables.

   k.   Project Implementation Methodology specific to this project and Operation Management plan details.

   l.   **Compliance of the Pre-Qualifying criteria/Eligibility as per the tender along with documentary evidence of the same.**

7.2 Part-II (Financial Bid) will contain:

7.2.1   The prices should be quoted as per the Price Formats given in the Annexure-III.

7.2.2   The break-up of the price should include the following:-

   a.   One time supply, Installation, Integration & commissioning for complete system against the BoM with comprehensive warranty for one year and AMC next two years on annual basis.

   b.   **The quoted cost should be inclusive of installation, commissioning, training and any other cost, if required to provide the complete solution.**

   c.   The quoted prices should be inclusive of freight, insurance charges, etc.

   d.   Bids should be valid for a minimum period of 180 days after the due date.

8.   Envelope should bear the following inscription:

   "Supply, Installation and Commissioning of Active and Passive network components for the Establishment of Wi Fi Campus Area Network for ------------University/ Institution."

   "Due Date: Time

   Opening of Bids: Time"

9. The Bids must reach the undersigned on or before the due date. Bids received after the due date and time are liable to be rejected. In the event of due date being a closed holiday or declared Holiday, the due date for submission of the bids will be the following working day at the appointed time & venue.

10. The rates should be quoted in Indian Rupees for delivery at the premises of the University. All prices shall be fixed and shall not be subjected to escalation of any description. The rates must be quoted as per the bill of materials/ Price Bid provided in **Annexure-III.**

11. Govt. Levies like sales tax/ VAT, octroi, Work Contract Tax (WCT) etc., if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, Sales Tax etc., if any.

12. It may specifically be mentioned whether the quotation is strictly as per tender specifications/ conditions. If not, deviations must be spelt out specifically. **In the absence of this, the quotation may be rejected.**

13. The University/ Institute reserves the right to accept or reject any bid or cancel the tender proceedings without assigning any reason whatsoever

14. The bidders should quote the products strictly as per the tendered specifications giving models, make and exact specifications. All the technical literature/ Datasheets for the products offered by the bidder may be enclosed in the bid.

15. **In complete quotations are liable to be rejected.**

16. Bidder shall sign all pages of quotation and drawings forwarded with the quotation.

17. In case of any discrepancy between rates mentioned in figures and words, the latter shall prevail.

18. Bidder should quote for all the items. Any partial bidding may lead to rejection of bid.

19. University/Institution may waive any minor deviations or may seek any clarification, if so desired.

20. Any attempt of negotiation directly or indirectly on the part of the tenderer with the authority to whom he has submitted the tender or authority who is competent finally to accept it after he has submitted his tender or any endeavor to secure any interest for an actual or prospective tenderer or to influence by any means the acceptance of a particular tender will render the tender liable to be rejected.

21. The vendor will have to arrange for all the testing equipment and tools required for installation, testing, maintenance etc.

22. All the offered Wi-Fi equipments should be from single OEM.

23. University/Institution will have the right to reject the components/equipment supplied if it does not comply with the specifications at any point of installation /inspection.

24. The vendors should give clause-by-clause compliance for the technical specifications of the equipments in their technical bids.

23. Any equipment quoted by bidder should not be declared obsolete from its OEM and also bidder should arrange an undertaking from OEM side in this regard along with next five year support commitment.

24. **Comparison and Evaluation of Tenders**

24.1 The Tenders received and accepted will be evaluated by University/Institution to ascertain the technical competence and lowest evaluated Tender in the interest of Project for the complete scope of the tender.

24.2 In the process of bids evaluation, ERNET may seek clarifications to any of the bidders on their submitted bid and request them to submit the documents as maybe required for evaluation.

25. The evaluation of the bids will be done on the basis of ownership of the solution for 5years.

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26. **EARNEST MONEY DEPOSIT**

 i. Each quotation must be accompanied by Earnest Money Deposit of Rs.50,000/- (Rupees Fifty thousand only) shall be in the form of Demand Draft/Pay Order/ Bank Guarantee of any Nationalized Bank in favour of "-----------University/Institution". Bank Guarantee should be valid minimum for a period of 180 days from the original date of bid submission. **Quotations received without Earnest Money Deposit are liable to be rejected.**

 ii. Earnest Money is liable to be forfeited and bid is liable to be rejected, if the tenderer withdraws or amends, impairs tender in any respect within the period validity of the tender.

 iii. The earnest money of all the unsuccessful tenderers will be returned after placement of order on the selected vendor. No interest will be payable by University/Institution on the Earnest Money Deposit.

 iv. The Earnest Money of successful bidder shall be returned after delivery & installation of equipments.

 v. The bidder should enclose the Tender fee of Rs.2000/- in the form of DD in favour of "----------University/Institution".

27. **Performance Guarantee**

 27.1 The bidder, whose bid is accepted, shall submit the performance guarantee of 10% (Ten Percent) of the total project price to University/Institution in the form of an irrevocable and unconditional bank guarantee from a nationalized Indian bank, as per **Proforma attached as Annexure-IV** within 15 calendar days of the issue of Letter of Intent (LOI)/ letter of acceptance.

 27.2 The guarantee amount shall be payable to University/Institution in Indian Rupees without any condition what so ever and the guarantee shall be irrevocable.

 27.3 The performance guarantee shall be **deemed to govern the following guarantees** from the successful bidder, in addition to the other provisions of the guarantee:

 a. The successful and satisfactory operation of the equipment supplied in accordance with the specifications and other relevant documents.

 b. The equipment supplied shall be free from all defects and designs, material and workmanship and upon written notice from University/Institution, the successful bidder shall fully remedy free of expenses to University/Institution all such defects as developed under the normal use of the said equipment within the period of contract with the bidder.

 c. The performance guarantee is intended to secure the performance of the entire equipment and services by the bidder. However, it is not to be considered as limiting the damages stipulated in any other clause.

 27.4 **The performance guarantee will be returned to the successful bidder at the end of the period of one year warranty period or any other liability without interest.**

28. **INSPECTION**

University/Institution's representative shall have the right to inspect or to test the items to confirm their conformity to the ordered specifications. The supplier shall provide all reasonable facilities and assistance to the inspector at no charge to University/ Institution. In case any inspected or tested goods fail to conform to the specifications, University/Institution may reject them and supplier shall either replace the rejected goods or make all alterations necessary to meet specification required free of cost to University/Institution.

29. **WARRANTY / AMC**

Warranty shall include free onsite maintenance of the whole equipment supplied including free replacement of parts and free software upgrades. The defects if any shall be attended to on immediate basis but in no case any defect should prolong for more than 6 hours.The Comprehensive Warranty shall be for a minimum period of one year from the date of acceptance of the equipment by University/ Institution. The bidders are also required to quote

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for Comprehensive maintenance/ AMC including all Hardware items and Software items for two years after one year of warranty period. The bids received without quotes for Comprehensive Maintenance would be outrightly rejected. The Grand total including the cost of AMC for two years will be taken into account for deciding the L1 bidder.

30. **DELIVERY & COMMISSIONING PERIOD**

The bidder will ensure **Supply, Installation and Commissioning of Active and Passive network components for Establishment of Wi Fi Campus Area Network for** University/Institution within first three weeks from the date of placement of purchase order at University/Institution's premises to establish the proposed network as per the scope of work given in this tender. Bidder shall be responsible for submission of acceptance test document and getting it signed by the authorized official of University/Institution. The warranty of the equipment should start from the date of acceptance of the network as a whole.

Any delay by the supplier in the performance of delivery, installation and Commissioning of the equipments/network shall render the supplier liable to any or all the following sanctions for feature of its Earnest Money Deposit/PBG, imposition of liquidated damage or/and cancellation of the purchase order for default.

31. **LIQUIDATED DAMAGES**

If the supplier fails to delivery any or all of the goods or complete the installation/services within the period specified in the purchase order, University/Institution shall without prejudice to it, deduct as liquidated damages of two percent of the value of purchase order.

32. Rates quoted by the Bidder shall be final and no negotiation will be held.

33. **PAYMENT TERMS:**

Payment shall be made by University/Institution to the successful bidder as per the following schedule. The payment shall be made by cheque to the vendor.

a. 90% of the payment shall be made after the successful Supply, Installation, Commissioning and acceptance of complete network by University/Institution and the remaining10% will be paid after satisfactory completion of warranty period of one year or 100% payment will be released upon submission of PBG of equivalent to10% of amount to be valid for a period of 15 months.

b. With respect to AMC/ maintenance cost of every year, payment shall be made on quarterly basis after satisfactory completion of every quarter in the complete period of contract.

34. **ELIGIBILITY CRITERIA:**

34.1 Bidder should be a registered company under company registration act 1956 or registered society under society registration act 1860.

34.2 The bidder should be an ISO 27001certifiedcompany/ organization.

34.3 The bidder shall have an average annual turnover of above Rs. 1 crore in the last three financial years.

34.4 The bidder should have positive net worth in the last three years.

34.5 Bidder should have executed three similar works of value not less than 7 lakhs (of each order) in last three years from the date of release of this tender. (order copies to be provided)

34.6 In order to ensure provenness of the offered Wi-Fi solution, the offered OEM should have presence in India from last three years and also have minimum five similar deployments in Education/Research Institute. (order copies from OEM to be provided)

34.7 The offered OEM for Wi-Fi equipments should be listed in Gartner/IDC in Leaders quadrant.

34.8 The bidder should not have been black listed in the past three years from any Central/ State Government organization/ undertaking across India. An undertaking in this regard should be submitted by the bidder

35. **SLA Terms and conditions during the period of warranty and AMC.**

35.1 Maintain an uptime of 99%. Uptime can be ensured by providing stand by equivalent equipment.

35.2 Call attending time within six hours and resolution in next six hours including any hardware item repair or change.

35.3 Any faulty hardware item will be replaced at the earliest by hardware item of equivalent specifications at the earliest. After repairing, the same equipment will be placed in the network. If the hardware item is beyond repair, it may be replaced with new equipment of same specifications.

35.4 The Successful Bidder will provide the toll-free number for registration of complaints.

35.5 The Successful Bidder will keep the spares of major equipments of the equivalent specifications. Vendor should submit an undertaking along with list of standby material in technical bid.

35.6 Down time penalty of 1% of maintenance cost of complete network for every 0.1% below 99%.

Yours faithfully,

Authorized Representative
University/Institution

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Bill of Material

A. Active Equipment & Components

S.No.	Description	units	Quantity
1	Access Switch - Layer2 with console/auxiliary ports along with all other accessories and required modules/components:		
i	24 port PoE 10/100/1000 Mbps (Ethernet-RJ45) switch with 2	Nos.	3
2	Wireless Access Points		
i	Wireless Access Points supporting 802.11a/b/g/n/ac and with suitable antenna to work with Wireless controller	Nos.	37
3	WLAN Controller		
i	Wireless LAN Controller/switch(WLANC) with 2 Gigabit Ethernet uplinks for 100 802.11a/b/g/n/ac Access Points provided with high availability configuration all accessories and	Nos.	1
4	1KVA UPS with 30 minutes battery backup	Nos.	3

B. Passive Equipment & Components

S. No.	Item Description	Units	Qty*
1	Feasibility Study, Site Survey, project plan specifying layout plan of Network components and Bill of Material of the Network devices & equipment (per site)	Nos.	1
2	Supply & Fixing of 1", 1.5" PVC duct (Pipe) for UTP cables - AKG/ Modi/ISI		
i)	1 inch (per meter)	Mtrs	1087.8
ii)	1.5 inch (per meter)	Mtrs	466.2
3	UTP Cable Laying	Mtrs	2590
4	Installation and labeling of 24 Port Jack Panels & termination of UTP Cat6 cable on Jack Panel (Per unit)	Nos.	3
i)	Labeling of jack panels 24 ports) and nodes	Nos	3
5	Installation & Termination of information outlets (includes termination CAT 6	Nos.	3
6	Testing of laid cables for the nodes (UTP) (per node)	Nos.	3
7	Supply & installation of 19" Surface & Wall Mount Racks with platform & proper support for brackets, Racks filled with Casters, Front & rear doors, Power distribution unit & Fans. Cable Manager (Horizontal		
i)	12U	Nos.	3
8	Installation & termination of single mode fiber optic cable (Armored12 core)		
9	Supply of UTP Cable & components		
i)	Cat6 Cable (Per meter)	Mtrs	2590
ii)	Cat6 I/O Surface Mount	Nos.	3
iii)	Cat6 Jack Panel 24 Ports, 19" Rack Mount	Nos.	3
iv)	Cat6 Patch cords (1 mtrs)	Nos.	7
10	Site certification for 20 yrs. Warranty from OEM	Nos.	1

Note: *Quantity for passive equipment and components are purely based on assumption and will change as per actual requirements.

<div align="center">**Technical Specifications**</div>
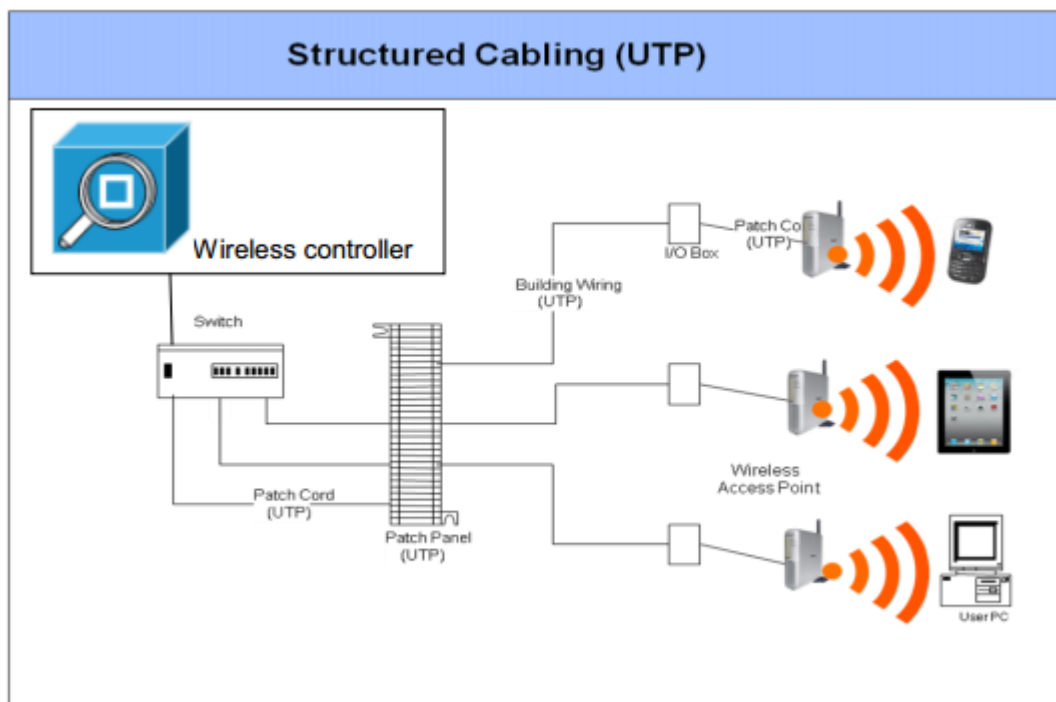
<div align="center">**Indicative Layout for the facility**</div>

Active & Passive Equipment & Components

1.   Access Switches (PoE)

S. No.	Technical Specifications
1	**Switch Architecture and Performance**
2	Switch should have 24 X 10/100/1000Base-T auto-sensing ports complying to IEEE 802.3, IEEE 802.3u and 802.3ab standard, supporting half duplex mode, full duplex mode and auto negotiation on each port with 2X1G /10G uplinks with SFP+ support
3	Switch should support stacking with dedicated stacking ports whenever required in future
4	Switch should support link aggregation across multiple switches in a stack.
5	Switch should have non-blocking wire-speed architecture.
6	Switch should be IPv4 and IPv6 enabled from day One
7	Switch should have non-blocking switching fabric of minimum 88 Gbps or more and should have Forwarding rate of minimum 65 Mpps..
8	Switch should support power supply redundancy.
9	**Layer 2 Features**
10	IEEE 802.1Q VLAN tagging with support for minimum 255 active VLANs and 4k VLAN ids
11	Should support for minimum 16k MAC addresses
12	Should support Spanning Tree Protocol as per IEEE 802.1d, Multiple Spanning-Tree Protocol as per IEEE 802.1s, Rapid Spanning-Tree Protocol as per IEEE
13	Switch should support IGMP v1/v2/v3 as well as IGMP v1/v2/v3 snooping.

<div align="right">**372**</div>

14	**Quality of Service (QoS) Features**
15	Switch should support classification and scheduling as per IEEE 802.1P on all
16	Switch should support DiffServ as per RFC 2474/RFC 2475.
17	Switch should support QoS configuration on per switch port basis support four hardware queues per port.
18	**Security Features**
19	Switch should support MAC address based filters / access control lists (ACLs) on all switch ports.
20	Switch should support Port as well as VLAN based Filters / ACLs.
21	Switch should support RADIUS and TACACS+ for access restriction and authentication.
22	Secure Shell (SSH) Protocol, HTTP and DoS protection
23	Should support DHCP snooping, DHCP Option 82, Dynamic ARP Inspection (DAI)
24	**Management, Easy-to-Use Deployment and Control Features**
25	Switch should have a console port with RS-232 Interface for configuration and diagnostic purposes.
26	Switch should be SNMP manageable with support for SNMP Version 1, 2 and 3.
27	Switch should support TELNET and SSH Version-2 for Command Line Management.
28	Switch should support 4 groups of embedded RMON (history, statistics, alarm and events).
29	Support for Unidirectional Link Detection Protocol (UDLD) to detect unidirectional links caused by incorrect fiber-optic wiring or port faults and disable on fiber-optic
30	Layer 2 trace route eases troubleshooting by identifying the physical path that a packet takes from source to destination.
31	**Standards**
32	Should be RoHS Compliant.
33	Should support IEEE 802.1x support.
34	Should support IEEE 802.3x full duplex on 10BASE-T and 100BASE-TX ports.
35	Should support IEEE 802.3u 10 BaseT / 100 Base Tx /1000 Base Tx.

2. Wireless Access Points (WAP)

S.No.	Minimum Technical Specifications
1.	**Hardware:**
2.	Access Points proposed must include radios for both 2.4 GHz and 5 GHz.
3.	Must have a robust design for durability, without visible vents
4.	Must have an industrial design for durability, with industrial grade antenna connectors, without visible vents, and with metal locking points.
5.	Must include dual band antennas to support both the 2.4GHz and 5GHz operations simultaneously from single antenna.
6.	Must support a variety of antenna options
7.	Must support 3x3 multiple-input multiple-output (MIMO) with three spatial
8.	Must support simultaneous 802.11n on both the 2.4 GHz and 5 GHz radios.
9.	Must support data rates upto 1.3 Gbps on 5Ghz radio and 450Mbps on 2.4Ghz
10.	Must support 40 MHz wide channels in 5 GHz.
11.	Must support 80 MHz wide channels with 802.11ac
12.	Must support upto 23dbm of transmit power in both 2.4Ghz and 5Ghz radios. (limited as per Govt. of India regulation for such WAP)

13.	**RF**
14.	WAP should have the technology to improve downlink performance to all mobile devices including one-, two-, and three spatial stream devices on 802.11n. The technology should use advanced signal processing techniques and multiple transmit paths to optimize the signal received by 802.11 clients in the downlink direction and should work with all existing 802.11 clients.
15.	Should support configuring the access point as network connected sensor to access any network location covered by the access point to get real-time Spectrum analysis
16.	Must support WAP enforced load-balance between 2.4Ghz and 5Ghz band.
17.	Must incorporate radio resource management for power, channel, coverage hole detection and performance optimization
18.	**Roaming**
19.	Must support Proactive Key Caching and/or other methods for Fast Secure
20.	**Security**
21.	Must support Management Frame Protection.
22.	Should support locally-significant certificates using a Public Key Infrastructure
23.	Must operate as a sensor for wireless IPS
24.	**Encryption**
25.	WAPs must support a distributed encryption/decryption model.
26.	**Monitoring**
27.	Must support the ability to serve clients and monitor the RF environment
28.	WAP that serves clients must be able to be dedicated to monitoring the RF environment.
29.	**Flexibility:**
30.	WAP proposed must be able to be both a client-serving WAP and a monitor-only WAP for Intrusion Prevention services.
31.	Should support mesh capabilities for temporary connectivity in areas with no Ethernet cabling.
32.	Mesh support should support QoS for voice over wireless.
33.	Must support multiple WLANs per WAP for SSID deployment flexibility.
34.	**Operational:**
35.	A single WAP automatically distribute the network configuration to other WAPs in the
36.	**Power:**
37.	Must support Power over Ethernet, local power and power injectors. Should be provided with power adapter.
38.	Must support Reliable Multicast Video to maintain video quality
39.	Must support QoS
40.	Must be IPv4 and IPv6 enabled from day One
41.	Standards
42.	802.11a
43.	802.11b
44.	802.11g
45.	802.11n
46.	802.11ac
47.	Should have one USB 2.0 port

3. Wireless LAN Controller/Switch (WLANC)

S.No.	Minimum Technical Specifications
1.	WLANC must be compliant with IEEE CAPWAP or equivalent for controller-based Wireless LANs(WLANs)
2.	WLANC should support upto 100 Access points scalable to 500. Should be proposed in High Availability mode.
3.	Should not require a separate controller for Wireless Intrusion Prevention Access Points
4.	Should support multiple redundancy models like 1+1 and N+1.
5.	Should have redundant power supplies.
6.	Must support an ability to dynamically adjust channel and power settings based on
7.	Radio coverage algorithm must allow adjacent WAPs to operate on different channels, in order to maximize available bandwidth and avoid interference
8.	Must support interference detection and avoidance.
9.	Must support coverage hole detection and correction that can be adjusted on a per WLAN basis.
10.	Must support RF Management with 40 MHz channels with 802.11n.
11.	Must support 80 MHz channels with 802.11ac.
12.	WLANC performance must remain the same if encryption is on or off for wireless SSIDs.
13.	Should support ability to adjust Delivery Traffic Indicator Message (DTIM)
14.	WLAN basis to improve performance for latency sensitive applications
15.	Should adhere to the strictest level of security standards, including 802.11i Wi-Fi Protected Access 2 (WPA2), WPA, Wired Equivalent Privacy (WEP), 802.1X with multiple Extensible Authentication Protocol (EAP) types, including Protected EAP (PEAP), EAP with Transport Layer Security (EAP-TLS), EAP with Tunneled
16.	Must support setting Access Control Lists (ACLs).
17.	Should support Management frame protection for the authentication of 802.11 management frames by the wireless network infrastructure.
18.	Should support a capability to shun / block WLAN client in collaboration with wired
19.	Must support built-in web authentication
20.	Must be able to set a maximum per-user bandwidth limit on a per-SSID basis.
21.	Must support user load balancing across Access Points.
22.	Should provide Mesh capability for Mesh supported AP
23.	Must be able to dedicate some APs to monitor-only for Intrusion Prevention Services.
24.	Must support client roaming across controllers separated by a layer 3 routed boundary.
25.	Must support clients roaming across at least 100 APs or better.
26.	Must support WAP over-the-air packet capture for export to a tool such as Wireshark/equivalent
27.	Should support the ability to schedule WAP power on/off for energy savings.
28.	Should be able to classify over 20 different types of interference within 5 to 30 seconds.
29.	Should provide a snapshot of air quality in terms of the performance and impact of interference on the wireless network identifying the problem areas.
30.	Should provide an Air Quality rating on a per- radio basis to help gauge the impact of interference on the network
31.	Should provide real-time charts showing interferers per access point, on a per-radio, per-channel basis.

32.	Should support 802.11e WMM
33.	Should have Voice Call Admission
34.	Support for configuring media streams with different priority to identify specific video streams for preferential quality-of-service treatment.
35.	To deliver optimal bandwidth usage, reliable multicast must use single session between WAP and Wireless LAN Controller.
36.	Should be IPv4 & IPv6 enabled from day one.
37.	Should support Internet Group Management Protocol (IGMP) snooping and access point should transmits multicast packets only if a client associated to the access point is subscribed to the multicast group.
38.	Should have at least One USB 2.0
39.	Should support the following wireless standards:
40.	802.11a
41.	802.11b
42.	802.11g
43.	802.11n
44.	802.11ac

4)   UPS 1KVA

S. No.	Description
1.	Type: Single-phase UPS systems in double-conversion technology compatible batteries, USB/RS232 interface. Power Factor 0,7 Topology Double conversion On-Line Type Rack/Tower
2.	**Power Rating :1000 VA**
3.	Input : Rated Voltage 230 V (180 – 280 V) Frequency : 50/60 Hz ± 5 % Power Factor : > 0.97 with linear load
4.	Output: Voltage : 230 V ±1 % (220/230/240 V adjustable) Output Frequency : 50Hz ± 0.1% Crest Factor Should be 3:1 Power Factor : 0.7 or
5.	Battery: Sealed maintenance free battery for backup duration of 30 minutes. Battery & UPS to be housed in a cubicle with suitable louvers.
6.	Overload Conditions: Overload Capacity : 105% overload continuous Overload Efficiency : 80% or
7.	Protection against Short Circuit, Overloading, Low battery, Input Over/Under voltage, Over Temperature
8.	System Indications: LED Indicators: Status displays with AC Power on, loadgroup, Overload, on battery and general alarm indicators. Audible Alarms: For UPS alarm conditions such as on battery, low Battery, overload, UPS fault.
9.	Certification:
	Safety IEC/EN 62040-1-1,IEC 60950-1
	Performance IEC/EN 62040-3
	EMC IEC/EN62040-2 Class A/ EN500901-2 Class A/ FCC Part 15 Subpart B Class A/ IEC/EN55011, CISPR11, IEC61000-4-2/-3/-4/-5, IEC61000-2-2, IEC61000-3-2/-3

10.	Environmental parameters: Operation Temperature 0 - 40°C Noise Level < 50 dBA Relative Humidity 0 to 90% (Without condensation)
11.	Form Factor: 19" Rack mountable/ Tower Type Necessary mounting kit to be provisioned along with the UPS
12	Quality Standard ISO Certification 9001 & 14001
13	All UPS should be from the same OEM

A. **Passive Cabling & Components**

1. Should meet ISO 11801 cabling standards and local construction and telecommunication regulations.
2. Should provide a user-friendly environment with less technical support and lower maintenance cost.
3. The entire UTP cabling system and components should be tested, approved and certified by internationally recognized third parties such as ETL, CSA, UL etc.(Provide documentary proof in this regard)
4. Should be ETL/UL certified
5. The OFC cable and components should conform to 10Gigabit Ethernet or higher standards.
6. All latest standards including the Following standards are to be complied with
   a. ISO/IEC 11801:2002
   b. EIA/TIA 568B
   c. EIA/TIA 568B.2-1
   d. EIA/TIA 568B.3
   e. EIA/TIA 568-C.2
7. The Faceplate Should have shutter to prevent dust and dirt getting into the outlet for single & dual outlets. Must have clear label for identification.
8. The RJ45 type telecommunication outlets should be surface or flush mounted and should support Gigabit Ethernet or higher. Should have integral hinged dust cover if not available on the face plate and suitable wire management unit for cable entry to protect against any loose joints, strain, etc.
9. The Work Area Patch cord and Mounting Cord should have factory fitted snagless boots to maintain the bend radius at both ends. The patch cords should be available in different colors for ease of identification.
10. The 4 pair UTP cable shall be of 23/24 AWG bare solid copper conductors. The cable should have uniform characteristic impedance. Should meet or exceed EIA/TIA 568-B2.1 CAT6 specifications. The cable should be tested for 250-500MHz or higher. The cabling system should be with Gigabit Ethernet Zero bit error rate performance warranty.
11. The components of the wire termination module should be UL or ETL Certified to meet EIA/TIA 568B.2-1 Category 6 Standard. The panel shall be available in 24 ports configurations in one Rack Unit for unshielded installation and shall fit into a 19" size. Rear cable management should only occupy the same area as the panel.
12. The bidder shall provide a list of their technical support staff, together with their working experience in the relevant field. Should provide the nearest location of their principal's support center. This center shall have permanently stationed support staff that is capable of providing technical support effectively and efficiently.
13. The bidder shall provide a 20 years industry standards compliance warranty, The 20 year product warranty shall cover product manufacturing defects for all passive Structured Cabling System as well as components.
14. All the UTP cables and fibre optic cables must be individually tested by the tenderer after installation of the cables for conformance to the said standards. The UTP nodes should be tested using the pentascanner and the fibre testing should be performed using the OTDR.
15. All equipment and materials supplied shall be new, the best of quality and designed to ensure satisfactory operation under varying atmosphere, climatic, humid tropical conditions without distortion and deterioration in any part affecting efficiency and reliability of the systems. The bidder shall provide manufacturer's literature including

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manufacturer's data on maintenance and operation of all equipment installed. Relevant catalogues of all materials, instruments, equipment, components, etc. supplied shall be included in this Tender.

16. Each equipment, panel and outgoing cable from the patch panels shall be labeled. Proper labeling and numbering shall also be provided on the outlets. All cable labels are to be of clear wrap around self adhesive type & each cable is to be labeled at each end 100mm from termination point. Labeling to be machine typed.

17. The bidder shall plan the cabling system and routing to ensure system integrity and performance, and that it does not present problems of maintenance, access nor conflict with the operation and maintenance of other systems.

18. All necessary penetrations and access between floors is the responsibility of the bidder, to provide same, and to ensure all penetrations and access holes are fully sealed to local Fire Authority rules.

19. The bidder shall provide adequate support for all cabling that is vertically installed, ensuring that the weight of the cables is sufficiently supported.

20. The bidder shall provide complete and detailed documentation covering the installation and maintenance of the building cabling system. Including "as built" drawings showing all main cable runs, cable trays and catenaries, outlets, consolidation points. Complete with outlet numbering.

21. The bidder should use trenchless digging technique for laying fiber under the roads without affecting the existing utilities.

22. The Bidder may use GI Flexible instead of PVC Flexible and ensure the closure of all points in the network racks subject to proper grounding and safety precautions.

23. Materials such as pipe, bricks, sand, stone-chips, cement, paint etc. required for laying the cables and other fixation work will have to be supplied by the Bidder.

24. All the passive networking components(UTP & Fiber optic cable) should be from same manufacturer and should be quoted with part numbers along with datasheets.

25. All the passive networking components(UTP & Optical Fiber) quoted by the bidder should be from one OEM make to ensure easy integration, compatibility, ease of installation, OEM's warranty and for maintenance purpose.

26. For passive components, the purchase order will be placed based on estimates only. But the payments will be made based on actual quantities installed/consumed.

(i) UTP Cabling
   ➢ UTP cable shall be CAT 6 UTP cable
   ➢ Cable to be laid in conduit/channels as per the requirement. The conduit and channel being used shall be ISI marked
   ➢ Clamps/Saddles shall be installed on conduit every 0.8 meter
   ➢ I/O faceplate shall be simplex and would be installed using 3x3" gang box
   ➢ Each installed node to be tested using pentascanner and report to be submitted

(ii) Racks
   ➢ Racks to be used shall be 19" standard racks with all required accessories
   ➢ Racks should have fans, power strips, mounting hardware, vertical and horizontal cable managers as per requirement. Bidder should install min 1 horizontal cable manager for each jack panel and LIU
   ➢ Wherever required, Racks with platform & proper support for brackets, Racks filled with Casters, Front & rear doors, Power distribution unit & Fans. Cable Manager (Horizontal & Vertical) and all accessories
   ➢ Bidder to ensure atleast 50% free capacity within the racks for future expansion
   ➢ Wall mount racks to be installed using hole fastners and floor standing racks should have castors

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**Price Schedule For Supply, Installation And Commissioning Of Active And Passive
Network Components For Establishment Of Campus Area Network
University/Institution**

To,
**Authorized Representative
University/Institution**

PRICE BIDFORMAT

S. No.	Item Description	Make &Model	Qty (A)	Unit price in INR {Inclusive of onsite warranty for one year}(B)	Sales Tax / Service Tax/ Etc. (C)	WCT (D)	Total price in INR E={(A*(B+C+D))}
1							
2							
3	As per clause1 of Annexure -I .						
.							
.							
.	.						
	.						
.	.						
.	.						
.	.						
.							
.							
					Grand Total		

Important Note:
    1. **The grand total will be used for calculation of L1.**
The price format should be appended with following text.
1. It is hereby confirmed that we have understood the terms and conditions of the tender and have thoroughly examined specifications and are thoroughly aware of the nature of goods/ services required and our offer is to supply goods/ services strictly in accordance with the requirement and terms and conditions of the tender. We agree to abide unconditionally to all the terms and conditions of the tender.
2. We hereby offer to supply the bandwidth/ services/ goods detailed above or such portions thereof as specified in the purchase order at the price quoted and agree to hold this offer open for acceptance for a period of 180days from the date of opening of bid.

_____
(Signature and seal of Manufacturer/Bidder)

Dated-------------------

PROFORMA FOR BANK GUARANTEE FOR CONTRACT PERFORMANCE

(To be stamped in accordance with stamp Act)
(The non-judicial stamp paper should be in the name of issuing Bank)

(As per clause nos. 16 of Section– A and 14 of Section-D)

Bank Guarantee No……….

Ref………….
Date………..

To

Authorized Representative
University/Institution

Dear Sirs,

In consideration of the **University/Institution** (herein after referred as the **'Owner'**, which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s …………………………..……………….(herein referred to as the **'Contractor,** which expression shall unless repugnant to the context of meaning thereof, include its successors, administrators executors and assigns), a Contract Bearing No……………dated………valued at------------------- for…………………….and the **Contractor** having (scope of Contract) agreed to provide a Contract Performance of the entire Contract equivalent to……………. (----------percent) of the said value of the Contract to the Owner.

We……….having its (Name & Address) Head Office at…………..herein after referred to as the **'Bank'**, which expression shall, unless repugnant to the context or meaning thereof, include the successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Owner, on demand any and all amount payable by the Contractor to the extent of………………….as aforesaid at any time upto…………….(day/month/year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the owner the Bank shall be conclusive and binding not withstanding any difference between the Owner and Contractor or any dispute pending before any court, tribunal or any authority.

The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Owner and further agrees that the guarantee herein contained shall continue to be enforceable till the Owner discharges this guarantee. The owner shall have the fullest liberty, without affecting in any way the liability of the Bank under this guarantee, to postpone from time to time the exercise of any powers vested in the nor of any right which they might have against the Contractor, and to exercise the same at

any time in any manner, and either to enforce or to forebear to enforce any covenants, contained or implied, in the Contract between the Owner and the Contractor or any other course of or remedy or security available to the Owner. The Bank shall not be relieved of its obligations under these presents by any exercise by the owner or by any other matters or thing whatsoever which under law would, but for this provision, have the affect of relieving the Bank. The Bank also agrees that the Owner at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and not withstanding any security or other guarantee that the Owner may have in relation to the Contractor's liabilities.

Notwithstanding anything mentioned herein above our liability under this guarantee is restricted to Rs……….. and it shall remain in force upto and   including………shall be extended from time to time for such period), as may be desired by M/s…………………….on whose behalf this guarantee has been given.

<u>WITNESS BANK</u>

Signature………………   Signature…………………

Name…………………   Name----------------------

                                                    (Bank's Rubber Stamp)

Official address………………………

Designation with Bank Stamp

Attorney as per Power of Attorney No……………

Date…………..

NATIONAL INFORMATICS CENTRE SERVICES INCORPORATED

नेशनल इंफोर्मेटिक्स सेंटर सर्विसिज़ इंक.
National Informatics Centre Services Inc.
(A Government of India Enterprise under NIC)
Ministry of Communications & Information Technology

10(21)/2014-NICSI

Dated: 10.09.2014

To,

M/s Bharti Airtel Ltd.
Bharti Crescent, 1, Nelson Mandela Road,
Vasant Kunj Phase II, New Delhi-110070

Subject: Empanelment of selected vendor consequent to finalization of NICSI's open tender NICSI/2G-3G-Wi-Fi DONGLE & BROADBAND DATA CONNECTIVITY/2014/11 for 2G, 3G, Wi-Fi Dongle and Broadband Data connectivity for use in Aadhaar enabled bio-metric attendance system (AEBAS) to be deployed in Government of India offices in Delhi

Dear Sir,

I am directed to refer to your financial bid against our open tender **NICSI/2G-3G-Wi-Fi DONGLE & BROADBAND DATA CONNECTIVITY/2014/11** for 2G, 3G, Wi-Fi Dongle and Broadband Data connectivity for use in Aadhaar enabled bio-metric attendance system (AEBAS) to be deployed in Government of India offices in Delhi, and to inform you that it has been decided by the competent authority at **NICSI** to empanel your firm (hereunder referred to as the 'vendor' or 'bidder') on the terms and conditions, and the prices, mentioned in this empanelment letter and its annexure, for providing the following:

1. **Broadband connectivity with WiFi Router (Technical Category C item)**

The issuance of this empanelment letter and its unconditional acceptance by you, in writing, will stand as a written agreement between **NICSI** and **M/s Bharti Airtel Ltd.** for honouring all tender conditions and adherence to all aspects of fair trade practices in executing the purchase orders placed by **NIC/NICSI** on behalf of its clients.

Terms and conditions pertaining to this empanelment are as follow:

1 EMPANELMENT OF VENDORS

1. Keeping in view the NICSI project commitments, NICSI reserves the right to evolve a super-set of technically qualified accepted systems and subsystem, items of their brands and models for the entire range of systems covered by various Annexures of this tender so as to take care of the service delivery related aspects concerning the suitability of configuration needs matching the project requirements from time to time.
2. Validity of the panel is given in the **"Annexure: Validity of bids, rates etc."**
3. In the event the vendor's Company or the concerned division of the Company is taken over/bought over by another company, all the obligations and execution responsibilities under the agreement with NICSI, should be passed on for compliance by the new company in the negotiation for their transfer.
4. All empanelled vendors have to agree for honoring all tender condition and adherence to all aspects of fair trade practices in executing the purchase orders placed by NICSI or by organizations supported by NICSI.
5. If the name of the product is changed for describing substantially the same in a renamed form; then all techno-fiscal benefits agreed with respect to the original product, shall be passed on to NICSI and the obligations with NICSI taken by the Vendor with respect to the product with the old name shall be passed on along with the product so renamed.
6. In the case of Bidders whose tender bids are accepted for empanelment, bidders shall be required to give Security Deposit as mentioned in the **"Annexure: Security Deposit"** along with acceptance of purchase order, within 15 calendar days. Security Deposit will be in the form of Bank Guarantee (BG) of any Nationalized / Commercial bank drawn in the name of National Informatics Centre, New Delhi, valid for a period as mentioned in the **"Annexure: Security Deposit"**
7. Security Deposit will have to be renewed for such further periods till satisfactory free warranty support has been provided by the Vendor for all the Systems supplied and installed, and thereafter the Security Deposit shall be refunded to the vendor without any interest.
8. The vendor should not assign or sublet the empanelment or any part of it to any other agency in any form. Failure to do so shall result in termination of empanelment and forfeiture of Security Deposit/EMD.

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Hall No. 2 & 3, 6th Floor, NBCC Tower, 15 Bhikaji Cama Place, New Delhi-110066 Ph.: 26105054, 26711304, 26105159, 26105182, 26105193 Fax : 91-11-26105212, 26161650
ई-मेल : nicsi@nic.in   E-mail : nicsi@nic.in

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9. NICSI may, at any time, terminate the empanelment by giving written notice to the empanelled vendor without any compensation, if the empanelled vendor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to NICSI.

10. During the validity of the panel including the extended period, if any, if the Vendor quotes, sells or exhibits written intention to sell any System or sub-system of the same or equivalent configuration to any other Department/ Organization at a price lower than the price fixed for NICSI under similar terms and conditions, the vendor shall voluntarily pass on the price difference to NICSI. The effective date will be the date of quoting lower rates by the bidder in the bid/quote. In the event of lowering of government levies subsequent to the finalization of the panel, the vendor shall automatically pass on the benefits to the NICSI, and in the event of increasing of government levies subsequent to the finalization of the panel; NICSI shall automatically pass on the pro-rata benefits to the Vendor, if the same have been explicitly given in the financial annexure.

11. During the validity of the panel, in case NICSI notices that the market rates have come down from the time the rates were finalized or selection of new system configuration based on market trends or for the reasons of technological changes, NICSI will ask the eligible vendors to re-quote the prices and the vendor(s) will be selected on the basis of procedure given earlier. All those vendors, who were declared Technically Qualified and NOT empanelled, will submit the revised quote with the EMD, if they have withdrawn the EMD from NICSI. The time difference between such re-quotes will be minimum 3 months except in case of the Union Budget. For any bulk requirements, NICSI reserves the right to call for the revised bids from the empanelled vendors any time during the empanelment.

2 PLACING OF PURCHASE ORDERS

1. NICSI has the right to choose any subset of the tendered items for ordering.
2. In case Purchase Orders are placed on more than one vendor, the distribution of purchase orders shall be as per the decision of NIC and the User Departments.
3. For procurement of goods, Purchase order will be placed on the empanelled vendor in hardcopy format or in softcopy mode either through e-mail containing the scanned copy of the Purchase Order or an alert through e-mail for downloading the Purchase Order from NICSI Purchase Section Web Site.
4. **Any objection to the Purchase Order, due to technical infeasibility of providing connectivity at a given site or any other reason, must be reported to the Purchase Section by the vendor within three (3) working days counted from the Date of issue of Purchase Order, or before the receipt of all documentation from the user as mandated by TRAI, whichever is later. Otherwise it is assumed that the vendor has accepted the Purchase Order in toto. This is applicable in case of electronic publishing/delivery of Purchase Order also.**
5. On the receipt of the Purchase Orders, the Vendor(s) shall collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit/State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.
6. If the vendor is not able to supply the ordered items completely within the specified period, the EMD/Security Deposit will be forfeited in full. Besides legal action shall be taken separately.

3 DELIVERY PROCESS

1. **All deliveries are to be made to NICSI HQ, NBCC Tower, Bhikaji Cama Place, New Delhi.**
2. All aspects of safe delivery shall be the exclusive responsibility of the Vendor. At the destination Site, the cartons will be opened only in the presence of NICSI/User representative and Vendor's representative and the intact position of the Seal for not being tampered with, shall form the basis for certifying the receipt in good condition.
3. **Vendor has to deliver the items to NICSI HQ, NBCC Towers, Bhikaji Cama Place, New Delhi, within 15 days from date of issue of Purchase Order, or within 15 days of the receipt of all documentation from the user as mandated by TRAI, whichever is later, failing which penalty as per Annexure: Penalty will be applicable.**
4. **Activation of SIM Card / Broadband Connectivity should be completed within 7 Days (Seven Days) from the scheduled or actual date of delivery; whichever is later, for all locations, failing which penalty as per Annexure: Penalty will be applicable.**
5. If the scheduled date of delivery / activation falls on holiday / non working day (at the delivery location), the next working day shall be treated as due date of delivery / activation. All aspects of safe delivery shall be the exclusive responsibility of the Bidder.

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6. Where required, vendor must apply to the respective authority/user for issue of road permit /waybill in time. The Vendor has to collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit/State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.

7. Where applicable, delays on account of getting relevant road-permits shall not make vendors' eligible for waiver of late delivering penalties in terms of Purchase Order. Hence to avoid the delays, they are suggested to initiate the process of obtaining the Rood-permits well before the actual delivery of items.

8. Though Purchase Section of NICSI will provide all the necessary documents for ensuring smooth delivery of goods, it is the responsibility of the vendor to deliver the goods in time, even if the documents provided by NICSI are NOT honored by the State Authorities.

9. **During installation at final User site, if a SIM / broadband Router / Access Point Dongle or any other hardware provided by the vendor is found to be defective or broken, it will be replaced with new one by the Vendor at its own cost and risk within 5 (five) days from the date on which the vendor has been informed of such damage failing which penalty as per Annexure: Penalty will be applicable. The replacement SIM / broadband Router / Access Point/ Dongle or any other component will be delivered to NICSI HQ, New Delhi.**

4 PAYMENT PROCESS

1. **For items where the vendor has to make a delivery to NICSI**, the vendor has to submit the copy of their Invoice (in Triplicate) in the name of NICSI-New Delhi by charging the applicable Delhi VAT and other Taxes at NICSI's Stores-Section, New Delhi, along with the original excise duty gate pass (if any) and other relevant documents such as copy of Purchase-order, NICSI's Invoice and PBG shall be submitted (in 2 copies) within 10 days of actual delivery of items.

2. **For payment of monthly usage bills**, the vendor has to submit the copy of their Invoice (in Triplicate), **once every quarter**, in the name of NICSI-New Delhi, by charging the applicable Taxes at NICSI's Stores-Section, New Delhi, along with the original itemized monthly bills and other relevant documents such as copy of Purchase-order, NICSI's Invoice and PBG shall be submitted (in 2 copies) within 10 days of end of quarter.

3. Entry Tax etc. if payable will be reimbursed as per actuals and for which vendor has to submit all the original documents/receipts along with the Proof-of-delivery. Such claims shall neither be processed separately nor on any post-facto basis

4. Payments shall be subject to deductions of any amount for which the empanelled agency is liable under the empanelment or tender conditions. Further, all payments shall be made subject to deduction of TDS (Tax deduction at Source) as per the current Income-Tax Act.

5. 100% payment will be made after Delivery of all items in the Purchase Order is over.

6. Monthly usage bills will be paid in 100% on a quarterly basis.

7. All payments to agency will be made through RTGS only.

8. In case the submission of bills to NICSI, along with the necessary documents i.e. POD's/BG's etc., is delayed by the Supplier beyond 30 days from the date of delivery of materials, the entire liability towards payment of interest/penalty to the tax authorities would be on the cost of respective Supplier so that NICSI is not burdened unnecessarily with this amount. All such amount will be deducted from the payment due to respective vendor.

5 GENERAL TERMS & CONDITIONS

1. No interest shall be payable for the Earnest Money Deposit and the No deviations from these terms and conditions will be accepted. Any violation there off will lead to rejection of the bid.

2. The Security Deposits without any interest accrued, shall be released only after the expiry of the warranty period of the systems successfully.

3. The decision of NICSI arrived during the various stages of the evaluation of the bids is final and representation of any kind shall not be entertained on the above. However, reasons for disqualification of a bid will be disclosed to the bid submitting company where inquiries are made.

4. In case the empanelled vendor is found in-breach of any condition(s) of tender or supply order, at any stage during the course of supply/ installation/commissioning or warranty period, the legal action as per rules/laws, shall be initiated against the vendor and EMD/Security Deposits shall be forfeited, besides debarring & Black listing the vendor concerned for at least 3 years, for further dealing in Govt. departments.

5. Any attempt by vendor to bring pressure towards NICSI's decision making process, such vendors shall be disqualified for participation in the present tender and those vendor may be liable to be debarred from bidding for NICSI tenders in future for a period of three years.

6. Printed conditions mentioned in the tender bids submitted by vendors will not be binding on NICSI. All the terms and conditions for the supply, testing and installation, payment terms, penalty etc. will be as those mentioned herein and no change in the terms and conditions by the vendors will be acceptable. Alterations, if any, in the tender bids should be attested properly by the vendor, failing which, the tender will be rejected.

7. Upon verification, evaluation / assessment, if in case any information furnished by the vendor is found to be false/incorrect, their total bid shall be summarily rejected and no correspondence on the same, shall be entertained.

8. No deviations from tender terms and conditions will be accepted. Any violation thereof will lead to the rejection of the bid.

9. Indemnity: The selected vendor shall indemnify the NICSI/User department against all third party claims of infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied software/ hardware/manpower etc. and related services or any part thereof. NICSI/User department stand indemnified from any claims that the hired manpower may opt to have by virtue of working on the project for whatever period. NICSI/User department also stand indemnified from any compensation arising out of accidental loss of life or injury sustained by the hired manpower while working on the project.

10. **Limitation of liability: Except in the case of gross negligence or willful misconduct on the part of the Vendor or on part of any person or company acting on behalf of the Vendor in carrying out the services, the Vendor, with respect to damage caused by the Vendor to end user / NICSI / NIC, shall be liable to end user / NICSI / NIC:**
    i.   **for any indirect or consequential loss or damage; and**
    ii.   **for any direct loss or damage,**
    only to the extent of :

    A. **the total payments payable under this contract to the Vendor, or**
    B. **the proceeds the Vendor may be entitled to receive from any insurance maintained by the Vendor to cover such a liability,**

    whichever of (A) or (B) is higher, plus the security deposit and performance bank guarantees submitted by the Vendor.
    This limitation of liability shall not affect the Vendor liability, if any, for damage to Third Parties caused by the Vendor or any person or firm / company acting on behalf of the Vendor in carrying out the work.

11. Termination for Insolvency: NICSI may at any time terminate the purchase order / contract by giving written notice of four weeks to the Supplier, without any compensation to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent.

12. NICSI will not be responsible for any misinterpretation or wrong assumption by the vendor.

13. Force Majeure: If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics quarantine restrictions, strikes, lockouts or acts of God (hereinafter referred to as "events"), provided notice of happenings of any such event is duly endorsed by the appropriate authorities/chamber of commerce in the country of the party giving notice, is given by party seeking concession to the other as soon as practicable, but within 21 days from the date of occurrence and termination thereof and satisfies the party adequately of the measures taken by it, neither party shall, by reason of such event, be entitled to terminate this contract, nor shall either party have any claim for damages against the other in respect of such nonperformance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist and the decision of the purchaser as to whether the deliveries have so resumed or not, shall be final and conclusive, provided further, that if the performance in whole or in part or any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, the purchaser may at his option, terminate the contract.

14. NICSI reserves the right to cancel this tender or modify the requirement.

15. NICSI also reserves the right to modify/relax any of the terms & conditions of the tender by declaring / publishing such amendments in a manner that all prospective vendors / parties to be kept informed about it.

16. NICSI in view of projects requirement may reject any tender(s), in which any prescribed condition(s) is/are found incomplete in any respect and at any processing state.

17. The vendor should provide System manual and User manual along with each System, irrespective of the fact that more than one system may be meant for any location.

5.1   DEFAULT

Definition for default:

Default is said to have occurred -

i.   If the supplier fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by NICSI.
ii. If the supplier fails to perform any other obligation(s) under the contract

If the agency, in either of the above circumstances, does not take remedial steps within a period of 30 days after receipt of the default notice from NICSI (or takes longer period in-spite of what NICSI may authorize in writing), NICSI may terminate the contract / purchase order in whole or in part. In addition to above, NICSI may at its discretion also take the following actions:

i.   NICSI may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate NICSI for any extra expenditure involved towards goods and services to complete the scope of work in totality or 10 % of the work order as cancellation charges whichever is higher.

5.2   DISPUTE RESOLUTION

1. NICSI and bidder/subsequently empanelled vendor agree to resolve any dispute which may arise during the processing of current tender and/or execution of the empanelment thereafter for procuring services/products through mutual consultation in an amicable manner.
2. Having tried the option I and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by conciliation in accordance with ICADR Arbitration Rules 1996.
3. Having tried the option I & II and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by arbitration in accordance with ICADR Arbitration Rules, 1996.

5.3   APPLICABLE LAW

1. The agency shall be governed by the laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing.
2. All disputes in this connection shall be settled in Delhi jurisdiction only.

Terms and conditions which are not specifically mentioned in this empanelment letter, but are a part of the tender document **NICSI/2G-3G-Wi-Fi DONGLE & BROADBAND DATA CONNECTIVITY/2014/11**, shall be ipso facto applicable to this empanelment and the purchase orders to be placed thereafter.

You are requested to submit a signed and stamped copy of this letter within 7 (seven) days of the issue of this letter as a token of acceptance of the empanelment. Each and every page of the empanelment letter must be signed and stamped by the authorised signatory.

Yours Faithfully,

10-9-14
(Vineet Tomar)
DGM (Tender)

Copy to:
1. Purchase Section, NIC, CGO Complex, Lodhi Road, New Delhi
2. SO, Paid Project, NIC, New Delhi
3. SO, Tender Process Section, NIC, New Delhi
4. GM(P), NICSI, New Delhi
5. Account Section, NICSI, New Delhi
6. Project Co-ordinators, NIC/NICSI, New Delhi
7. Company Secretary, NICSI, New Delhi
8. Guard File

ANNEXURE

Broadband connectivity with WiFi Router (Technical Category C item)

S. No.	Item	Denomination		Charges
1	One-time Cost of Broadband Data Plan (3 years validity) with ADSL WiFi Router (with 3 years warranty)	In Rs.	A	2,200.00
2	VAT Percentage	In %	B	5.00%
3	VAT Amount	In Rs.	C = A * B	110.00
4	Total one-time cost (3 years validity of data plan and 3 years warranty on hardware)	In Rs.	D = A+C	2,310.00
5	Fixed Monthly Rental with 200 MB free monthly data usage at Broadband speed of 512 Kbps	In Rs.	E	399.00
6	Cost of 10 KB data transaction at Broadband speed of 512 Kbps after exhaustion of free 200 MB monthly limit	In Rs.	F	0.00
7	Service Tax Percentage	In %	G	12.36%

10-9-14

NATIONAL INFORMATICS CENTRE SERVICES INCORPORATED

नेशनल इंफोर्मेटिक्स सेंटर सर्विसिज़ इंक.
National Informatics Centre Services Inc.
(A Government of India Enterprise under NIC)
Ministry of Communications & Information Technology

10(23)/2014-NICSI

Dated: 13.09.2014

To,

M/s Intek Micro Systems Pvt. Ltd
E-131, 4th Floor, Ganapati Bhawan, Mohammadpur,
Opp. Bhikaji Cama Place, New Delhi-110066

Subject: **Empanelment of selected vendor consequent to finalization of NICSI's Limited Tender NICSI/Wi-Fi ACESS POINT/2014/12 for Empanelment of Vendors for Supply of Wi-Fi Access Points in Govt. of India offices in New Delhi and NCR**

Dear Sir,

I am directed to refer to your financial bid against our limited tender **NICSI/Wi-Fi ACESS POINT/2014/12** for **Empanelment of Vendors for Supply of Wi-Fi Access Points in Govt. of India offices in New Delhi and NCR**, and to inform you that it has been decided by the competent authority at **NICSI** to empanel your firm (hereunder referred to as the 'vendor' or 'bidder') on the terms and conditions, and the prices, mentioned in this empanelment letter and its annexure, for providing the following:

1. Wifi Access point for connecting with existing LAN

The issuance of this empanelment letter and its unconditional acceptance by you, in writing, will stand as a written agreement between **NICSI** and **M/s Intek Micro Systems Pvt. Ltd.** for honouring all tender conditions and adherence to all aspects of fair trade practices in executing the purchase orders placed by **NIC/NICSI** on behalf of its clients.

Terms and conditions pertaining to this empanelment are as follow:

1 EMPANELMENT OF VENDORS

1. This empanelment is valid for up to 2 (two) years w.e.f from 12.09.2014 to 11.09.2016.
2. After the above mentioned period of validity, NICSI may choose to extend the empanelment for 1 (one) more year in mutual agreement with the vendor.
3. The minimum period for revision of rates is 3 (three) months.
4. Keeping in view the NICSI project commitments, NICSI reserves the right to evolve a super-set of technically qualified accepted systems and subsystem, items of their brands and models for the entire range of systems covered by various Annexure of this tender so as to take care of the service delivery related aspects concerning the suitability of configuration needs matching the project requirements from time to time.
5. In the event the vendor's Company or the concerned division of the Company is taken over/bought over by another company, all the obligations and execution responsibilities under the agreement with NICSI, should be passed on for compliance by the new company in the negotiation for their transfer.
6. All empanelled vendors have to agree for honoring all tender condition and adherence to all aspects of fair trade practices in executing the purchase orders placed by NICSI or by organizations supported by NICSI.
7. If the name of the product is changed for describing substantially the same in a renamed form; then all techno-fiscal benefits agreed with respect to the original product, shall be passed on to NICSI and the obligations with

Accepted 13/9/2014

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ई-मेल : nicsi@nic.in   E-mail : nicsi@nic.in

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NICSI taken by the Vendor with respect to the product with the old name shall be passed on along with the product so renamed.

8. In the case of Bidders whose tender bids are accepted for empanelment, bidders shall be required to give Security Deposit as mentioned in the **Section: Security Deposit** along with acceptance of purchase order, within 15 calendar days. Security Deposit will be in the form of Bank Guarantee (BG) of any Nationalized / Commercial bank drawn in the name of National Informatics Centre, New Delhi, valid for a period as mentioned in the **Section: Security Deposit**

9. Security Deposit will have to be renewed for such further periods till satisfactory free warranty support has been provided by the Vendor for all the Systems supplied and installed, and thereafter the Security Deposit shall be refunded to the vendor without any interest.

10. The vendor should not assign or sublet the empanelment or any part of it to any other agency in any form. Failure to do so shall result in termination of empanelment and forfeiture of Security Deposit/EMD.

11. NICSI may, at any time, terminate the empanelment by giving written notice to the empanelled vendor without any compensation, if the empanelled vendor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to NICSI.

12. During the validity of the panel including the extended period, if any, if the Vendor quotes, sells or exhibits written intention to sell any System or sub-system of the same or equivalent configuration to any other Department/ Organization at a price lower than the price fixed for NICSI under similar terms and conditions, the vendor shall voluntarily pass on the price difference to NICSI. The effective date will be the date of quoting lower rates by the bidder in the bid/quote. In the event of lowering of government levies subsequent to the finalization of the panel, the vendor shall automatically pass on the benefits to the NICSI, and in the event of increasing of government levies subsequent to the finalization of the panel; NICSI shall automatically pass on the pro-rata benefits to the Vendor, if the same have been explicitly given in the financial annexure.

13. During the validity of the panel, in case NICSI notices that the market rates have come down from the time the rates were finalized or selection of new system configuration based on market trends or for the reasons of technological changes, NICSI will ask the eligible vendors to re-quote the prices and the vendor(s) will be selected on the basis of procedure given earlier. All those vendors, who were declared Technically Qualified and NOT empanelled, will submit the revised quote with the EMD, if they have withdrawn the EMD from NICSI. The time difference between such re-quotes will be minimum 3 months except in case of the Union Budget. For any bulk requirements, NICSI reserves the right to call for the revised bids from the empanelled vendors any time during the empanelment.

2 SECURITY DEPOSIT

1. In the case of Bidders whose tender bids are accepted for empanelment, bidders shall be required to give Security Deposit for the equivalent amount of EMD. Security Deposit will be in the form of Bank Guarantee (BG) of any commercial bank drawn in the name of National Informatics Centre Services Inc., New Delhi, valid till the duration of empanelment. In case of default by the vendor on non-acceptance of the purchase orders, this EMD/BG will be forfeited and empanelment will be cancelled.

2. Empanelled vendors shall be required to give Performance Bank Guarantee at the time of bill submission.

3. Performance Bank Guarantee will be of any scheduled bank drawn in the name of National Informatics Centre Services Inc., New Delhi, valid for a period of **36 (Thirty Six)** months from the actual date of delivery.

4. After the expiry of the validity period, Security Deposit / BG shall be returned to the vendor without any interest.

5. Security Deposit / BG will be invoked in case of non- compliance with tender terms and conditions during the validity period.

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Security deposit has to be made in form of Bank Guarantee equal to the **EMD amount**

Validity	Valid for the period of empanelment / extended empanelment. The BG will be released after the empanelment or execution of all pending POs whichever is later
Instrument	One single deposit in the form of Bank Guarantee
Amount	Equal to EMD amount

Performance Bank Guarantee (PBG)

Validity	A period of **36 (Thirty Six) months** from the actual date of delivery.
Instrument	One single deposit in the form of Bank Guarantee to be submitted along with the bills and proof of delivery
Amount	Equal to 8% of PO Value

3 PLACING OF PURCHASE ORDERS

1. NICSI has the right to choose any subset of the tendered items for ordering.
2. In case Purchase Orders are placed on more than one vendor, the distribution of purchase orders shall be as per the decision of NIC and the User Departments.
3. For procurement of goods, Purchase order will be placed on the empanelled vendor in hardcopy format or in softcopy mode either through e-mail containing the scanned copy of the Purchase Order or an alert through e-mail for downloading the Purchase Order from NICSI Purchase Section Web Site.
4. Objection, if any, to the Purchase Order must be reported to Purchase Section by the vendor within three (3) working days counted from the Date of Purchase Order for modifications, otherwise it is assumed that the vendor has accepted the Purchase Order in toto. This is applicable in case of electronic publishing/delivery of Purchase Order also.
5. On the receipt of the Purchase Orders, the Vendor(s) shall collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit/State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.
6. If the vendor is not able to supply the ordered items completely within the specified period, the EMD/Security Deposit will be forfeited in full. Besides legal action shall be taken separately.

4 DELIVERY PROCESS

1. **All deliveries are to be made to NICSI HQ, NBCC Tower, Bhikaji Cama Place, New Delhi.**
2. All aspects of safe delivery shall be the exclusive responsibility of the Vendor. At the destination Site, the cartons will be opened only in the presence of NICSI/User representative and Vendor's representative and the intact position of the Seal for not being tampered with, shall form the basis for certifying the receipt in good condition.

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3. **Vendor has to deliver the items to NICSI HQ, NBCC Towers, Bhikaji Cama Place, New Delhi, within 15 days from date of issue of Purchase Order, failing which penalty as per Section: Penalty will be applicable.**

4. If the scheduled date of delivery falls on holiday / non-working day (at the delivery location), the next working day shall be treated as due date of delivery. All aspects of safe delivery shall be the exclusive responsibility of the Bidder.

5. Where required, vendor must apply to the respective authority/user for issue of road permit / waybill in time. The Vendor has to collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit / State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.

6. Where applicable, delays on account of getting relevant road-permits shall not make vendors' eligible for waiver of late delivering penalties in terms of Purchase Order. Hence to avoid the delays, they are suggested to initiate the process of obtaining the Road-permits well before the actual delivery of items.

7. Though Purchase Section of NICSI will provide all the necessary documents for ensuring smooth delivery of goods, it is the responsibility of the vendor to deliver the goods in time, even if the documents provided by NICSI are NOT honored by the State Authorities.

8. During installation at final User site, if the supplied hardware is found to be defective or broken, it will be replaced with a new one by the Vendor at its own cost and risk within 5 (five) days from the date on which the vendor has been informed of such damage failing which penalty as per Section: Penalty will be applicable. The replacement hardware will be delivered to NICSI HQ, New Delhi.

5 PENALTY

S. No.	Condition	Penalty
1	Failure in maintaining Delivery Schedule	A penalty of 0.2% of the Purchase Order value per day, for up to a maximum of 30 days, if the items are not delivered within 15 days of Purchase Order issue.
2	Failure in maintaining Hardware Replacement Schedule	A penalty of Rs. 50 per Device per day, for up to a maximum of 30 days, if a defective/damaged Device* is not replaced/repaired within 3 days of the date of the issue being reported by the User Department.

*Device can be an Access Point or any other hardware supplied by the vendor

6 PAYMENT PROCESS

1. **For items where the vendor has to make a delivery to NICSI,** the vendor has to submit the copy of their Invoice (in Triplicate) in the name of NICSI-New Delhi by charging the applicable Delhi VAT and other Taxes at NICSI's Stores-Section, New Delhi, along with the original excise duty gate pass (if any) and other relevant documents such as copy of Purchase-order, NICSI's Invoice and PBG shall be submitted (in 2 copies) within 5 to 10 days of actual delivery of items.

2. Entry Tax etc. if payable will be reimbursed as per actuals and for which vendor has to submit all the original documents/receipts along with the Proof-of-delivery. Such claims shall neither be processed separately nor on any post-facto basis

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3. Payments shall be subject to deductions of any amount for which the empanelled agency is liable under the empanelment or tender conditions. Further, all payments shall be made subject to deduction of TDS (Tax deduction at Source) as per the current Income-Tax Act.

4. 100% payment will be made after Delivery is over.

5. All payments to agency will be made through RTGS only.

6. In case the submission of bills to NICSI, along with the necessary documents i.e. POD's/BG's etc., is delayed by the Supplier beyond 30 days from the date of delivery of materials, the entire liability towards payment of interest/penalty to the tax authorities would be on the cost of respective Supplier so that NICSI is not burdened unnecessarily with this amount. All such amount will be deducted from the payment due to respective vendor.

7 GENERAL TERMS & CONDITIONS

1. No interest shall be payable for the Earnest Money Deposit and the No deviations from these terms and conditions will be accepted. Any violation there off will lead to rejection of the bid.

2. The Security Deposits without any interest accrued, shall be released only after the expiry of the warranty period of the systems successfully.

3. The decision of NICSI arrived during the various stages of the evaluation of the bids is final and representation of any kind shall not be entertained on the above. However, reasons for disqualification of a bid will be disclosed to the bid submitting company where inquiries are made.

4. In case the empanelled vendor is found in-breach of any condition(s) of tender or supply order, at any stage during the course of supply/ installation/commissioning or warranty period, the legal action as per rules/laws, shall be initiated against the vendor and EMD/Security Deposits shall be forfeited, besides debarring & Black listing the vendor concerned for at least 3 years, for further dealing in Govt. departments.

5. Any attempt by vendor to bring pressure towards NICSI's decision making process, such vendors shall be disqualified for participation in the present tender and those vendor may be liable to be debarred from bidding for NICSI tenders in future for a period of three years.

6. Printed conditions mentioned in the tender bids submitted by vendors will not be binding on NICSI. All the terms and conditions for the supply, payment terms, penalty etc. will be as those mentioned herein and no change in the terms and conditions by the vendors will be acceptable. Alterations, if any, in the tender bids should be attested properly by the vendor, failing which, the tender will be rejected.

7. Upon verification, evaluation / assessment, if in case any information furnished by the vendor is found to be false/incorrect, their total bid shall be summarily rejected and no correspondence on the same, shall be entertained.

8. No deviations from tender terms and conditions will be accepted. Any violation thereof will lead to the rejection of the bid.

9. Indemnity: The selected vendor shall indemnify the NICSI/User department against all third party claims of infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied software/ hardware/manpower etc. and related services or any part thereof. NICSI/User department stand indemnified from any claims that the hired manpower may opt to have by virtue of working on the project for whatever period. NICSI/User department also stand indemnified from any compensation arising out of accidental loss of life or injury sustained by the hired manpower while working on the project.

10. Termination for Insolvency: NICSI may at any time terminate the purchase order / contract by giving written notice of four weeks to the Supplier, without any compensation to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent.

11. NICSI will not be responsible for any misinterpretation or wrong assumption by the vendor.

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12. Force Majeure: If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics quarantine restrictions, strikes, lockouts or acts of God (hereinafter referred to as "events"), provided notice of happenings of any such event is duly endorsed by the appropriate authorities/chamber of commerce in the country of the party giving notice, is given by party seeking concession to the other as soon as practicable, but within 21 days from the date of occurrence and termination thereof and satisfies the party adequately of the measures taken by it, neither party shall, by reason of such event, be entitled to terminate this contract, nor shall either party have any claim for damages against the other in respect of such nonperformance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist and the decision of the purchaser as to whether the deliveries have so resumed or not, shall be final and conclusive, provided further, that if the performance in whole or in part or any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, the purchaser may at his option, terminate the contract.

13. NICSI reserves the right to cancel this tender or modify the requirement.

14. NICSI also reserves the right to modify/relax any of the terms & conditions of the tender by declaring / publishing such amendments in a manner that all prospective vendors / parties to be kept informed about it.

15. NICSI in view of projects requirement may reject any tender(s), in which any prescribed condition(s) is/are found incomplete in any respect and at any processing state.

16. The vendor should provide System manual and User manual along with each System, irrespective of the fact that more than one system may be meant for any location.

7.1   DEFAULT

Definition for default:

Default is said to have occurred -

i.   If the supplier fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by NICSI.

ii. If the supplier fails to perform any other obligation(s) under the contract

If the agency, in either of the above circumstances, does not take remedial steps within a period of 30 days after receipt of the default notice from NICSI (or takes longer period in-spite of what NICSI may authorize in writing), NICSI may terminate the contract / purchase order in whole or in part. In addition to above, NICSI may at its discretion also take the following actions:

i.   NICSI may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate NICSI for any extra expenditure involved towards goods and services to complete the scope of work in totality or 10 % of the work order as cancellation charges whichever is higher.

7.2   DISPUTE RESOLUTION

1.   NICSI and bidder/subsequently empanelled vendor agree to resolve any dispute which may arise during the processing of current tender and/or execution of the empanelment thereafter for procuring services/products through mutual consultation in an amicable manner.

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2. Having tried the option I and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by conciliation in accordance with ICADR Arbitration Rules 1996.

3. Having tried the option I & II and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by arbitration in accordance with ICADR Arbitration Rules, 1996.

7.3 APPLICABLE LAW

1. The agency shall be governed by the laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing.

2. All disputes in this connection shall be settled in Delhi jurisdiction only.

Terms and conditions which are not specifically mentioned in this empanelment letter, but are a part of the tender document **NICSI/Wi-Fi ACESS POINT/2014/12**, shall be ipso facto applicable to this empanelment and the purchase orders to be placed thereafter.

You are requested to submit a signed and stamped copy of this letter within 7 (seven) days of the issue of this letter as a token of acceptance of the empanelment. Each and every page of the empanelment letter must be signed and stamped by the authorised signatory.

Yours Faithfully,

(Vineet Tomar)
DGM (Tender)

Copy to:
1. Purchase Section, NIC, CGO Complex, Lodhi Road, New Delhi
2. SO, Paid Project, NIC, New Delhi
3. GM(P), NICSI, New Delhi
4. Account Section, NICSI, New Delhi
5. Project Co-ordinators, NIC/NICSI, New Delhi
6. Company Secretary, NICSI, New Delhi
7. Guard File

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8 ANNEXURE: Item Rates

Wifi Access point for connecting with existing LAN

S. No.	OEM Name	Product Make / Model and Part Code	Basic Unit Price (with 3 years warranty)	VAT	Total Price (All inclusive) With 3 years warranty
			In Rs.	In %	In Rs.
1	D-Link	DIR600L	980.00	5.00%	1029.00

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नेशनल इंफोर्मेटिक्स सेंटर सर्विसिज़ इंक.
National Informatics Centre Services Inc.
(A Government of India Enterprise under NIC)
Ministry of Communications & Information Technology

10(21)/2014-NICSI   Dated: 09.09.2014

To,

M/s Reliance Communications Ltd.
#Reliance Centre,
Maharaja Ranjit Singh Marg,
New Delhi – 110 002

Subject: **Empanelment of selected vendor consequent to finalization of NICSI's open tender NICSI/2G-3G-Wi-Fi DONGLE & BROADBAND DATA CONNECTIVITY/2014/11 for 2G, 3G, Wi-Fi Dongle and Broadband Data connectivity for use in Aadhaar enabled bio-metric attendance system (AEBAS) to be deployed in Government of India offices in Delhi**

Dear Sir,

I am directed to refer to your financial bid against our open tender **NICSI/2G-3G-Wi-Fi DONGLE & BROADBAND DATA CONNECTIVITY/2014/11** for 2G, 3G, Wi-Fi Dongle and Broadband Data connectivity for use in Aadhaar enabled bio-metric attendance system (AEBAS) to be deployed in Government of India offices in Delhi, and to inform you that it has been decided by the competent authority at **NICSI** to empanel your firm (hereunder referred to as the 'vendor' or 'bidder') on the terms and conditions, and the prices, mentioned in this empanelment letter and its annexure, for providing the following:

1. GSM 2G connectivity with Nano/Micro /Standard SIM (Technical Category A item)
2. GSM 3G connectivity with Nano/Micro/ Standard SIM (Technical Category B item)
3. CDMA/GSM Dongle with in-built WiFi access point (Technical Category D item)

The issuance of this empanelment letter and its unconditional acceptance by you, in writing, will stand as a written agreement between **NICSI** and **M/s Reliance Communications Ltd.** for honouring all tender conditions and adherence to all aspects of fair trade practices in executing the purchase orders placed by **NIC/NICSI** on behalf of its clients.

Terms and conditions pertaining to this empanelment are as follow:

1 EMPANELMENT OF VENDORS

1. Keeping in view the NICSI project commitments, NICSI reserves the right to evolve a super-set of technically qualified accepted systems and subsystem, items of their brands and models for the entire range of systems covered by various Annexures of this tender so as to take care of the service delivery related aspects concerning the suitability of configuration needs matching the project requirements from time to time.
2. Validity of the panel is given in the **"Annexure: Validity of bids, rates etc."**
3. In the event the vendor's Company or the concerned division of the Company is taken over/bought over by another company, all the obligations and execution responsibilities under the agreement with NICSI, should be passed on for compliance by the new company in the negotiation for their transfer.
4. All empanelled vendors have to agree for honoring all tender condition and adherence to all aspects of fair trade practices in executing the purchase orders placed by NICSI or by organizations supported by NICSI.
5. If the name of the product is changed for describing substantially the same in a renamed form; then all techno-fiscal benefits agreed with respect to the original product, shall be passed on to NICSI and the obligations with NICSI taken by the Vendor with respect to the product with the old name shall be passed on along with the product so renamed.
6. In the case of Bidders whose tender bids are accepted for empanelment, bidders shall be required to give Security Deposit as mentioned in the **"Annexure: Security Deposit"** along with acceptance of purchase order, within 15 calendar days. Security Deposit will be in the form of Bank Guarantee (BG)

हॉल सं. 2 व 3, छठी मंजिल, एन.बी.सी.सी. टावर, 15, भीकाजी कामा प्लेस, नई दिल्ली-110066   दूरभाष : 26105054, 26711304, 26105159, 26105182, 26105193 फैक्स : 26105212, 26161650
Hall No. 2 & 3, 6th Floor, NBCC Tower, 15 Bhikaji Cama Place, New Delhi-110066 Ph. : 26105054, 26711304, 26105159, 26105182, 26105193 Fax : 91-11-26105212, 26161650
ई-मेल : nicsi@nic.in   E-mail : nicsi@nic.in

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of any Nationalized / Commercial bank drawn in the name of National Informatics Centre, New Delhi, valid for a period as mentioned in the **"Annexure: Security Deposit"**

7. Security Deposit will have to be renewed for such further periods till satisfactory free warranty support has been provided by the Vendor for all the Systems supplied and installed, and thereafter the Security Deposit shall be refunded to the vendor without any interest.

8. The vendor should not assign or sublet the empanelment or any part of it to any other agency in any form. Failure to do so shall result in termination of empanelment and forfeiture of Security Deposit/EMD.

9. NICSI may, at any time, terminate the empanelment by giving written notice to the empanelled vendor without any compensation, if the empanelled vendor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to NICSI.

10. During the validity of the panel including the extended period, if any, if the Vendor quotes, sells or exhibits written intention to sell any System or sub-system of the same or equivalent configuration to any other Department/ Organization at a price lower than the price fixed for NICSI under similar terms and conditions, the vendor shall voluntarily pass on the price difference to NICSI. The effective date will be the date of quoting lower rates by the bidder in the bid/quote. In the event of lowering of government levies subsequent to the finalization of the panel, the vendor shall automatically pass on the benefits to the NICSI, and in the event of increasing of government levies subsequent to the finalization of the panel; NICSI shall automatically pass on the pro-rata benefits to the Vendor, if the same have been explicitly given in the financial annexure.

11. During the validity of the panel, in case NICSI notices that the market rates have come down from the time the rates were finalized or selection of new system configuration based on market trends or for the reasons of technological changes, NICSI will ask the eligible vendors to re-quote the prices and the vendor(s) will be selected on the basis of procedure given earlier. All those vendors, who were declared Technically Qualified and NOT empanelled, will submit the revised quote with the EMD, if they have withdrawn the EMD from NICSI. The time difference between such re-quotes will be minimum 3 months except in case of the Union Budget. For any bulk requirements, NICSI reserves the right to call for the revised bids from the empanelled vendors any time during the empanelment.

2 PLACING OF PURCHASE ORDERS

1. NICSI has the right to choose any subset of the tendered items for ordering.
2. In case Purchase Orders are placed on more than one vendor, the distribution of purchase orders shall be as per the decision of NIC and the User Departments.
3. For procurement of goods, Purchase order will be placed on the empanelled vendor in hardcopy format or in softcopy mode either through e-mail containing the scanned copy of the Purchase Order or an alert through e-mail for downloading the Purchase Order from NICSI Purchase Section Web Site.
4. **Any objection to the Purchase Order, due to technical infeasibility of providing connectivity at a given site or any other reason, must be reported to the Purchase Section by the vendor within three (3) working days counted from the Date of issue of Purchase Order, or before the receipt of all documentation from the user as mandated by TRAI, whichever is later. Otherwise it is assumed that the vendor has accepted the Purchase Order in toto. This is applicable in case of electronic publishing/delivery of Purchase Order also.**
5. On the receipt of the Purchase Orders, the Vendor(s) shall collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit/State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.
6. If the vendor is not able to supply the ordered items completely within the specified period, the EMD/Security Deposit will be forfeited in full. Besides legal action shall be taken separately.

3 DELIVERY PROCESS

1. **All deliveries are to be made to NICSI HQ, NBCC Tower, Bhikaji Cama Place, New Delhi.**
2. All aspects of safe delivery shall be the exclusive responsibility of the Vendor. At the destination Site, the cartons will be opened only in the presence of NICSI/User representative and Vendor's

representative and the intact position of the Seal for not being tampered with, shall form the basis for certifying the receipt in good condition.

3. **Vendor has to deliver the items to NICSI HQ, NBCC Towers, Bhikaji Cama Place, New Delhi, within 15 days from date of issue of Purchase Order, or within 15 days of the receipt of all documentation from the user as mandated by TRAI, whichever is later, failing which penalty as per Annexure: Penalty will be applicable.**

4. **Activation of SIM Card / Broadband Connectivity should be completed within 7 Days (Seven Days) from the scheduled or actual date of delivery; whichever is later, for all locations, failing which penalty as per Annexure: Penalty will be applicable.**

5. If the scheduled date of delivery / activation falls on holiday / non-working day (at the delivery location), the next working day shall be treated as due date of delivery / activation. All aspects of safe delivery shall be the exclusive responsibility of the Bidder.

6. Where required, vendor must apply to the respective authority/user for issue of road permit /waybill in time. The Vendor has to collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit/State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.

7. Where applicable, delays on account of getting relevant road-permits shall not make vendors' eligible for waiver of late delivering penalties in terms of Purchase Order. Hence to avoid the delays, they are suggested to initiate the process of obtaining the Rood-permits well before the actual delivery of items.

8. Though Purchase Section of NICSI will provide all the necessary documents for ensuring smooth delivery of goods, it is the responsibility of the vendor to deliver the goods in time, even if the documents provided by NICSI are NOT honored by the State Authorities.

9. **During installation at final User site, if a SIM / broadband Router / Access Point Dongle or any other hardware provided by the vendor is found to be defective or broken, it will be replaced with new one by the Vendor at its own cost and risk within 5 (five) days from the date on which the vendor has been informed of such damage failing which penalty as per Annexure: Penalty will be applicable. The replacement SIM / broadband Router / Access Point/ Dongle or any other component will be delivered to NICSI HQ, New Delhi.**

4 PAYMENT PROCESS

1. **For items where the vendor has to make a delivery to NICSI**, the vendor has to submit the copy of their Invoice (in Triplicate) in the name of NICSI-New Delhi by charging the applicable Delhi VAT and other Taxes at NICSI's Stores-Section, New Delhi, along with the original excise duty gate pass (if any) and other relevant documents such as copy of Purchase-order, NICSI's Invoice and PBG shall be submitted (in 2 copies) within 10 days of actual delivery of items.

2. **For payment of monthly usage bills**, the vendor has to submit the copy of their Invoice (in Triplicate), **once every quarter**, in the name of NICSI-New Delhi, by charging the applicable Taxes at NICSI's Stores-Section, New Delhi, along with the original itemized monthly bills and other relevant documents such as copy of Purchase-order, NICSI's Invoice and PBG shall be submitted (in 2 copies) within 10 days of end of quarter.

3. Entry Tax etc. if payable will be reimbursed as per actuals and for which vendor has to submit all the original documents/receipts along with the Proof-of-delivery. Such claims shall neither be processed separately nor on any post-facto basis

4. Payments shall be subject to deductions of any amount for which the empanelled agency is liable under the empanelment or tender conditions. Further, all payments shall be made subject to deduction of TDS (Tax deduction at Source) as per the current Income-Tax Act.

5. 100% payment will be made after Delivery of all items in the Purchase Order is over.

6. Monthly usage bills will be paid in 100% on a quarterly basis.

7. All payments to agency will be made through RTGS only.

8. In case the submission of bills to NICSI, along with the necessary documents i.e. POD's/BG's etc., is delayed by the Supplier beyond 30 days from the date of delivery of materials, the entire liability towards payment of interest/penalty to the tax authorities would be on the cost of respective Supplier so that NICSI is not burdened unnecessarily with this amount. All such amount will be deducted from the payment due to respective vendor.

5 GENERAL TERMS & CONDITIONS

1. No interest shall be payable for the Earnest Money Deposit and the No deviations from these terms and conditions will be accepted. Any violation there off will lead to rejection of the bid.
2. The Security Deposits without any interest accrued, shall be released only after the expiry of the warranty period of the systems successfully.
3. The decision of NICSI arrived during the various stages of the evaluation of the bids is final and representation of any kind shall not be entertained on the above. However, reasons for disqualification of a bid will be disclosed to the bid submitting company where inquiries are made.
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5. Any attempt by vendor to bring pressure towards NICSI's decision making process, such vendors shall be disqualified for participation in the present tender and those vendor may be liable to be debarred from bidding for NICSI tenders in future for a period of three years.
6. Printed conditions mentioned in the tender bids submitted by vendors will not be binding on NICSI. All the terms and conditions for the supply, testing and installation, payment terms, penalty etc. will be as those mentioned herein and no change in the terms and conditions by the vendors will be acceptable. Alterations, if any, in the tender bids should be attested properly by the vendor, failing which, the tender will be rejected.
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8. No deviations from tender terms and conditions will be accepted. Any violation thereof will lead to the rejection of the bid.
9. Indemnity: The selected vendor shall indemnify the NICSI/User department against all third party claims of infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied software/ hardware/manpower etc. and related services or any part thereof. NICSI/User department stand indemnified from any claims that the hired manpower may opt to have by virtue of working on the project for whatever period. NICSI/User department also stand indemnified from any compensation arising out of accidental loss of life or injury sustained by the hired manpower while working on the project.
10. **Limitation of liability: Except in the case of gross negligence or willful misconduct on the part of the Vendor or on part of any person or company acting on behalf of the Vendor in carrying out the services, the Vendor, with respect to damage caused by the Vendor to end user / NICSI / NIC, shall be liable to end user / NICSI / NIC:**
    i. **for any indirect or consequential loss or damage; and**
    ii. **for any direct loss or damage,**
    only to the extent of :

    A. **the total payments payable under this contract to the Vendor, or**
    B. **the proceeds the Vendor may be entitled to receive from any insurance maintained by the Vendor to cover such a liability,**
    whichever of (A) or (B) is higher, plus the security deposit and performance bank guarantees submitted by the Vendor.
    This limitation of liability shall not affect the Vendor liability, if any, for damage to Third Parties caused by the Vendor or any person or firm / company acting on behalf of the Vendor in carrying out the work.
11. Termination for Insolvency: NICSI may at any time terminate the purchase order / contract by giving written notice of four weeks to the Supplier, without any compensation to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent.
12. NICSI will not be responsible for any misinterpretation or wrong assumption by the vendor.
13. Force Majeure: If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics quarantine restrictions, strikes, lockouts or acts of God (hereinafter referred to as "events"), provided notice of happenings of any such event is duly endorsed by the appropriate authorities/chamber of commerce in the country of the party giving notice, is given by party seeking concession to the other as soon as practicable, but within 21 days from the date of occurrence and termination thereof and satisfies the party adequately of the measures taken by it, neither party shall, by reason of such event, be entitled to terminate this contract, nor shall either party have any claim for damages against the

other in respect of such nonperformance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist and the decision of the purchaser as to whether the deliveries have so resumed or not, shall be final and conclusive, provided further, that if the performance in whole or in part or any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, the purchaser may at his option, terminate the contract.

14. NICSI reserves the right to cancel this tender or modify the requirement.
15. NICSI also reserves the right to modify/relax any of the terms & conditions of the tender by declaring / publishing such amendments in a manner that all prospective vendors / parties to be kept informed about it.
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17. The vendor should provide System manual and User manual along with each System, irrespective of the fact that more than one system may be meant for any location.

5.1 DEFAULT

Definition for default:

Default is said to have occurred -

i. If the supplier fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by NICSI.
ii. If the supplier fails to perform any other obligation(s) under the contract

If the agency, in either of the above circumstances, does not take remedial steps within a period of 30 days after receipt of the default notice from NICSI (or takes longer period in-spite of what NICSI may authorize in writing), NICSI may terminate the contract / purchase order in whole or in part. In addition to above, NICSI may at its discretion also take the following actions:

i. NICSI may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate NICSI for any extra expenditure involved towards goods and services to complete the scope of work in totality or 10 % of the work order as cancellation charges whichever is higher.

5.2 DISPUTE RESOLUTION

1. NICSI and bidder/subsequently empanelled vendor agree to resolve any dispute which may arise during the processing of current tender and/or execution of the empanelment thereafter for procuring services/products through mutual consultation in an amicable manner.
2. Having tried the option I and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by conciliation in accordance with ICADR Arbitration Rules 1996.
3. Having tried the option I & II and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by arbitration in accordance with ICADR Arbitration Rules, 1996.
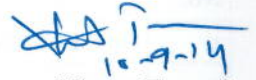
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1. The agency shall be governed by the laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing.
2. All disputes in this connection shall be settled in Delhi jurisdiction only.

Terms and conditions which are not specifically mentioned in this empanelment letter, but are a part of the tender document **NICSI/2G-3G-Wi-Fi DONGLE & BROADBAND DATA CONNECTIVITY/2014/11**, shall be ipso facto applicable to this empanelment and the purchase orders to be placed thereafter.

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You are requested to submit a signed and stamped copy of this letter within 7 (seven) days of the issue of this letter as a token of acceptance of the empanelment. Each and every page of the empanelment letter must be signed and stamped by the authorised signatory.

Yours Faithfully,

(Vineet Tomar)
DGM (Tender)

Copy to:
1. Purchase Section, NIC, CGO Complex, Lodhi Road, New Delhi
2. SO, Paid Project, NIC, New Delhi
3. SO, Tender Process Section, NIC, New Delhi
4. GM(P), NICSI, New Delhi
5. Account Section, NICSI, New Delhi
6. Project Co-ordinators, NIC/NICSI, New Delhi
7. Company Secretary, NICSI, New Delhi
8. Guard File

ANNEXURE

GSM 2G connectivity with Nano/Micro /Standard SIM (Technical Category A item)

S. No.	Item	Denomi-nation		Charges
1	One-time SIM card and Data Plan Cost (with 3 years validity)	In Rs.	A	0.00
2	VAT Percentage	In %	B	0.00%
3	VAT Amount	In Rs.	C = A*B	0.00
4	Total one-time cost (with 3 years validity)	In Rs.	D = A+C	0.00
5	Fixed Monthly Rental with 200 MB free monthly data usage at 2G speed	In Rs.	E	30.00
6	Cost of 10 KB data transaction at 2G speed after exhaustion of free 200 MB monthly limit	In Rs.	F	0.03
7	Service Tax Percentage	In %	G	12.36%

GSM 3G connectivity with Nano/Micro/ Standard SIM (Technical Category B item)

S. No.	Item	Denomi-nation		Charges
1	One-time SIM card and Data Plan Cost (with 3 years validity)	In Rs.	A	0.00
2	VAT Percentage	In %	B	0.00%
3	VAT Amount	In Rs.	C = A*B	0.00
4	Total one-time cost (with 3 years validity)	In Rs.	D = A+C	0.00
5	Fixed Monthly Rental with 200 MB free monthly data usage at 3G speed	In Rs.	E	50.00
6	Cost of 10 KB data transaction at 2G speed after exhaustion of free 200 MB monthly limit	In Rs.	F	0.03
7	Service Tax Percentage	In %	G	12.36%

CDMA/GSM Dongle with in-built WiFi access point (Technical Category D item)

S. No.	Item	Denomi-nation		Charges
1	CDMA/GSM Dongle with in-built WiFi access point with 3 years validity of data plan and 3 years warranty on hardware	In Rs.	A	1,619.05
2	VAT Percentage	In %	B	5.00%
3	VAT Amount	In Rs.	C = A*B	80.95
4	Total one-time cost (with 3 years validity of data plan and 3 years warranty on hardware)	In Rs.	D = A+C	1,700.00
5	Fixed Monthly Rental with 200 MB monthly free data usage at 256 kbps or more speed	In Rs.	E	50.00
6	Cost of 10 KB data transaction at 256 kbps or more speed after exhaustion of free 200 MB monthly limit	In Rs.	F	0.03
7	Service Tax Percentage	In %	G	12.36%

![NICSI Logo] **National Informatics Centre Services Incorporated**

नेशनल इंफोर्मेटिक्स सेंटर सर्विसिज़ इंक.
National Informatics Centre Services Inc.
(A Government of India Enterprise under NIC)
Ministry of Communications & Information Technology

No. 10(23)/2014-NICSI   Dated: 12.09.2014

To,

M/s Zephyr Ltd.

A-3,2nd Floor,

Sector-59,Noida-201301

Subject: **Empanelment of selected vendor consequent to finalization of NICSI's Limited Tender NICSI/Wi-Fi ACESS POINT/2014/12 for Empanelment of Vendors for Supply of Wi-Fi Access Points in Govt. of India offices in New Delhi and NCR**

Dear Sir,

I am directed to refer to your financial bid against our limited tender **NICSI/Wi-Fi ACESS POINT/2014/12** for **Empanelment of Vendors for Supply of Wi-Fi Access Points in Govt. of India offices in New Delhi and NCR**, and to inform you that it has been decided by the competent authority at **NICSI** to empanel your firm (hereunder referred to as the 'vendor' or 'bidder') on the terms and conditions, and the prices, mentioned in this empanelment letter and its annexure, for providing the following:

1. Wifi Access point for connecting with existing LAN

The issuance of this empanelment letter and its unconditional acceptance by you, in writing, will stand as a written agreement between **NICSI** and **M/s Zephyr Ltd.** for honouring all tender conditions and adherence to all aspects of fair trade practices in executing the purchase orders placed by **NIC/NICSI** on behalf of its clients.

Terms and conditions pertaining to this empanelment are as follow:

1 EMPANELMENT OF VENDORS

1. **This empanelment is valid for up to 2 (two) years from the date of issue of this empanelment letter.**
2. **After the above mentioned period of validity, NICSI may choose to extend the empanelment for 1 (one) more year in mutual agreement with the vendor.**
3. The minimum period for revision of rates is 3 (three) months.
4. Keeping in view the NICSI project commitments, NICSI reserves the right to evolve a super-set of technically qualified accepted systems and subsystem, items of their brands and models for the entire range of systems covered by various Annexure of this tender so as to take care of the service delivery related aspects concerning the suitability of configuration needs matching the project requirements from time to time.
5. In the event the vendor's Company or the concerned division of the Company is taken over/bought over by another company, all the obligations and execution responsibilities under the agreement with NICSI, should be passed on for compliance by the new company in the negotiation for their transfer.

हॉल सं. 2 व 3, छठीं मंजिल, एन.बी.सी.सी. टावर, 15, भीकाएजी कामा प्लेस, नई दिल्ली-110066   दूरभाष : 26105054, 26711304, 26105159, 26105182, 26105193 फैक्स : 26105212, 26161650
Hall No. 2 & 3, 6th Floor, NBCC Tower, 15 Bhikaji Cama Place, New Delhi-110066 Ph.: 26105054, 26711304, 26105159, 26105182, 26105193 Fax : 91-11-26105212, 26161650
ई-मेल : nicsi@nic.in   E-mail : nicsi@nic.in

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6. All empanelled vendors have to agree for honoring all tender condition and adherence to all aspects of fair trade practices in executing the purchase orders placed by NICSI or by organizations supported by NICSI.

7. If the name of the product is changed for describing substantially the same in a renamed form; then all techno-fiscal benefits agreed with respect to the original product, shall be passed on to NICSI and the obligations with NICSI taken by the Vendor with respect to the product with the old name shall be passed on along with the product so renamed.

8. In the case of Bidders whose tender bids are accepted for empanelment, bidders shall be required to give Security Deposit as mentioned in the **Section: Security Deposit** along with acceptance of purchase order, within 15 calendar days. Security Deposit will be in the form of Bank Guarantee (BG) of any Nationalized / Commercial bank drawn in the name of National Informatics Centre, New Delhi, valid for a period as mentioned in the **Section: Security Deposit**

9. Security Deposit will have to be renewed for such further periods till satisfactory free warranty support has been provided by the Vendor for all the Systems supplied and installed, and thereafter the Security Deposit shall be refunded to the vendor without any interest.

10. The vendor should not assign or sublet the empanelment or any part of it to any other agency in any form. Failure to do so shall result in termination of empanelment and forfeiture of Security Deposit/EMD.

11. NICSI may, at any time, terminate the empanelment by giving written notice to the empanelled vendor without any compensation, if the empanelled vendor becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to NICSI.

12. During the validity of the panel including the extended period, if any, if the Vendor quotes, sells or exhibits written intention to sell any System or sub-system of the same or equivalent configuration to any other Department/ Organization at a price lower than the price fixed for NICSI under similar terms and conditions, the vendor shall voluntarily pass on the price difference to NICSI. The effective date will be the date of quoting lower rates by the bidder in the bid/quote. In the event of lowering of government levies subsequent to the finalization of the panel, the vendor shall automatically pass on the benefits to the NICSI, and in the event of increasing of government levies subsequent to the finalization of the panel; NICSI shall automatically pass on the pro-rata benefits to the Vendor, if the same have been explicitly given in the financial annexure.

13. During the validity of the panel, in case NICSI notices that the market rates have come down from the time the rates were finalized or selection of new system configuration based on market trends or for the reasons of technological changes, NICSI will ask the eligible vendors to re-quote the prices and the vendor(s) will be selected on the basis of procedure given earlier. All those vendors, who were declared Technically Qualified and NOT empanelled, will submit the revised quote with the EMD, if they have withdrawn the EMD from NICSI. The time difference between such re-quotes will be minimum 3 months except in case of the Union Budget. For any bulk requirements, NICSI reserves the right to call for the revised bids from the empanelled vendors any time during the empanelment.

2 SECURITY DEPOSIT

1. In the case of Bidders whose tender bids are accepted for empanelment, bidders shall be required to give Security Deposit for the equivalent amount of EMD. Security Deposit will be in the form of Bank Guarantee (BG) of any commercial bank drawn in the name of National Informatics Centre Services Inc., New Delhi, valid till the duration of empanelment. In case of default by the vendor on non-acceptance of the purchase orders, this EMD/BG will be forfeited and empanelment will be cancelled.

2. Empanelled vendors shall be required to give Performance Bank Guarantee at the time of bill submission.

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3. Performance Bank Guarantee will be of any scheduled bank drawn in the name of National Informatics Centre Services Inc., New Delhi, valid for a period of **36 (Thirty Six)** months from the actual date of delivery.

4. After the expiry of the validity period, Security Deposit / BG shall be returned to the vendor without any interest.

5. Security Deposit / BG will be invoked in case of non- compliance with tender terms and conditions during the validity period.

Security deposit has to be made in form of Bank Guarantee equal to the **EMD amount**

Validity	Valid for the period of empanelment / extended empanelment. The BG will be released after the empanelment or execution of all pending POs whichever is later
Instrument	One single deposit in the form of Bank Guarantee
Amount	Equal to EMD amount

Performance Bank Guarantee (PBG)

Validity	A period of **36 (Thirty Six) months** from the actual date of delivery.
Instrument	One single deposit in the form of Bank Guarantee to be submitted along with the bills and proof of delivery
Amount	Equal to 8% of PO Value

3 PLACING OF PURCHASE ORDERS

1. NICSI has the right to choose any subset of the tendered items for ordering.

2. In case Purchase Orders are placed on more than one vendor, the distribution of purchase orders shall be as per the decision of NIC and the User Departments.

3. For procurement of goods, Purchase order will be placed on the empanelled vendor in hardcopy format or in softcopy mode either through e-mail containing the scanned copy of the Purchase Order or an alert through e-mail for downloading the Purchase Order from NICSI Purchase Section Web Site.

4. Objection, if any, to the Purchase Order must be reported to Purchase Section by the vendor within three (3) working days counted from the Date of Purchase Order for modifications, otherwise it is assumed that the vendor has accepted the Purchase Order in toto. This is applicable in case of electronic publishing/delivery of Purchase Order also.

5. On the receipt of the Purchase Orders, the Vendor(s) shall collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit/State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.

6. If the vendor is not able to supply the ordered items completely within the specified period, the EMD/Security Deposit will be forfeited in full. Besides legal action shall be taken separately.

4 DELIVERY PROCESS

1. **All deliveries are to be made to NICSI HQ, NBCC Tower, Bhikaji Cama Place, New Delhi.**

2. All aspects of safe delivery shall be the exclusive responsibility of the Vendor. At the destination Site, the cartons will be opened only in the presence of NICSI/User representative and Vendor's representative and the intact position of the Seal for not being tampered with, shall form the basis for certifying the receipt in good condition.

3. **Vendor has to deliver the items to NICSI HQ, NBCC Towers, Bhikaji Cama Place, New Delhi, within 15 days from date of issue of Purchase Order, failing which penalty as per Section: Penalty will be applicable.**

4. If the scheduled date of delivery falls on holiday / non-working day (at the delivery location), the next working day shall be treated as due date of delivery. All aspects of safe delivery shall be the exclusive responsibility of the Bidder.

5. Where required, vendor must apply to the respective authority/user for issue of road permit / waybill in time. The Vendor has to collect all the desired documents from NICSI's Stores-section at New Delhi for seeking the necessary Road-Permit / State-Entry-Permit of the respective state from the concerned users for complete, safe and timely delivery of the ordered products.

6. Where applicable, delays on account of getting relevant road-permits shall not make vendors' eligible for waiver of late delivering penalties in terms of Purchase Order. Hence to avoid the delays, they are suggested to initiate the process of obtaining the Road-permits well before the actual delivery of items.

7. Though Purchase Section of NICSI will provide all the necessary documents for ensuring smooth delivery of goods, it is the responsibility of the vendor to deliver the goods in time, even if the documents provided by NICSI are NOT honored by the State Authorities.

8. During installation at final User site, if the supplied hardware is found to be defective or broken, it will be replaced with a new one by the Vendor at its own cost and risk within 5 (five) days from the date on which the vendor has been informed of such damage failing which penalty as per Section: Penalty will be applicable. The replacement hardware will be delivered to NICSI HQ, New Delhi.

5 PENALTY

S. No.	Condition	Penalty
1	Failure in maintaining Delivery Schedule	A penalty of 0.2% of the Purchase Order value per day, for up to a maximum of 30 days, if the items are not delivered within 15 days of Purchase Order issue.
2	Failure in maintaining Hardware Replacement Schedule	A penalty of Rs. 50 per Device per day, for up to a maximum of 30 days, if a defective/damaged Device* is not replaced/repaired within 3 days of the date of the issue being reported by the User Department.

*Device can be an Access Point or any other hardware supplied by the vendor.

(4)

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6   PAYMENT PROCESS

1. **For items where the vendor has to make a delivery to NICSI**, the vendor has to submit the copy of their Invoice (in Triplicate) in the name of NICSI-New Delhi by charging the applicable Delhi VAT and other Taxes at NICSI's Stores-Section, New Delhi, along with the original excise duty gate pass (if any) and other relevant documents such as copy of Purchase-order, NICSI's Invoice and PBG shall be submitted (in 2 copies) within 5 to 10 days of actual delivery of items.

2. Entry Tax etc. if payable will be reimbursed as per actuals and for which vendor has to submit all the original documents/receipts along with the Proof-of-delivery. Such claims shall neither be processed separately nor on any post-facto basis

3. Payments shall be subject to deductions of any amount for which the empanelled agency is liable under the empanelment or tender conditions. Further, all payments shall be made subject to deduction of TDS (Tax deduction at Source) as per the current Income-Tax Act.

4. 100% payment will be made after Delivery is over.

5. All payments to agency will be made through RTGS only.

6. In case the submission of bills to NICSI, along with the necessary documents i.e. POD's/BG's etc., is delayed by the Supplier beyond 30 days from the date of delivery of materials, the entire liability towards payment of interest/penalty to the tax authorities would be on the cost of respective Supplier so that NICSI is not burdened unnecessarily with this amount. All such amount will be deducted from the payment due to respective vendor.

7   GENERAL TERMS & CONDITIONS

1. No interest shall be payable for the Earnest Money Deposit and the No deviations from these terms and conditions will be accepted. Any violation there off will lead to rejection of the bid.

2. The Security Deposits without any interest accrued, shall be released only after the expiry of the warranty period of the systems successfully.

3. The decision of NICSI arrived during the various stages of the evaluation of the bids is final and representation of any kind shall not be entertained on the above. However, reasons for disqualification of a bid will be disclosed to the bid submitting company where inquiries are made.

4. In case the empanelled vendor is found in-breach of any condition(s) of tender or supply order, at any stage during the course of supply/ installation/commissioning or warranty period, the legal action as per rules/laws, shall be initiated against the vendor and EMD/Security Deposits shall be forfeited, besides debarring & Black listing the vendor concerned for at least 3 years, for further dealing in Govt. departments.

5. Any attempt by vendor to bring pressure towards NICSI's decision making process, such vendors shall be disqualified for participation in the present tender and those vendor may be liable to be debarred from bidding for NICSI tenders in future for a period of three years.

6. Printed conditions mentioned in the tender bids submitted by vendors will not be binding on NICSI. All the terms and conditions for the supply, payment terms, penalty etc. will be as those mentioned herein and no change in the terms and conditions by the vendors will be acceptable. Alterations, if any, in the tender bids should be attested properly by the vendor, failing which, the tender will be rejected.

7. Upon verification, evaluation / assessment, if in case any information furnished by the vendor is found to be false/incorrect, their total bid shall be summarily rejected and no correspondence on the same, shall be entertained.

8. No deviations from tender terms and conditions will be accepted. Any violation thereof will lead to the rejection of the bid.

i.   NICSI may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate NICSI for any extra expenditure involved towards goods and services to complete the scope of work in totality or 10 % of the work order as cancellation charges whichever is higher.

7.2   DISPUTE RESOLUTION

1.   NICSI and bidder/subsequently empanelled vendor agree to resolve any dispute which may arise during the processing of current tender and/or execution of the empanelment thereafter for procuring services/products through mutual consultation in an amicable manner.

2.   Having tried the option I and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by conciliation in accordance with ICADR Arbitration Rules 1996.

3.   Having tried the option I & II and in case of not able to resolve the dispute, both NICSI and the bidder/subsequently empanelled vendor agree to resolve their contractual disputes by arbitration in accordance with ICADR Arbitration Rules, 1996.

7.3   APPLICABLE LAW

1.   The agency shall be governed by the laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing.

2.   All disputes in this connection shall be settled in Delhi jurisdiction only.

Terms and conditions which are not specifically mentioned in this empanelment letter, but are a part of the tender document **NICSI/Wi-Fi ACESS POINT/2014/12**, shall be ipso facto applicable to this empanelment and the purchase orders to be placed thereafter.

You are requested to submit a signed and stamped copy of this letter within 7 (seven) days of the issue of this letter as a token of acceptance of the empanelment. Each and every page of the empanelment letter must be signed and stamped by the authorised signatory.

Yours Faithfully,

(Vineet Tomar)
DGM (Tender)

Copy to:

1.   Purchase Section, NIC, CGO Complex, Lodhi Road, New Delhi
2.   SO, Paid Project, NIC, New Delhi
3.   GM(P), NICSI, New Delhi
4.   Account Section, NICSI, New Delhi
5.   Project Co-ordinators, NIC/NICSI, New Delhi
6.   Company Secretary, NICSI, New Delhi
7.   Guard File

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8   ANNEXURE: Item Rates

Wifi Access point for connecting with existing LAN

S. No.	OEM Name	Product Make / Model and Part Code	Basic Unit Price (with 3 years warranty)	VAT	Total Price (All inclusive) With 3 years warranty
			In Rs.	In %	In Rs.
1	Tenda	Tenda N3 Wireless N150 Home Router	980.00	5.00%	1029.00

⑦

Proposal for Project e-Exam under NMEICT

R.K. Shevgaonkar

Director, IIT Delhi and

Professor of Electrical Engineering, IIT Bombay

Introduction

India is one of the leading countries in e-learning. On the initiative of MHRD a large number of e-learning projects have been initiated under the head NMEICT in last one decade. Most of the project however either focused on content creation or content dissemination. For example the NPTEL project developed more than 600 video and web courses in all disciplines of engineering and science. The courses are now available on the NPTEL national server as well as on YouTube. Over the last few years the courses have gained popularity worldwide and recently the 1billion hit mark was achieved by the NPTEL website. A similar effort was made in the direction of creating e-laboratories under the Virtual Lab project. More than 100 labs were created and distributed to a large number of colleges in the country. Other projects also have made efforts in taking the live classrooms to a wider audience across the country. So in short the work carried out in the direction of e-content creation by faculty of IITs, IISc and other institutions is highly commendable.

However, a question invariably asked (and rightfully so) is, how the e-content has helped in raising the standard of engineering education in the country? Is the material (in particular the NPTEL courses) used effectively by the students in the country? The web access analysis shows that the NPTEL content is heavily used during certain periods of the year that is, before the national competitive examinations like GATE etc. Although the content created by the NPTEL has high praise from the student community the content is used only by a small fraction of the students in the engineering institutions. The content however is used by the teachers to a greater extent for improving their teaching. After discussing with the students of various colleges, it becomes clear that the students do not use the material comprehensively because they do not see any direct tangible benefits from the usage of the e-content developed under the NPTEL project. While the NPTEL courses put thrust on fundamentals and logical development of the subject, the examinations in most of the universities test how well the subject content is memorized. This gap between the content and the testing mechanism makes the usage of e-content developed under NPTEL less attractive to the college students. To make the e-content more usable, two things are imperative: (1) Integration of the e-content developed under NMEICT in the university curriculum (2) Designing the question paper that is commensurate with the content. It is worthwhile mentioning here that considering wide variation of the university syllabi, the NPTEL courses have been developed in a modular form. The individual universities can configure their courses by suitable combination of the course modules. So integrating the e-content in the university curriculum is not a difficult task if proper policy is adopted by a university. The second task however is

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not easy unless we make a special effort for that. The e-Exam project essentially addresses this aspect of the e-learning process, the Evaluation.

Present Examination System

Leaving a few, most of the technical colleges in India are affiliated to a parent university. The affiliating university forms the syllabi for the subjects and conducts examination for all subjects in all semesters. The central control of the examination makes the examination vulnerable to many factors like availability of qualified paper setters, distribution of the exam material in secured fashion, uniformity in evaluation, etc. If the question paper is set by an inexperienced paper setter, the quality of questions may not be up to the expected standard. Many times it becomes difficult to find a good paper setter. Also there is always a fear of leakage of the question paper in a large university system.

Further as pointed out above, the question papers invariably test only memorizing capability of the students instead of testing the in-depth understanding of the subject, logical reasoning and analytical capability. The questions are typically descriptive type. Even if there are analytical questions, the same questions repeat and students memorize even the analytical problems.

It is therefore apparent that there is a need to develop high quality examination system which is aligned with the quality e-content created under the NMEICT project. Through this platform all universities can set question papers of same high standard. Also it will take away all the problem associated with the paper distribution logistics. The question papers can be set and (re-set if need arises) by the stroke of a key and can be distributed instantly.

Basic Philosophy of the Project

Let us look at a good standard examination and ask what a good examination should test. Especially in technical subjects, the exam should test:

1. Knowledge of basic principles

2. Application of the basic principles to define an engineering problem

3. Solving the problem following systematic steps using analytical tools.

If a large number of problems are created to meet these objectives, a quality examination can be conducted by any university even if there is shortage of highly qualified paper setters and limited logistic. One may wonder here that by creating a question bank, will the exam become known! Indeed the questions will be known to all the students but if the number of questions is large (few hundred to thousand per subject) knowledge of thousand questions is as good as knowing the full subject. Further, from a given numerical problem infinite number of problems can be generated by changing just the numerical values. Therefore even if a question is known a priori, the person can solve it only if s/he

knows the systematic steps involved in defining and solving the problem. The student cannot solve the problem just by memorizing it. The student needs to memorize the steps involved in solving the problem and that is what normally professional needs to know. The analytical skills of a student (as expected in (2) and (3)) therefore can be well tested through this approach. Testing of (1) is straightforward in any case.

In a university examination, different questions have different marks depending upon the difficulty level of the questions. In e-Exam therefore we need to create questions of different complexity levels.

Methodology

The e-Exam needs development at two levels.

1. Creation of question bank and its dynamic solution manual.

2. Development of a system which can assemble questions to create a question paper of desired composition.

While the first component requires subject experts and technical manpower, the later needs general software developers.

Creation of Question Bank and the Solution Manual

First the subjects that are needed by large number of colleges at the UG level and which are not descriptive type will be identified. This will be followed by identifying SMEs who can develop the desired e-question bank. The SMEs will be encouraged to compile all possible questions from past university exams and other competitive exams. The SME may also invite questions from the experts by paying suitable honorarium. The SME will then study the commonality of the questions and will create questions which meet the pedagogy criteria defined above. The SME will create questions which will test all possible ways through which the knowledge can be tested. For a typical course, it is expected to develop few hundred questions which will cover all aspects of the course. The questions will be of different complexity level which will be indicated by the marks attached to a question or by typical time needed to solve the question. For example one mark question could be just memory type, two marks question could be of direct application of a formula type with small calculation, and three, four, five mark questions could be of multiple calculation nature. To provide flexibility to the paper setter, the subject will be divided in large number of modules and questions for different marks will be created for each module. There will also be complex questions which will run across the multiple modules.

Once the basic question banks are created, a dynamic solution manual will be created. The dynamic solution is a dedicated program for each question, which can be run for different numerical values for the input data. The dynamic solution manual can be developed on platforms like Matlab, Scilab etc or it can be a standalone program in C++ etc. This task can be carried out with the help of

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Research Assistants. The dynamic solution manual will give numerical answers at multiple internal steps of the question.

Creation of a Question Paper

The paper composition strategy is defined by the paper setter and therefore a platform needs to be created which can use paper setter defined parameters to compose a question paper.

As mentioned above, a course is divided into small modules and each module will have a question bank of different complexity levels and different marks. A university first will define the syllabus by choosing a set of modules from the modules of the e-content developed under the content development project. The syllabus is made available to the paper setter. The paper setter will define the format of the paper i.e., what is the weightage given to different modules and number of questions in different complexity groups. The program then will assemble questions to create a question paper. The paper setter will be given flexibility to look at the individual questions and ask for an alternative question if needed. The alternative question will be randomly picked up from the question bank. The paper setting program can use information of the previous years' question papers to avoid repetition. The paper setter can iterate till s/he gets a satisfactory question paper.

At this stage the paper setter can freeze the question paper and can ask for a solution which can be kept confidential with the controlling authority.

Duration   2 Years

Each course will take about one year. e-Exam for multiple courses can be developed parallely.

Total Funding Requirement

Funding for Paper setting Platform

- Manpower (2)   25.00 Lac

1. Software   5.00 Lac

2. Coordinator Honorarium   5.00 Lac

   Total   35.00 Lac

Funding needed per course

1. Manpower (2-3)   25.00 Lac

2. SME Honorarium   10.00 Lac

3. Other expenses   10.00 Lac

         Total   45.00 Lac

In the pilot phase, e-Exam will be created for **5 fundamental courses** in few branches of engineering.

Total Funding over 2years   **260.00 Lac**

Achievements of the Projects

1. The project will enhance the standard of examination in more than 5000 engineering institutions in the country.

2. The expenses for conducting university examination will be reduced substantially.

3. There will be no need to set multiple question papers for the security reason.

4. It will make the question papers error-free and therefore will avoid disputes.

5. It will make the examinations leak proof.

6. It will save time for the paper setter as the paper can be composed quickly and the solutions can be generated automatically.

7. Evaluation may be computerized and can be made faster and error-free.

Queries from the SC members and their answers

1. How will non-numerical question be handled?

A. This platform is for subjects which are numerical based. Subjects like, Electromagnetics, Mechanics, Electrical circuits, Electronics, Control systems, Heat transfer, etc.

2. Can other experts add on to the question bank (crowd sourcing)?

A. Yes, but it should be with the approval of the original question bank creator. Crowd sourcing is a good idea provided the question from the crowd are error-free and of good standard.

3. Who will be the intended students for such question papers? What will be the level of questions/exams? Pedagogy of exams?

A. Any UG student in an engineering institution. In fact the idea is to replace the current examination with a quality examination. The level of the exam is same as that needed at any good institution at the UG level. The pedagogy will be same that in the NPTEL courses. The basic idea is that the exam system should supplement the NPTEL content.

4. Different universities have different syllabi / books. How will that be addressed? What will be the syllabus/curriculum for the exam?

A. This was answered while developing the NPTEL contents. The courses have been developed in modular format. Each module being 3-4 lectures. A typical UG course therefore will consist of 10-15 modules. A university can select modules to frame the syllabus and assign desired weightages to different modules.

5. A descriptor language needs to be developed/adopted to make the dynamic question paper.

A. Yes. That is part of the proposal.

6. A group in Microsoft research is already working on something similar. Prof. Khincha (Chairman, SC) had more details if required.

A. Microsoft may be doing a general purpose descriptor. We here will be developing with specific application in mind.

KPMG

cutting through complexity™

Project E- Question Bank for Engineering Courses

Financial Due Diligence - KPMG Report

November 2014

Project E-Question Bank for Engineering Courses
Project Background

Project Need	The current examination system can be vulnerable to factors such as availability of qualified paper setters, distribution of the exam material in secured fashion and uniformity in evaluation to name a few. It is therefore apparent that there is a need to develop high quality examination system which is aligned with the quality e--content. The key objective of this project is remove the loop holes present in the current examination system like inexperienced paper setter, the quality of questions, thereby maintaining a high standard across all institutions.
Proposed Benefits	• The project will enhance the standard of examination in more than 5000 engineering institutions in the country. • The expenses for conducting university examination will be reduced substantially. • There will be no need to set multiple question papers for the security reason. • Make the question papers error--free and therefore will avoid disputes. • Make the examinations leak proof. • Saving time for the paper setter as the paper can be composed quickly and the solutions can be generated automatically. • Evaluation may be computerized and can be made faster and error-free.
Project Scope	• To prepare a question bank for five engineering courses and each course containing 500-1000 questions & answers that will help engineering students to understand respective courses after the students have visited the NPTEL lectures • To improve knowledge of principles of topics, application of the basic principles to define an Engineering problem and solving the problem following Systematic Steps using Analytical Tools.
PI	Prof R.K. Shevgaonkar
Project Duration	2 Years

Budget (Phase 1)	Proposed Budget	Revised Budget
	INR 2.1 Cr	**INR 2.1 Cr**

Project E-Question Bank for Engineering Courses
Key Observations

Parameters	DPR Components / Clarifications / Resolutions	KPMG Comments
Basis of Estimates	■ The budget breakdown was analysed through phone calls, emails and documents made available by the PI. ■ Nonetheless, the budget breakdown and basis of estimates were not detailed to ensure justification of cost components. *(Please refer to Annexure I and II for budget breakdown and basis of estimates provided)*	■ In the absence of detailed budget breakdown and basis of estimates, KPMG based analysis on market analysis, comparative projects and industry standards. ■ KPMG recommends that IITD (PI) prepare a formal basis of estimates note and attach with the DPR, collating the detailed breakdown for all budget components.
Timeline for Project	■ As per discussions with the PI, the timeline for development of the paper setting platform and generation of question bank is 2 years.	■ KPMG is of the view that the timeline for each of the components can be rationalized and hence rationalization of manpower costs hired for 2 years. ■ KPMG analysis is based on review of similar projects. *(Please refer to Annexure III for details on similar projects)*

Project E-Question Bank for Engineering Courses
Project Financials

Budget Breakup (INR Lakhs)			
# Component	Proposed Budget	Revised Budget	KPMG Comments
Funding for Paper Setting Platform			
1 **Manpower**	26	26	■ **Manpower consists of 2 full time employees for the two years.** ■ In the absence of detailed job description and resource loading, KPMG analysis based on projects with similar deliverables. ■ <u>KPMG recommends rationalized resource loading for manpower given that the typical duration for development of the Platform is estimated at 6 months, while monitoring and evaluation can be conducted over a period of a year.</u> (*Please refer to Annexure III for details on similar projects*)
2 **Software**	4	4	■ Software costs include licensing fees for suggested software, Mathcad and Matlab. ■ KPMG analysis based on market analysis of prevalent rates.
4 **Honorarium**	5	5	■ **Computed at approximately 16% of the budget** ■ PI estimates justified to the PAB, however not formally documented. KPMG requests PAB to review and decide. ■ <u>KPMG recommends that the honorarium be aligned to the general practice of computing at</u> **<u>approximately 5%.</u>** (*Please refer to Annexure IV*)
Total	**35**	**35**	

Project E-Question Bank for Engineering Courses
Project Financials

# Component	Proposed Budget	Revised Budget	KPMG Comments
Budget Breakup (INR Lakhs)			
Funding needed per Course			
1 **Manpower**	22	22	■ **Manpower consists of 2 full time employees for the two years.** ■ In the absence of detailed job description and resource loading, KPMG analysis based on projects with similar deliverables. ■ <u>KPMG feels that full time resources for 2 years are not required, as the content development should take about 1 year and hence resource loading can be rationalized in second year.</u>
2 **SME Honorarium**	10		■ **Computed at approximately 16% of the budget** ■ PI estimates justified to the PAB, however not formally documented. KPMG requests PAB to review and decide. ■ <u>KPMG recommends that the honorarium be aligned to the general practice of computing it at</u> **approximately 5%** *(Please refer to Annexure IV)*
3 **Office Equipment**	1.5	1.5	■ Equipment include laptop, PC and portable disks. ■ <u>Based on KPMG analysis of market rates, costs can be rationalized</u> **to under 1 lakh**. *(Please refer to Annexure V)*
4 **Travel**	1	1	■ According to the PI the travel related expenses are as per the **UGC- MHRD, GoI norms**
5 **Contingency**	0.5		■ Computed at approximately **1.5% of Course Funding**
Total	35	35	
Total Budget for 5 courses	175	175	
Total	210	210	■ **No explicit budget rationalization, but increased understanding of budget components (yet to be documented in the revised DPR)**

KPMG recommends that basis of estimates be formally documented as part of the DPR baseline. Such an exercise shall allow this Project to be used as reference for other similar projects or for future scope expansion.

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Questions

I. Funding for Paper Setting Platform   **Total Cost:**   **35.0 Lac (Including Hon. 5.0 Lac)**

    1) Manpower   **Total cost:**   **26.0 Lac**

       a. Please provide detailed breakdown of manpower for all two years including:

          i. Number and category of all resources to be utilized

          Ans. Two persons, one high-end software developer and one regular software developer are needed.

          ii. Role and extent of involvement of resources

          Ans. The senior person will conceptualize and develop the language descriptor platform and system integrator, and the junior person will write the code of the software.

          iii. Associated costs with each category of resource

          Ans.   Senior person (with M Tech qualification or experience) 7.5 Lac/year

                Junior person (with B Tech qualification)   5.5 Lac/year

    2) Software   **Total Cost:**   **4.0 Lac**

       a. Please provide cost breakdown for software that would be required for implementing this project, along with specific uses.

       Ans. Each question has to have a computing engine for dynamically solving the problems. Matlab, Mathcad and some graphic display software with multiple license needs to acquired question bank needs to be dynamic. When the question data changes solution will change

II. Funding Needed per Course   **Total Cost:**   **35.0 Lac (Including Hon. 10 Lac)**

    1) Manpower   **Total Cost:**   **22.0 Lac**

       a. Please provide detailed breakdown of manpower for all two years including :

          i. Number and category of all resources to be utilized

          Ans. Two persons will be recruited. The persons will be for the subject. One of the persons (Research Associate) will be at the PhD or PDF level and other person (Research Assistant) will be with M Tech.

          ii. Role and extent of involvement of resources

          Ans. The Research Associate will help SME in designing problems of different type and complexity and develop solutions. The Research Assistant will write dynamic solution codes. Research Assistant will also provide administrative help.

          iii. Associated costs with each category of resource

          Ans.   Research Associate   7.0 Lac/year

                Research Assistant   4.0 Lac/year

    2) Other Expenses   **Total Cost:**   **3.0 Lac**

       a. Please provide detailed breakdown of what shall be included in Other Expenses

       Ans. Other Expenses are:

          Computers, Laptops, portable disks, etc.   1.5 Lac

          Travel   1.0 Lac

          Contingency   0.5 Lac

Wed 11/12/2014 10:29 AM

R.K. Shevgaonkar <rks@ee.iitb.ac.in>

RE: GENTLE REMINDER: MHRD - NMEICT - Project e-Exam under NMEICT -   Financial D

To   Singh, Shristi

Cc   rks@ee.iitb.ac.in; vvsm@nmeict.ac.in; Jain, Sameer; Vashisht, Neha

You replied to this message on 11/12/2014 4:38 PM.
We removed extra line breaks from this message.

Dear Ms Singh,

Yesterday I explained to you all the componets of the projects and their financial requirements.
As I mentioned, I do not have answers to your micro level questions. For example, you asked:

Which laptop or commpter will you buy?
Where will you travel?
How many times you will travel?

Infact travel and all that is just grated as contigency up 15% of the project cost in most of the Govt. funded projects. In fact I have been one of the PIs of the National NPTEL project for last 12 years and these types of micro questions were never asked.

About honorarium also, I have explained the logic to the PAB which is chaired by Prof. Khincha.

Therefore I do not think I have any thing new to add than what I have provided in my response throgh email.

Please note that these projects are of academic nature and not of commercial nature. Professors have to be persued to take up this activity which I think is extremely important for improving education standard in the country. I cannot micro-manage the professors of high academic stature.

Further note that IITs have very robust system of project implementation and all the Govt rules are followed strictly.

Thank you

---RKS

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In the absence of basis of estimates for manpower resource loading, KPMG conducted a comparative analysis with the Online Joint Entrance Examination Platform Project under NMEICT undertaken by CBSE. The scope of the Project is as follow:

- Prepare Table of specifications and metadata to be developed by experts on the basis of previous JEE examination papers
- Prepare a question bank consisting of 501 items (concepts) mapped to each specification, expanded to 10 questions per item
- Prepare learning material or content linking concepts to questions and their answer options
- Prepare An online platform in the form of a website where students can access the resources (paid or free)

The proposed timeline for delivery for the Project is as follows

Key Deliverables	Expected time of delivery
Inception of the Project	1 July 2014
Development of item bank with 501 items	30 Nov 2014 (5 months)
Completion of technology Platform along with Hosting	31 Dec 2014 (6 months)
Pilot run of the Platform	1 Jan 2015
Ongoing monitoring and evaluation of the performance of the platform and enhancements made accordingly	1 Jan 2015 - 31 Dec 2015 (1 Year)

Given the similarity in the Project in terms of deliverables and scope, KPMG suggests the resource loading for development of the Platform and development of question bank be aligned with the timeline proposed for the aforementioned Project.

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Based on our review of projects under NMEICT, the basis of honorarium as a percentage of Project Cost ranges from 1% to 6%. The following table provides a comparative analysis of honorarium as a percentage of Project Cost for various Projects under NMEICT

Project	Institute	Honorarium as a % of project cost
An Open Source Indian MOOCs Platform	IIT Bombay	3%
Institutional Network and Virtual Knowledge Repository for Arts and Humanities Education in India	IIIT Hyderabad	6%
Development of National Digital Library of India	IIT Kharagpur	1%

Based on the aforementioned analysis, KPMG recommends that the honorarium be aligned to the general practice of computing it at approximately 5%.

Source: Amazon, Fllipkart, Snapdeal, MySmartPrice

Based on our analysis, KPMG has identified laptops with specifications that suit requirements of the Project. The following table summarizes specifications and market price of such Laptops. Analyzing market rates, the highest specification laptop HP Pavillion M4- 1012TX 14" Notebook is also available within INR 45,000. Therefore, based on this analysis, KPMG recommends the laptop cost can be rationalized to INR 45,000.

Model	HP Pavilion M4- 1012TX 14" Notebook	Lenovo Idea Pad G50 (59413719) Notebook	Dell Inspiron 15 3000 Series
Specification	• Intel Core i5-3230M • 2.6 GHz Processor • 4 GB DDR3 RAM • 500 GB Hard Disk • Windows 8 64 bit OS	▪ Intel Core i3-4010U • 1.7 GHz Processor • 8 GB DDR3 RAM • 1 TB Hard Disk • Windows 8.1 64 bit OS	▪ Intel Pentium 3558U processor (2M Cache,1.7 GHz) ▪ Windows 8.1 (64 bit) ▪ 15.6 inch LED Backlit display with true life and HD resolution (1366*768) ▪ 4 GB Ram ▪ 500 GB 5400 rpm SATA hard Drive
Price	INR 42,899 approx.	INR 41,690 approx.	INR 28,390 approx.

Source: Amazon, Fllipkart, Snapdeal, MySmartPrice

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Thank you

Contact Person:
Sameer Jain
Manager, Government Advisory, IGS
KPMG
Email: sameerjain@kpmg.com

NMEICT

Thank You