Scheme of setting up 20 new Indian Institutes of Information Technology (IIITs) on Public Private Partnership (PPP) modal

To address the challenges faced by the Indian IT industry and growth of the domestic IT market, the Ministry of Human Resource Development (MHRD), Government of India intends to establish twenty Indian Institutes of Information Technology (IIIT), on a Not-for-profit Public Private Partnership (N-PPP) basis. The partners in setting up the IIITs would be the Ministry of Human Resource Development (MHRD), Governments of the respective States where each IIIT will be established, and the industry.

1. Objectives

A major objective in establishing IIITs is to set up a model of education which can produce best-in-class human resources in IT and harnessing the multi-dimensional facets of IT in various domains. While the number of students produced by these IIITs would be small, the impact they create would be great. Thus, the 20 new IIITs should be created to act as the Lead or Spearhead institutions that

a. Are autonomous, not-for-profit, self-sustaining, research-led education institutions

b. Are set up under an Act of Parliament (since this process is time consuming, the IIITs initially may be registered as Societies under the Societies Registration Act 1860)

c. Are set up to contribute significantly to the global competitiveness of key sectors of the Indian economy and industry

d. Are focused on applied research and education in IT in selected domain areas

e. Are managed by professionals from the area of academics and research, under the guidance of a Governing Council that has representatives of participating companies that are making a significant contribution/commitment, Industry Association(s), eminent academicians & researchers and representatives from Government

2 Governance Structure of the IIIT

To realize its objectives, a IIIT needs an innovative governance structure which allows it to function with autonomy, flexibility and transparency. Autonomy will enable the IIIT to take responsibility for its development and promote accountability and responsibility in the institute's stakeholders; flexibility will enable the IIIT to meet the rapidly changing needs of the IT industry; and transparency is required to satisfy the multiple stakeholders involved in each IIIT that their interests are not being compromised. The proposed governance structure should also be aligned with the current policy and regulatory framework. Additionally, there is also the need for a formal pan -IIIT structure which allows the various IIIT to leverage best practices from each other, co -ordinate common efforts like faculty development, student admission processes, manage the IIIT brand etc.The overall governance framework for the IIITs will involve -SG: State Government; CG: Central Government; C P: Corporate Partner; PI: Partner Institute

3. IIIT Governing Council (or Governing Board)

The Apex body for managing each IIIT will be the IIIT Governing Council. The IIIT Governing Council will be completely empowered. Approvals for budgets, purchases, capital and operational expenditure, faculty salaries, recruitment norms, etc will be within the powers of this Board. The IIIT Governing Council should be of a size say 13-15 members, which, while allowing representation of a diverse cross-section, does not become unwieldy. An independent Review Committee will be appointed by the stakeholders (Central and State Governments and Corporate Partners) every ten years or less to do a comprehensive and independent review of all aspects of the functioning of the institution. The members of this committee will be appointed on the basis of a consensus amongst the three parties. The results of the review will be published in the public domain including the website of the institute.

4. Council of IIITs

The Council of IIITs will function as the apex body for the twenty IIITs. The Council of IIITs is not intended to be a regulatory or coordinating body. Instead

the main purpose of the Council of IIITs will be to provide leadership and leverage synergies across the twenty IIITs. The Council of IIITs will also not invest in any individual IIIT. Some key responsibilities of the Council of IIITs would be:

- Custodian of the IIIT brand. This is a very important as the 'brand IIIT' should stand for best-in-class technical education similar to the 'brand IIT'.
- Promote the 'IIIT' brand both domestically and internationally.
- Provide a platform for each IIIT to leverage best practices and next practices from each other.
- Prepare common minimum guidelines for a IIIT to allow usage of the IIIT brand.
- Facilitate an independent performance review of each IIIT. It would be incorporated as a Registered Society and will be a not–for-profit entity.

5. Infrastructure

For a IIIT to evolve into a world-class academic institution, it is important that the infrastructure and facilities available at each IIIT are best-in-class. A good infrastructure will play a major role in attracting and retaining good faculty and also be conducive to exposing the students to higher standards of education.

For developing an integrated campus which not only meets today's need of a IIIT, but also provides scope for expansion for facilities like incubators, Science & Technology Park etc, which are essential for the IIIT to achieve it's objectives of becoming a best-in-class research institute, it is, therefore, recommended that each IIIT should be allotted 100 acres of land, preferably contiguous.

The minimum land requirement for establishing a IIIT has been estimated to be 50 acres with additional land area spread across various facilities as follows:

		Area in Sq Ft *
Core Infrastructure	Class Rooms	1,2 5,000

	Laboratories and others	6,40,000
	Student Hostels	5,25,000
	Faculty/staff residence	3,9 5,000
	Estate development	4,7 5,000
Other infrastructure		
	Research labs	4,3 5,000
	Sports Area	3,00,000
	Auditorium	20,000
Land Area required		**38 acres**
	Green Area in campus	12 acres
Minimum Land required		**50 acres**

Land and infrastructure will also be required for the following facilities:

1. Training
2. Advanced academic research
3. Commercial research
4. Guest Houses
5. Demonstration theatres
6. Incubators
9. Recreation

However, it is possible that contiguous 100 acres may not be available in the indicated locations. In such a situation, it is recommended that instead of compromising on the location, a 'hub & spoke' model for the IIIT campus may be considered wherein the main campus with the core educational, administrative and research infrastructure, including, student hostels of the IIIT is in one central location which serves as the main campus but other facilities e.g. staff and faculty residences, incubation facility are located separately but in close proximity to the main campus.

To reduce its initial capital expenses, the institute may also decide to enter into a Build Operate-Transfer (BOT) arrangement with a real estate developer wherein the institute provides land to the developer (through a long term leasing arrangement) and the developer will construct hostels and faculty housing and lease it back to the institute for a certain number of years after which the hostels and faculty housing will be transferred to the institute.

6. Location

Given the importance of the location towards the success of the IIIT, it is important that the location for each IIIT is a well-thought decision arrived at by a careful consideration of all factors and criteria.

Some criteria that should be considered for selection of the location are as follows:

- Presence of a number of IT parks & IT SEZs will enable the institute to leverage the good quality infrastructure.
- Presence of leading IT companies will enable the development of academia- industry linkages.
- Presence of non -IT industry will enable the IIIT to develop domain specialization.
- Availability of infrastructure including good connectivity (by air and/or road), local transport, clean city environment in terms of sanitation, good quality hotels, housing facilities etc.
- The location should allow for future expansion of the institute.

The final choice and priority of the location will be made by MHRD in consultation with the state governments and participating industry firms. While it is quite possible that 50-100 acres of contiguous land may not be easily available in some of the indicated locations and thereby may lead to alternative locations being considered which may not satisfy the location selection guidelines presented

earlier. In such an eventuality, it is recommended that instead of compromising on the location, a 'hub & spoke' model for the IIIT campus may be considered wherein the main campus of the IIIT is in one location but other facilities e.g. faculty residences, out reach education and incubation are located separately, but in close proximity to the main campus.

It is important to note that for a IIIT which is located in cities which meet the above criteria, the capital expenses will be reduced as the IIIT will not have to provide for facilities like children schools, markets, housing etc.

7. Curriculum

Each IIIT should have complete autonomy to develop its own academic programmes including curricula, new courses and method of assessment. IIITs will have common elements in the curriculum, which will be designed to meet the student aspirations and the industry requirements. These will be as follows:

(1) Research experiences as part of undergraduate curriculum: Courses will emphasize projects and research experience. There will even be a research option (leading to BTech (Honours)) which will permit the interested students to undertake research while being an undergraduate. This would require radically different design of curriculum with IT courses starting early and flexibility in choosing courses very early on in the programme

(2) A set of domain courses in science and engineering which will give breadth to the students. Specific areas would depend on the domains chosen by the specific IIIT.

(3) A strong component of Humanities and Social Sciences (HSS) with as much as 15-20% of total BTech credits from HSS areas.

(4) Special attention would be paid to human values, as these are essential in contemporary society. Specially designed courses on human values would be made a regular part of the B Tech curriculum, especially in the first year.

The curriculum shall be designed to meet basic requirements with a focus on research and development. The curriculum for undergraduate courses shall include subjects in various domains for IT application; electives in humanities subjects such as philosophy, sociology, political science, business administration, economics, accounting and marketing; and soft courses such as presentation skills, communication skills, team building, leadership, motivation, project management, performance management, interviewing skills and languages.

8. Faculty

The availability of best-in-class faculty is critical to the success of the IIIT initiative. There is a need to provide a research-oriented environment, sustainable faculty development initiatives and market driven compensation to attract and retain good faculty. A strong research orientation is required among the faculty at a IIIT, which will lead to excellence in teaching and attract faculty who are highly regarded in their fields of specialization.

Creating the faculty pool for the IIITs will require a systematic approach which addresses the issues in both short term and long term. In the short-term, it is imperative that a seed pool of highly qualified faculty is established in each IIIT. One of the key responsibilities of this seed faculty will be to implement processes to develop a pool of faculty both organically (through doctoral research scholars) and inorganically (attracting other faculty to join the IIITs). To achieve this, the IIITs acting singly or collectively should establish a search committee to 'head hunt' the right faculty members from both within India and overseas.

To leverage the current interest among foreign universities/academic institutions to establish a presence in India, each IIIT should enter into formal collaborations with premier academic institutions in India (e.g. IITs and IIIT Hyderabad) and overseas to implement a faculty exchange or visiting faculty programme wherein faculty from both the institutes visit each other for a certain minimum duration. This will not only help in faculty development, but it will also lead to collaborative research.

Another important element of the short-term measures for faculty development will be to encourage the corporate partners for each institute to depute experienced professionals from each firm as faculty to the IIIT for an extended period instead of the current guest lecture approach.

9. Generating Faculty

The most important success factors for the proposed IIITs are the availability of quality faculty and incubation of research in each IIIT. The number of PhDs produced in India is abysmally small. This needs to be corrected not only to improve the availability of faculty for high quality institutions but also to support and strengthen India's leadership role in the IT industry. Lecturership scheme is proposed here which will not only help in preparing high quality faculty, but also in incubating applied research groups in each IIIT. It is expected to attract the best B.Tech and M.Tech students graduating from premier institutions to join a IIIT as a lecturer and at the same time join the PhD programme at one of the participating mentor institutions. A lecturer appointed under this scheme would spend the first year at the mentor institution pursuing his/her PhD coursework, the second year at his/her IIIT (employer) engaged in teaching what he has learnt in the first year; the third year at the mentor institution, where he/she undertakes PhD research and offers a distance teaching course at his/her home IIIT.

It is proposed to create research groups with a critical mass in the mentor institution with satellite research groups in participating IIITs that would be nurtured till they mature into full-fledged independent research groups. There are schemes being proposed by Dept of IT, under the name of IT Research Academy to link up R&D groups. This scheme can be made use of by the new IIITs to link up with their mentor institution.

A Mentor institution which plays a major role in mentoring research and running lecturership programs to support several of the new IIITs will be designated as the

main mentor institution. Funds to the tune if Rs 50 Crores are set aside to support such a mentor institution.

10. Admissions to the IIIT

- Existing tests like the AIEEE may be used for the selection of the candidates.

11. Financial Model

Financial viability and self-sustainability of the IIIT are key considerations towards the preparation of the financial model for the IIIT. The IIIT should be provided complete autonomy to set fees and raise funds through donations, with no link to the size of the corpus that each IIIT can maintain. For each IIIT, the State Government will make available 50-100 acres of land at no cost.

The project is targeted to be completed in nine years from 2011-12 to 2019-20. In the 1st year, 5-10 IIITs would be set up depending upon the response of the State Governments and private partners. The actual financial liability of the Central Government would, therefore, vary according to the number of institutes. The capital cost of each IIIT is Rs. 128.00 crore to be contributed in the ratio of 50: 35: 15 by the Central Govt., the State Govt , and the industry respectively. In the North-Eastern states, the industry participation for capital expenditure wil be kept at 7.5% and Central Government participation at 57.50% while State Governments' at 35%. In addition, Rs. 50.00 crore for faculty development programme will be provided by the Central Government. The effort shall be made to encourage private partners to set up as many IIITs as possible in the North Eastern Region. During the first four years of setting up each IIIT, the Central Government will provide assistance towards recurring expenditure to the extent of Rs.10 crore yearwise requirement of which will vary depending on growth of the institutes and requirement of funds. Each IIIT shall meet its entire operating expenditure on its own within 5 years of commencement out of students fees,

research and other internal accruals. The concerned State Government will provide 50-100 acres of land, free of cost. In addition to sharing 15% of the capital cost (7.5% in the case of North Eastern states), the participating companies were expected to contribute towards research labs and projects, internship, faculty chairs etc. from time to time. Besides, there shall be a cap on the amount of support by the Central/State governments and any escalation in the cost estimates for any reason whatsoever will be arranged by private partners.

Total cost of the Project is 2808.71 crores - Rs.2558.71 crores for non-recurring expenditure, Rs.200 crore for recurring expenditure and Rs.50.00 crore for faculty development expenditure

Each IIIT is expected to become financially self-sufficient and able to meet its entire operating expenditure (Opex) without any support from the Central or State Government within five years of its commencing operations. The Opex would be met from the Institute's revenues generated through student fees, endowments, research grants, etc. Scholarships, Faculty Chairs, Additional Infrastructure etc. will be contributed by Industry, Govt. & donors.

FINANCIAL IMPLICATION

PHASING OF RECURRING AND NON-RECURRING EXPENDITURE

(Rs. in lakh)

Total Expenditure (per IIIT)									
S.No	**Capital Expenditure**	**1 Year**	**2 Year**	**3 Year**	**4 Year**	**5 Year**	**6 Year**	**7 Year**	**Total**
1.	Academic Expenditure	0	0	508	520	525	496	510	2559
2.	Residential Expenditure	0	0	811	522	475	447	948	3203
3.	Hostel Expenditure	0	0	1023	1195	1203	1207	1091	5719
4.	Equipment Expenditure	18	80	89	107	95	97	115	601
5.	Furniture Expenditure	17	78	86	96	92	93	111	573
6.	Guest House	0	0	145	0	0	0	0	145
7.	**Total Capital Expenditure**	**35**	**158**	**2662**	**2440**	**2390**	**2340**	**2775**	**12800**
8.	Recurring Expenditure	100	80	370	450	0	0	0	1000
9.	Faculty Development	80	10	60	50	50	0	0	250
10.	Total Expenditure	215	248	3092	2940	2440	2340	2775	14050

YEAR WISE TOTAL INVESTMENT

(Rs. in lakh)

Total Expenditure (per IIIT)									
S.No		**1 Year**	**2 Year**	**3 Year**	**4 Year**	**5 Year**	**6 Year**	**7 Year**	**Total**
1.	**Capital Expenditure**	**35**	**158**	**2662**	**2440**	**2390**	**2340**	**2775**	**12800**
2.	Recurring Expenditure	100	80	370	450	0	0	0	1000
3.	Faculty Development	80	10	60	50	50	0	0	250
4.	**Total Expenditure**	**215**	**248**	**3092**	**2940**	**2440**	**2340**	**2775**	**14050**

Year-wise phasing of expenditure for 20 IIITs

Sharing of expenditure among GOI, State government and industry											Rs. in Lakh
S. No	Share	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Capital Expenditure share GOI's (50%)	89	492	6556	12782	25272	23696	24452	19316	15282	127935
2	Recurring grant Share of GOI's	500	900	3850	5750	5000	4000	0	0	0	20000
3	Faculty Development Share of GOI's	400	150	1100	1050	1050	750	500	0	0	5000
4	Total Expenditure to be met by GOI	989	1542	11506	19582	31322	28446	24952	19316	15282	152935
5	Capital Expenditure share State Government (35%)	62	344	4589	8947	17690	16587	17116	13521	10697	89555
6	Capital Expenditure share Industry (15%)	27	147	1967	3835	7581	7109	7335	5795	4585	38381
7	**Total Investment**	**1077**	**2033**	**18061**	**32364**	**56593**	**52143**	**49403**	**38632**	**30564**	**280871**