

**RECOMMENDATIONS OF THE WORKING GROUP ON IT-HUMAN  
RESOURCE DEVELOPMENT**

1. IT companies will be encouraged to play a significant role in IT education, for which the following steps will be taken:
  - (i) IT HRD, including IT Education and Training, in formal as well as non-formal sector, will be treated as a Service industry. For this purpose, in the IT Action Plan (Part – I) approved by the cabinet and notified in the Gazette of India, Extraordinary, No. 160, Part –I, Section – I, dated July 25, 1998, wherever ‘IT Services’ are mentioned, they shall be redefined to include IT manpower development including IT Education and Training. As the IT HRD companies have presently the greatest propensity for becoming Indian multinational companies around the world, the provisions of the IT Action Plan Part-I Policy Nos. 19, 21, 23 to 25, 27 to 42, 45 to 53, 55 to 57, 58 to 80, 88, 96, 98 and 99 fully apply to IT HRD companies, public institutions, autonomous institutions and private societies, with the following additional qualifications:
    - (a) ‘IT Service’ and ‘IT enabled service’ will ipso facto include IT HRD/IT Education/IT Training services.
    - (b) ‘IT Software’ will ipso facto include IT Training materials in Program/Program Text/ Self-tutoring/ interactive-tutoring/ computer-aided-teaching/ computer-aided learning, software and associated databases.
    - (c) Computer networks will ipso facto include networks as carriers for distance learning networks and satellite based/ optical fibre cable based delivery mechanism for Education-to-Home (ETH) services/ Education-to-Community Centres (ETCC)/ data broadcast systems and services delivering educational contents and educational products.
    - (d) STPs and Private STPs will ipso facto include Technology parks combining any subset of services at (a), (b) and (c) above.
    - (e) IT Software and IT service exporters and joint ventures/ purchase of companies abroad will ipso facto cover IT HRD/ Education/ Training Services export and/or NRI companies primarily registered in India or with India as the primary operational base or having headquarters in India.
  - (ii) Banks and Financial Institutions (FIs) will be allowed to float special bonds, to be called Vidya Dhan (Education Bonds), to raise capital for investment in IT Education and Training sector. The investment in Vidya Dhan will be treated at par with Infrastructure Bonds.
  - (iii) Banks and FIs will make this fund available to IT HRD companies and institutions on low interest rates as applicable to priority lending sector.
  - (iv) Entrepreneurs, including NRIs, will be offered special financial packages, including venture capital, to set up IT education facilities by Banks and FIs.
  - (v) IT HRD companies will engage themselves in industry oriented as well as basic research in specific areas relevant to achieving the growth targets set for the industry.
  - (vi) A Vidya Kalyan scheme will be introduced to integrate the infrastructure that the state can provide with the working capital (both physical and human) that private enterprise

can offer to optimize available national resources for IT education. Under this scheme, public funded institutions and academic institutions in the country offering IT education in the formal sector, such as IITs, RECs, universities, colleges, polytechnics and ITIs etc. may tie up with IT industry to jointly offer education and training programs. For this purpose, they can float an IT Education and training company under section 25, or as a Society, wherein the contribution of the academic institution in terms of infrastructure, such as building and faculty and other resources, will be treated as its equity to this company. National Council for IT Education (NCITE), to be established by AICTE, as approved in IT Action Plan (Part – I), will prepare suitable guidelines to facilitate this.

- (vii) Public funded IT institutions will be given adequate autonomy to attract and utilize community funds, and fees will be linked to national per capita income so that they get automatically upgraded every year.
- (viii) All Companies, in IT as well as other sectors, will be encouraged to set aside 6% of their value added revenue (sum of salaries, perquisites and net profit) to support IT HRD sector in offering IT as well as IT-enabled education through investment in infrastructure establishment/ upgradation in educational/ training institutes, providing endowment, catering to the recurring expenditure of the institute such as on salaries/ honorarium to faculty, scholarships to students, providing part-time instructors, etc. These companies will have full freedom to allocate such funds to any institution of their choice and to be utilized specifically in the manner desired by them.
- (ix) Government in association with IT HRD companies will aim to achieve 100% IT literacy at senior secondary level (10 + 2) in 5 years and at secondary level in 10 years.
- (x) All institutes offering engineering education, including Polytechnics and ITIs, will ensure that within 3 years all engineering students in the country will acquire IT knowledge to be able to serve in IT enabled Services sector besides serving in IT industry directly.

2. To foster and encourage HRD Entrepreneurship, the following promotional measures will be taken:

- (i) IT HRD sector will aim to achieve an export target of US \$5 billion by 2005. Towards this objective, government will support leading Indian companies in this sector to help them emerge as large Multinational Companies (MNCs).
- (ii) Templates of 'Turnkey Structures' will be prepared jointly by the government, IT industry and the IT HRD companies to evolve structure for facilitating emergence of Indian MNCs in IT HRD. A tripartite committee will be set up by the government to develop such templates.
- (iii) Institutes of national importance such as IITs and IIITs will be allowed to establish joint ventures with IT HRD companies in their efforts in emerging as Indian MNCs in this sector.
- (iv) With a view to bring stability in the sector by minimising the rate of attrition of trained manpower from companies due to shortage of skilled manpower in the industry and be able to plan a massive growth in domestic as well as global market, IT HRD companies will be allowed to offer special financial incentives to its employees such as Employee Stock Option (ESOP) and Sweat Equity as per recommendations 58 and 59 in the IT Action Plan (Part-II).
- (v) Special IT HRD Entrepreneurship Training Programs will be organized by the IT HRD sector in collaboration with IIMs and other leading management institutes for entrepreneurs and financial institutions.

3. The following Academic Policies will be put in place:

- (i) IT HRD policy will be so evolved and implemented that it is effectively affordable even by the poor and should cover all parts of the country including rural areas.
- (ii) Special programs will be instituted to support/encourage higher end of IT education.
- (iii) IT HRD companies/institutions can seek affiliation to one of the Universities, Central, State, foreign university, or any other such institutional structure, existing or which may be created from time to time, for award of degrees. In case of affiliation to a foreign university, a two stage procedure will be followed: Association of Indian Universities (AIU) will prepare a list of eligible countries, on strict quality considerations, with whose universities affiliation can be sought by Indian IT HRD companies/institutes. The degree for which affiliation is being sought with a university in any of these AIU shortlisted countries, should have been accorded formal recognition in its own country for academic and employment purposes.
- (iv) Institutes of national importance such as IITs and IIITs will be encouraged to establish Virtual Institutes, particularly in the area of advanced Post Graduate and Continuing Education programs in IT, to support IT education and Research at other institutions in the country.
- (v) Self-financing colleges will be permitted broadly to admit only the number that can find employment. In government institutions, state support should be limited in the same manner to the number that can find employment.
- (vi) Apart from training in software and hardware skills, increasing attention will be paid to education in basic principles of computer science.
- (vii) The reward package for IT professionals (particularly teachers) should be upgraded to avoid temptation to migrate.
- (viii) The Institute of Computer Professionals of India (ICPI), as envisaged in the IT Action Plan (Part-I) and to be nucleated by NASSCOM with initial financial support from the industry and the government, will function with various accreditation institutions as its members on voluntary basis.
- (ix) The IT HRD companies/institutions will be expected to widely disseminate information on academic performance of their students as well as their placement in the industry. These institutions will maintain a website, of their alumni and the kind of employment secured by them as an indicator of the value of the education imparted by them. A system of credit rating agencies is expected to evolve in the country for evaluating IT HRD institutes.
- (x) Selected R&D laboratories and technical organizations with requisite infrastructure in the country will be given accreditation for IT HRD programs, particularly at the post graduate level for high specialisation areas of IT.
- (xi) A special program will be organized to develop instructional material employing IT as a tool in all courses and at all levels from elementary education upwards.
- (xii) Nationwide aptitude tests, on the pattern of GATE, will be conducted by NCITE and other similar organizations as per guidelines framed by AICTE, at different levels to evolve a process of all India ranking of students with aptitude for IT education. The percentile score in these tests will be used as short listing criterion for admission to various IT HRD programs in the country. Preferably, the percentile rank in the institution

in which the candidate has studied should also be used as an additional short-listing criterion so that the handicap, students have in backward areas, will be mitigated. As these aptitude tests will not be rejection tests (the way entrance examination tests presently are), it is permissible to make questions public in these tests through a large question bank.

- (xiii) The current system of terminal examination will be reviewed for IT courses. Instead continuous evaluation that will test the multiple dimensions of intelligence needed by IT professionals will be allowed.
- (xiv) NCITE and ICPI will establish and promote national IT Competency Examinations (ITCEs) to certify competency level of the students in various areas and at various levels. Regulatory systems will be evolved to monitor the quality of courses in such a manner that they will not curb in any way individual initiative.
- (xv) NCITE will frame guidelines in such a manner so as to provide administrative, financial and academic autonomy to state-run and state-aided institutions, in the manner applicable to IITs, to devise their own courses and modify them as frequently as progress in the field demands.
- (xvi) Students will have freedom to accumulate grades in various subjects from different IT HRD companies/institutes and then appear for completing IT Competency Examinations.
- (xvii) Professional bodies such as CSI, IETE and India Chapters of ACM and IEEE, etc will be invited by NCITE and ICPI to play an active role in collaboration with the industry in the process of evolving professional ethics and standards in IT HRD.
- (xviii) Employers' organizations like NASSCOM, MAIT, CII, FICCI, ASSOCHAM will also be involved in setting standards for the output of HRD institutions.

4. The following National Infrastructure will be created for IT HRD:

- (i) A high-speed national network backbone, referred to as Vidya Vahini, will be established within the next 3 years by the government and the industry as a joint venture.
- (ii) All investments in Vidya Vahini will be treated at par with investment in infrastructure sector and will thus be eligible for all the financial schemes as applicable to infrastructure sector.
- (iii) Private sector will be encouraged to invest in the arteries of Vidya Vahini at local and regional levels. Such investments will also be treated as made in Vidya Vahini and will entitle the company to avail all the relevant financial packages.
- (iv) IT HRD companies will be allowed to use satellite and cable TV based networking, including Data Broadcast and Direct To Home (DTH) services over C band, Extended C band, Ku band, Ka band and other emerging satellite systems, for broadcasting educational and training programs and services over these networks without any licensing.
- (v) The companies specializing in producing contents for Vidya Vahini, such as network based educational programs and services will be treated as educational companies at par with IT HRD companies.
- (vi) All imports for establishment of infrastructure, including hardware and software tools and preparation of educational programs and services, for IT HRD will be covered under R&D projects.

- (vii) Companies registered under Section 25 for IT HRD will be considered for automatic imports under R & D projects on self-declaration basis without requiring a separate certification by a government agency.
5. The following Financial Schemes will be made available:
- (i) IT HRD companies covered under Small Scale sector will be allowed to have investment from companies in large sector without any ceiling.
  - (ii) All investments, including equity investment, by individuals/companies in IT HRD companies/institutions will be eligible as deductible expenses to the same extent as available with respect to R&D companies/institutions.
  - (iii) Investments made by companies on IT education and training of their employees will also be eligible as deductible expenses to the same extent as in (ii).
  - (iv) All royalty payments received on account of IT education and training services in STPI and S-BIT scheme of IT Action Plan (Part – I) will be covered under Section 10A of Income Tax act.
  - (v) Budgetary provision will be made to enable government organizations to donate computer systems including the software after two years of procurement to the recognized IT HRD institutes, as per guidelines that will be prepared by NIC and DOE.
  - (vi) Students opting for IT HRD programs will be provided loans by banks and financial institutions at low interest rates by treating this as a “priority area” for lending.
  - (vii) Endowment schemes offered by IT and user companies in academic institutes will provide flexibility to offer higher amounts to faculty under the scheme compared to normal salary structure.
6. To encourage the worldwide trend of employment of women in the IT Sector, the following promotional measures will be taken:
- (i) Telecommuting will be allowed to professionally qualified women in IT to facilitate their continued association with their work place in case they are not in a position to attend to the job in office on a regular basis due to family constraints. Such women will be offered special loans/financial grants by the companies to set up infrastructure at their homes to be able to telecommute.
  - (ii) Virtual institutes will evolve special HRD programs to help educated women to enter the field of IT-enabled services.
  - (iii) Banks and FIs will offer special financial packages on a pro-active basis to support enterprising and professionally qualified women to set up home based IT services in various areas of IT-led economic activities.