

Newspaper Clips
January 4-5, 2015

Pioneer ND 05/01/2015

P-2

Keeping under wrap!

The media had a hard time confirming the news of the unscheduled meeting of HRD Minister Smriti Irani with President Pranab Mukherjee. While official sources, both at the HRD Ministry and Rashtrapati Bhavan, earlier confirmed that Irani called on Mukherjee, by evening the Raisina Hill denied any such meeting took place at all. In the past, Rashtrapati Bhavan readily confirmed news of such formal meetings. What made the matter worse was disclosure by a top IIT official who claimed calling on the President, the Visitor of IIT, only to go in the denial mode by the evening. These two meetings acquired importance because they took place in the backdrop of the controversy involving the resignation of IIT Director. Obviously, the Rashtrapati Bhavan did not want to be dragged in the controversy.

Indian Express ND 05/01/2015
P-10

Ministry of control

HRD ministry must explain why IIT Delhi director resigned. Its record so far invites suspicions of meddling

THE row that has erupted over the resignation of IIT Delhi director R.K. Shevgaonkar, two years before his term was due to expire, seems distressingly familiar. Officially, Shevgaonkar is said to have quit for "personal reasons", and the human resource development ministry has vehemently denied that it brought pressure on him to resign. But the HRD ministry's recent record invites suspicions of meddling. In this case, the ministry has instituted an inquiry into the allegation that the IIT Delhi director violated the IIT Act by helping to set up the International Institute of Technology Research Academy (IITRA) in Mauritius. But according to M. Balakrishnan, who was deputy director, faculty, when IITRA was initiated and who wrote in these columns last week, the ministry had earlier approved the final MoU. The ongoing conjecture and speculation hurts the reputation of one of India's most valuable higher education brands. If it is to contain the damage, the HRD ministry must explain itself.

Questions of institutional autonomy, or lack thereof, have bedevilled India's education system for long. They predate the present government's tenure. Yet, under Smriti Irani, the HRD ministry is emerging again as a magnet for contro-

versy. Irani took office just as the University Grants Commission's squabble with Delhi University over the latter's four-year undergraduate programme (FYUP) erupted into an all-out brawl. The UGC's about-turn from its own tacit endorsement of the FYUP under the UPA seemed to confirm the suspicion that the HRD ministry was, in fact, pulling the strings. After emerging victorious in this face-off, an emboldened UGC rushed into another altercation, this time with the IITs, over whose degrees it now claims jurisdiction. Concerns over academic freedom have only been sharpened by reports that Irani has held consultations with Sangh Parivar leaders and its education wings.

There have been other missteps: the cavalier mid-term scrapping of German in Kendriya Vidyalaya schools, for instance, and the controversy around the resignation of National Council for Education Research and Training director Parvin Sinclair halfway into her five-year tenure. After years of neglect and inertia, there was hope that an energetic new government and minister might kickstart the process of education reform. Instead, this latest face-off between IIT and the HRD ministry seems emblematic of a seven-month tenure marked by avoidable confrontations and questionable choices.

Hindustan Times ND

04/01/2015 P-10

IIT-K opens doors to foreign faculty

KANPUR: IIT-Kanpur has decided to appoint foreign faculty to ensure higher academic standards from its next session. The institute has already begun scouting for qualified teachers from several countries to meet its objective. In the past, the institute had been against foreign faculty because it felt the new arrangement would create wage disparity. The plan to hire foreign teachers was approved by IIT-K's board of governors and the ministry for human resource and development).

Govt to relax land norms for IITs, IIMs, central universities

ADITI TANDON
TRIBUNE NEWS SERVICE

NEW DELHI, JANUARY 3

Faced with immense shortage of urban land to set up new central institutions including IITs, IIMs and central universities, the Narendra Modi-led BJP government is all set to relax land requirements for various categories of top central higher educational institutions.

The HRD Ministry has already set up a five-member committee comprising top administrators, educationists and bankers to recommend the plan of action for rationalisation of land requirements for educational institutions of which there is tremendous dearth in the country.

The committee chaired by Higher Education Secretary Satyanarayan Mohanty has among members KV Kamath, chairman, Board of Directors, ICICI Bank; former education secretary MK Kaw; Director, College of Engineer-

Five-member panel to recommend plan of action

- The HRD Ministry has set up a five-member committee comprising top administrators, educationists and bankers to recommend the plan of action for rationalisation of land requirements for educational institutions
- Sources say land requirements for central institutions could be nearly halved to enable the establishment of new institutes and universities
- They say vertical construction is likely to be made part of land norms in place of horizontal spreads as is the current practice

ing, Pune, Anil Sahasrabudhe; chairperson, Board of Governors of IIT Roorkee, Ashok Mishra; and Vice-Chancellor of Central University of Gujarat Syed Bari.

A source familiar with developments on this front told The Tribune that land requirements for central institutions could be nearly halved to enable the establishment of new IITs, new IIMs, National Institutes of Technology, Indian Institutes of Science and Research and central universities.

The source added that vertical construction was likely to

be made a part of land norms in place of horizontal spreads as is the current practice. According to prevailing norms, a state government must spare 100 acres for the establishment of an IIT; 200 acres for an IIM or IISER; 300 acres for an NIT and 500 acres for a central university.

The high-level committee appointed by the HRD Ministry to determine future land norms has meanwhile asked the government to appoint a renowned architect to help it objectively assess land availability, need and related norms.

दूर होंगी नए आईआईटी की बाधाएं

नई दिल्ली, 4 जनवरी (ब्यूरो): नए आईआईटी, आईआईएम के बिल्डिंग डिजाइन से लेकर जमीनों के सदुपयोग के लिए केंद्र सरकार सॉफ्टवेयर कंपनी इंफोसिस और वास्तुकार हफीज कांट्रैक्टर से सुझाव लेगी। इन शिक्षण संस्थानों के बनने में आ रही जमीन समेत अन्य रुकावटों का अध्ययन करने के लिए सरकार की ओर से बनाई गई एक कमेटी की बैठक में यह फैसला लिया गया।

केंद्रीय मानव संसाधन विकास मंत्रालय की ओर से फिलवक्त आईआईआईटी के लिए 100 एकड़, आईआईएम एवं आईआईएसईआर के लिए 200 एकड़, एनआईटी के लिए 300 एकड़ तथा आईआईटी और केंद्रीय विश्वविद्यालय के लिए 500 एकड़ भूमि की जरूरत का प्रावधान किया गया है। ये उच्चतर शिक्षण संस्थान व्यावसायिक शिक्षा मुहैया करवाते हैं,

■ नए आईआईएम में भी नहीं होगी रुकावट

जहां प्रोफेशनल्स और एक्सपर्ट बुलाए जाते हैं। इनका आना-जाना सहज और सुलभ रहे, लिहाजा इन संस्थानों को एयरपोर्ट और औद्योगिक क्षेत्रों के आसपास ही जमीन मुहैया कराने का दबाव है। एकमुश्त इतनी जमीन कई राज्यों में एक स्थान पर उपलब्ध नहीं है। इसके चलते अधिकांश राज्यों ने अब तक इन उच्चतर शिक्षण संस्थानों के लिए केंद्र को प्रस्ताव तक नहीं भेजा है।

इन शिक्षण संस्थानों की स्थापना के लिए जमीन राज्य सरकारों को मुफ्त में मुहैया करानी है। बाकी खर्च केंद्र सरकार करेगी। कम जगह में कैसे इन संस्थानों को बेहतर तरीके से बनाया जा सकता है, उसके लिए बिल्डिंग

डिजाइन का काम अब सॉफ्टवेयर कंपनी इंफोसिस और वास्तुकार हफीज कांट्रैक्टर से सुझाव लेने का फैसला लिया गया है। मंत्रालय सूत्रों के मुताबिक एमएचआरडी मिनिस्ट्री की ओर से बनाई गई उच्च शिक्षा सचिव सत्य एन. मोहंती की अध्यक्षता वाली कमेटी की हाल में हुई बैठक में यह निर्णय लिया गया। यह कमेटी पिछले नवंबर में बनी थी। कमेटी को देश में संचालित उच्चतर शिक्षण संस्थानों के साथ ही कुछ विदेश उच्च शिक्षण संस्थानों का दौरा कर जमीनों की बेहतर उपयोगिता का अध्ययन कर अपनी रिपोर्ट मंत्रालय को देनी है। बैठक में जोर दिया गया कि ये संस्थाएं वहां स्थापित हो जहां हवाई यातायात सुगम हो व कारोबारी या औद्योगिक क्षेत्र के पास हो। वहीं कमेटी की रिपोर्ट मिलने के बाद एचआरडी मिनिस्ट्री इन संस्थानों के जमीन संबंधी मानकों को कुछ शिथिल कर सकता है।

IIT-M TO POWER IDEAS of entrepreneurial success

Sindhu.Hariharan@timesgroup.com

Centre for Innovation (CFI), a student-run innovation lab at IIT-Madras, is running an initiative called Nirmaan, a mock incubator to support students with entrepreneurial interests by providing them a risk-free environment to develop their ideas and shielding them from financial pressures through seed funding.

Mahesh Panchagnula, adviser of co-curricular at IIT Madras, said that though CFI's motto is 'Walk in with an idea, walk out with a product', right now the students build a prototype and leave it at that. Through Nirmaan, they aim to make students work on improving their prototype so that at the end of their college stint they are ready with a marketable product.

Twenty-nine teams and projects are now part of Nirmaan after a registration and selection process in September. The seed funding of ₹2 lakh per team is being provided as per requirement and the progress of ideas is being reviewed by a faculty team. The funds come from alumni grants, corporate sponsors and



What is Nirmaan

- ▶ A mock incubator, it funds and guides potential entrepreneurs before they enter market
- ▶ Provides students a risk-free environment to develop ideas by providing seed funding
- ▶ Encourages students to improve their prototypes till they are marketable
- ▶ 29 teams and projects are now part of Nirmaan. They are getting a funding of ₹2 lakh each
- ▶ Teams working on products ranging from light-based wearables to portable paper strips that detect milk adulteration
- ▶ Student managers will approach the faculty and students of other colleges with the concept

institute funds.

Sai Gole, a student manager at CFI and also a member of Nirmaan, said the idea is to make it easier for student ventures to enter the startup ecosystem outside the college by reducing a few steps in the process. "With a relatively mature product and a network of mentors already with them, it is easier for the student entrepreneurs to approach incubators and investors," Gole said. She added that almost six startup teams that were part of CFI were able to get incubation at IIT Madras' incubation cell.

The 29 teams which are part of Nirmaan are working on a variety of in-

novative products ranging from a light-based wearable that is an alternative to alarm clocks to portable paper strip tests to detect milk adulteration. Student managers of CFI are also planning to approach the faculty and students of other colleges to explain the concept of Nirmaan and two institutions have already expressed interest in the idea.

IIT Madras started CFI in 2008 with funds donated by the 1981 batch during their silver jubilee reunion. While CFI's clubs had around 500 student members in 2008, it now boasts of almost 1,300 student members showing the increase in a culture of innovation and entrepreneurship among the institute's students.

MHRD panel to finalize IIT plot

<http://timesofindia.indiatimes.com/city/kochi/MHRD-panel-to-finalize-IIT-plot/articleshow/45746045.cms>

KOCHI: An HRD ministry committee will visit Palakkad on January 17 to take a final decision regarding the plot to set up a permanent IIT. They will also finalise the temporary academic block and hostel to ensure that the classes commence next academic year.

State government has identified three places for setting up temporary classrooms with hostel facility for students and residential complex for faculty, on government land.

The three identified spots include - 35 acres of land available at Polytechnic College, 90 acres belonging to directorate of industries and commerce west Pudukkottai and land available with Fluid Control Research Institute at Kanjikode West.

"A five-member team headed by MHRD's higher education additional secretary Amarjeet Sinha will visit the place and finalise things. We expect to start classes from next academic year," said higher education department additional secretary M Sherif, who is also the liaison officer from the state for observing land availability to set up an IIT.

IIT Chennai will mentor and manage the new institute till independent directors are appointed, a process that would take up to six months.

The mentor institutes will be asked to find out temporary facilities where the new ones would be housed till they get a permanent campus. If no temporary campus is available, the mentor institute will host the new IIT on its campus.

Railway Ministry seeks to rope in officials with IIM, IIT background to help for budget making

<http://www.dnaindia.com/india/report-railway-ministry-seeks-to-rope-in-officials-with-iim-iit-background-to-help-for-budget-making-2049672>

For the first time, the government is inviting suggestions from the public for formulating [Railway Budget](#) 2015-16. Railway minister [Suresh Prabhu](#) will present the second budget of the National Democratic Alliance (NDA) government in February. Among the other new and unique initiatives taken by Prabhu is creation of a database of the officials having IIT or IIM background.

Discussing the initiative taken by Prabhu, a source close to the development told dna, "The [railway ministry](#) has sought suggestions from the general public on the upcoming budget. Also, the minister has called for a list of officials who have degrees from the Indian Institute of Mass Communication and Indian Institute of Technology. This list has been compiled and has been handed over to the minister." Prabhu also desired to know the area of educational specialisation of the officials having IIM, IIT background.

According to sources, this database is being made to deploy the internal resources on specific subjects such as funding models, revenue sharing of infrastructure projects and model concession agreements so that the dependence on outside consultancies could be reduced.

The suggestions to the railway ministry for the budget could be provided on the website of the ministry. The suggestions could be made under 13 heads. These include computerisation, electrical, finance, foot over bridge, freight, infrastructure, land, railway lines and crime prevention.

There is also an innovative ideas head under which suggestions could be given to the railway ministry. The initiative was launched last week, but the sources did not disclose what suggestions have come till date. The suggestions are being collected at a place and will be forwarded to the concerned departments for evaluating whether it could be taken up for consideration in the budget.

Funding of the already announced railway projects, which will require Rs 4-6 lakh crore, is one of the key focus area in the budget. Already, two committees are working on the fundraising aspect of Railways, and will come out with reports soon.

Ex-President Kalam ignites young minds at Techfest

<http://timesofindia.indiatimes.com/city/mumbai/Ex-President-Kalam-ignites-young-minds-at-Techfest/articleshow/45754121.cms> MUMBAI: The highlight of the last day of IIT-Bombay's Techfest was a speech by former President APJ Abdul Kalam.

Organizers said over a lakh landed at the Powai campus on Sunday.

"I have brought along my entire family for the event," said Lalita Ravichandran, a Reserve Bank of India employee.

"It has been my dream to hear Dr Kalam speak, I have come all the way from Kharghar," said Aishwarya, a second-year engineering student.

Kalam delivered a talk on the various aspects of 'World Vision 2030-Empowering 30 billion'. "In two years, India should move away from consumption of costly fuel to providing solar energy. Youngsters will be the pioneers of India's future development. I am sharing this with you, so that you can become future ambassadors for solar power," he said.

The session ended with an interactive session where Kalam answered questions from young and old on topics ranging from motivation, language barrier in development and challenges to solar power. Several competitions like the robotics event drew crowds at the premier institute. "The competition of robots was appreciated by students and locals alike. Other exhibits like the flight simulator and the go-carting event attracted many," said a members of IIT-B's organizing committee. "The amount of research done by the festival's organizers was impressive. Each exhibit was well researched," said Mugdha, a student of St Xavier's College.

Economic Times ND 05/01/2015 P-4

HRD Ministry Plans to Rope in States for Skilling Drive

JAN 6 ROUNDTABLE To consult states on new edu policy too

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New Delhi: The HRD Ministry is set to seek state governments' help to further Prime Minister Narendra Modi's skilling mission in a meeting called on January 6.

The government had recently launched a credit framework aimed at promoting lateral and vertical mobility of students within the vocational education system.

The meeting of all state education ministers on January 6 has been called to urge their governments to adopt the framework and also encourage colleges and universities to

start add-on courses to increase employability of students. At this meeting the ministry will also broach the topic of initiating consultations for the new education policy.

Under the new credit framework, students pursuing vocational education will have their learning and

SETTING HIGH GOALS

HRD ministry is aiming at increasing number of colleges offering vocational courses from 127 to 1,000 this year

achievements mapped in terms of credits, which can then be used for transfer between institutions and programmes. The government is calling it the Skills Assessment Matrix for Vocational Advancement of Youth, or Samvay.

Skill development is among the top priorities of the new Modi government, which has created a separate ministry for this purpose. BJP leader Rajiv Pratap Rudy has been recently anointed as the new minister for entrepreneurship and skill development. The government has set a target of skilling 500 m youth by 2022, out of which 50 m will be HRD Ministry's responsibility

NEW IITs, IIMs: Infosys, Hafeez Suggestions to be Sought

Press Trust of India

NE DELHI: Government has decided to seek suggestions from software giant Infosys and famed architect Hafeez Contractor to develop a model architectural plan for setting up new IITs and IIMs.

At a recently chaired meeting of a panel to determine land requirement for central higher educational institutions, it was also suggested that these institutes be set up in areas which are accessible by air and in vicinity of

business or industrial hubs to get quality faculty and opportunities for students to take up internships.

The panel was set up in November last year by the HRD Ministry with Higher Education Secretary Satya N Mohanty as its chairperson to resolve problems arising due to availability of land in setting up of new IITs, IIMs and central universities in cities and towns.

Currently land requirement varies from around 100 acres for IITs to around 200 acres for IIMs and IISERS, and around 300 acres for NITs.



CENTRAL ROLE: Narayana Murthy (T) Hafeez Contractor

Pioneer ND 05/01/2015 P-5

New norms to determine land requirement by varsities soon

PNS ■ NEW DELHI

The Centre has set up a panel to recommend fresh norms and criteria for determining land requirement for elite institutions like IITs and IIMs taking into account the topography and class of a city. According to a directive by the HRD Ministry, revising land requirement should be such that it is more "realistic" and takes into account technological development which allows for vertical expansion of buildings.

The panel headed by HRD Secretary SN Mohanty would also seek suggestions from leading architect of the country Hafeez Contractor to develop model architectural plan for setting up such institutes. The

panel will also have software giant Infosys to resolve problems arising due to availability of land in setting up of new IITs, IIMs and central universities in cities and towns and thereafter suggest the Ministry on various aspects including determining land requirement for central higher educational institutions.

In a recent meeting of the panel it was suggested that these institutes be set up in areas which are accessible by air and in vicinity of business or industrial hubs to get quality faculty and opportunities for students to take up internships.

Mohanty was of the view that the central educational institutes should be set up in areas, which are accessible by air and in the vicinity of business

or industrial hubs to get quality faculty and provide opportunities for students to take up internships. It should be no further than a 30-40 minute drive from the nearest airport.

Currently land requirement varies from around 100 acres for IITs to around 200 acres for IIMs and IISERs, and around 300 acres for NITs. Ministry sources said that the panel in its first meeting on December 8 had decided that its members Ashok Mishra (chairperson of IIT Roorkee's Board of Governors) and Chairman of ICICI Bank KV Kamath "will interact with Hafeez Contractor and submit model architectural plans for various categories of the institutions in the next meeting".

Govt to seek suggestions from Infosys, Hafeez for IITs & IIMs

STATESMAN NEWS SERVICE
New Delhi, 4 January

The government has decided to seek suggestions from software giant Infosys and famed architect Mr Hafeez Contractor to develop a model architectural plan for setting up new IITs and IIMs.

At a recently chaired meeting of a panel to determine land requirement for central higher educational institutions, it was also suggested that these institutes be set up in areas which are accessible by air and in vicinity of business or industrial hubs to get quality faculty and opportunities for students to take up internships.

The panel was set up in November last year by the HRD Ministry with Higher Education Secretary Mr Satya N Mohanty as its chairperson to resolve problems arising due to availability of land in setting up of new IITs, IIMs and central universities in cities and towns.

Currently land requirement varies from around 100 acres for IITs to around 200 acres for IIMs and IISERs,

GOVT PLAN

- It was suggested that IITs and IIMs be set up in areas that are accessible by air and in vicinity of business or industrial hubs
- This will help get quality faculty and opportunities for students to take up internships
- Rapid urbanisation and expanding cities have forced ministry to re-look into land requirement
- land requirement should be such that it is more "realistic" and takes into account technological development

and around 300 acres for NITs.

Rapid urbanisation and expanding cities have forced the Ministry to re-look into the land requirement.

At its first meeting held on December 8 last, the panel had decided that its members Mr Ashok Mishra (chairperson of IIT Roorkee's Board of Governors) and Chairman of ICICI Bank Mr.

K V Kamath "will interact with Hafeez Contractor and submit model architectural plans for various categories of CE in the next meeting," a ministry note said.

It also underlined that air connectivity should be a priority in location of land for the campuses. Ideally, it should be no further than a 30-40 minute drive from the nearest airport.

Mr Mohanty was of the view that the central educational institutes should be set up in areas, which are accessible by air and in the vicinity of business or industrial hubs to get quality faculty and provide opportunities for students to take up internships.

One of the mandates of the committee is to recommend fresh norms and criteria for determining land requirement in different locations taking into account the topography and the class of a city.

According to the ministry's order, revising land requirement should be such that it is more "realistic" and takes into account technological development which allows for vertical expansion of buildings.

LAND SCARCITY

Central educational institutes may have to share resources

BY PRASHANT K. NANDA
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NEW DELHI

Upcoming central educational institutions (CEIs) may be located in clusters close to cities and share resources, as scarcity of land and talent hobbles expansion of these premier institutions.

While setting up new CEIs, the "endeavour should be to establish education hubs wherein an IIT and IIM, for example, can share some resources and have academic collaboration", according to a human resources development (HRD) ministry note on the meeting of a committee on CEIs appointed by the ministry. Two officials confirmed the note.

Top institutions such as the Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs), National Institutes of Technology (NITs), Indian Institutes of Information Technology (IIITs), Indian Institutes of Science Education and Research (IISERs) and central universities have vast land

requirements. Several recently opened ones are working from makeshift campuses in the absence of adequate land and infrastructure.

Land requirements range from around 100 acres for IIITs, 200 acres for IIMs and IISERs, 300 acres for NITs and 500 acres for IITs and central universities. Some committee members felt these requirements can be rationalized and an IIM can be built over just 100 acres, or half of the current requirement, the first government official said, requesting anonymity.

The committee, led by higher education secretary Satyanarayan Mohanty, includes leading academics and industry experts. The ministry note says the committee has pointed to the urgency "to re-assess the requirement of land for setting up new central educational institutions (CEI) in view of the fact that land is very scarce in the country".

A template for common facilities such as libraries, gyms, auditoriums and academic resources

may be designed between CEIs, the note said. The area for these institutes should be determined keeping in view current enrolment and prospects of future growth.

"There is no other option than sharing resources and going for vertical build space instead of horizontal growth. This can help cut down land requirements," said the second official, who also requested anonymity.

The committee is of the opinion that CEIs should be opened only in places which are accessible by air and in the vicinity of business or industrial hubs to fuel their growth.

Bhaskar Ramamurthy, director of IIT Madras, said there is always a challenge to convince faculty members to move to a place which is less developed. Though new institutes are improving their facilities, geography has its own benefit and helps attract quality faculty and even companies for placement.

"In the last eight-nine years, the number of IITs, IIMs and central universities has doubled.

Many of these top institutions have come up in less developed places, posing challenges to develop them both in terms of physical and intellectual infrastructure. Procuring huge land patches is always tough, leading to delays in construction and cost escalation," the second official said.

Since 2007-08, the number of IIMs has gone up from six to 13 and the number of IITs has more than doubled from seven to 16, the second official explained. The National Democratic Alliance government has also promised to open five more IITs, six more IIMs and several other top institutes.

The first official said the committee will submit its report after a few more meetings, in which it will deliberate the issues in detail, take examples from foreign educational institutes and vertical educational designs. "There are challenges and this committee was set up to find solutions. Getting large patches of land takes time, and it has led to huge cost escalation for IITs which were set up in last six years," the official said.

In May, the HRD ministry had proposed to raise the cost of setting up eight IITs from ₹6,080 crore to ₹15,664 crore—an increase of more than 150% over the initial project cost—the Comptroller and Auditor General of India said in December.

Sense On Science

PM's call to put science and research at forefront welcome, now government must act on it

Speaking at the Indian Science Congress, Prime Minister Narendra Modi hit all the right buttons by declaring that he will pay as much attention to ease of doing research and development in India as to ease of doing business, that China's emergence as the world's second biggest economy paralleled its rise to second place in science and technology and that India needs to focus on science and innovation as a top priority. At a time when he is also putting research-led initiatives at the centre of his foreign policy, the PM's call for greater flexibility in science funding and freeing the university system from excessive regulation and cumbersome procedures is welcome. Now his government must act on it.

Unfortunately India's education sector remains an exemplar of exactly the reverse maxim of what Modi wishes to promote: maximum government, minimum governance. India's overly regulated education sector means that not one Indian university is currently ranked among the world's top 200. India is also the only Brics country with no representation among the top 100 global universities. With only 0.88% of Indian GDP going to research and development investments, India also spends much less on science and technology than US (2.74%), South Korea (4.04%) or China (about 2%). With government aiming to increase R&D expenditure to 2% in the current Plan period (2012-17), India needs a drastic overhaul of how it manages higher education.



Instead of focussing on greater autonomy and flexibility to universities, the HRD ministry has so far aimed for even greater centralisation. Delhi University was forced to scrap its experiment with four-year undergraduate degrees, Kendriya Vidyalaya students were put in an impossible situation with the row over German and Sanskrit, IIT Delhi's director resigned reportedly over an educational tie-up with Mauritius and a draft Bill has been circulated proposing greater uniformity in governance structures at central universities.

Universities need functional and financial autonomy for achieving excellence, not greater control from Delhi. We have seen great innovations in several Indian sectors after the state withdrew stifling controls. The time has come for government to get out of the way in higher education too. Government must provide only a broad framework, an enabling environment for innovation as it opens up the sector. The rest should be left to competition and a transparent performance-based system of funding without fear or favour.

SCIENCE CONGRESS

New addition at ISC: ancient Indian science

Change may draw criticism, especially in wake of initiatives to tweak school syllabi to promote Sanskrit

BY NIKITA MEHTA
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MUMBAI

In a departure from the past, this year's Indian Science Congress had a new addition: the importance of ancient Indian science in a modern world. The change could potentially expose the government to criticism, especially in the context of the recent initiatives to tweak school syllabi to promote Sanskrit.

On the second day of the five-day Congress hosted by the University of Mumbai, speakers focused on why Indians must study ancient Indian sciences. Invitees spoke of origins of mathematical theorems and surgical methods in Sanskrit, as well as how Indians flew planes before the Wright brothers did. There was a session titled "Ancient Sciences through Sanskrit".

"Ancient Indian scientific theories with those machines and tools are based on experience, wisdom and minute observation and logic. Those must be recognized and it has relevance today. If scientists from other countries can produce new science based on our ancient sciences, why can't we?" asked Prakash Javadekar, minister of state for information and broadcasting.

Speakers talked about peer review systems in ancient Indian science, weather forecasting through blooming of certain flowers, methods to conduct autopsies and *Ganita Kaumudi* by Narayana Pandita which has a reference to the mathematical constant, Pi. One speaker dwelt on physician Sushruta and com-

pared ancient surgical instruments with modern ones.

In a session, Anand Jayaram Bodas and Ameya Jadhav explained aviation technologies in Maharshi Bharadwaja's *Vaimanika Shastra*.

Bodas also spoke of radars described in ancient Sanskrit literature which can show the shape of planes and fighter planes that could fly forward and backward. Pamphlets on Shivkar Bapuji Talpade, touted as the first man to fly a modern aircraft, were distributed at the session. Talpade, it is claimed, flew an unmanned plane in December 1895 at Mumbai's Chowpatty beach.

"Our sages have given many *sutras* on war technology, *viman-shastra*, surgery, botany and described technology in detail. It is important for the youth of our country to be aware of this literature and not neglect it any more; instead of only looking at advances in science in western society," said Jadhav, a lecturer at Swami Vivekanand International School and Junior College.

According to Hem Pandey, additional secretary at the ministry of environment, forests and climate change, the session's idea was to establish where Indian research started. "One must read the original text, instead of its translations, and understand it," he said.

The sessions, though, have faced criticism, with an Indian scientist with the National Aeronautical Space Administration floating an online petition against peddling what he called pseudo-science as modern science. However, there are defenders, too. Congress member of Parliament Shashi Tharoor tweeted that "to mock the credulous exaggerations of the Hindutva brigade, you don't need to debunk the genuine accomplishments of ancient Indian science!"

INTERVIEW WILFRED H MUSKENS

'Indian students are smart, intelligent and motivated'

Dimple Bhavsar

In an effort to encourage students to pursue higher studies in Pennsylvania, USA, the Pennsylvania Department of Community & Economic Development Hub has collaborated with a group of Indian institutes on December 5. Hyderabad (Sind) National Collegiate Board (HSNC) that runs 17 educational institutes such as KC College, Churchgate, RD National College, Bandra (W), apart from Ramnarain Ruia College, Matunga, Symbiosis Institute of Business Management, Pune among others. The programme aims at providing undergraduate courses at eight foreign universities affiliated with the programme.

Wilfred H Muskens, deputy secretary for International Business Development, Pennsylvania Department of Community & Economic Development (DCED) spoke to HT Education about the functioning and the benefits of the programme for Indian students who wish to study abroad. What is the Global Pathways Institute-Pennsylvania Hub?

Global Pathways Institute is an initiative of the Commonwealth of Pennsylvania State along with educationist, Sujay Jairaj, trustee of Narsee Monjee Educational Trust. It is a Middle States Association (MSA) accredited institution with a unique programme that allows students to complete two years of the four-year undergraduate degree course in India, and the next two years at any Arcadia university.

What brings Penn hub to India?

We believe India is one of the most important markets in the world with regards to higher education. Pennsylvania and India have a long shared history — 13 years ago, we were the first US state to open a trade office in India. It is a marriage of equals, where



Pennsylvania is extending its hands to India and vice versa. We think it would be a win-win situation for both.

Which educational programmes will be offered to the students at Penn Hub?

Various inbound and outbound international educational programs have been designed for the students at Penn Hub such as Summer Abroad Programmes that are popular amongst the students in India which help benefit them from a broader socio-economic spectrum. Other programmes such as Internship Abroad programmes, Skill-Based Programmes, Global Studies, Dual Degree Programmes have also been designed.

What do the Global Studies and Dual Degree programmes include?

Global studies are programmes in which classes for a particular semester are conducted abroad and students reside in the destination city for the entire semester. The Dual Degree programme allows a foreign partner institution to offer the first half of their university degree programme by replicating segments of the curriculum. Courses offered in India will be the clones of the model on campus. This programme involves a student studying for two different university degrees in parallel, either at the same institution or at different institutions. The two degrees might be in the same area or two different subjects as per the choice of the student and the applications that are submitted.

How do you think Penn Hub will benefit Indian students?

The Penn Hub is a two-way street where the Indian students will benefit in various ways. The US culture will flow to India and the Indian students will take their culture and experiences to universities in USA. Students from both the countries get a chance to study abroad. Various programmes implemented for the students will help them grow globally. It also gives the Indian students an opportunity to study abroad for a few semesters, instead of pursuing an entire degree out.

The Pennsylvania Hub has collaborated with which College across India?

Hyderabad (Sind) National Collegiate Board (HSNC) which shelters around 27 educational institutions across India is one of the boards that Penn has collaborated with. Other institutes include Ramnarain Ruia College, Matunga and Symbiosis Institute of Business Management, Pune.

फीस बढ़ाने की तैयारी में टॉप बिजनेस स्कूल

**IIM-A ने PGP प्रोग्राम के लिए फीस 16.60 रुपये
लाख की जगह ₹18.50 लाख लेने का ऐलान किया है**

[श्रीराधा डी बसु & देविना सेनगुप्ता | मुंबई]

इस साल शुरू होने वाले सेशन से देश में छह नए इंडियन इंस्टीट्यूट ऑफ मैनेजमेंट (आईआईएम) में पढ़ाई शुरू होगी। जहां पुराने आईआईएम देश और विदेश में अपनी ब्रांड इमेज चमकाने में जुटे हैं, वहीं नए-नवले संस्थान अपनी जगह बनाने की कोशिश में हैं। इस साल जहां इन संस्थानों का ज्यादा फोकस रिसर्च और आंत्रप्रेन्योरशिप पर होगा, वहीं स्टूडेंट्स और उनके पैरेंट्स को ज्यादा फीस चुकानी पड़ सकती है।

हायरिंग के मोर्चे पर तस्वीर बेहतर दिखने और पे-पैकेज चढ़ने के साथ देश के कुछ टॉप बिजनेस स्कूल्स फीस बढ़ाने की तैयारी में हैं। आईआईएम-अहमदाबाद ने अपने जाने-पहचाने पीजीपी प्रोग्राम के लिए फीस 2015-17 सेशन से 16.60 लाख रुपये के बजाय 18.50 लाख रुपये करने का ऐलान कर भी दिया है। पीजीपीएक्स कोर्स की फीस भी 21.5 लाख रुपये से बढ़ाकर 24 लाख रुपये की जा रही है।

इस राह पर आईआईएम-बेंगलुरु भी चल सकता है। इसने पिछले दो वर्षों में फीस नहीं बढ़ाई है। इंस्टीट्यूट के स्पोक्सपर्सन ने कहा कि इस संबंध में जनवरी के शुरू में बोर्ड मीटिंग में फैसला किया जाएगा।

सूत्रों ने बताया कि फीस बढ़ाने पर विचार कर सकने वाले दूसरे संस्थानों में आईआईएम-इंदौर, आईआईएम-लखनऊ और आईआईएम-तिरुचिरापल्ली शामिल हैं। आईआईएम त्रिची के डायरेक्टर प्रफुल्ल अग्निहोत्री ने कहा, 'हमने यह संस्थान शुरू होने से अब तक फीस नहीं बढ़ाई है। मार्च में होने वाली बोर्ड मीटिंग के बाद ही कोई फैसला किया जाएगा।' उन्होंने कहा, 'अभी हम अपने कॉस्ट स्ट्रक्चर का आकलन कर रहे हैं।'

आईआईएम-कलकत्ता ने 2014-16 सेशन के लिए फीस बढ़ाई थी और अब नए सेशन से इसके फीस बढ़ाने की आशंका नहीं है।

रिसर्च पर फोकस

देश के टॉप बिजनेस स्कूल्स को अपने रिसर्च पर फोकस करना होगा और टॉप जर्नल्स में पेपर्स पब्लिश कराने के लिए ज्यादा से ज्यादा प्रोफेसर्स को प्रोत्साहित करना होगा। इन रिसर्च पेपर्स की संख्या और इनकी गुणवत्ता से ग्लोबल बिजनेस स्कूल्स के बीच इनकी



रैंकिंग सुधरेगी। इस साल आईआईएम और ग्लोबल बिजनेस स्कूल्स के बीच ज्यादा तालमेल होता दिखेगा। वहीं, कॉर्पोरेट घरानों के साथ मिलकर रिसर्च करने पर फोकस बढ़ेगा।

पिछले साल दिसंबर में आईआईएम-अहमदाबाद ने ऐलान किया था कि उसने कॉर्पोरेट गठबंधन से 20 करोड़ रुपये जुटाए हैं और यह रकम फाइनेंशियल मार्केट्स, इंफ्रास्ट्रक्चर और आंत्रप्रेन्योरशिप में रिसर्च पर खर्च की जाएगी। नए संस्थानों के बीच आईआईएम त्रिची ने यह सुनिश्चित किया है कि इसके ज्यादातर प्रोफेसर्स टॉप रैंकिंग वाले जर्नल्स में अपने पेपर्स पब्लिश कराएं।

पिछले साल अक्टूबर में आईआईएम-बेंगलुरु ने ऐसा कार्यक्रम शुरू किया था, जिसमें फैकल्टी मेंबर्स को अपने ज्ञान के विशेष क्षेत्र में कौशल बढ़ाने के लिए अपनी पसंद के देश में रिसर्च फैसिलिटी पर फोकस करना है। अब तक जापान, चीन, दुबई और सिंगापुर को चिन्हित किया गया है और आईआईएम-बी की फैकल्टी इस संबंध में इन देशों की यात्रा कर चुकी है। आईआईएम-बेंगलुरु के डीन (एकेडमिक) देवनाथ तिरुपति ने कहा, 'संस्थान ने रिसर्च और पब्लिकेशंस पर फोकस करने के साथ इंटरनेशनलाइजेशन और इनोवेशन पर जोर देने की रणनीति बनाई है ताकि ग्लोबल लेवल पर इसकी पहचान मजबूत हो सके।'

Science meet told of 'ancient India planes'

K.A. DODHIYA
MUMBAI, JAN. 4

Ancient Indian sciences had mastered aviation to an extent that it had aeroplanes that could facilitate inter-planetary travel and the same has been mentioned in the Rigvedas, claimed Captain Anand Bodas, the retired principal of a pilot training facility, on the second day of the 102nd Indian Science Congress. Captain Bodas was speaking during a symposium on "Ancient Sciences through Sanskrit" at the university sports complex at Kalina on Sunday.

Referring to the Vedic texts to support his claim, Captain Bodas said that Maharishi Bharadwaj spoke of the existence of aeroplanes 7,000 years ago. He said that Maharishi Bharadwaj mentioned that these aeroplanes could travel from one country to another and also from earth to other planets and back. "The Wright Brothers are given credit for developing flying technologies in 1904 but the same was existent in ancient India," said Captain Bodas.

Elaborating on Maharishi Bharadwaj's work, Captain Bodas said that youngsters should read his book *Vimana Samhita* wherein Maharishi Bharadwaj has mentioned about metal alloys that were used to make aeroplanes and try to make those alloys which India currently needs to import from foreign countries.

The retired captain further said that ancient Indian scientists had also developed a radar system



A young scientist shows her project to former President A.P.J. Abdul Kalam during an exhibition at the 102nd Indian Science Congress in Mumbai on Sunday. — PTI

that was named the *rooparkanrahasya* that would display the actual shape of the flying object rather than just a blimp that the modern-day radar systems show.

He added that ancient India had jumbo planes that measured around 60 feet by 60 feet and 200 feet in length. The planes flew on 40 small engines that had a flexible exhaust system which the modern aviation is yet to discover.

Captain Bodas has been in the eye of a controversy recently after the scientific community criticised his comments saying that it undermined the very basis on which the Indian Science Congress was started.

'Sanskrit key to computer study, maths'

AGE CORRESPONDENT
MUMBAI, JAN. 4

Eminent speakers at the 102nd Indian Science Congress highlighted the fact that while ancient India was way ahead in medicine and other sciences, it had taken the congress 100 years to discuss the same. Referring to the advancements in ancient Indian surgery, Dr Ashwin Sawant, one of the speakers, said that the same was now being recognised by the world and some of it was still being researched by the global medical fraternity.

Union minister Prakash Javadekar, who was also a speaker, said that the centuries old theories of ancient India were still relevant and are being exploited by European countries.

Noted computer scientist Vijay Bhatkar said, "We observe that it is for the very first time in 102 years at the Indian Science Congress, that we have discussed ancient science. Why did it take 100 years for us to realise that this is a very important issue of science?"

Stressing on the need to adopt Sanskrit for solving computational problems involving mathematics and algorithms, Mr Bhatkar said that computer scientists should study Sanskrit as the language has many solutions.

Times Of India ND 05/01/2015 P-15

Nasa explores inflatable spacecraft for Mars trip

Tech Could Aid Entry To Remote Areas Of Planet

Norfolk (US): Devising a way to one day land astronauts on Mars is a complex problem but Nasa scientists think something as simple as a child's toy design may help solve the problem. Safely landing a large spacecraft on the Red Planet is just one of many engineering challenges the agency faces as it eyes an ambitious goal of sending humans into deep space later this century.

At Nasa's Langley Research Center in Hampton, Virginia, engineers have been working to develop an inflatable heat shield that looks a lot like a super-sized version of a stacking ring of doughnuts that infants play with. The engineers believe a lightweight, inflatable heat shield could be deployed to slow the craft to enter a Martian atmosphere much thinner than Earth's.

Such an inflatable heat shield could help a spacecraft reach the high-altitude southern plains of Mars and other areas that would otherwise be inaccessible under existing technology. The experts note that rockets alone can't be used to land a large craft on Mars as can be done on the atmosphereless moon. Parachutes also won't work for a large spacecraft needed to send humans to Mars, they add.

Hence the inflatable rings. The rings would be filled with nitrogen and covered with a thermal blanket. Once deployed for landing, the rings



A hypersonic inflatable aerodynamic decelerator is shown in the background at the Nasa Langley research center in Hampton, Virginia. It is made up of high-tech fabric rings, similar to those seen in the foreground. The rings will be filled with nitrogen

Nuclear weapons may blast dangerous asteroids

US researchers are looking into the possibility of using nuclear weapons to protect Earth from the threat of incoming asteroids. Scientists at Los Alamos, the US government's atomic weapons research centre in New Mexico, say that the threat of an asteroid impact is far greater than had been realized and research was required to work out the best way to destroy or deflect them. "The goal is to study the effectiveness of using a nuclear explosive to alter the orbit, or destroy, a potentially harmful object," said one of the scientists. PTI

would sit atop the spacecraft, somewhat resembling a giant mushroom.

"We try to not use propulsion if we don't have to," said Neil Cheatwood, the senior engineer at Langley for advanced entry, descent and landing systems. "We make use of that atmosphere as much as we can, because it means we don't have to carry all that fuel with us."

Nasa's leaders acknowledge that getting humans safely to and from Mars as early as the 2030s will pose extreme challenges.

The agency's scientists acknowledge they also must design new in-space propulsion systems, advanced spacesuits, long-term living habitats aboard spacecraft, even communication systems for deep space. AP

Continued impetus on education reforms needed

Laws to protect original and authentic content in the larger interest of students and the education fraternity; digitisation in schools; and clarity in tax regime for e-books needed

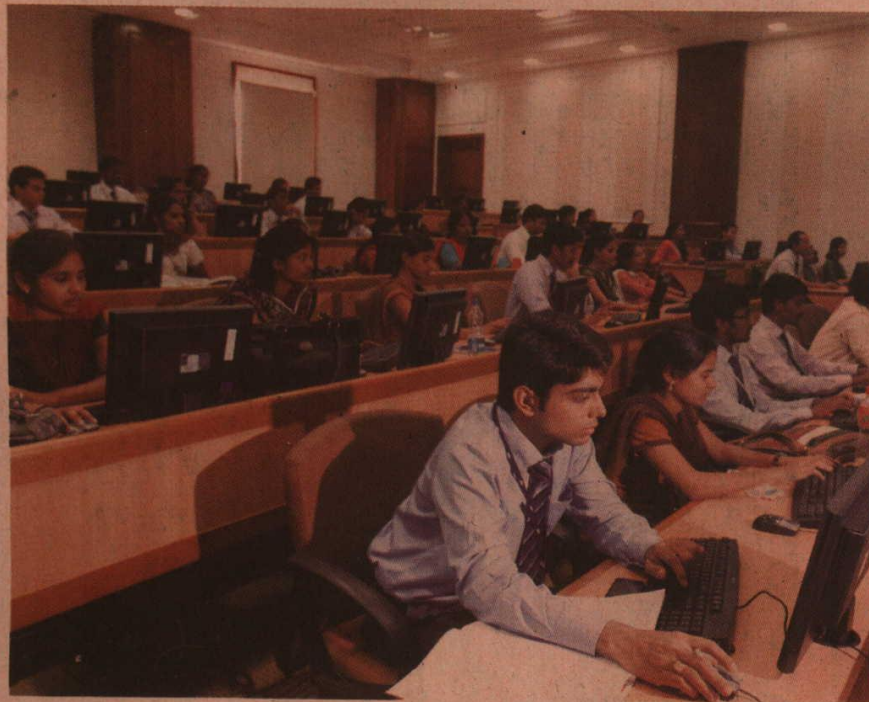


RANJAN KAUL

Last year was about the monumental changes in the Indian polity. People will expect the positive sentiment to translate into action and impact on the ground, and that, we believe, will be the real test of the incumbent government. For obvious reasons, the education sector has been a priority area for successive years; however, the sector is in need of policy reforms, increased outlays, stringent implementation of existing schemes and, most importantly, measurement of the efficacy of the work undertaken.

We think that while the Union Budget of 2014 was promising in parts for the education sector, in many ways it was not hugely dissimilar to the earlier Budgets with no significant increases in outlays. However, it did strike the right notes with the priority accorded to skill development, teacher training (launch of the Pandit Madan Mohan Malviya National Mission on Teachers and Teaching), and digitisation and innovation in schools. We believe each of these is a critical block in improving learning outcomes in Indian classrooms and contributing to the development of the learner.

Some of the other an-



nouncements through 2014, too, seem like steps in the right direction, such as plans to increase IITs and IIMs, review of the role of key regulators such as UGC and AICTE, and introduction of credit transfer system in Indian universities. The underlying philosophy behind each of these initiatives seems to be that quality education should be made accessible and affordable for learners of all ages. To make this happen, the government will need to ensure that quality standards of content and delivery are improved.

Quality education should be made accessible for learners of all ages. The govt needs to ensure that quality standards of content and delivery are improved. In 2015, we look forward to a continued impetus on education and sector-specific reforms

In 2015 we look forward to a continued impetus on education and sector-specific reforms. Some of the measures that the education industry will welcome include:

- **Laws to protect original and authentic content in the larger interest of students and the education fraternity:** Copyright infringement, piracy and plagiarism of content should be dealt with seriously so that authors and publishers are incentivised to produce high-quality and original work for learners.

- **Digitisation in schools:**

The last few years have been marked by increased digitisation of education, mainly in elite private schools. Across the world the governments have supported digitisation of education which has led to better learning outcomes. There should be allocation for digitisation in both government and government-aided schools, as also in private schools. Private publishers can then be encouraged to provide interactive digital content to such schools.

- **Clarity in tax regime for e-books:** The current tax structure for publishers is unclear. It is a long-pending demand of publishers to bring about a simplified tax structure around both print and electronic content (e-books). Currently, in some cases, service tax is levied on e-books, a holding tax on foreign published journals and no tax is levied on books printed in India. With increased usage of e-books, taxation of e-books and other forms electronic content should be reviewed earnestly. Learning either in print or through the electronic medium should not be differentiated.

- **Duty on paper:** A long-standing issue has been duty on paper which results in publishers increasing price of books on a frequent basis, leading to cost-burden on parents of school-going children. A reduction in VAT/custom duty on paper shall certainly be a welcome step in 2015.

The author is managing director, Oxford University Press India

Gearing up for the new generation of IT skills



UMA GANESH

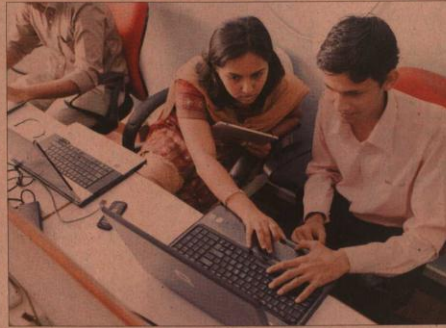
INDIA has managed to build a \$120 billion software industry from scratch over the last 30 years. This stupendous success has been feasible due to the early founders of this industry recognising the importance and the opportunity for skills in programming. The resource intensive and huge scale of demand to cope with myriad opportunities for computerisation of records and transactions in the initial decade, to the next phase witnessing networked environment and globalisation of information access fuelled by proliferation of Internet has resulted in the demand for more variety and sophistication for relevant programming skills over the years.

The lack of aptitude for such jobs in large numbers and the resultant shortage of such skills in the western countries proved to be a great opportunity for India to scale the software industry rapidly with the support of large number of educational institutions coming forward to offer programmes in computer science. This boon, which catapulted the nation to taking up an irre-

versible position of advantage with the Y2k phenomenon, resulted in the creation of an average 150,000 new jobs and about 600,000 indirect jobs in other sectors such as real estate, hospitality, automobile, FMCG, educational institutions and others each year, for the last 10 years. The question to be asked now is, whether this trend will continue in the next decade and more importantly, is there a continuous opportunity to multiply these jobs in the IT industry and proliferate the success to cover larger parts of the country.

To answer this question, we have to examine the dynamics at work in the traditional bastion of application development which has been the reservoir for job creation for the industry. Over the decades with the maturity in the industry, processes becoming more standardised, reusable library of codes being accessible and several innovative tools being developed to reduce time and cost in developing large systems, resource intensive programming processes are giving way to automation led programming systems. This trend will continue in the coming decades and will impact the demand for software programmers.

The rate of growth in the demand for software programmers is not likely to keep pace with the overall growth for software applications due to high rate of automation. Demand will shift to the need for lesser number of programmers but with a sound foundation in programming construct, familiarity with automation tools and skills to create precision driven secure systems. We are already saddled with the problem of not



more than 15 to 20% of engineering talent meeting the industry requirements. Further to this, with the emerging demand pattern for the new age programmers, the focus of educational institutions has to shift from mass output of potential coders to niche programming talent with the new skills in demand.

Developing applications is no longer a pure play technical task. With the emergence of multiple devices, form factors and customer experience are the additional elements that form a part of the system development approach. This application development would become more and more centered around continuously understanding and en-

hancing human-machine interfaces. Therefore the study of computer science has to be integrated with subjects such as psychology, design, user interfaces, fine arts, security and the construct of devices. Merely introducing these subjects will not suffice, it is necessary to cue the student to think and integrate the principles of humanities into the core of computer science in order to make their programming efforts a success.

The other strand of opportunity lies in analytics with the volume and complexity of data increasing by the day for each business. Instead of fulfilling the demand of the industry primarily

The focus of educational institutions has to shift from mass output of potential coders to niche programming talent with the new skills in demand

through computer science and engineering programmes, there is a huge opportunity for creating interest among the youth in core subjects such as mathematics, statistics, econometrics and commerce as there would be an increasing demand for what if scenarios, virtualisation and projections based on modelling and simulations of data very specific to domains and businesses. Thus familiarity with the business domain along with exposure to the tools available to extract relevant data and data interpretation are the skills that would be in demand.

With the increasing demand patterns for diverse and unique skills to be brought together for the purpose of a project from within the organisation or tapped on demand from outside, the role of project manager will become more crucial and thus project management capability will remain in demand for a long time to come.

Internet of Things (IoT) is the other emerging area which has the potential to inject new energy in the study of every discipline of engineering studies. Study of social media and creating the competencies to extract the most out of

this medium for business benefit would be another area that would be hugely in demand. From being a mere fun tool, social media has now become central to the business strategy for growing and influencing the customer database. Therefore a comprehensive study in social media aimed at becoming social media specialists—as artists, scientists and technologists would be required to be planned.

In order to continue to keep pace with the industry trends and the requirement for talent, academic curriculum should be redesigned to cover the new areas. The general computer science curriculum has to be broad-based to include the specialist skills outlined. Continued success and preeminent position in the global software arena for the Indian IT industry hinges on the availability of the talent pool that is rightly skilled. The demand shift from just programming talent to a whole range of specialist skills is a great opportunity for academic institutions to diversify and for the youth with interest and aptitude in a variety of subjects to build successful careers aligned with the growth trajectory of the software industry.

In order to take advantage of the exciting opportunities that the digital world is throwing up, understanding of industry trends and speed and innovation in curriculum design and implementation would be the critical success factors.

The writer is CEO, Global Talent Track, a corporate training solutions company

This Shaastra, the mantra is startups

TIMES NEWS NETWORK

Chennai: At Shaastra 2015, the annual student-run technical festival at IIT – Madras, the focus is on building entrepreneurial culture. The theme this year is 'Designing dreams' and according to the institute, the events are all oriented to make the participants dream big.

"Transformation is underway in the country where we are seeing students of all disciplines thinking about how they can take initiative. At IIT Madras, it is part of our strategic plans to encourage entrepreneurship," IIT-M director Bhaskar Ramamurthy said, speaking at the commencement of the festival which will go on till January 6 at the IIT campus.

In line with the focus area, the opening event of the festival was 'Entrepre-



DREAM MERCHANTS: (From left) Srikanth Sundarajan, Vijay Karunakaran, Bhaskar Ramamurthy, Kris Gopalakrishnan, Anand Rajaraman at IIT Madras

neurship Confluence' which had panelists Kris Gopalakrishnan, co-founder and executive vice-chairman of Infosys and Anand Rajaraman, co-founder of Jungle Corp, stressing that now was the best time to be a startup in India.

Shaastra will also offer a platform to startups through 'The Startup Hive', which is conducted in coordination with Paypal India, The Indus Entrepreneurs and Chennai Angels. The event comprises of various seminars, lectures, panel discussions and networking sessions pertaining to entrepreneurship.

Spread across five days, the festival will host an International Symposium on health-care, lecture series featuring eminent personalities, third edition of Envisage - a techno-cultural show, Airshow by 3D fliers from Germany and grand finale of Robowars for the robotics enthusiasts among other events and workshops.

Indian IT landscape to see bright future

N V Vijaykumar

Banking on a sustained focus on customers, with add-on services, using innovative technologies, the \$120-billion Indian IT industry witnessed a turnaround of fortune in 2014, with topline companies registering double-digit growth. But if we introspect and look at other global peers, can we say that Indian IT companies succeeded in bringing out products and services which are disruptive in nature, and with a true Indian stamp of frugal innovation?

This where the malice of inheritance comes to picture, as we have the nature of calling ourselves the second-best and imitate what others do. Even though mergers and acquisitions did not make that much impact during the period, leading IT bellwether Infosys made changes in its higher echelons with Vishal Sikka becoming the CEO, and startup companies earned huge fortunes in the industry.

Technologies in cloud, big data, analytics, mobility, social media and the Internet of Things (IoT) have become the order of the day. Indian companies are keeping track of these trends and gearing up to change their products and services to accommodate these areas where clients are looking for more innovations to enhance delivery.

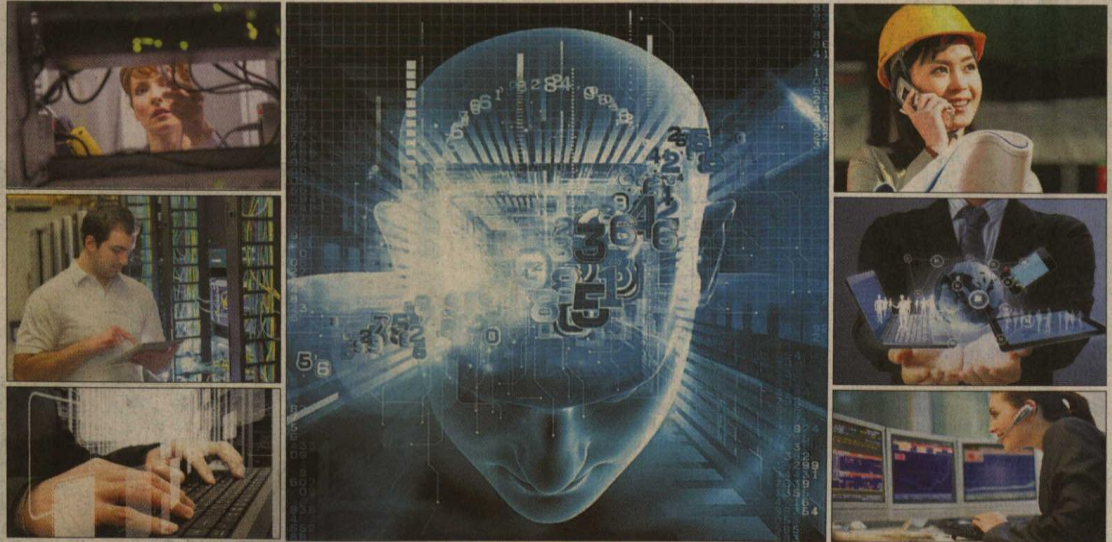
The industry also had to face the headwinds of the economic slump globally in the first half of the year and its effects on the cut in government expenditure. In India, the Narendra Modi government provided a positive momentum to industrial and investment activities with a new policy push. His revised National e-Governance Plan (NeGP), Digital India campaign and development of Smart Cities also added impetus to Indian IT companies with other government-initiated economic measures in European and the US economies.

The Indian IT industry landscape comprises small, medium and large firms, including global services majors like TCS, Infosys, Wipro and HCL, multinational companies captive units and sectors providing software, hardware, process management, engineering, research and development and innovative products. This also includes ever growing startups vying hard to receive global attention with their so-called innovative products and brimming with high valuation expectation.

Churning in the country's IT industry is very much linked to global trends. As automation makes inroads globally, Infosys and US-headquartered Cognizant have partnered with automation specialists such as IPSoft and Tata Consultancy Services and HCL Technologies have built automation tools in-house. Here an important fact to be noted is that the sector has highly depended on the American and European markets. The former still accounts for 60 per cent of India's software exports. As per Nasscom estimates, the industry is projected to register 15 per cent export growth for this fiscal (2014-15) as against 13 per cent last fiscal (2013-14).

"We expect the industry to add overall revenues of \$13-14 billion this fiscal compared to \$118 billion achieved in last fiscal, with software exports touching \$100 billion and domestic sales reaching Rs 1,28,000 crore (\$20 billion)," says Nasscom President R Chandrashekhar.

In a scathing attack on the trends in the



As per a study by research firm Gartner, Indian IT spending will reach \$73.3 b in 2015, up 9.4% from \$67.1 b in 2014. The pace of IT spending in India may make it the third largest IT market in the Asia-Pacific by 2016 and second largest by 2018, after China.

industry, Infosys CEO Vishal Sikka said that the industry is moving in the wrong direction. "All of us in the industry find ourselves in a downward spiral, it is like a treadmill of increasingly lower cost, hiring people faster and faster from more and more mediocre places, training people less and less, putting them into jobs faster and faster," he said in a pre-recorded keynote delivered through a video link at the recent Cebit India in Bengaluru.

He also opined that a better idea for the companies will be to innovate, and move towards automation and artificial intelligence (AI). "That is the future that our clients are looking for, that is what they are looking to India for," he said.

"We are great at following orders from our clients, but we are not great at raising issues and we are not great at raising opportunities that we see for our clients. That change in mindset is what we (Infosys) fundamentally go after. I think the way to get there is to rely on our greatest strength, education," he said.

Indian companies should be very careful and not give the domestic market to foreign companies. "We have new initiatives of the government in sectors like education, healthcare, agriculture, financial services, logistics, infrastructure and manufacturing to implement various programmes with other stakeholders. Here the digitisation campaign, Aadhar, smart cities and industrial corridors will have its impact with the help of IT hardware and software supports," says PWC analysts Pallavi Singhal.

IT spend to surge

As per a study by research firm Gartner, Indian IT spending will reach \$73.3 billion in 2015, up 9.4 per cent from \$67.1 billion in 2014. The pace of IT spending in India may make it the third-largest IT market in the Asia-Pacific by 2016 and second-largest by 2018, after China, it said.

The Indian IT sector hiring will witness a churning with majority of the companies deciding to go slow on hiring plans. "Besides automation, the decision of companies to focus on non-linear services, move services to the cloud platform and the pres-

sure on billing rates will impact hiring in IT service companies. There is a possibility that middle-level engineers with around ten years of experience, who can handle things better, can be wiped out," says CRISIL Research Director Ajay Srinivasan. But leading IT companies are saying that they will go for massive campus hiring.

According to Nasscom President R Chandrashekhar, the Indian startup ecosystem is rapidly evolving and driven by an extremely young, diverse and inclusive entrepreneurial landscape, with more than 3,000 vibrant tech/digital startups, which is the fourth largest base across the world.

"Indian startups are witnessing a four-fold increase in access to capital through VCs, angel investment and seed funding. This helps them to work on building tailor-made products for their customers. Simultaneously, we need to also work addressing challenges on creating supportive government policies in terms of ease of doing business, tax incentives, participation in government contracts and availability of risk capital. Nasscom will continue to actively engage with stakeholders across to address these challenges," he said.

With the world moving towards the Internet of Things, the market for which will surpass the PC and mobile markets combined by 2017, the IT software and hardware industry will have to address the issues related vulnerabilities like hacking and piracy. Here, the industry is also facing the challenges of privacy and security of information.

CRISIL Research forecasts the industry growth rate to remain below 15 per cent annually over the next two years globally. Gartner Senior Vice-President and Global Head (Research) Peter Sondergaard said that the IT services segment is forecasted to grow 15.7 per cent while the software sector may grow 14 per cent in 2015. This spells good news for Indian software services exporters like Tata Consultancy Services (TCS), Infosys, HCL Technologies, Wipro and Tech Mahindra, which have also reported improved growth and large deal wins from key markets of the US and

Europe, which together account for over 85 per cent of their business. "By 2015, we expect that one in three jobs will be connected to software, smart decision-making or robotics. By 2018, digital businesses will require 50 per cent fewer business process workers. However, by 2018, digital business will drive a 500 per cent boost in digital jobs," said Sondergaard. Gartner said that devices will continue to account for the second-largest part of the Indian information and communication technology (ICT) market, after IT services.

Opportunity in connected life

The IT industry is going through churning of technological advancement. Here the question is how they can recoup themselves to take on these challenges. Prospects of the IT industry gearing up to tackle interoperability issues and the idea of using software to control hardware.

As per rough estimates, up to 50 million things will be connected on the Internet by 2020 bringing together sensors and smartwatches, smart meters and smartphones, washing machines, fridges, wearable devices, and much more. The Internet of Things, Industrial Internet, and Internet of Everything in 2015 will morph into the Internet of Anything. Here companies will have to take head on the challenges of making a common software "ecosystem" capable of accommodating any and all sensor inputs, system states, operating conditions, and data contexts, an overarching "Internet Operating System".

Besides, the prospects in predictive analytics used by a variety of businesses to identify risks and opportunities, the augmented reality applications pave the way for over 2.5 billion mobile augmented reality app downloads per year by 2017.

Rather than squirming in the shallow waters of second-rate IT products and services, it is high time that IT companies should come up with world-class products and services following the footsteps of the impact of Indians, who are donning the mantle of topline tech companies and part of startups in the Silicon Valley.

DH News Service

Premji again tops India philanthropy list

BS REPORTER
New Delhi, 4 January

Azim Premji, 69, chief of the Bengaluru-based multinational Wipro, donated as much as ₹12,316 crore of his personal wealth in the period between April 2013 to October 2014.

There are 50 people who donated a minimum of ₹10 crore in this period but Premji gave away six times as much as the person who comes second on the list, Anil Agarwal of London-based Vedanta Resources, who gave away ₹1,796 crore. The list has been compiled by the Shanghai-based The Hurun Research Institute, the second year it has done this ranking, of an 'India philanthropy list'.

Premji had topped the list a year

FOR A CAUSE

Top 10 contributors to charity in April '13- Oct '14, according to the Hurun Report

Azim Premji ▶

Name	₹ crore	Name	₹ crore	Name	₹ crore
Azim Premji	12,316	Mukesh Ambani	603	Ronnie and Zarina Screwvala	350
Anil Agarwal	1,796	Nandan & Rohini Nilekani	498	S Gopalakrishnan	255
Shiv Nadar	1,136	Kavitark R Shriram	377	Ravi Pillai	145
Ratan Tata	620				



from 31 a year before

- South Indians donated ₹13,300 crore, five times that given away by North Indians
- Mumbai is home to as many as 15 of those on Hurun's list, followed by Bengaluru and Delhi
- 11 of the top 50 don't live in India; of these, five made their donations entirely in India
- 42 of the top 50 are also in the latest Hurun India Rich List
- 73 per cent of them are self-made, not having had inherited wealth
- Ashish Dhawan of Central Square Foundation is the youngest on the list, at age 45; the boldest is Pallonji Mistry, 85 (father of Tata Group chief Cyrus Mistry)
- This year's list has 27 new faces.

before, too. In the institute's measure, issued three months earlier, of the 'India rich list', he was ranked at number four in personal wealth, with an own fortune of ₹86,100 crore. His donation in the 2013-14 list was to the Azim Premji Foundation, which mainly gives to bodies engaged in education.

Education was, in fact, the most

favoured cause for Indian philanthropists, accounting for four-fifths of the donations.

Shiv Nadar, Ratan Tata, Mukesh Ambani and Nandan & Rohini Nilekani rank next on the list after Agarwal of Vedanta. Hurun said it included cash and cash equivalents pledged, with legally binding commitments for

the period in question. It included donations made by companies in which an individual had a significant share, by applying the percentage the individual has of the company on the donations. "The list is a good representation of responsible entrepreneurship in India. It's interesting to note that many entrepreneurs in India con-

sider religious donations as philanthropy. In this context, we would have missed many more in India," said Anas Rahman Junaid, publisher-at-large of Hurun Report India.

Other nuggets from the list:

- The number donating at least ₹10 crore has risen to 50 this time

दिल्ली विश्वविद्यालय नए सत्र के लिए दाखिला लेने वाले छात्रों को यह टैबलेट बाटेंगा

विशेष टैबलेट से पढ़ेंगे नेत्रहीन छात्र

पहल

नई दिल्ली | कार्यालय संवाददाता

डीयू के स्कूल ओपन लर्निंग (एसओएल) के नेत्रहीन छात्र अब विशेष टैबलेट से पढ़ाई करेंगे। एसओएल छात्रों को मुफ्त में ये टैबलेट देने जा रहा है। नए सत्र के लिए दाखिले लेने वाले छात्रों को ही ये बांटे जाएंगे।

एसओएल के निदेशक सी.एस. दुबे ने बताया कि फिलहाल विभाग में 500 से ज्यादा छात्र विकलांग छात्र हैं। इनमें नेत्रहीनों की संख्या अधिक है। 150 के करीब हर साल दाखिला लेते हैं। इन्हें पढ़ाई करने में कई तरह की दिक्कतों का सामना करना पड़ता है। इनकी राह आसान करने के लिए स्पेशल टैबलेट तैयार किए हैं।

ये एंड्रायड आधारित होंगे जिनमें ऑडियो स्पीक यानी बोलने वाले विशेष सॉफ्टवेयर होगा। इतना ही नहीं, इनमें

एसओएल के हर कोर्स के पाठ्यक्रम, फीस, परीक्षाओं की तिथि और स्टडी सेंटर जैसी हर जानकारी अपलोड होगी। बहरहाल, बता दें कि 300 से ज्यादा टैबलेट तैयार कराए गए हैं। नेत्रहीनों के बीच इनका परीक्षण किया गया है। कोर्स की पूरी अवधि तक छात्र इनका इस्तेमाल कर सकेंगे।

ऐसे काम करेंगे टैबलेट: जैसे तो टैबलेट में टच स्क्रीन होगी लेकिन नेत्रहीनों के लिए इनमें ब्रेल लिपि वाले विशेष कीबोर्ड लगाए जाएंगे। की-बोर्ड लगते ही टच स्क्रीन लॉक हो जाएगी। इससे छूने के बाद भी स्क्रीन काम नहीं करेगी। इसके अलावा इसमें 'टॉक बैक' और 'स्पीक इंजन' जैसे ऑडियो स्पीक यानी सुनकर और बोलकर किसी भी आइकन को इस्तेमाल करने वाले सॉफ्टवेयर होंगे।

पढ़ने के लिए विशेष सॉफ्टवेयर: छात्र इनकी मदद से टैब का प्रयोग कर सकेंगे। यही नहीं, इसमें किताब पढ़ने के

लिए ऑडियो रीडिंग बुक के विशेष सॉफ्टवेयर भी होंगे। कार्यकारी निदेशक एचसी पोखरियाल ने बताया कि इन सॉफ्टवेयर और की-बोर्ड के जरिये छात्र आसानी से इंटरनेट के प्रयोग से लेकर किताबें आदि पढ़ सकेंगे।

रिसोर्स सेंटर भी मिलेगा: शारीरिक रूप से अक्षम छात्रों को हाईटेक तरीके से पढ़ाई कराने के लिए एसओएल रिसोर्स सेंटर बना है। इसमें उनकी ई-बुक्स से लेकर टैब के इस्तेमाल में मदद करने वाले सॉफ्टवेयर व हार्डवेयर आदि हैं। यही नहीं, रिसोर्स सेंटर का काम समय-समय पर ऐसी तकनीक को लागू करना होगा जो कि विकलांगों के लिए मददगार साबित हो सकें।

मशीन करती है चुटकी में अनुवाद: एसओएल में सबसे दिलचस्प ट्रांसलेट रीडिंग मशीन से पढ़ाया जाएगा। यह ब्रेल लिपि की प्रिंटर मशीन के साथ जुड़ी है। मान लीजिए यदि कोई छात्र अंग्रेजी या उर्दू की किसी किताब को अन्य भाषा में

आईआईटी छात्रों ने बनाए विशेष जूते, बाजार में उतारने की तैयारी

आईआईटी दिल्ली के मैकेनिकल विभाग के छात्रों ने नेत्रहीनों की जिंदगी आसान बनाने वाले जूते तैयार किए हैं। आईआईटी के प्रो. एमवी राव ने बताया कि ये जल्द ही इन्हें बाजार में उतारने वाले हैं। इसके लिए पेटेंट कराने की तैयारी है। बता दें कि ये रेडिएशन और सेंसर से काम करने वाले जूते हैं। इन्हें एक खास कालीन पर पहनकर चला जा सकता है। इन्हें पहनकर कालीन पर चलने पर जूते काम करते हैं। अगर कोई कालीन से बाहर पांव रखता है तो

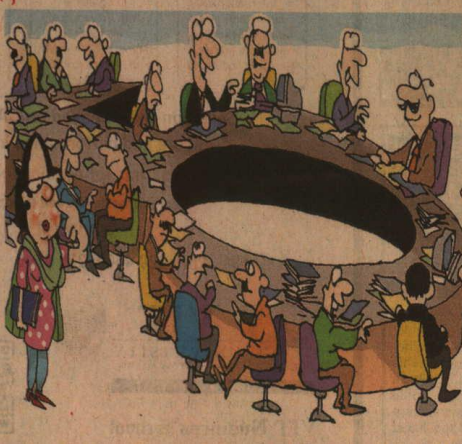
चलने वाले व्यक्ति को मशीन के जरिये संदेश मिलता है कि आगे डेंजर जोन है। ये जूते नेत्रहीनों को रास्ता दिखाते हैं। इसे बनाने वाले छात्रों का कहना है कि यह आईआईटी का है जो कि नेत्रहीनों के लिए कारगर है। सरकार कालीन की ही तरह सड़कों या पार्क में अलग लेन बना सकती है जिसमें सेंसर लगे हों। इन रास्तों पर इस जूते के जरिये चला जा सकता है। इससे उन्हें चलने में दिक्कत नहीं होगी। वे आराम से सड़क पार भी कर सकेंगे।

अनुवाद करना चाहता है तो कंप्यूटर से इस मशीन को जोड़ने के बाद ई-बुक्स की सारी पाठ्य सामग्री पांच से दस मिनट में 22 से अधिक दुनियाभर की भाषा में अनुवादित हो जाती है।

इस प्रक्रिया में पहले मशीन मूल किताब की पाठ्य सामग्री को ऑडियो फॉर्मेट में तब्दील करती है। जैसे-जैसे

रिकॉर्डिंग होती है उसी के साथ चयन की गई भाषा में अनुवाद होता रहता है।

इसके अलावा ट्रांसलेट रीडिंग मशीन नेत्रहीन छात्रों के लिए किसी भाषा की किताब को ब्रेल लिपि में बदल सकती है। ब्रेल लिपि की प्रिंटर मशीन जोड़ने से इस लिपि में पाठ्य सामग्री मिल जाती है।



जेंडर डायवर्सिटी सुधारने में जुटा इंडिया इंक

बोर्ड में महिलाओं की हिस्सेदारी बढ़ाने, सीनियर लेवल के लिए पाइपलाइन तैयार करने पर विचार

रिका भट्टाचार्य • अनुमेहा चतुर्वेदी | मुंबई • नई दिल्ली |
बीते साल इंडिया इंक ने जेंडर गैप कम करने और डायवर्सिटी सुधारने के लिए काफी कोशिश की। बहुत सी कंपनियों का मानना है कि मैनेजमेंट लेवल पर महिलाओं को रखना बिजनेस के लिए भी बेहतर होता है। इसके अलावा, नए कंपनी लॉ को शर्त और सेबी के निर्देश के मुताबिक भी कंपनियों के लिए बोर्ड में कम से कम एक महिला को रखना जरूरी है। इस वजह से कॉर्पोरेट जगत बोर्डरूम में महिलाओं की हिस्सेदारी बढ़ाने और सीनियर लेवल के लिए एक पाइपलाइन तैयार करने पर विचार कर रहा है।
 केपीएमजी इंडिया के पार्टनर एंड हेड (पीपल एंड चेंज प्रैक्टिस) निरचय स्री ने कहा, 'जेंडर डायवर्सिटी के लिए सुधार सिस्टेमेटिक होगा और इसे स्वीकार करना व्यक्तिगत।'

2015 के लिए टॉप पांच जेंडर डायवर्सिटी ट्रेड्स में प्रत्येक लेवल पर महिलाओं की संख्या बढ़ाना, जेंडर पॉलिसीज में पुरुषों को शामिल करना, विमेन लीडर्स की घटती पाइपलाइन में सुधार करना, अंजाने में होने वाले पक्षपात को लेकर जागरूकता बढ़ाना और सरकार के निर्देश के मुताबिक या सीईओ की अगुवाई वाली जेंडर स्ट्रेटजी पर फोकस करना है।
 कस्टमर मिक्स में महिलाओं का पर्सेंटेज बढ़ाने के साथ टेलीकॉम कंपनी वोडाफोन जनरल मैनेजमेंट, सेल्स, मार्केटिंग, फाइनेंस, टेक्नोलॉजी, लीगल, ह्यूमन रिसोर्सेज, डिस्ट्रीब्यूशन एंड रिटेल, एंटरप्राइज और मोबाइल बैंकिंग जैसे सभी फंक्शंस में ज्यादा महिलाओं को जॉब देगी। वोडाफोन इंडिया के डायरेक्टर (एचआर) अशोक रामचंद्रन ने बताया, 'पिछले दो वर्षों में हमने जेंडर के लिहाज से संतुलित बनने

पर फोकस किया है और अपनी वर्कफोर्स में महिलाओं की संख्या 14 पर्सेंट से बढ़ाकर 20 पर्सेंट की है। 2015 में भी यह फोकस जारी रहेगा।' कंपनी के डिस्कवर ग्रेजुएट प्रोग्राम में बिजनेस स्कूलों और टेक्नोलॉजी इंस्टीट्यूट्स से हायरिंग की जाती है और इसमें एंटी-लेवल पर 50 पर्सेंट महिलाओं को हायर करने पर फोकस रहता है, जो आगे भी जारी रहेगा।
 टाटा ग्रुप की ग्रुप एग्जिक्यूटिव काउंसिल महिलाओं की संख्या दोगुनी करने के लिए प्रतिबद्ध है। ग्रुप की कंपनियों में 5,40,000 लोग काम करते हैं और इनमें से 1,15,000 महिलाएं हैं। ग्रुप की योजना महिलाओं की संख्या बढ़ाकर तीन लाख से ज्यादा करने की है। इसके अलावा टाटा ग्रुप ने इस वर्कफोर्स में से 1,000 विमेन लीडर्स को भी डिवेलप करने का टारगेट रखा है।

All under 25, entrepreneurs talk change

AMRUTA LAKHE

DEORIA(UP), JANUARY 4

WHEN he was 19, Nikhil Gampa attended an entrepreneurship workshop where he met young people bursting with exciting and innovative business ideas.

Gampa, 24, is one among the 450 budding entrepreneurs aboard the Jagriti Yatra. An alumnus of NIT Durgapur, he spends many late hours in his laboratory at the Tata Institute of Social Sciences in Mumbai where he is studying for an MA in social entrepreneurship. A biotechnologist, his forte is waste management. He has devised a technique by which he cultivates a particular kind of



From left to right: Nikhil Gampa, Megha Nikam and Sunita Mekale.

mushroom on waste and then creates paper pulp. "I'm in the prototype stage. This year, I hope to launch the paper from waste," says Gampa.

Over the last 11 days, the specially commissioned Jagriti Yatra train carrying young entrepreneurs has travelled from Mumbai to Hubli, Bangalore, Madurai, Chennai, Visakhapatnam and Deoria, to meet potential clients in rural India.

On the last leg of their journey to Delhi, three such Mumbai-based entrepreneurs spoke about the impact that they hope to create.

Megha Nikam, wishes to focus on water scarcity. "In my village in Phaltan, children skip school and stand in queues every day for hours. Through my work, I want to bring innovations to the 'save water, collect water' concept," says Nikam, a civil en-

gineer, pursuing an MTech in Water Management from IIT Bombay.

Sunita Mekale, pursuing a master's in Mass Communication wants to challenge caste discrimination through entrepreneurship. "People think casteism doesn't exist, but it is rampant in villages. I feel responsible to bring about a change," says Mekale.

But as entrepreneurs all three agree resources are not hard to come by. "Today if you want to become an entrepreneur, you are not handicapped. We are told it wasn't so a few years ago. I feel confident that I can actually change things today," says Mekale who is following the footsteps of her three brothers, all social entrepreneurs.

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JUST LIKE HOME

Paul Cahill, PhD student, School of Engineering, University College Cork, Ireland on his study experience in India

I am pursuing a PhD in civil engineering at University College Cork (UCC), Ireland. The main research area I am investigating is the integration of smart materials with large-scale structures. Such smart materials can use the movement of structures, such as that caused in bridges by passing traffic, to generate electricity and can potentially power small-scale



Paul Cahill

wireless devices. These smart materials can be also used to detect damage in the structure and alert authorities to the need for immediate action for public safety.

As part of this research, I have been engaging with other researchers based in Ireland, Sweden, America and India. I have had the opportunity to conduct research in Texas in collaboration with leading experts

in the field of damage detection and I recently concluded a month-long visit to the Indian Institute of Technology (IIT) Madras.

While attending IIT Madras, I found that all departments appear to have a close working relationship that allows for excellent interdisciplinary work, which, in my opinion, is the future of engineering research. The experience of living in a hostel on campus was new to me. I met many interesting people whose ideas and opinions complemented my thoughts on many areas. I was especially grateful for conversations on Indian culture and history, from which I have

gained a deep appreciation and affection for India and its people.

While on the surface, it would seem that Ireland and India are different, within the first few days of my arrival, I began to learn that both possess close social and cultural ties. Although there are certainly some differences, I felt at home soon into my trip.

I was fortunate to visit Madurai, Bangalore, Mysore, Kochi and Kozhikode during my stay. My trip to India has been a defining experience for me, at a personal as well as professional level. I look forward to returning in the near future.

— As told to **Sarah Zia**