

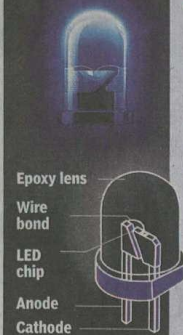
Newspaper Clips

October 8, 2014

Times of India ND 8/10/2014 P-20

'LED find would've made Alfred Nobel very happy'

THE LED STORY



► Red and green diodes had been around for a long time but **without blue light, white lamps could not be created**

► White light is made from **combining light from every other colour**, but before blue LEDs, one crucial part of the spectrum was missing

► The invention of the blue LED was the final key to using light-emitting diodes – **low power, long-lasting sources of light**

► You can see it in your smartphone screen – where **low heat output and slim size** of LEDs are a selling point

► It's also there in the backlight of a LED TV, where the low power usage lets manufacturers trumpet **cheaper electricity bills**

► LED lamps emit a bright white light, which are **long-lasting and use far less energy** compared with the incandescent lightbulb pioneered by Thomas Edison in the 19th century

► Because they have very low electricity needs, **LED lights can be connected to cheap, local solar power** – a benefit for the more than 1.5 billion people around the world who lack access to the electricity grid

The trio made bright blue light beams from semiconductors in the 1990s, triggering a fundamental transformation of lighting technology



Shuji Nakamura

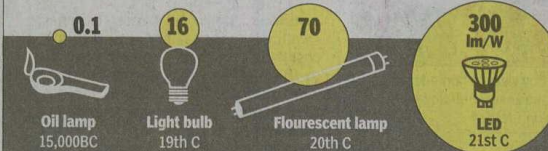


Hiroshi Amano



Isamu Akasaki

LEDs produce more lumens of light per watt of electrical power than other light



► Continued from P 1

Immigration policy hurting Britain's scientific standing: Nobel laureate

The latest voice to protest against Britain's immigration policy that has seen a tremendous fall in number of Indian students visiting English shores is professor John O'Keefe, who won the Nobel prize for medicine and physiology on Monday for discovering a GPS system inside the human brain. Keefe expressed his concern over UK's immigration policy warning the government that polices on immigration and animal research are risking Britain's scientific standing. He said that the present immigration rules are "a very, very large obstacle" to hiring the best scientists.

Kounteya Sinha

Finally, Nakamura got \$8.1 million from his former employers in 2005 and could be among the rare Nobel winners to have got the prize before completing a PhD. Reacting to winning the prize, Nakamura who was woken up by the Nobel Committee when it shared the news with him, said, "this is unbelievable".

According to the Royal Swedish Academy of Sciences, the invention has revolutionized the field of illumination technology. LED lamps are flexible light sources, already with several applications in the field of illumination.

The committee chairman Staffan Normak said: "Alfred Nobel would have been very happy with this invention. Artificial light is all around us. The invention of the LED, however, will be highly beneficial and safer than older light sources. For example, fluorescent light has mercury whereas LEDs don't. In future, it can be used to sterilize water as we know that UV light can kill bacteria and viruses. It has been known since 1671 that to get white light, we have to combine red, green and blue light. Red and green light has been around for half a century. Now we have blue which we can effectively mix and create new white light sources."

The LED lamp holds great

promise as due to low power requirements it can be powered by cheap local solar power. As about one fourth of world electricity consumption is used for lighting purposes, the LEDs contribute to saving earth's resources.

Materials consumption is also diminished as LEDs last up to 100,000 hours, compared to 1,000 for incandescent bulbs and 10,000 hours for fluorescent lights.

When Isamu Akasaki, Hiroshi Amano and Shuji Nakamura produced bright blue light beams from their semi-conductors in the early 1990s, they triggered a fundamental transformation of lighting technology. Red and green diodes had been around for a long time but without blue light, white lamps could not be created.

Despite considerable efforts, both in the scientific community and in industry, the blue LED had remained a challenge for three decades. They succeeded where ev-

eryone else had failed. The invention of the blue LED is just 20 years old, but it has already contributed to create white light in an entirely new manner for the benefit of us all.

Akasaki worked together with Amano at the University of Nagoya, while Nakamura was employed at Nichia Chemicals.

The committee said, "When Akasaki, Amano and Nakamura arrive in Stockholm in early December to attend the Nobel Prize ceremony, they will hardly fail to notice the light from their invention glowing in virtually all the windows of the city. Blue light remained a challenge for three decades. When they obtained bright blue light beams from their semi-conductors, the gates opened up for a fundamental transformation of illumination technology. Incandescent light bulbs had lit the 20th century; the 21st century will be lit by LED lamps."

Inventors of low-energy LED light win Nobel Prize for physics

REUTERS

Stockholm/London, 7 October

An American and two Japanese scientists won the 2014 Nobel Prize for Physics on Tuesday, for inventing a new energy-efficient and environment-friendly light source, leading to the creation of modern LED light bulbs.

Isamu Akasaki and Hiroshi Amano of Japan and Japanese-born US citizen Shuji Nakamura won the prize for developing the blue light-emitting diode (LED), the missing piece that now allows manufacturers to produce white-light lamps.

The arrival of such lamps is changing the way homes and workplaces are lit, offering a longer-lasting and more efficient alternative to the incandescent bulbs pioneered by Joseph Swan and Thomas Edison at the end of the 19th century.

"Red and green LEDs have been around for a long time but



Isamu Akasaki (from left) and Hiroshi Amano of Japan, and Japanese-born US citizen Shuji Nakamura

blue was really missing. Thanks to the blue LED, we now can get white-light sources which have very high energy efficiency and very long lifetime," Per Delsing, a member of the Royal Swedish Academy of Sciences, told a news conference.

The award is a notable example of a practical discovery winning the prize, in contrast to last year, when the physics prize went to scientists who predicted the existence of the Higgs boson particle that explains how elementary matter

attained the mass to form stars and planets.

"Incandescent light bulbs lit the 20th century; the 21st century will be lit by LED lamps," the academy stated.

Frances Saunders, president of Britain's Institute of Physics, said the shift offered the potential for huge energy savings.

MIND YOUR GPS

The Physiology Nobel for 2014 was given for research on mammals' awareness of their location



The 2014 Nobel in physiology or medicine has been given to three scientists—John O'Keefe of University College London, and the wife-husband team of May-Britt Moser and Edvard Moser of the Norwegian University of Science and Technology—who worked out how the mammalian brain processes coordinates of location. Key to animals' ability to move is their knowledge of where they are—a GPS system hardwired in the brain, if you will. O'Keefe and the Mosers discovered two sets of cells, in two neighbouring loci of the brain, that tell the brain where the animal is.

The first group of cells were first reported in a paper by Dr O'Keefe in 1971 from mice studies conducted by the scientist. Place cells, as these are known now, located in the hippocampus, were quiet most of the time but fired when a mouse was in a particular location in its range. Different cells became active for different locations, showing that the brain used a recognition system for the animal to be conscious of geography of the world outside. The Moser couple, in 2005, found in the entorhinal cortex, a region that is connected to the hippocampus, a more complex recognition system known as the grid cells which are arranged, as their name suggests, in grids of equilateral triangles, which help the organism in path-finding. Both the studies on the brain's positioning system are expected to help understand devastating spatial memory loss, a defining trait of dementia conditions like Alzheimer's, and may be even aid cognitive impairment mitigation research.

Business Line ND 8/10/2014 P-4

India ranks 18th on 'most desirable place to work' list

64% of BCG survey participants are willing to work abroad

PRESS TRUST OF INDIA

New Delhi, October 7

India has been ranked 18th globally on the list of most desirable destinations to work, even as 70-80 per cent of Indians are willing to work in an overseas location, says a new report.

The US has been ranked on the top, followed by the UK, Canada, Germany and Switzerland, making them the five most desirable countries to work on the list compiled by the Boston Consulting Group, total jobs.com and The Network.

The other countries in the top 10, where foreigners said they would like to work in-

clude - France (6th), Australia (7th), Spain (8th), Italy (9th) and Sweden (10th).

As a desirable work destination, India was ranked 18th among G20 nations.

Asia-Pacific lags

The Asia Pacific region does not generate as much interest as a possible work destination as the US or Europe, largely because of the perceived difficulty of learning an Asian Language, the report said, but noted "some fast growing Asian countries are starting to reclaim workers they have lost."

Globally, one in every five participants already has in-



ternational work experience and almost 64 per cent said they would be willing to go to another country for work.

According to the survey, around 70-80 per cent of Indians are already living abroad or are willing to move to a foreign country for work.

Some of the most important workplace attributes in India include good work life balance, job security, learning and career development

and appreciation for your work. The report noted that most people are willing to uproot themselves and head for a foreign country for work mainly because they want to broaden their life experience and that of their families.

Around 94 per cent of survey respondents in The Netherlands said they would consider moving to another country for work. In France, where the economy has been showing signs of stagnating, the same proportion (94 per cent) is willing to leave home.

On the other hand, people in the US, Germany and the UK - three economies that have rebounded more convincingly - are not as willing to go abroad for work.

Hindustan Times ND 8/10/2014 P-17

India ranks 18th on list for most desirable destinations to work

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Getting to Mars through 'jugaad'

India's Mars mission was made possible by less expensive engineering talent willing to work round the clock and the use of ingenious improvisation to cope with resource constraints

Karine Schomer

Ten months after its flawless launch on November 5, 2013, when India's Mars Orbiter Mission (MOM) successfully entered orbit around Mars, most of the western world greeted the event with astonishment. A cartoon in the *New York Times* even went on to ridicule India's effort to enter the global space elite — of the U.S., Europe and Russia — by symbolically referring to it with the image of a farmer, accompanied by a cow, knocking on the door of the elite space club. The newspaper has rightly apologised for its portrayal of India.

The country's technological feat, accomplished two days after U.S. National Aeronautics and Space Administration (NASA) project MAVEN orbiter reached the Red Planet, might well have some lessons to offer to other developed countries on the Indian style of innovative fix or 'jugaad' as they call it.

Lessons from India

What made it possible for India to become the first Asian nation to accomplish its Mars mission on its maiden attempt? What fundamental strength of the Indian way of getting things done, and approach to innovation, accounts for this achievement on a shoestring budget: only \$74 million compared to NASA's \$671 million for the MAVEN project? What can NASA learn from the Indian Space Research Organisation (ISRO)? What can the mature developed economies of the world learn from what has been accomplished in the resource-constrained environment of an emerging economy?

A few months ago, I was invited to brief the NASA-ISRO Synthetic Aperture Radar (NISAR) project team at the Jet Propulsion Laboratory (JPL) in Pasadena, California. The NISAR team is working on a joint mission between NASA and ISRO to design and launch by 2020 a satellite with advanced radar imaging that will provide the capability for a unique space-based platform for long-term observations of the natural processes of the changing earth. The purpose of the briefing was to create awareness of cultural differences in thinking, communication, ways of working and management style that could potentially affect the success of this high-stakes bi-national undertaking.

At JPL, I met Alok Chatterjee, NISAR Mission Interface Manager and the main architect of this collaboration with India. He is also the man behind the earlier



INNOVATIVE FIX: ISRO built the final model of the orbiter from the start instead of building a series of iterative models, as NASA does. Picture shows scientists and engineers working on the Mars Orbiter vehicle in 2013 at ISRO's satellite centre in Bangalore. — PHOTO: AFP

successful NASA-ISRO collaboration on the Chandrayaan-1 mission, and also helped set up JPL support on trajectory, navigation and manoeuvre validation and deep space coverage for ISRO's MOM mission. He had also worked at ISRO for ten years before joining NASA/JPL.

Mr. Chatterjee and I had the opportunity to discuss at length differences in how projects are planned and carried out in India and the U.S., with special reference to ISRO and NASA/JPL, and how to make such project collaborations successful. With the well-documented story of the parallel launching of MOM and MAVEN the previous November, we had a high-profile case in point for a fundamental aspect of the Indian mindset that needs to be understood, appreciated and negotiated on a daily basis by all those who work with Indian partners and counterparts. This approach and way of thinking is superbly captured by India's art of ingenious improvisation: jugaad.

A double-edged sword

Jugaad has come to refer to a habit of mind, born out of historical scarcity and an environment of uncertainty, which emphasises ad hoc improvisation and flexibility as a way of getting things done. Jugaad means different things in differ-

ent contexts, but it's fundamentally the art of "making things work" in the immediate present circumstances, without necessarily being concerned about long-term sustainability or systemic impacts. Jugaad enables people to come up with quick, innovative and low-cost ways of solving problems, and to make something works even when conventional wisdom says it isn't possible. It's a philosophy that is at the heart of Indian entrepreneurial energy and optimism.

There are myriad examples of jugaad in action in India at the level of everyday work style as well as fundamental attitude and belief. What each reveals is that in the Indian environment, flexibility and "playing it by ear" is not only habitual, and often a matter of necessity, but is considered a strength rather than a weakness. Historically, under feudalism, colonialism and — later on — the "bureaucracy raj" of the first 40 years of independent India, the ability to work around the system, to improvise and to circumvent the rules, was often required for any kind of success.

Of course, jugaad is a double-edged

sword. Social commentators and management theorists in India line up on opposite sides of an ongoing and heated national debate about the pros and cons of the jugaad approach. For some, jugaad is "an Indian commodity ripe for export," while for others it's an attitude that can mean choosing expediency over long-term effectiveness.

It's not surprising then to see Indian commentary on the Mars Orbiter Mission phrased in terms of jugaad. But for Mr. Chatterjee, "Jugaad is the Indian approach of getting the maximum out of spending the least amount of resources, including time. And while jugaad cannot defy the laws of physics in getting a complex space mission like MOM accomplished, it is definitely a time-tested approach that has proved applicable to processes for achieving the mission's accelerated goals."

India's "space venture on a shoestring" was thus made possible not only by less expensive engineering talent willing to work-around the clock, but also by using ingenious improvisation to cope successfully with resource constraints and exceptionally tight timelines. ISRO built the final model of the orbiter from the start instead of building a series of iterative models, as NASA does. They limited the number of ground tests. They used components and building blocks from earlier and concurrent missions. They also circumvented the lack of a rocket powerful enough to launch the satellite directly out of the earth's gravitational pull by having the satellite orbit the earth for a month to build up enough speed to break free from the earth's gravitational pull.

Jugaad enables people to come up with quick, innovative and low-cost ways of solving problems

Right now, in the afterglow of India's space age triumph, the strengths of the jugaad philosophy seem vindicated. But had the MOM story ended differently, in failure, as have 30 out of the 51 attempts the world has made to reach Mars, the talk in India today would be far different from Prime Minister Narendra Modi's hailing of the mission as "a shining symbol of what we are capable of as a nation." There would be questioning of whether the national genius for low-cost improvised innovation and ingenious workaround solutions — jugaad — is indeed the key to a successful future.

(Karine Schomer is President of Change Management Consulting & Training.)

Research Group from IISc Develops Probe to Detect Palladium

<http://www.newindianexpress.com/cities/bangalore/Research-Group-from-IISc-Develops-Probe-to-Detect-Palladium/2014/10/07/article2465404.ece>

BANGALORE: Palladium is a metal used to make drugs, fuel cells and to decrease emission of harmful compounds from vehicular exhaust. However, the accumulation of this metal in food can cause serious health hazards. Hence, the detection of palladium in the environment is very essential.

A group from the Indian Institute of Science has developed a probe to detect palladium even in tiny amounts without the hassle of expensive equipment and complex procedures.

This probe has a variety of applications. It was developed by Prof Santanu Bhattacharya's group at the Department of Organic Chemistry and it can selectively detect the dangerous forms of palladium instantaneously. The findings were published in Chemistry, an Asian journal, recently.

The probe can be used to estimate palladium concentration in water samples. It can visually detect minute amounts of residual palladium present in glassware used for carrying out experiments with palladium, even after it has been rinsed with laboratory detergent or water. Further, it was found that a sure way to remove such residual palladium is to wash with acetone.

Detection of palladium is possible using both ultraviolet/ visual (UV/Vis) and fluorescence spectroscopy.

Nilanjan Dey, who worked on this probe as a student of Bhattacharya, said "It is useful to have both UV/Vis and fluorescence analysis. While many times visual detection is useful, it cannot be relied on to detect intercellular palladium contaminants in the body. Then detection through fluorescence spectroscopy comes in handy."

The probe has been tested and shown to work in determining residual palladium, pharmaceutical products, real-life water samples as well as detecting palladium contaminants in mammalian cells. Further, for fast track detection, portable strips have been prepared using filter paper.

If palladium is present in the sample, the probe changes its structure and the colour changes to bright pink. The minimum detectable concentration of palladium was found to be 62.79 nano gram/litre, which is much lower than the permitted level of palladium in drinking water.

Researchers found through experiments that this probe can clearly distinguish between different forms of palladium. Also, palladium could be detected even if it was part of other compounds and complexes. The pharmaceutical industry makes use of reactions catalysed by palladium in drug design. The probe can be used to detect the palladium contaminant in the end product.

HRD minister Smriti Irani says “People’s suggestions to be taken for New Education Policy”

<http://www.prepsure.com/news/hrd-minister-smriti-irani-says-peoples-suggestions-to-be-taken-for-new-education-policy/>

The Centre would invite suggestions from students, teachers and parents for the proposed New Education Policy, the process of which will begin from next year, Union Human Resource Development Minister [Smriti Zubin Irani](#) said.

“For the New Education Policy, we will go to all the states. We will invite suggestions from students, teachers and parents for it and will discuss with them how this policy should be,” Irani said at a function here. The government would use all the media — print, electronic and Internet — for engaging the society in the process, she said. Stating that all the past education policies were framed by educationists and academicians, she said for whom such a policy mattered most were never associated.

Irani, however, added: “I am not here to blame the past.

I am here to frame the course for the future.”

The minister said the process for the New Education Policy for the country will begin from next year. India had last formulated the National Education Policy in 1986.

Meritorious students without jobs

BLEAK PROSPECTS Students of two schools of architecture are finding their career plans going awry as the institutes they studied in do not have degree granting status

Jeevan Prakash Sharma

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Despite all-India rank 640 in the All-India Engineering Entrance Examination (AIEEE) in 2008 (replaced by JEE later) and all-India rank 5 in the Graduate Aptitude Test in Engineering (GATE) in 2013, Triveni Prasad Nanda, a graduate from the School of Planning and Architecture (SPA), Bhopal, faces an uncertain future.

The Bhopal school and SPA Vijaywada were established in 2008 by the Central government as 'institutes of national importance'. Like Prasad, hundreds of other meritorious students, too, were drawn to the schools to pursue degree and master's degree courses in architecture.

When the first batches of more than 120 of BArch students in both institutes, admitted in 2008, passed out in 2013, they found – to their horror – that both schools did not have degree granting status. The second batch which has passed out this year shares a similar plight.

"As we did not have a degree certificate, the Council of Architecture (CoA) refused to give us a registration number

that would allow us to practice as architects. So I chose to go for a master's and secured AIR 5 in GATE. Then, on the written assurance of the SPA Bhopal that I would get the degree certificate, I got admitted to IIT Kharagpur and will complete my master's in 2015. However, by that time if the Central government does not pass an Act in the Parliament to empower the two SPAs with degree granting status, all my hard work and money will go waste," says Prasad.

According to officials of the two

SPAs, the fate of around 1,000 meritorious students hangs in balance as the MHRD has yet to pass an act to empower these two SPAs with degree conferring status.

Both schools have been offering a five-year bachelor of architecture, a four-year bachelor of planning and two-year master's in architecture and planning from 2008 onwards without being affiliated to any university or having the status of a university.

Like Prasad, Nagpur-based Atul Lalsare, too, does not find his career going

anywhere significant. After completing his BArch from the Visvesvaraya National Institute of Technology (VNIT) Nagpur in 2010, he was selected for a national students' scholarship 2010 by the Institute for Steel Development and Growth, Kolkata, after which he applied for an MArch programme in urban design from SPA, Bhopal. He passed out in 2012, but has yet to get a job. "I lost my father at an early age and my mother has brought me up with her hard-earned money. Only I knew how she managed to pay the ₹3 lakh fee for my master's course. Now even after completing the course I don't have master's degree certificate and cannot apply for any government job," says Lalsare. He feels lucky, however, to be registered as an architect because of the BArch programme he did from VNIT, which granted him a degree certificate.

Says Akhil Chaudhary (name changed), who completed his BArch from SPA Vijaywada in 2013, "Students face multiple problems due to government apathy. Those who passed BArch in 2013 and 2014 and B Plan in 2012, 2013 and 2014 are

badly impacted because they can't practice their profession independently. Some students also find it difficult to pursue master's in foreign universities. Those who completed their BArch and B Plan from other institutes and came to SPA Bhopal or Vijaywada for MArch and MPlan are facing problems."

Alumni associations of the two SPAs allege that the government is not responding to their requests to take appropriate steps to empower the two SPAs with degree granting status.

"We met Ashok Thakur, secretary, higher education and pleaded that meritorious students of the country not be victimised. The HRD minister Smriti Irani recently came to Bhopal to lay the foundation stone of one of our buildings and the faculty apprised her of the plight of hundreds of students but nothing has happened. Had the government taken action, the issue would have been resolved in the monsoon session of the Parliament, but it seems that all our requests are falling on deaf ears," says Navjit Gaurav, president of the alumni association of SPA, Bhopal.



Financial Chronical ND 8/10/2014 P-11

Is India ready for an IT revolution?

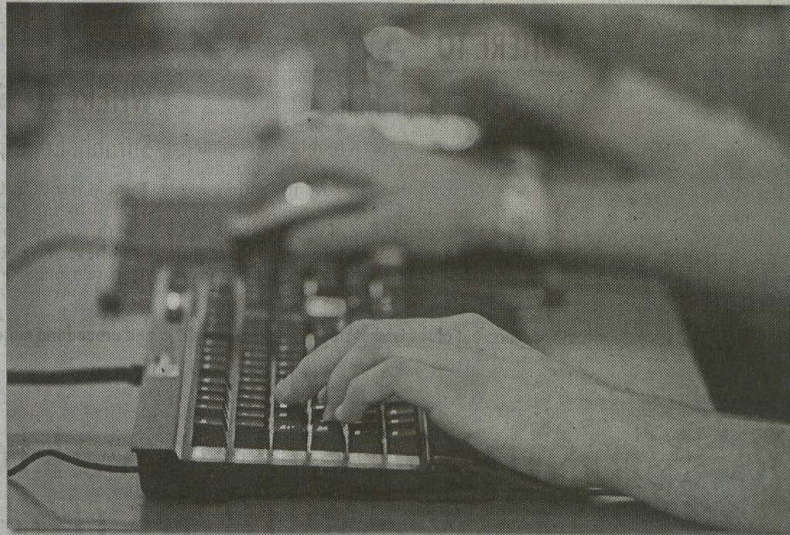
ONE of my British mentors told me that technology waves are similar to a London red bus. You do not know exactly when will it come. But when it does, you must jump in or you will have missed it. And the wait for the next one may belong! As India is busy making money on IT services and conventional technologies, a new wave is arriving. Are we ready?

The market capitalisations of traditional IT services behemoths in India have been built on the foundation of cost arbitrage. These companies typically have campuses with large deployments of in-house server farms. Yesterday, these campuses constituted an entry barrier. Tomorrow, with cloud computing becoming inexpensive and available, they may be a liability. So, the model is clearly wilting.

India has produced a Snapdeal here and a Flipkart there, but it is yet to produce a company that has the scale and resilience of a Baidu or an Alibaba. With the exception of iflex which is now part of the Oracle stable, we have not produced any other large software products company.

But a new bus has arrived and the question is — will we jump into it on time? It is being called the internet of things (IoT). So what really is the 'internet of things'? Wikipedia defines it as, "the interconnection of uniquely identifiable embedded computing devices within the existing internet infrastructure. Typically, IoT is expected to offer advanced connectivity of devices, systems and services that go beyond machine-to-machine communications and cover a variety of protocols, domains and applications. The interconnection of

Roopen Roy



ATTACHED ALGORITHM: As connected devices proliferate and networks penetrate into remote regions, the potential for IoT solutions and growth in the IoT ecosystem has increased

these embedded devices (including smart objects) is expected to usher in automation in nearly all fields."

According to a recent study conducted by Deloitte Consulting, IoT is really about the collection, analysis and use of unprecedented amounts of real-time data that will disrupt the way many organisations do business today. The IoT concept involves connecting machines, facilities, fleets, networks and even people to sensors and controls, and then feeding the sensor data into advanced analytics applications and predictive algorithms as a way of enhancing automation along with improving maintenance as well as operation of machines and entire systems — and in some cases, even enhancing human health.

As connected devices proliferate and networks penetrate into remote regions, the potential for IoT solutions and growth in the IoT ecosystem has increased. If IoT solutions can improve enterprise adopters' fundamental business values — not just savings and risk management, but also revenue growth and innovation — demand for new uses of connected devices will grow. At a higher level, IoT has a role to play in helping companies create more sustained value through moving from a one-time transaction to a continuous relationship with customers, suppliers, workers and assets. Already, agriculture is experimenting with more efficient irrigation and soil monitoring. For building smart cities in the future, IoT will be a key concept.

A Gartner study predicts that by 2020 — which is only 6 years away — there will be 26 billion connected devices on IoT. We will have IoT applications on logistics, transportation, healthcare, privacy, safety, energy savings, building automation, manufacturing and environmental monitoring, to name a few. The applications will come in several genres. They may spring from ambient intelligence, to building the architecture of IoT, to designing the security system as well as to creating objects (several trillion) and finally to manufacturing remote devices.

Cisco Systems's CEO John Chambers has said that the 'internet of everything' — connected products ranging from cars to household goods — could be a \$19 trillion opportunity. Ericsson is equally

gung-ho about IoT: "We believe the internet of things will have a profound impact in the future. Enabling anything to be connected and providing 'smartness' to these connected things will bring value across a number of sectors in the networked society."

However, there are concerns about IoT too. But India should look for opportunities in these risks. For instance, security and privacy are huge concerns. In a January article in *Forbes*, cyber security columnist Joseph Steinberg listed many internet-connected appliances that can already "spy on people in their own homes" including televisions, kitchen appliances, cameras and thermostats. On the back of the proliferation of connected devices, a new security and privacy opportunity is emerging.

A second concern regarding IoT technologies relates to the environmental damage of the proliferation of semiconductor-rich devices. IoT will tend to deploy a wide variety of heavy and rare-earth metals and highly toxic synthetic chemicals. The western answer is to use landfills and try recycling strategies. India is good both at frugal innovation and creativity in green and alternative technologies. Hidden in these legitimate concerns are huge opportunities. The cradle of the PC revolution was the US, while the Bethlehem of mobile phones was Europe. Can Asia, with its software prowess and manufacturing capability, combine to become the hub of the IoT revolution? The IoT bus is approaching and the question really is — is India ready to jump in?

(The writer is managing director of Deloitte Consulting, India. These are his personal views)

Times of India ND 8/10/2014 P-5

Bharti: Electric crematoriums should be shut

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New Delhi: The water resources, river development and Ganga rejuvenation minister, Uma Bharti, suggested on Tuesday that "electric" crematoriums should not be used on river banks and instead bodies should be burnt in a traditional way with minimum use of wood. She said that religious leaders - "sadhus" - have not approved the use of electric (many have been converted to CNG) crematoriums. She was speaking at a conference on "Cleaning of Indian Rivers" organized by Teri on Tuesday.

Bharti had formed a committee to study and recommend technologies that can cut down on river pollution from crematoriums. It comprises director, National Environmental Engineering Research Institute (NEERI), secretary, Central Pollution Control Board (CPCB), and a senior professor of IIT-Kanpur.

Her latest proposal has, however, left environmentalists puzzled. They would like her to explain how bodies can be burnt in the traditional way without adding to the pollution from partially burnt bodies that are disposed of routinely in rivers. "Instead of electric crematoriums, we are looking at burning bodies with less wood. We are asking people not to use electric crematoriums on ghats," said Bharti. The CNG crematoriums do not pollute so much and do not leave bodies partially burnt either.

"We want to see the committee report first. These are very big things and we have to understand how it could be made possible. It's difficult to react to such vague comments. I hope the report is presented soon and clarifies all doubts," said the head of Centre for Science and Environment, Sunita Narain. Sushmita Sengupta of CSE's water programme said unburnt bodies are causing major bacterial pollution in Varanasi. "As of now electric crematoriums are the most efficient option and have been recommended in all policy measures for rivers," she said.

Professor A K Gosain of IIT Delhi, who is preparing Delhi's drainage master plan, believes that "if there is proper radiation



Times View

The minister may have a personal view that traditional methods of cremation are better than modern ones, but she must not let that intrude upon her role as a minister. Electric crematoriums to begin with, and now CNG ones, were set up precisely because they were found to be environmentally less polluting and they ensure bodies are burnt faster and more completely. We hope that her suggestion that these be banned will not be pursued by the government. Those who have religious objections to using CNG crematoriums are free not to use them, but to impose that will on everybody is not on.

and the environment is suitable for burning bodies, there will be no partially burnt bodies. I think they are assessing factors which can help burn bodies completely with the same amount of wood." Manoj Misra of Yamuna Jiye Abhiyan feels "improved" traditional crematoriums are often more efficient than the conventional pyres along ghats.

Speaking on cleaning of rivers, Bharti said a plan to clean Ganga will be activated in three years. "Its implementation will be monitored closely for the next seven years," she said. Her focus will be to ensure ecological flow (flow of enough fresh water) in the river. On Yamuna, the minister said: "I wish one day the PM can bring foreign delegates to show or spend some time along Yamuna, like he did recently in Sabarmati." She was all praise for the Sabarmati riverfront project and called for other rivers to be developed on those lines.

Giving India a leg-up

BREAKING BARRIERS International academic institutes' ranking bodies are keen to help India improve its positioning, writes Gauri Kohli



The performance of Indian universities in the recent major global rankings has hardly sprung any surprises. No Indian institute features among the top 200 in the 2014 QS World University Rankings. As last year, the top placed Indian institution is 222nd in the world, a position held this time by IIT Bombay, which overtakes IIT Delhi for the first time, the latter slipping to rank 235. In the Times Higher Education (THE) rankings for 2014-15, apart from Panjab University and IISc,

Bangalore, only the IITs of Bombay and Roorkee could make it to the top 400.

India's strength is in the QS survey of academics, in which two leading IITs, Delhi University and IISc feature in the top 200. The weakest elements for India are the proportions of foreign staff and students. Ben Sowter, who is responsible for the rankings as head of the QS Intelligence Unit, says: "India may not have made as much progress as it would have liked in the new rankings, but Indian universities are engaging with the rankings more than ever before and this should bear fruit in the medium term."

QS and THE are two of the major ranking systems globally and officials from both the rankings have expressed interest in

lending support to India and also help in developing the necessary system for an India-specific ranking, if needed. So, is QS working on developing a ranking system for Indian universities? "We have always maintained that domestic rankings should be led by domain experts who are better placed to understand the nuance, mood and requirements of the country where they are based. The Indian Centre for Assessment & Accreditation (ICAA) has been instrumental in helping many Indian institutions understand our approach and in engaging with key policy makers in India. In return, should they proceed with a ranking in India, QS would gladly lend expertise

and counsel, and subject to the agreement of institutions, shared data where we have it. Any such conversation is at an early stage and would require extensive consultation with the sector," says a spokesperson from QS World University Rankings. As an external observer, QS is also interested in HRD minister Smriti Irani's ambitious plans for a higher education system overhaul, which includes a proposal to create a national ranking system of central universities. "It is certainly an interesting idea. Rankings create a data-driven culture which can have a positive impact on the governance of universities, access to public funding and private

investments. This, in turn, will affect and hopefully improve the overall students' experience," adds the QS spokesperson.

Times Higher Education Rankings is happy to be working with the Indian government to share data and insights over time to ensure that India's top universities can track progress towards their goals. Phil Baty, editor of the THE's World University Rankings, says that if more Indian varsities open up for evaluation against global benchmarks, a new matrix could be developed specifically for India. "The global rankings don't perfectly capture everything that India does, the local nuances and the good work Indian universities do, but officials in the government, the Planning Commission and Indian varsities now agree that one has to compare themselves with the best globally, otherwise India risks falling behind. We ran a policy dialogue on rankings with the MHRD and Planning Commission in 2013, and have remained in informal discussions about this," says Baty.

WE ARE READY AND WILLING TO MODIFY OUR ROBUST AND TRUSTED METHODOLOGY TO HELP PROVIDE A CONTEXT-SPECIFIC ANALYSIS FOR INDIA

PHIL BATY, editor of THE's World University Rankings



UK losing out on Indian post-graduate students to US

ADITI KHANNA
Press Trust of India

LONDON: The UK is losing out on Indian students as they are choosing the US institutions over those in Britain, according to a new study that also said Nigeria will soon replace India as the second-largest source of foreign post-graduates in the country.

The UK will host 241,000 post-graduate international students by 2024, allowing it to remain one of the top two destinations for studying post-graduation abroad after the US, according to a study by British Council.

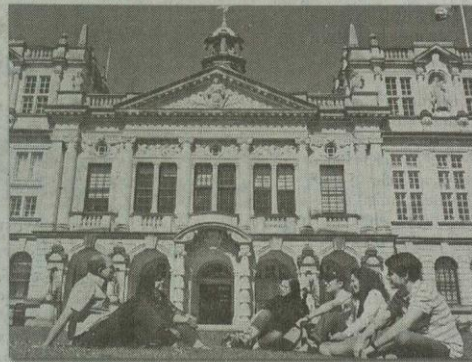
Indians form the second-largest source of international post-graduates in Britain so far after the Chinese but the UK is failing to steer more Indians away

from the US, which remains the most popular destination for higher studies. China is the largest source of international post-graduations students.

Researchers, however, warn the UK is too dependent on China for its international numbers, and that it is losing out on Indian students. Nigeria, which currently has the third-highest segment of foreign post-grads in the UK will soon move up to second place.

"Demographic changes mean India's appetite for higher education is expanding quickly and providing a source of international post-grad students that the US is exploiting," the research said.

According to a *Guardian* report, more than half (54 per cent) of international students from the US are from India while China



DECLINING ATTRACTION: Indians form the second-largest source of international post-graduate students in Britain so far after the Chinese

accounts for 33 per cent of the students in the US.

"No single market should drive the growth and composition of a country's incoming post-graduate body," said Zainab Malik, director of research for BC education intelligence. "As such, it is essential for institutions and policy-makers to continue attracting students from expanding economies besides China and India, including Nigeria, Indonesia, Saudi Arabia, Pakistan and Vietnam," she said.

The study says the annual growth rate of the UK's international post-graduate numbers will dip over the next 10 years, falling 4.1 per cent during the period 2007-12 to 3.5 per cent between 2013 and 2024.

Most recent UK office of national statistics figures had re-

ported that the number of overseas students coming to study in the UK from Commonwealth countries such as India and Pakistan had fallen from 100,000 to 35,000 in the past three years.

The number of Indian students fell from 18,535 in 2010-11 to 13,250 in 2011-12 and further to 10,235 in 2012-13.

Although a large proportion of international students is still expected to come from China, the number of postgraduate students elsewhere who are looking to study overseas is rising rapidly.

The growth rate of internationally mobile post-graduate students is especially high in Nigeria (+8.3 per cent) India (+7.5 per cent), Indonesia (+7.2 per cent), Pakistan (+6.4 per cent) and Saudi Arabia (+5.2 per cent).

Hindustan Times ND 8/10/2014

P-17

Companies find foreign degree holders better skilled for jobs: Survey

New Delhi, Oct 7: Functioning in an increasingly globalised environment, many companies feel that foreign degree holders have better technical skills for jobs compared to the Indian university graduates, says a latest survey.

As per British Council's 'India Employability Survey 2014', as much as 39 per cent of the companies in India said that foreign university graduates are better prepared for the jobs than those from Indian ones.

Further, the survey conducted among 200 Indian and foreign companies in the country found that 41% have hired at least one foreign-university graduate in the last two years.

Sector-wise, consumer goods (60%), services (52.2%), infrastructure, telecom and energy

(50%) firms are the most likely to have hired at least one candidate with a foreign degree.

"As organisations strive to compete and drive business growth in an increasingly global marketplace, they place significant importance on international education in talent they recruit," British Council India director Rob Lynes said.

"Hiring foreign-university graduates is an integral part of talent plan for a large percentage of firms," Lynes added.

About 41% of companies surveyed prefer to hire graduates from American universities, while 25.8% do so for universities in the United Kingdom. Subject-knowledge related to the job was ranked the most important skill by the companies. *PTI*

Business Standard ND 8/10/2014 P-2

A foreign degree might not land you a job in India: Survey

BS REPORTER

New Delhi, 7 October

Having a foreign degree doesn't mean one will get a job in India because most companies find job seekers with domestic degrees good enough, a British Council survey said.

The survey, across 200 Indian and foreign companies to understand the employability of Indian students, found only 13 per cent of companies actively seek foreign-degree holders. While companies had increased hiring of foreign graduates in the past three years, the number is expected to come down this year.

"Students with foreign degrees should actively consider tapping into a job market that is still underdeveloped. They will, however, need to modify their expectations in terms of salaries, job content,

etc. They will also need to compete with a domestic talent pool that most companies see as 'good enough' or 'large enough'. In fact, most companies that do not hire foreign-trained students cite these two factors as the main reason they do not actively look abroad for talent," the report said.

Among foreign degree holders, those with US degrees are more likely to find recruiters than those graduating from other countries. The study suggests 41 per cent of recruiters are likely to hire students who graduate from the US, followed by 26 per cent from the UK and six per cent from Germany.

The study also suggested that 59 per cent of the respondents have not hired students from abroad in the past two years, owing to the huge talent pool in India.

Recruiters say students with foreign degrees will also need to compete with a domestic talent pool that most companies see as 'good enough' or 'large enough'

A steel frame for clinical trials

Ranjit Roy Chaudhury and
Arghya Sengupta

In recent months, the quest for a safer, more transparent clinical trials regime has found new momentum. Fourteen notifications in July 2014, governing various aspects pertaining to a clinical trial — ranging from placebo-controlled trials to compensation awards — have been notified. Further, the Central Drugs Standard Control Organization (CDSCO) has proposed a forward-looking IT-enabled information system that will ensure transparency and protect the interests of trial subjects.

These developments are important steps for the clinical trials regime in India to satisfy the three principles laid down by the Supreme Court for approving trials — assessment of risk versus benefit to patients, need for innovation *vis-à-vis* existing therapeutic option and the unmet medical needs in the country. But for satisfying these standards, much more remains to be done. The entire regulatory framework pertaining to clinical trials needs to be overhauled and a clear, coherent and succinct set of stand-alone rules needs to be introduced for this purpose. This will not only ensure adherence to the principles laid down by the Supreme Court but also give impetus to the clinical trials industry in India, currently languishing due to an uncertain regulatory environment.

Accreditation and ethics

There are three key changes that are essential if the clinical trials regime in India is to be put on a firm foundation — instituting a structured accreditation process accrediting investigators, trial sites and ethics committees, making ethics committees function effectively and ensuring diligent adherence to guidelines concerning informed consent from trial subjects. Each of these three aspects has been studied closely by the committee headed by one of us, the Ranjit Roy Chaudhury Committee, with detailed recommendations provided.

Accreditation must become the centrepiece of a new clinical trials regime founded on the

The regulatory framework on clinical trials needs a coherent set of stand-alone rules. This will not only ensure adherence to the principles laid down by the Supreme Court but also give impetus to the clinical trials industry in India, currently languishing due to an uncertain regulatory environment

principle of patient safety. Accreditation ensures adherence to certain quality standards thereby instilling confidence not only in patients who will be trial subjects but equally in the industry, which is responsible for conducting the trials. Thus, principal investigators of trials should be accredited depending on their qualifications, experience and training; trial sites should be accredited on the basis of infrastructure, personnel and systems; finally, institute ethics committees must be accredited keeping in mind the experience of their members and the standard operating processes for review which are used.

Guidelines in this regard have been prepared recently by an expert committee; these must be implemented post-haste. If this is done, India would be the first country anywhere in the world to institute such a structured process of accreditation.

Conflicts of interest and consent

Accreditation of ethics committees is an especially central element towards making such committees effective custodians of the safety and probity of all clinical trials. Several cases of casualties in clinical trials have emerged in the past few years, where compliance with standard operating processes were

shoddy or such processes themselves were absent. In an Indian Council of Medical Research (ICMR) publication, the independence of ethics committees and conflict of interest questions were highlighted. To correct this, it is not only essential that ethics committees are accredited but also develop standard operating procedures that are capable of effective implementation. To follow such procedures, members of ethics committees need to undergo high-quality mandatory training. This requires a combination of men and women of wisdom and experience and training protocols that are succinct and geared towards en-

sureing safe and effective trials where all norms are strictly followed.

A key positive spin-off of accredited ethics committees would be to prevent conflicts of interest. The Ranjit Roy Chaudhury Expert Committee Report pointed out gross malpractices and unscrupulous decisions in clinical trials caused owing to ethics committee members having an interest in the trial itself. To offset this, a key facet of accreditation would be a strict adherence to finding independent persons to serve on ethics committees. This can be achieved by a combination of randomised allocation of experts to particular ethics committees together with a

supplementary check by the accrediting body. A hybrid process, part-automatic with a supplementary human element, would not only ensure independence of the ethics committee in fact, but also create a positive perception of such independence in the minds of trial subjects.

Such a positive perception of the independence of ethics committees, it is believed, would become a key facet of securing informed consent of trial subjects. The need for informed consent was a key norm that was recently found by the United States Office for Human Research Protections (OHRP) to be flouted in a cervical cancer study funded by the U.S. National Cancer Institute and the Bill & Melinda Gates Foundation. Till April 2014, 254 women in unscreened control groups in these trials have died. The OHRP determined that insufficient information was provided in order for these and other women to give informed consent to participate in the trial.

Towards a new order

Culpability in this matter is still an open question that might require judicial intervention. However, at this stage, it is clear that the episode demonstrates the lack of effective protocols to ensure that informed consent is truly on the basis of relevant information and the lack of clear methods to ascertain the taking of such consent. This has been partially offset by CDSCO which issued draft guidelines earlier this year on audio-visual recording of informed consent process in clinical trial. This mandates audio-visual recording and safe storage of the taking of informed consent from trial subjects. This is a welcome move. However it is imperative to keep in mind the privacy of patients who might not wish to be recorded. Thus, it is recommended that such recording should be mandatory subject only to waiver by the trial patient or the ethics committee, keeping in mind the equally significant principle of patient privacy.

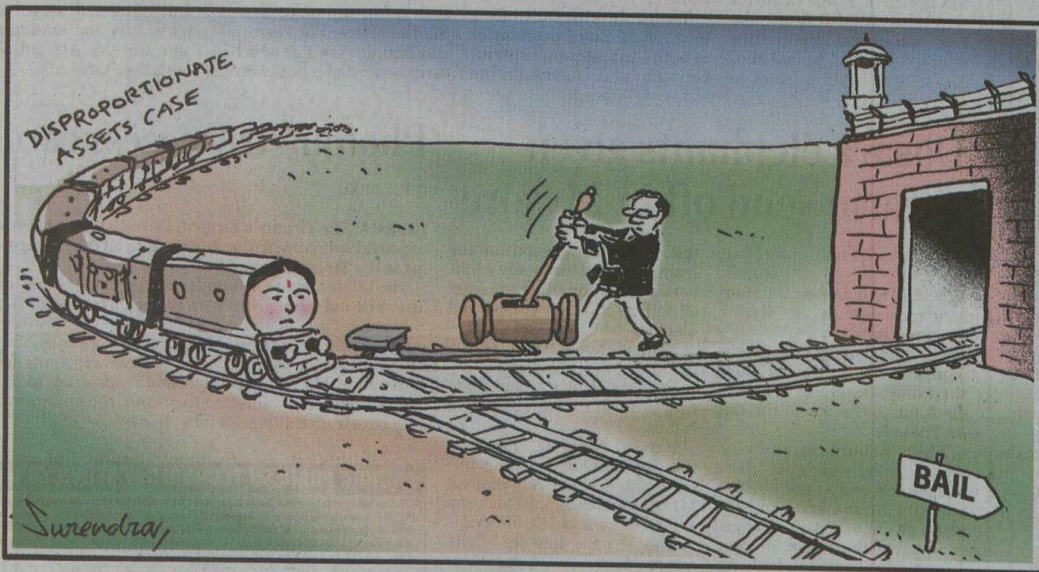
Not only is the substance of the changes mentioned significant, but equally the form it takes. Best practices worldwide demonstrate that having a succinct, stand-alone set of rules governing clinical trials promotes transparency and increases certainty. Currently, the legal architecture governing clinical trials is complex with several facets governed by the Drugs and Cosmetics Rules, 1954, a slew of notifications thereunder, and some facets regulated by the proposed Drugs and Cosmetics (Amendment) Bill, 2013, pending in the Rajya Sabha.

It is essential that the recommended reforms together with any other changes proposed by CDSCO are brought under a consolidated umbrella of rules governing clinical trials. This will give the clinical trials industry the necessary certainty to undertake trials in India with confidence. The benefits for India — in terms of development of new drugs, employment generation in the clinical trials industry and ensuring a safe environment for its citizens desirous of participating in clinical trials — would be tremendous. Most crucially, it would demonstrate the seriousness that the government attaches to effective public health systems and scientific progress, two goals of a well-functioning clinical trials regime that must also become the pillars on which modern India is built.

(Ranjit Roy Chaudhury was Chairman of the Expert Committee to formulate policy, Guidelines, SOPs for approval of new drugs and clinical trials and banning of drugs. Arghya Sengupta is Research Director, Vidhi Centre for Legal Policy.)

“Accreditation must become the centrepiece of a new clinical trials regime founded on the principle of patient safety.”

CARTOONSCAPE



HT.COM ND 08/10/2014 P-10

SKILL DEFICIT GRADUATES IS A PRESSING PROBLEM

EMPLOYMENT

91.82% of IT, engineer and management candidates lack skills

Anasua Chakraborty

India Inc is going through a near crisis situation due to lack of employable candidates. A recent NASSCOM report says that only 10% of fresh graduates in India are employable. More shocking facts have come up in the third edition of the National Employability Report, Engineering Graduates - 2014 conducted by a private employability solutions company that reveals that only 18.09% engineers actually get a job.

Further even those employed lack key skills. Of the 1.2 lakh IT/engineering/management candidates surveyed across multiple states, 91.82% lack programming and algorithm skills, 71.23% lack soft and cognitive skills, 60% lack domain skills, 73.63% lack English speaking and comprehension skills, and 57.96% have poor analytical and quantitative skills.

What do industry experts have to say about this unhealthy trend? "Quality of education is now below par. Moreover, the curriculum in educational institutes doesn't have any relevance to the requirements of the industry," says Rajiv Burman, managing partner, Lighthouse Partners.

Validating the same, Sidharth Agarwal, director, Spectrum Talent Management, says, "The irony with the Indian education system is that every year, more than 3 million



■ Three million students graduate every year but only 40-45% are employable.

FILE PHOTO

students graduate but just 40-45% of them are employable. Poor quality of teachers combined with an outdated curriculum is to be blamed for this major issue."

Sunil Goel, managing director, GlobalHunt India Pvt Ltd, explains, "It has been observed that college/university education has become very text-book centric and candidates get little to no industry exposure. Employers require candidates who have the basic technical knowledge,

interpersonal skills, fast learning ability, a focused approach along with high level of integrity and stability." So is this giving rise to a breach in the corporate workspace: more of an attitudinal mismatch between employer expectations and candidate expectations?

While the obvious solution to unlock India's much discussed demographic dividend is to empower candidates with requisite skills, the question remains: can employ-

ability skills be taught?

"Industry and education both need to work together. Candidates on their part should work towards acquiring industry-specific skills through some skill training courses; get exposure through industry training programmes to get on-the-job experience," suggests Sunil Goel.

R. Anand hints. "Graduates should have clarity, consistency and confidence in getting across their messages while interacting.