Newspaper Clips
April 21, 2015

Behind The Scene: Sound and Fury

http://www.greatandhra.com/politics/gossip/behind-the-scene-sound-and-fury-65543.html

Smriti Irani is caught in another controversy and coming on the eve of a cabinet expansion/reshuffle, it could have best been avoided.

National magazine ‘Outlook’ carried a cover story of Smriti Irani saying that she was in serious disfavor with the RSS, BJP and even the people working under her.

The article said that Smriti’s style of functioning as HRD Minister was not at all up to the mark. It also mentioned various instances of her working style.

So while a vice chancellor of a central university is quoted as saying those trying to suggest ideas to Irani could be told "this is not your classroom, this is my ministry", a senior ministry official speaks about how she flung a file at additional secretary-rank official only to apologize later, and promise to 'restore his honor'. However, the official applied for a transfer.

According to the Outlook piece by Saba Naqvi, the BJP has its own problems with the minister.

Senior leaders are unhappy with the manner in which she has been treating senior leadership, including not standing to greet Rajnath Singh, not responding to requests for appointments and making people who do meet her feel "uncomfortable".

Naturally, there was nothing positive in the article about the Union Minister and adds to the growing perception that she might be sacked in the next reshuffle. In eleven months, there have been numerous controversies regarding the Minister.

Among the controversies surrounding Irani are her educational qualifications, the decision to celebrate 'good governance day' instead of Christmas day in CBSE schools, respected nuclear scientist Anil Kakodkar threatening to quit from the board of IIT-B directors and dropping German as a third language in Kendriya Vidyalayas.

Smriti has responded to the article on Twitter by thanking those who stood up for her. “My heartfelt gratitude for all the support against the slanderous statements in a print magazine. Unfortunate publishing standards,” said Smriti on Twitter.

- See more at: http://www.greatandhra.com/politics/gossip/behind-the-scene-sound-and-fury-65543.html#sthash.mPzrucce.dpuf

Former dean questions arbitrary selection process of IIT directors

http://www.hindustantimes.com/higherstudies/former-kanpur-dean-questions-arbitrary-selection-process-of-iit-directors/article1-1339122.aspx

The appointment of directors for three Indian Institutes of Technology (IITs) has again found itself in controversy, this time over the hurried way in which the appointments were made.

Dheeraj Sanghi, former dean of academics at IIT Kanpur has questioned the arbitrary process of selection. “The current selection process reduces the prestige and respect of the director. It is clear to all stakeholders that the selection as directors is partly a lottery, and partly a result of connections,” Sanghi said in a blog post. Sanghi is presently a professor of computer science at IIT Kanpur. He, however, clarified that he is not questioning the credentials of the people appointed but the process.

Human resource department minister Smriti Irani conducted a fresh round of interviews of 36 candidates for the post of directors on Thursday and appointed RV Raja Kumar as director of IIT Bhubaneswar, Sarit Kumar Das for Ropar and Pushpak Bhattacharyya for the post of director of Patna.

According to Sanghi, during the first round of interviews conducted last month, one of the candidates was given five minutes to make a presentation and another five minutes to answer questions. “How are ten minutes enough to select people for such a crucial post?” he asked.

Ministry sources confirmed that the fresh interviews also lasted for only ten minutes or less for all candidates, leading academicians to question the process.

Eminent nuclear scientist Anil Kakodar had resigned from the post of board of governors of IIT Bombay last month citing similar issues of “casual approach towards appointments.”

While these appointments have left out the names that had caused the rift between the ministry and Kakodkar, he refused to comment on the subject. A former dean of academics at IIT Bombay, on condition of anonymity, said that both governments, UPA and the current one, did not pay much heed to IIT directors selections.

“It has been taken too casually for too long, the results of which will be reflected in the performance of the institutions. The IIMs on the other hand have a better selection process, which should also be extended to the IITs.”

For the selection of IIMs, the governing boards of each IIM select three names and send them to the HRD ministry for a final selection. The name is then forwarded to an ‘appointments committee’ for approval.

Panel questions HRD ministry's decisions

Hindustan Times (Mumbai)

NEW DELHI: Even as the Appointment Committee of Cabinet (ACC) has delayed giving a go ahead to the appointment of Sanjay Kachroo as the officer on special duty to HRD minister Smriti Irani, it raised queries on candidature of Anil Sahasrabudhe as AICTE chairman.

Sahasrabudhe, who is director of college of engineering, Pune was recommended by the HRD ministry as the next chairman of AICTE, the apex regulatory body of technical institutions.

Sources in the government said the ACC had raised questions on the 'lien period', granted to Sahasrabudhe saying he had exceeded its limit.

Lien is granted for appointment of a permanent employee who has right to hold his previous post in old department for a certain period (2 years, extendable to 3 years) while performing duty in a new department on temporary basis.

Sahasrabudhe, who is originally a faculty member at IIT Guwahati was on lien with College of Engineering, Pune, an engineering college affiliated to university of Pune for eight years.

IIT Bombay lifts night ban on Net for PhD students

http://indianexpress.com/article/cities/mumbai/iit-bombay-lifts-night-ban-on-net-for-phd-students/

Years after it imposed a ban on local area network (LAN) inside hostels at night, IIT Bombay has now decided to lift the same for PhD students.

Recently, students of IIT Bombay urged the institute authorities to lift the LAN ban inside hostels between 1.30 am to 5.30 am. The ban, which was implemented after 2005, was inadvertently lifted for about a year recently and re-introduced last month. Doctorate students argued that the ban was not allowing them to continue their PhD-related work during the night.

"In a recent meeting of post-graduate students with the director, a PhD student raised the issue and the director announced that PhD students will not face LAN ban. A representation has also been made by students to remove the ban for all of them, which is being looked into," said Prof U A Yajnik, dean of student affairs, IIT Bombay.

According to the institute, the LAN ban was introduced after a student committed suicide in 2005 after being failed in a few courses owing to low attendance, allegedly due to excess use of the Internet.

"Some of us use the Internet to study at night. Also, there is no ban on use of personal Internet connection. We really hope the authorities give us LAN access at hostels in the night," said a BTech student.

IIT-K to have centre for study on Ganga

Hindustan Times (Lucknow)

DR VINOD TARE SAID THE UNION MINISTRY FOR CENTRAL WATER RESOURCES HAS GIVEN IN PRINCIPLE NOD FOR SETTING UP THE CENTRE AT THE INSTITUTE AND AN OFFICIAL NOTIFICATION WAS LIKELY TO BE MADE SOON

KANPUR: The Indian Institute of Technology (IIT-K) would soon have a river science and management centre that would facilitate scientists in carrying out research related to keeping Ganga pollution-free.

Senior professor of civil engineering department at the IIT-K Dr Vinod Tare said the Union ministry for central water resources has given in principle nod for setting up the centre at the institute and an official notification was likely to be made soon.

He said the institute's past work in ensuring continuous and clean flow of water in the river was taken into consideration before giving nod for the proposal.

The IIT-K scientists, in their past surveys, had apprised the government about the major causes of pollution in the river and had suggested measures like introducing the 'zero liquid discharge system' at tanneries and in other units situated along the river bank.

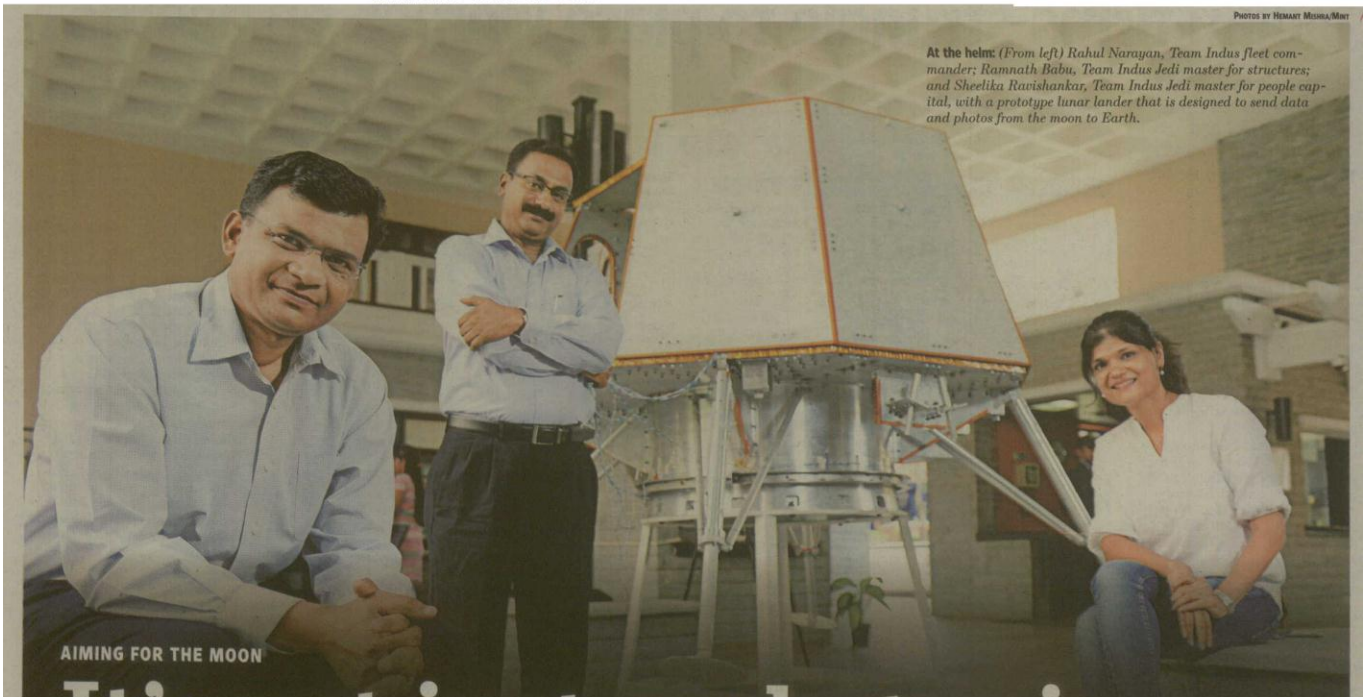
The ministry is also exploring the possibilities of carrying out pollution control projects for Ganga under public private partnership (PPP) model.

It has also proposed to introduce online monitoring system in all the 402 tanneries for observing the pollution level and discharge of waste from the tanneries into the river.

The Central Pollution Control Board has been assigned the responsibility of online monitoring. Notably, the CPCB has asked the Central Leather Research Institute (CLRI) to prepare a digital project report for the safe disposal of effluents discharged from the tanneries.

Mint ND 21/04/2015 P-14

PHOTOS BY HEMANT MISHRA/MINT



At the helm: *(From left) Rahul Narayan, Team Indus fleet commander; Ramnath Babu, Team Indus Jedi master for structures; and Sheelika Ravishankar, Team Indus Jedi master for people capital, with a prototype lunar lander that is designed to send data and photos from the moon to Earth.*

AIMING FOR THE MOON

It's not just rocket science

Team Indus doesn't see Google's Lunar XPRIZE as a technical problem to be solved; it's equally about ensuring a buy-in from a whole host of stakeholders

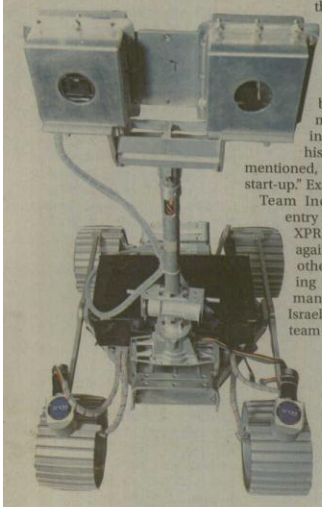
BY N.S. RAMNATH
feedback@livemint.com

Raw energy hums through the Team Indus office in Bengaluru, even when it's half empty. It's lunch time. Two young men who could pass for university students are discussing trajectories as they navigate around scattered cartons and chairs. A few feet away, a young engineer who had left his seat for a minute to consult with a colleague finds his chair missing. He pauses only for a second before he grabs his laptop, sits on the table and starts typing.

These young engineers have recently moved into this roomy hall from another section in the building. Team Indus needed space for new hires. It might take some more time to set things up, but even to a casual observer, this much seems clear: the work can't wait.

Rahul Narayan, an alumnus of the Indian Institute of Technology (IIT), Delhi, who has tried his hand at entrepreneurship more than once and brought these young men together, takes in this scene, shakes his head and says: "As I mentioned, this is like any other start-up." Except that it isn't.

Team Indus is India's only entry for the Google Lunar XPRIZE. It is competing against teams from eight other countries, including the US, Japan, Germany, Spain, Italy and Israel. To win the prize, a team has to be the first to "land a robot on the surface of the moon, travel 500 metres over the lunar surface, and send images and data back to the Earth".



The challenge: *To win the Lunar XPRIZE, this rover will have to traverse 500m, collecting a range of pictures and data that will be transmitted to Earth.*

The Indian Space Research Organisation (Isro), which has sent satellites to the moon and Mars, has never soft-landed before. Team Indus, founded in 2011, is aiming to do that. In January, it was one of four teams to win a $1 million Milestone Prize in the landing system category, demonstrating that it can soft-land a spacecraft on the moon.

None of the founding members have a background in aerospace. They entered the fray with only a dream, enormous confidence and, having signed up a little late, very little time.

"Sometimes, when we tell our advisors, veteran scientists, what we did on a particular day, they say, 'But this is something you should have done at T minus year three, (three years before the launch date)," says Ramnath Babu, who leads operations at Team Indus. "And then, of course, they help us do things better and faster."

It's this aggressive ambition that has attracted many to this motley group. Arun Seth, non-executive chairman of India operations at telecom equipment maker Alcatel-Lucent and one of Team Indus's early backers, says he first heard about it from his IIT friends, and was blown over by the audacity of what they were trying to achieve.

Sharad Sharma, former chief executive of Yahoo's India research and development centre and an investor, uses a similar term to describe them: audacious spunk. Kiran Karnik, former head of software lobby group Nasscom and a member of the scientific advisory council to Prime Minister Narendra Modi, says that while start-ups tend to go deep in one discipline, Team Indus is multi-disciplinary, demanding deep expertise in several areas.

Even among the very ambitious, spunky and scientifically deep start-ups, Team Indus is special. It has attracted help from many quarters even though, in the aerospace business, it is difficult for an outsider to gauge where a business stands—the success of any space mission depends on so many factors, which can't be tested in entirety.

What makes it special?

#1. A participatory model

Team Indus doesn't see the Lunar XPRIZE as merely a technical problem to be solved; it's equally about ensuring a buy-in from a whole host of stakeholders.

Right from its early days, help came from many quarters. Rajiv Mody, founder of Sasken Communication Technologies, let them use a part of its headquarters in Bengaluru. Tata Communications offered help with communications and connectivity. Larsen and Toubro (L&T), which has worked with Isro for years, put its weight behind the design and manufacturing. Scientists with a wealth of experience were generous with their time and advice.

"It's a dynamic talent model," says Julie Woods-Moss, chief marketing officer and chief executive of Next Gen Business at Tata Communications, which has provided some of the communication tools to collaborate across geographies and time zones.

Team Indus is able to make these relationships work because its approach is participatory, not transactional.

The approach resonates. Its partners don't look at their association with Team Indus in commercial terms. "It's the only team from India, and it's something we can all be proud of," says M.V. Kotwal, whole-time director at L&T.

For its part, Team Indus demonstrated its willingness to accommodate partners. It moved to Bengaluru from Delhi so it could be close to mentors and tech advisors drawn mostly from Isro's old boys' network.

#2. A culture of ownership

Investor Sharad Sharma draws a distinction between mercenary and missionary start-ups. The former tend to attract people motivated by money; the latter attract those who identify with the vision and have the drive to take up impossible challenges.

That Team Indus is such a start-up didn't happen by accident. In one of the early meetings with K. Kasturirangan, former head of Isro, to discuss partnership possibilities, he said something that made a deep impression on Narayan: Isro was never about making money; its vision was to "harness space technology for national development".

The missionary aspect is clear in the team composition: the core team consists of space enthusiasts who often joined as interns. It's easy to see why Team Indus attracts them. When you speak to Isro veterans, you know that by being involved in the project, you are making history, says Sheelika Ravishankar, who heads human resources (HR).

#3. Institutionalizing that culture

When Ravishankar first met Narayan a year ago, Team Indus had just about 20 people (it has 52 people now). She wondered why a start-up so small would want to have an HR person.

Narayan was clear that it was imperative to institutionalize the culture before the team expanded.

"The ability of a person is important. Our assessment of the ability of that person to fit into the system is equally important because it's better to not have a resource, instead of having a resource that will disrupt the system," he says.

To capture the spirit of adventure that brought in so many people, Team Indus has unconventional titles, says Ravishankar. Narayan is fleet commander. Ramnath Babu is Jedi master for structures. Ravishankar is a Jedi master in people capital. The mentors are called commanders. And there are ninjas, skywalkers and troopers in the team.

The teams are small—about six to a team—and the structure is flexible. People can go where their passion takes them, rather than being restricted by, say, their specialization at university. Arpit Sharma, for example, studied aerospace at IIT Kanpur, but works in the rover team, which, he says, "is more about automotive". Since it is a multi-disciplinary project, people are encouraged to spend at least 20% of their time in other teams. This helps them understand how the system works, and helps them feel ownership over their subsystem and the project as a whole.

#4. Having a plan, even if it's just based on assumptions

There is an element of magical realism in the way Team Indus came to be. In 2011, three years after Lunar XPRIZE was announced, Narayan found there were no Indian teams participating. He decided to throw his hat into the ring. None of the founding members had relevant experience.

"Well, one of us, Sameer Joshi, was a pilot in the Air Force, but that has nothing to do with the moon," Narayan says. They decided they had a running chance based on certain assumptions and a few back-of-the-envelope calculations.

Some of these assumptions turned out to be wrong. For example, they thought they could save money by having their lander and rover piggyback on another payload on a satellite launch vehicle.

It turned out that theirs would have to be the only payload, with no room for even an extra kilogram.

Still, having a plan helped. When they pitched to Isro's commercial wing Antrix, it took them seriously because Indus had more than just an idea—Narayan had put together a team and could explain how they planned to go from point A to point B.

Having a plan—even though it

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HT.COM ND 21.04.2015 P-6

Breather to deemed universities

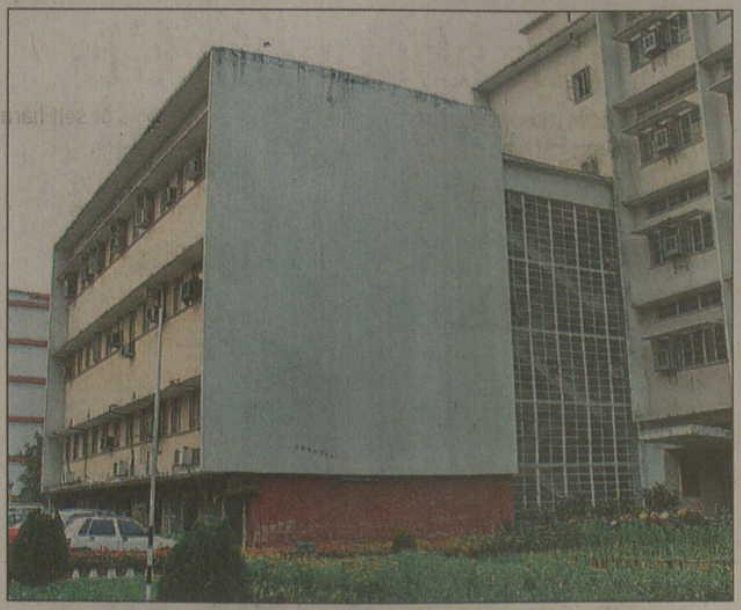
Press Trust of India

Human Resource Development (HRD) Ministry has rejected a University Grants Commission (UGC) report giving clean chit to 34 of 41 deemed universities which were blacklisted by a committee set up in 2009, in a breather to the varsities.The ministry has stated that the report was submitted by UGC without taking cognisance to any criteria and until the statutory rules are framed, no review of the deemed-to-be universities should be carried out.

In an affidavit filed in the Supreme Court, the ministry said that the relevant provisions under the UGC Act, have not been taken into cognisance for inspection and formulation of the reports.

"It it is legally untenable for the Ministry to take an informed decision on the basis of such flimsy reports," the report said.

The Tandon Committee set up in 2009 had blacklisted 44 deemed universities for failing to meet set of standards and parameters for being fit to enjoy the deemed university status.



■ HRD Ministry has given 34 blacklisted universities a clean chit.

The aggrieved varsities had moved the Supreme Court for relief. UGC had subsequently set up a committee to examine the varsities, and 34 of them were given the clean chit.

The ministry said it is in favour of framing statutory rules for criteria for the inspection of universities seeking deemed-to-be status and would need three months of time to do so.

THE SUPREME COURT HAS GIVEN THE HRD MINISTRY THREE MONTHS TO PRESENT A NEW SET OF STATUTARY GUIDELINES

The Supreme Court had earlier also rapped UGC for going into 'slumber' over verifying the infrastructure and faculty strength of deemed universities.

It had ruled out the suggestion of verification through photographs and videography, saying it was not an acceptable mode of determining the credentials.

The Supreme Court has now granted the HRD Ministry three months time to frame and present a new set of statutory rules and guidelines by which Universities can be evaluated henceforth. Till the statutory rules are framed, HRD ministry has said that no review of the universities could be done and that the UGC reports are to be ignored.

A SNAPSHOT OF THE TEAM AND ITS EXTENDED NETWORK

THE FOUNDERS

RAHUL NARAYAN
Team lead, IIT Delhi alumnus. Past assignments with Agnicient Technologies and IdeActive Consulting

INDRANIL CHAKRABORTY
Marketing lead, IIT Kharagpur alumnus. Past assignments with Recrich Consulting, IdeActive Consulting and Cynosure Media Solutions Pvt. Ltd

SAMEER JOSHI
Missions architect. Former Indian Air Force pilot

JULIUS AMRIT
Investment lead

DILIP CHABRIA
Corporate relations lead

BUSINESS ADVISORS

KIRAN KARNIK
Former president, Nasscom and member of the Scientific Advisory Council to the Prime Minister and the Central Employment Guarantee Council

PRACHEESH MATHUR
Former head of Lockheed Martin, India

ARUN SETH
Executive chairman of India operations at Alcatel-Lucent

TECHNICAL ADVISORS

R.V. PERUMAL
Former scientist and director, Liquid Propulsion Systems Center at Isro

P.S. NAIR
Former Isro scientist

N.C. BHAT
Former Isro scientist

R.K. SHARMA
Former Isro scientist, orbital mechanics

INVESTORS

NANDAN NILEKANI
Infosys co-founder and former chairman of Unique Identification Authority of India (UIDAI)

SHARAD SHARMA
Former CEO of Yahoo India R&D

VIVEK RAGHAVAN
Entrepreneur, angel investor, and chief product manager and biometric architect at UIDAI

SUBRATA MITRA
Partner, Accel Partners, India

SHEKHAR KIRANI
Partner, Accel Partners, India

THE FRONTRUNNERS

The race to win the prize is getting hotter. Out of the 33 teams that signed up, 12 have withdrawn, two were acquired by Moon Express and one got merged into Team Space IL. Of the 18 left, these are the four Team Indus must watch out for:

ASTROBOTIC
Base: Pittsburgh, US
Team leader: Dr William Red Whittaker
Formed in: 2008
Their feat: Milestone prizes for lander system, mobility and imaging

HAKUTO
Base: Tokyo, Japan
Team leader: Takeshi Hakamada
Formed in: 2010
Their feat: Milestone prize for mobility

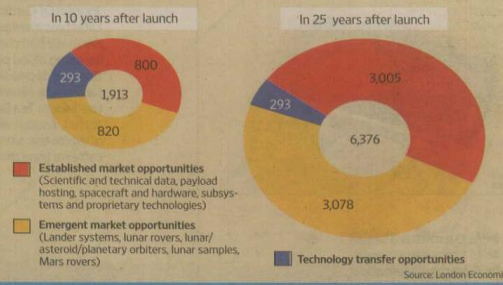
MOON EXPRESS
Base: Silicon Valley, US
Team leader: Bob Richards
Formed in: 2010
Their feat: Milestone prizes for lander system and imaging

PART-TIME SCIENTISTS
Base: Berlin, Germany (team members are spread across the world, and coordinated over the Internet)
Team leader: Robert Bohme
Formed in: 2009
Their feat: Milestone prizes for mobility and imaging

THE MISSION AND THE OPPORTUNITY

Team Indus's mission might seem irrational to some: they will raise about $40 million to take a shot at winning $20 million in prize money. However, in the longer term, they and other contestants could be operating in a lucrative market:

Overall market opportunities (in $ million)



Source: London Economics

CORE PARTNERS

LARSEN AND TOUBRO
Helps in design, manufacturing

TATA COMMUNICATIONS
Provides communication tools

SASKEN COMMUNICATION TECHNOLOGIES
Provides office space

INITIAL CONSTRAINTS
- Very little time, as they entered the competition late
- None of the founding members have a background in aerospace

ACHIEVEMENTS
- Have built a deep network comprising 12 veteran Isro scientists, 40 systems engineers and seven partner organizations
- Only non-American team in the top three
- Lowest cost mission ever at $35-40 million
- Most compact spacecraft. Dimensions: 2.8m diameter, 1.8m height
- Fastest concept to touchdown for the lander system, completed in 100 days

IMPACT
- Catalyse a virtuous knowledge cycle
- Raise aerospace capabilities
- Enable sectoral innovation
- Demonstrate delivery-focused R&D

MOHSIN SHAIKH/MINT

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was based on incomplete information—helped Indus take the first few steps with some degree of confidence that the goal is achievable. In the first year, they met partners, advisors, potential investors and mentors—and refined their plan.

Once external validation came with the Milestone Prize for the landing system, there have been more people wanting to work with them and donate funds. (It's giving finishing touches to a crowd-funding plan now.)

#5. Getting things done for the day

The big picture can be intimidating. When you are aiming for the moon, it's easy to be overwhelmed by the enormity of the goal and the complexity of the tasks.

"The big picture helps in getting the vision right. After that, it's about breaking down the problem into manageable bits, and getting them done," says Narayan.

So, every morning, all team members get together to give and get updates. And then there are more elaborate review meetings that focus on the logic, the impact that previous efforts had, and course corrections.

All this put together gives everyone the big picture, and the fact that they have to give updates and go through reviews keeps them focused on the steps that will lead to the final goal.

#6. Testing constantly

"As engineers, we have to constantly think about what could go wrong and try to fix it before something breaks," says Vinayak Vadlamani, who works with guidance control and navigation.

Former scientists from Isro have extended their help almost from the beginning.

As advisors and consultants, their job is to guide, train, offer solutions and, above all, bring the rigour of doing scientific work.

"At Isro, scientists enjoy a great deal of freedom. And the review process is extremely rigorous," says M. Jayaraman, a propulsion systems expert. "It doesn't matter who you are or what your designation is; your ideas go through a drilling that you might not enjoy, but at the end of the day, you know that it helps you. You know that you can't afford to make even a single mistake."

> What keeps many in the team going is the willingness to reach for what others say is impossible

N. Srinivasa Hegde, another Isro veteran, says, "Here, you will find a few old people like me, and the rest are these boys. They have a lot of passion. And sometimes my job is to slow that down a little."

#7. Doing what is needed

When you are launching a product, you can decide to drop a couple of features to bring it to market a little faster. But you can't afford to do that when launching a spacecraft. You have to do everything it takes, and you have to do it right.

How the team thought about the problem of soft-landing provides an insight into this.

As the spacecraft approaches the surface of the moon, it needs to slow down. Parachutes won't work because the moon doesn't have enough gravitational pull and has a thin atmosphere. It has to be done by changing the engine's thrust. Since Isro hadn't done soft landing, there was no ready idea that Team Indus could borrow. Having multiple engines with varying thrusts would make the spacecraft too complex, heavy and possibly unstable.

One of the ideas the team considered was to just send a projectile that would fly 500m on air capturing images and data. Not an elegant solution, though it would fulfil the Lunar X mission objectives.

Eventually, Jayaraman came up with a solution that was both practical and elegant, and the team is in the process of trying that out.

Julie Woods-Moss says this singularity of purpose—of having a specific goal—can energize people. This is something that big enterprises can learn from Team Indus, she says.

For many in Team Indus, what keeps them going is the willingness to reach for what others say is impossible. Narayan calls this an essentially human impulse. "It's human to try really, really hard. That's exactly what we have done. It has taken more than a village to get us where we are today, and we owe it to them that we finish what we have started."

(The unabridged version of this story appears on www.foundingfuel.com)

N.S. Ramnath is a Bengaluru-based journalist and is working on his first book.

Financial Chronicle ND 21/04/2015 P-10

Nasa offers award for new space protection device

PRESS TRUST OF INDIA

Washington

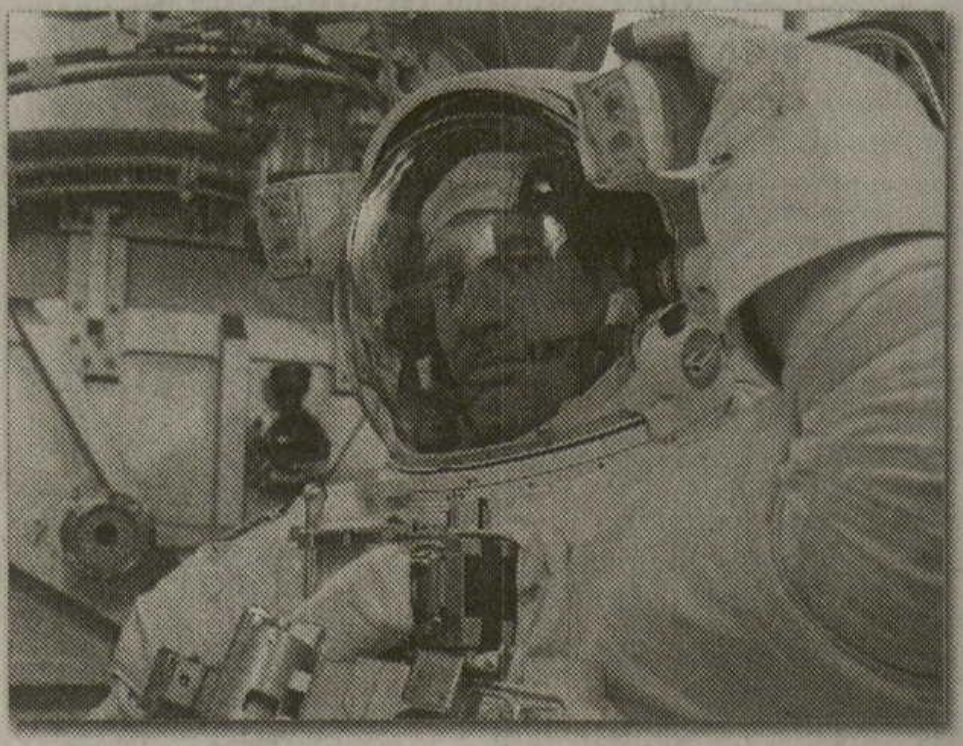
NASA is offering an award of up to $30,000 to space enthusiasts for innovative design ideas to protect crews on long-duration space missions such as the journey to Mars.

Anyone can participate in the challenge, which will be open from April 29 to June 29, 2015, Nasa said.

Galactic cosmic rays (GCRs), high-energy radiation that originates outside the solar system are a major issue facing future space travellers venturing beyond low-Earth orbit.

These charged particles permeate the universe and exposure to them is inevitable during space exploration.

Because missions to Mars will require crews to remain beyond the protection of Earth's magnetic field and atmosphere for approximately 500 days and potentially more than 1,000 days, learning how to protect human explorers from the effect of exposure to GCRs is a high priority.



SPACE SAFETY: Galactic cosmic rays that originate outside the solar system are a major issue facing future space travellers

Nasa has already awarded $12,000 to five winners of a challenge to mitigate radiation exposure on deep space missions.

"We are very impressed with the enthusiasm and sheer number of people from the public who showed interest in solving this very difficult problem for human space exploration," said Steve Rader, Nasa deputy manager of the Center of Excellence for Collaborative Innovation.

Financial Chronicle ND 21/04/2015 P-10

Nasa joins search for extraterrestrial life

PRESS TRUST OF INDIA

Washington

NASA scientists have joined the hunt for extraterrestrial life and will adapt a global climate model to simulate conditions on potentially habitable exoplanets. The effort by Nasa Goddard Institute for Space Studies (GISS) is part of a broader push to identify Earth-like worlds.

Nasa's space-based Kepler telescope has pinpointed more than 1,000 alien planets by observing the brief interruption of starlight that signals a planet passing in front of its parent star.

At least five of these planets are similar in size to Earth and located in the "habitable zone", where liquid water could persist. "We have to start thinking about these things as more than planetary objects," said Anthony Del Genio, a climate modeller who is leading the GISS effort.

"All of a sudden, this has become a topic not just for astronomers, but for planetary scientists and now climate scientists," he said.

Del Genio's group is one of around 16 – ranging from Earth and planetary scientists to solar physicists and astrophysicists – that are participating in Nasa's new Nexus for Exoplanet System Science (NExSS) programme, nature.com reported. "We are bringing together a bunch of different disciplines, and they all look at the formation and functioning of planets in different ways," said Mary Voytek, who directs Nasa's astrobiology programme and organised NExSS.

NExSS will expand the network of researchers collaborating on exoplanets, she said. That should help scientists to make sense of existing data and observations from the James Webb Space Telescope and the Transiting Exoplanet Survey Satellite, which are both scheduled for launch in 2018.

It could also help Nasa develop missions to hunt for exoplanets in the 2020s and beyond. At GISS, Del Genio's team has started repurposing the institution's workhorse Earth-system climate model.

The researchers are trying to locate simple parameters that are fixed for Earth.

A dream come true

FOR AYUSH SHARMA, SON OF A PUBLIC WORKS DEPARTMENT MECHANIC, AN MIT SCHOLARSHIP WORTH RS 1.4 CRORE TELLS A STORY

Whichever way those who can't get in would like to dream around it, the Massachusetts Institute of Technology — *the* destination for aspiring engineers – has decided on a quotient called acumen and chosen Ayush Sharma, from a humble background in Kanpur, to be part of its set-up. His is a family of limited means and he began with the local Kendriya Vidyalaya (a government-run school) on the IIT, Kanpur, campus. While his written English was fairly decent, he had a problem with verbal communication and pronunciation and no idea whatsoever of applying to US schools. When in Class XI, he came across Avanti, a social enterprise run by the IIT alumni, which strives to provide affordable coaching to students. Through efforts and dedication, he was selected for Yale University's prestigious Global Scholars Programme last year.

After completing his tenure at there, Sharma was a lot more focused in terms of a world view, confidence and communication, practically convinced that he wanted to foray into the most prestigious engineering institute of the world. He became well versed with team management, which would help him during his MIT tenure as also in the long run. It was his father who took him to Lucknow for his Test of English as a Foreign Language, and then to Delhi for his Scholastic Aptitude Test.

"I give credit for my success to my parents and students studying in IIT, Kanpur, who helped me in this journey," says Ayush. Through peer learning at Avanti and their support for his application and funding process, his dream to study at the MIT took shape. A dream sustains an urge that results in hard work bearing fruit and Sharma found a platform ready and willing to invest in his talent.

A resident of the Panki area of Kanpur city, his father, Rakesh Sharma, is a mechanic with the Public Works Department and mother Manju Lata Sharma retired as a constable with the Central Reserve Police Force. Like the father says, "We never had to force him to study. I always used to say to him, don't study so much." And his mother said, "We never bothered about his studies, what we always bothered about his health because he would not eat and sleep properly, But I am elated now that he has been selected for MIT."

The scholarship amounts to Rs 1.40 crore over four years and Ayush will leave for the USA September. And for all the talk about the son being father of the man, he is settled in the old ways about being allowed the licence to realise a dream.