A Haven for Product Startups

IIT-Madras has created a niche as a hotbed for product and IP-led innovation with its industry-focus. **J Vignesh** traces the journey of how India's premier engineering institute fostered a thriving startup culture within its campus

Tarun Mehta and Swapnil Jain, classmates from the Indian Institute of Technology-Madras, were barely into their first jobs when they decided to build a new design for lithium ion batteries. Mehta remembered a couple of college seniors starting businesses with the help of IIT-M. They reached out to their professor, R Krishnakumar, for support. This was in late 2012.

Krishnakumar assured them of all possible support and urged them to come back to IIT-M as project associates. Their project transformed into an electric vehicle and their company, Ather Energy, is preparing to roll out its first smart scooter, S340. The company is backed by Hero Motocorp, India's largest two-wheeler firm.

Ather Energy is one of several product and intellectual property-led startups to have emerged of the lush green environs of IIT-M. The premier engineering institute is arguably at the forefront of pushing product innovation in the country. This has been possible not due to any single spectacular effort but because of IIT-M doing several simple things right—creating a thriving alumni network, pushing a faculty-industry connect, providing the necessary infrastructure to let students and alumni experiment with ideas, and importantly, listening to feedback and learning on the move.

Since 2006, 140 startups have been a part of the IIT-M Incubation Cell. Of these, 32 startups have raised a total $108 million from investors, with Ather pocketing a chunk of it. "Success breeds success," said Mehta. "When we started, a couple of our seniors had… (made) successful hardware attempts. The community builds up. They encourage each other."

DOWN MEMORY LANE

The efforts to establish a startup ecosystem within the institute began more than two decades ago, with the Telecommunications and Computer Networking Group (TeNeT) within IIT-M. The group consisted of Professor Ashok Jhunjhunwala, a Padma Shri awardee and until recently an adviser to the government on its electric vehicle programme, and Professor Bhaskar Ramamurthi, now the director of IIT-M.

"Going back, you will see that IIT-M was more industry-facing than any of the other IITs (there are 23)," said Mahesh Panchagnula, associate faculty-in-charge of the IIT-M Incubation Cell. Panchagnula, an alumnus of IIT-M, is a professor of applied mechanics at the institute.

"In some sense, the IIT-M faculty were more grounded in real-life problems. A big push in this direction came because of a small group of people in the wireless technology group… Prof. Ashok Jhunjhunwala and Prof. Bhaskar Ramamurthi, the whole idea of doing startups, we must say, is because of them." TeNeT, even two decades ago, championed startups. The faculty raised money from companies that could potentially be users of products developed by startups emerging from TeNeT, and went about seeding those startups. "There was no ecosystem," said Ramamurthi. "Basically, some of us felt that to create products we needed to work with companies. We raised money from industry that would be beneficiaries of those products… this went partly to the project and partly to IIT-M. Slowly, with angel funding coming in, we could get money to some of the startups."

If one part of the effort was to encourage students, the other crucial aspect was to push faculty to interact more with industry and understand the challenges they faced. "When faculty members work with the industry, they get an idea as to what kind of problems the industry has, the kind of products that need to be built, and the things that need to be done," said Jhunjhunwala. "What happens is that gradually, as the faculty do this, they start incorporating this in their undergraduate teaching."

GLOBAL MODELLING

A major step in bringing faculty and industry together was the establishment of the IIT-M Research Park, an independent company promoted by IIT-M and its alumni, in 2010. The park, situated behind the institute, facilitates the promotion of research and development by the institute in partnership with industry. It was modeled on the lines of research parks at Stanford University, Massachusetts Institute of Technology, and Harvard University. The IIT-M Research Park now also houses the IIT-M Incubation Cell, which was established in 2013.

"We got support from the government (to set up an incubator). First, for rural-tech (Rural Technology and Business Incubator, or RTBI, started in 2006). It was first in the country and very successful," said Ramamurthi.

RTBI's mission was to incubate startups with a focus on leveraging information and communication technologies. It now functions under the IIT-M Incubation Cell, which is the umbrella organisation for the other two sector-specific incubators at the institute as well—one focused on bio-tech and the other on medical technology.

For undergraduate students of IIT-M, there's a pre-incubator of sorts, called Nirmaan. Students get small grants to test their ideas while still studying. The successful ones go on to fight for a place at the IIT-M Incubator Cell. "(At) Nirmaan, presently, we have 27 teams masquerading as companies. They will look like a company. We want them to behave as a company. When they come for funding, we treat them as a company," said Panchagnula. "There are no risks attached. Whatever money is given to them, it is like a project. For example, we have a group of students trying shared cycles, geared for the academic campus market. They had to buy cycles… now, they have 1,400 rides on 30 bicycles, with 500 registered users in a week."

In all this rush, the constant was the unwavering support of the alumni. From making industry connects to pooling in resources, the alumni have gone the extra mile. "We had a group of alumni thinking 'how do we make a startup ecosystem happen at IIT-M.' People like Anand Rajaraman of Junglee, Kris Gopalakrishnan, Desh Deshpande and many others… they brought their networks and also seed capital," said Panchagnula. "They helped us form some of these structures to invest in startups, through grants and loans. It is one thing to have a good group of people inside IIT-M to drive this—we always had that—but to scale up, we require this network."

The Gopalakrishnan Deshpande Center for Innovation and Entrepreneurship was launched at IIT-M in January with half a million dollars each from Jaishree Deshpande and Gururaj Deshpande of the Deshpande Foundation and former Infosys CEO S. Gopalakrishnan. They will fund $5 million over five years.

RAJINI IN INCUBATION CELL

A serious incubation cell is hardly the place for a Rajinikant-inspired room, but there it is. It has mug shots of the superstar in various filmy avatars adorning its walls. An auto-rickshaw juts out from a wall—a motif borrowed from Rajini's 1995 hit movie Baasha. It is a meeting room of sorts. A chill place on a floor where every other room is taken by startups solving industry problems. The Rajini room is vibrant, just like the palpable energy on the floor. The startups on the floor are tackling various issues—cargo transportation, underwater robotics, oil and gas inspection, among those. The incubation cell handholds entrepreneurs right from setting up companies to finding connects. "The incubation cell helps in accounting and legal, apart from providing a shared working space and other paraphernalia. The incubated companies do not need to worry about anything. They get some funding and depending on their progress, can ask for more. It comes as equity," said Gopal S, a former managing director at chemicals company Chemplast Sanmar who is now a mentor at the incubation cell.

Visakh Sasikumar, CEO of Pi Beam, which makes pedal-assisted three-wheelers to transfer cargo, is a beneficiary of this ecosystem. "When we built our first prototype, we didn't (have to buy) any materials—solar panels, batteries, cycle rickshaw, all these were sponsored by the IIT-M ecosystem. There are people who help in handholding. We didn't even know that we had to do a sales tax return," he said. Sasikumar, who is pursuing an MS in Entrepreneurship from IIT-M, also thinks the mentor clinics provided by the cell are crucial in helping entrepreneurs find answers to hard problems.

"Mentoring clinics happen every Friday. (Entrepreneurs) can ask for three mentors, whoever is available. There are also journey mentors, who stay with a company for its whole journey," said Gopal S. He is a journey mentor for IIT-M Incubation Cell companies DeTect Technologies, which focuses on the oil and gas sector, and underwater robotics firm Planys Technologies.

"The ecosystem supports you in such a way that you can start right out of your lab. You can use best-in-class facilities to build and test your product. IIT-M helps take the product to the industry, which takes you a mile ahead," said Tarun Kumar Mishra, cofounder of DeTect, which counts RIL and Bharat Petroleum among clients.

The mentors usually focus on factors other technical advice. The idea is to make the incubatees entrepreneurs and not just inventors. "We work to guide them on the non-technical part—things like hiring, pricing. I come here one Friday every month," said Venkat Viswanathan, IIT-M alumnus and chairman at data analytics firm LatentView.

Overtime, the incubation cell has also built relationships with mentors outside the IIT-M network and has been successful in getting funding from companies for its startup funding pool. "Many of our alumni, both in the US and India, they created this fund. We used to call it innovation fund… it has become a fairly large corpus," said Tamaswati Ghosh, CEO of IIT-Madras Incubation Cell, declining to disclose the size of the corpus. "We have alumni donation, grants from government. Corporate Social Responsibility has become a big contributor in recent years—Titan, Goldman Sachs, American Express and others help us."

THE PATH FORWARD

Panchagnula is not content yet. "We are not successful by global standards yet. We have some way to go," he said. "But IIT-M is the number one-ranked institution for engineering. We also have the number one academic incubator. It is a rare combination, even globally."

In India, several other IITs as well as BITS-Pilani are gaining ground as ecosystems for product startups. Panchagnula's idea for the path forward is simple: open the doors to more people not from the IITs to bring diversity, and target emerging sectors. "We are at the leading-edge of a hockey stick," said Panchagnula.

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SUCCESS STORIES

• FOUNDERS

Ather Energy
• Tarun Mehta (2012 batch)
• Swapnil Jain (2012 batch)

What it does?: Building India's first Smart Electric scooter, the S340.

Funding: Hero Motocorp, Tiger Global, Sachin Bansal, Binny Bansal

Uniphore Software
• Umesh Sachdev
• Ravi Saraogi

What it does?: Speech based mobility solutions for enterprises.

Funding: IDG Ventures, Indian Angel Network and others

Planys Technologies
• Tanuj Jhunjhunwala (2014 batch),
• Vineet Upadhay (2014 batch),
• Prof. Prabhu Rajagopal (Faculty, IIT-M),
• Prof. Krishnan Balasubramanian (Faculty, IIT-M)

What it does?: Designs and manufactures compact underwater vehicles for immersed structure inspection and environmental survey.

Funding: Keiretsu Forum

DeTect Technologies
• Prof Krishnan Balasubramanian (Faculty, IIT-M),
• Tarun Kumar Mishra (2013 batch),
• Karthik R (2015 batch),
• Daniel Raj David (2017 batch)
• Harikrishnan AS (2017 batch)

What it does?: A solution for the inspection needs of energy sector focusing mainly on the pipeline integrity management.

Funding: Keiretsu Forum, Axilor Ventures and others

IIT-Madras in numbers

Number of startups that have come out of IIT-Madras incubation cell **140**

The overall funding raised- 32 startups have raised a total investment of

$108 MILLION from angel/VC investments

A TIMELINE

• **IIT-M Rural Technology Business Incubator** – October 2006
• **IIT-M Incubation Cell** – December 2013
• **IIT-M Bio- Incubator** – December 2014
• **IIT-M HTIC-Med Tech Incubator** – August 2017

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MAHESH PANCHAGNULA, Associate faculty-in-charge, IIT-M Incubation Cell

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Success breeds success. When we started, a couple of our seniors had… (made) successful hardware attempts (through IIT-M). The community builds up.

TARUN MEHTA, CEO, Ather Energy

ET Q&A

ASHOK JHUNJHUNWALA,
Co-chairman, IIT-M Incubation Cell

We were the first to break the industry-academia barrier

Ashok Jhunjhunwala was among a few academicians responsible for the establishment of the Telecommunications and Computer Networks, or TeNeT, group—the predecessor to the IIT-M Incubation Cell. The incubator owes its success in churning out product and IP-led startups to the institute's early focus on connecting with industry, he said in an interview with J Vignesh. Excerpts:

What makes IIT-Madras tick as a startup incubation giant?
We are focussed on a tech incubator that will make a difference to the country and not just business. We have worked on it for long. The research park came even before the incubator. The whole idea of the research park was industry-academia interaction and to get faculty members to work with industry. When faculty members work with the industry, they get an idea as to what kind of problems the industry has, the kind of products that need to be built, and the things that need to be done. What happens is that gradually, as the faculty do this, they start incorporating this in their undergraduate teaching. Now, the overall climate is in favour of startups and (students and alumni) start looking at what can be done. Can they come up with a solution? If they come up with a bright solution, they go back to the professors and say can we try this, and the professors encourage them. This has become the process.

Take us through TeNeT.
TeNeT started 25-30 years ago. We incubated even before IIT-M formed an incubation cell. We must have incubated some 25-30 companies. They were all tech companies. Now, it is no longer limited to us. Now, there are multiple faculty members looking at industry problems. The research park has brought them closer to industry. That is what is imbibed by the students. Research scholars, PhD students, they are all starting to come up with ideas. This was unheard of.

The major difference is that a few of us started working with industries. I think we were the first to break that barrier. As people saw us involving with tech problems, more people got interested.

What do you aim to achieve with the incubator?
We are aiming for two things. We want to make these (incubatee) companies commercially successful and capable of making a difference in industry. Second, we are looking at the social problems before India—energy, water, pollution. There are domain things we drive. We will get more and more into different things. We want to use tech to solve problems. It is a decentralised approach. If a faculty wants to focus on biomed and set up an incubator, they are welcome. One incubator I have in mind is for fossil-free future technologies.

New Uber Chief Executive Keeps Finding Horrors at Every Turn

The appointment of Dara Khosrowshahi (in picture) as head of Uber Technologies this summer was supposed to mark the beginning of a new chapter. The company had been racing from one disaster to the next, leading to boycotts, lawsuits, criminal probes, an executive exodus and an investor-led mutiny against the cofounder.

Somehow, the new chief executive officer keeps finding more horrors at every turn. The latest is a cyberattack Uber had been concealing since last year that exposed personal data on 57 million customers and drivers globally. The company, which said it had paid hackers $100,000 to delete the data and keep quiet, disclosed the incident in a statement to Bloomberg on Tuesday, following an investigation commissioned by the board. The chief security officer and one of his deputies were ousted for their actions following the hack.

Khosrowshahi's role so far looks less like a chief apology artist and more like chief apology officer on behalf of his predecessor, Travis Kalanick. Since he took over, London moved toward outlawing the service, citing "a lack of corporate responsibility." Uber is appealing. ("I apologise for the mistakes we've made," Khosrowshahi said in response.) He then traveled to Brasilia to meet with officials there and ward off restrictions on Uber's business. ("In the past, we were a bit aggressive," he told a Brazilian newspaper.) And now the mishandled data breach. ("We will learn from our mistakes.")

The hacking fallout has already begun. Within hours of the disclosure, a customer filed a lawsuit seeking class-action status, and New York Attorney General Eric Schneiderman launched an investigation. More states and the Federal Trade Commission, which had settled with Uber over another privacy matter in August, will probably pile on, said Jeremiah Grossman, chief of security strategy at SentinelOne, which aids companies with cyber-defence. "I'm sure they'll get another call from the FTC," he said. Gadfly says Kalanick needs to come forward on Uber's breach. The ghosts of Kalanick's past will scare up more problems. The hack introduces an unexpected factor in negotiations between SoftBank Group Corp. and Uber shareholders over a planned investment of as much as $10 billion, a deal Khosrowshahi has been championing. It may weigh on the company's valuation, now at about $70 billion, ahead of an initial public offering expected in 2019. And the theft of customer data offers one more reason for people to switch to Lyft Inc., which was quickly gaining market share in the U.S. before expanding to Canada this month, or another local ride-hailing app.

The breach at Uber, while significant, is smaller than recent incidents at Yahoo or Equifax Inc., but the decision to keep it a secret for a year was particularly concerning. Cybersecurity experts said Uber's payment to the two hackers in exchange for their discretion and assurances that they delete the data was very unusual. "I was shocked," said Kowsik Guruswamy, chief technology officer at Menlo Security. "Companies need to own up." Experts also questioned whether Uber was able to verify the information was truly out of the attackers' hands.

— Bloomberg

While I can't erase the past, I can commit on behalf of every Uber employee that we will learn from our mistakes

Dara Khosrowshahi, CEO, Uber, in an email statement

Deal Digest

Secondaries have come to the fore in the current week with both transactions and new investment vehicles in the limelight. The big news, first reported by ET, is Tiger Global Management's decision to pare its stake in two of its biggest portfolio companies in India - Flipkart and Ola - to Japan's SoftBank. Additionally, Epiq Capital, the new technology-focused investment fund set up by former Matrix Partners India co-head Rishi Navani, is also likely to make a series of secondary bets. The development is positive for the country's startup ecosystem, where investors who have pumped in billions are now looking for liquidity.

Epiq Capital, set up by former Matrix Partners India managing director Rishi Navani, is set to make a first close on its maiden fund targeting $200-250 million which will focus on investments in technology and technology-enabled companies. The fund is making a first close of up to $100 million, raising capital from offshore investors.

KKR-led pan-Asian investment company Emerald Media has invested in Southeast Asian ecommerce enabler and e-distributor aCommerce. Emerald, which has a $300 million corpus from KKR to invest in fast-growing media, entertainment, consumer tech and B2B industries across Asia, is the lead investor in the $65 million Series B funding round of aCommerce. Other participants in the round include existing backers Blue Sky, MDI Ventures and DKSH, with North Ridge Partners advising.

Tiger Global is set to cash in $1 billion from its early bets on Ola and Flipkart by selling part of its stake to SoftBank. The sales will take the total realisation for Tiger, which has invested $2 billion in India, to nearly $1.5 billion.

SoftBank and Alibaba-backed Paytm has invested an undisclosed amount in Mumbai-based lending startup CreditMate. As a part of the deal, Paytm will leverage CreditMate's proprietary credit and asset valuation technology and loan management system.

US-based Ebix Inc has picked up a 50% stake in information technology-enabled services provider Vara United, in a deal that values the Kolkata-based company at Rs 306 crore ($46 million). The deal will see it push further into the country's financial and insurance sectors.

Home healthcare service provider Portea Medical has raised $26 million in Series C funding led by new investors Sabre Partners and MEMG CDC. Portea's existing investors Accel Partners, IFC and Qualcomm Ventures also participated. Portea has raised this capital in a down round, valuing the firm at a discount of 22% to its previous valuation of Rs 628 crore, according to RoC documents accessed from research platform Tofler.