Technology, Innovation and Entrepreneurship

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India Imports most of products it consumes

• Especially technology-based products
  • Most manufacturing Industries Capital goods imported
    • driving up its Import bill
    • Telecom & Electronics Product import was second only to oil (with oil at $100 per barrel)

• Large Industries are not always the best technology Innovators
  • They are good at scaling products developed by start-ups

• Start-ups with R&D linkages to Universities often creates most Innovative Technologies and Products
  • fills the gap in the technology-transfer chain, in areas where conventional companies are more cautious in view of novelty of field or risks involved on return of investment
  • plays a vital role, not only as drivers of innovative solutions to societal challenges, but also as job creators and economic stimulators
Start-ups can drive Economic Progress: towards 2500 Successful high-growth Ventures

• First Generation Entrepreneurs enable large “Job Creation”
  • Infosys, Sun Pharma, Mindtree, IndiaBulls, Edelweiss, Naukri, Makemytrip..

• Start-ups in India often leads in Technological Change & Innovation resulting in Enhanced Productivity
  • Young India takes pride in being an entrepreneur & being called co-founders; are now open to share the gains with employees and investors; ready to exit for a handsome return
  • JustDial, Flipkart, Midas, Tejas, Inmobi, Vortex, Bharat Matrimony, Shaadi, SnapDeal, Redbus, Bookmyshow, Zomato, Olacabs, MuSigma, Quikr…

• Entrepreneurship has potential to create a large no of successful high growth ventures
  • Could aim for 2500 ventures creating 25 million direct and indirect jobs over next decade
Over the last decade, a start made

- emergence of first generation entrepreneurs, increasing availability of capital, and strengthening of the ecosystem.
- DST has helped set up 75 university (largely) based incubators providing ₹2.5C avg to each (10 not functional)
  - Another 15 to be started this year including one at BSE already supporting 46 companies
    - Some state Governments including Maharashtra, AP, UP, Telengana, Gujarat, Rajasthan and Kerala have made significant co-investment
      - Start-up Village at Kochi is an example
  - 2600 companies incubated; incubation space of 6 lakh sqft created
  - ₹50C seed capital to 30 incubators investment from TDB and DST
Incubation Grows Up

- BIRAC (DBT) supported 13 incubators and invested ₹100C
  - Number of companies incubated by all - 49 resident & 12 virtual incubates

- BIRAC Support for Tech development and Commercialisation
  - BIG start-up grantees (₹50 lakhs each) : 120
    - 17 Products and 11 technologies developed and commercialized
  - BIPP & SIBRI Schemes: 240 companies for Discovery, POC, Early and Late stage and Validation
    - Mentoring to ~360 projects; IP Generated – 24

- 40 accelerators by private sector: Coca Cola, Reliance, Microsoft and Oracle
  - Boeing and Alstom with DST help
Incubation Support besides space: e.g. IITM

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<th>BRANDING</th>
<th>BUSINESS SUPPORT SERVICES</th>
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<tr>
<td>1</td>
<td>‘IIT Madras Incubated Company’</td>
<td>Accounting, tax, Company Secretary and Legal, IP</td>
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<th>MENTORING</th>
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<td>Collaborate with IITMEF (initiative by IITM alumni body) - monthly meets and assigned mentors</td>
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<td>Entrepreneur-in-Residence: interact one-on-one with accomplished entrepreneurs, industrialists</td>
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<th>SEED FUNDING</th>
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<td>IITM Startup Fund, a corpus fund with contributions from industry (CSR) and alumni donations</td>
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<td>Government seed support: MSME grant</td>
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<td>70+ ventures engage actively with each other to leverage collective knowledge and networks</td>
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<td>Networking and events such as monthly entrepreneur meetings</td>
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<td>Introduction to Angel investors/VCs/financial institutions; IITM visitors (industry, alumni)</td>
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<td>Permission to use laboratories, workshop facilities and equipment at IITM</td>
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<td>Facilitating hiring of student interns from IITM</td>
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<td>Entrepreneurship week (Eweek) at IITM – an annual event held on campus</td>
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<td>Training - leveraging resources of IITM alumni network and ecosystem partner, TiE Chennai</td>
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Key Challenges

• Angel funding between seed funding (₹5 to 25 lakhs) and early-stage funding (₹2.5C+) still weak

• Understanding start-up failures
  • Failures are black-mark in our culture
  • Whereas a successful venture follows multiple failed ones
  • In India no easy mechanism of Closing a failed venture

• Hassles from PF, ESI, Service Tax, VAT, Excise Duty Inspectors
  • Revisit current revenue limits

Domain: Cloud based Integrated Livestock Management

About the Company:
• Dairy technology solutions company, building automation tools integrated with cloud, mobility, and data analytics
• Dairy farm optimization and monitoring services with special focus on small and medium herd size farms
• Funded by Omnivore Capital – a fund anchored by Godrej Agrovet Limited

Domain: Agricultural Equipments for small farms

About the Company:
• Develop smart mechanization interventions for Agriculture (Rice transplanter, Sugarcane Harvester) for Farms less than 5 Acres
• Women Entrepreneur Quest 2013, TiE Bangalore Anthan Prerana 2013, First Prize in Krishi Mela – JSS Krishi Vigyan Kendra 2014
What we need

• Encourage Indian HNI investment in Angel funds
  • Need tax incentives

• ₹10,000C entrepreneurship to accelerate start-ups
  • 10% could be provided to successful university incubators for angel investment between ₹0.25C to ₹1C
  • Decentralised decision making with periodic monitoring

• 25% to TDB and BIRAC for co-investment with Angel funds

Domain: Micro and Medium grade Spinning Machinery Products
Founder: Kannan L (CEO)

• Creation of machinery to simplify / downscale spinning operations
• Runs small-sized units that integrate all the processes in the textile value chain — at different locations (Each of these village-based units engages 100 producer-households)

Designing and developing solar power assisted rickshaw: a convertible three-wheeled hybrid vehicle with three drive modes: electric, solar and pedal
Develop and Scale-up debt-offering

• Small-B Branch initiative of 2012 must be multiplied many-fold
  • Funding start-ups is a specialized skill
    • Multiply current network of Small-B independent branches

• Collateral Free Loans for SME – CGMSE Loans of Rs.1 crore
  • Stop taking personal guarantee of promoters when it is by definition collateral free with no 3rd party guarantees
  • Push banking network to release such loans

• Develop lending options for innovative start-ups
  • Bridge funding / Working capital loans
  • Auto payment to MSMEs from Large customers within stipulated 45 days
To Conclude

• India Technology Innovations and Startups to address our big problems
  • Can develop technology and build businesses to
    • Ensure that every family has an affordable home to live in: 50% power from solar by 2030
    • Ensure that every home in India gets some 24x7 power even in worst power situation
    • Ensure that every person gets clean water that they need
    • Ensure that we are able to effectively dispose and recycle all the wastes that we generate
    • Can we have 50% of our vehicles as electric vehicle by 2030? And so on...

Airwood Aerostructures

Design and manufacture **unmanned aerial vehicles** (UAVs). Produce high performance designs and services solutions in Agri and aerial imaging applications