Building a strong Entrepreneurship & Innovation Ecosystem in Universities & Colleges

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Contents

• Importance of ED & I, MSMEs
• ED&I Status & Global Experience
• ED&I Mission for Institutions
• ED&I processes for Institutions
• Measuring Progress
Important of Entrepreneurship & Innovation

- Successful entrepreneurs innovate, bring new products and concepts to the market, improve market efficiency, build wealth, create jobs, and enhance economic growth.

- Just as boosting entrepreneurship can lead to growth and job creation, failing to promote entrepreneurship can lead to stagnation, and social and economic inertia.
Importance of Entrepreneurship & Innovation

• Joseph Schumpeter, one of the greatest economists of all time, put innovation at the heart of economic theory and capitalism.

• Theory of “creative destruction” first highlighted the importance of innovators.

• New firms unleash creative destruction & shift surpluses from rent-seeking large producers to consumers and broader society.
Importance of MSMEs & Startups

• Young firms with innovative technology have the highest potential capacity to generate a large number of jobs.

• In the EU, 60% of jobs are accounted for by SMEs.

• In Germany, 80% of jobs come from SMEs.

• In Korea, 90% of jobs are generated by SMEs.
Importance of MSMEs & Startups

• In India, the SME sector employs only 40% of the workforce, and is plagued by low productivity. This segment needs a boost.

• By 2020, 63% of India’s population will be of working age. India’s working-age population will grow by 69 million between 2012 and 2022.

• Only 0.09 companies were registered for every 1,000 working age person (among the lowest rates of G20 countries in 2011). GEM report found that new business ownership rate for India in 2013 was the same as in 2008.
Entrepreneurship Growth curve

Figure 2.1: The S-Curve of Entrepreneurship

Source: Global Entrepreneurship Index 2016
Global Entrepreneurship Index
Entrepreneurship as a Competency set

● Entrepreneurship as “the dynamic, interaction between entrepreneurial attitudes, Entrepreneurial abilities, and entrepreneurial aspirations by individuals, which drives the allocation of resources through the creation and operation of new ventures.”

● In short, entrepreneurship is a competency & can be taught!
Figure 4.1: GEI Model of Entrepreneurial Ecosystems

Source: Global Entrepreneurship Index 2016
### Table 1: Entrepreneurial Attitude 2013, Percentage of Adult Population (18–64 years)

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>BRIC</th>
<th>Factor Driven</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurship as a Desirable Career Choice</td>
<td>61</td>
<td>70</td>
<td>77</td>
</tr>
<tr>
<td>Entrepreneurship is Given High Status</td>
<td>70</td>
<td>74</td>
<td>80</td>
</tr>
<tr>
<td>Media Attention for Entrepreneurship</td>
<td>61</td>
<td>66</td>
<td>70</td>
</tr>
</tbody>
</table>

Source: Global Entrepreneurship Monitor 2013 : India Report
The Indian Ecosystem

Source: Global Entrepreneurship Index 2016
### The Indian Ecosystem

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Score</th>
<th>Percentage for a 10 point improvement in GEI score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Absorption</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>Opportunity Startup</td>
<td>0.10</td>
<td>22%</td>
</tr>
<tr>
<td>Networking</td>
<td>0.14</td>
<td>18%</td>
</tr>
<tr>
<td>High Growth</td>
<td>0.14</td>
<td>14%</td>
</tr>
<tr>
<td>Internationalization</td>
<td>0.15</td>
<td>14%</td>
</tr>
<tr>
<td>Risk Capital</td>
<td>0.18</td>
<td>13%</td>
</tr>
<tr>
<td>Startup Skills</td>
<td>0.21</td>
<td>10%</td>
</tr>
<tr>
<td>Risk Acceptance</td>
<td>0.25</td>
<td>6%</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.26</td>
<td>3%</td>
</tr>
<tr>
<td>Cultural Support</td>
<td>0.28</td>
<td>2%</td>
</tr>
<tr>
<td>Opportunity Perception</td>
<td>0.36</td>
<td>0%</td>
</tr>
<tr>
<td>Product Innovation</td>
<td>0.51</td>
<td>0%</td>
</tr>
<tr>
<td>Process Innovation</td>
<td>0.62</td>
<td>0%</td>
</tr>
<tr>
<td>Competition</td>
<td>0.76</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Global Entrepreneurship Index 2016
Global Innovation Index 2015
India's ranking in GII

• India still comes 1st in the region, although it is now 8th among lower middle-income countries (7th in 2014) and has dropped five positions in the overall GII since 2014.

• India’s strengths lie in the subpillars Knowledge diffusion (34th), R&D (44th), General infrastructure (43rd), and Investment (42nd).
India's ranking in GII

- Still, its position remains weaker in Institutions (104th) and Infrastructure (87th), with rankings deteriorating in Human capital and research (103rd), Market sophistication (72nd), Business sophistication (116th), and creative outputs (95th) (falling from 96th, 50th, 93rd, and 82nd in 2014, respectively).
Figure 3: GII scores and GDP per capita in PPP$ (bubbles sized by population)
Institutions matter!

• Among the top, quality matters. Among high-income countries, a major divider can be found in the quality of innovation.

• This is the area in which the USA and the United Kingdom (UK), largely as a result of their world-class universities, stay ahead of the pack.
Innovation Quality

- But innovation is not only about volume: Quality counts, too. In terms of innovation quality—as measured by **university performance, the reach of scholarly articles, and the international dimension of patent applications**—the USA holds the top place within the high-income group, followed by the UK, Japan, Germany, and Switzerland.

- Top scoring middle-income economies are narrowing the gap on innovation quality: China leads this group, followed by Brazil and India, fuelled by an improvement in the quality of higher-education institutions.
What can Colleges do?
Current status

• Colleges reflect cultural mindset of poor risk taking in society. Most colleges indifferent to ED & I

• Many colleges conduct EACs once in a while few colleges have EDCs & BIs

• ED&I activities are fund & donor driven and not vision driven
Today ...
Figure 8: Attitude toward Entrepreneurship in India, 2013, Percentage of Entrepreneurs and Non-entrepreneurs

- Media Attention: 55% Entrepreneurs, 85% Non-entrepreneurs
- High Status: 67% Entrepreneurs, 84% Non-entrepreneurs
- Career Choice: 56% Entrepreneurs, 82% Non-entrepreneurs

Read as: 82% of entrepreneurs consider entrepreneurship as a desirable career choice, while 56% of non-entrepreneurs consider entrepreneurship as a desirable career choice.

Source: Global Entrepreneurship Monitor 2013: India Report
Tomorrow ….

ENTERPRISES LAUNCHED
Life Sciences – 5,
Manufacturing – 10
Services – 25
IT & IteS – 10
(Students – 10, Alumni - 40)
EDI Vision & Mission

• Creation of an aspirational entrepreneurship culture ie., opportunity driven entrepreneurship as opposed to necessity driven!

• Enhancement of the support ecosystem for entrepreneurs

• Rapid and inclusive growth of MSME / Startup enterprises and innovation
Institutional Vision

- **Aspirational entrepreneurship culture** built up within college by 2017: Management, alumni/students & faculty
- **College as a Collaboration hub**: between faculties, alumni, local industry, banks, etc.
- Supportive ecosystem established in stages within college by 2017
- **An interim goal**: 10 Alumni or students passing out launch own enterprises from 2018 ….
From Targets to Processes...

Colleges must plan and implement these three interlinked processes:

- Ecosystem Enhancement Process
- E & I Competency Development Process
- Innovation Promotion Process
Ecosystem Enhancement Process
Entrepreneurial University/College

Component 1
Inclusive grassroots community of E&I engagement across university populations and regional community

Component 2
Strength in industry-funded research and licensing of university-owned technology

Component 3
University E&I agenda reflected in its policies, mission, budget allocations, incentives and curriculum

Source: MIT-SkolTech: Creating university-based entrepreneurial ecosystems
Hallmarks of a E&I led University

• **University senior management:** Strong university leadership, actively promoting a clear and prominent E&I agenda that is heard and understood by staff, students and the regional community. Priority is given to establishing a market for the university’s innovative output, developing an approach that is responsive to regional constraints and opportunities.

• **University departments:** An academic culture that acknowledges, supports and rewards E&I within a cross-disciplinary context, helping to nurture influential discipline-based role-models, curricular and co-curricular activities, and champions for institutional change.

Source: MIT-SkolTech: Creating university-based entrepreneurial ecosystems
Hallmarks of a E&I led University

- **University-led E&I activity**: Distributed responsibility for E&I delivery across multiple university agencies, with a range of support services and participation routes for both students and staff throughout each stage of their personal entrepreneurial growth.

- **Student-led E&I activity**: An empowered, cohesive, inventive, bold and well-connected student led entrepreneurial community, benefitting from sustained low-level funding, seasoned entrepreneurial mentors and direct connections to university senior management.

Source: MIT-SkolTech: Creating university-based entrepreneurial ecosystems
Hallmarks of a E&I led University

- **External E&I community**: Robust relationships built on trust and mutual benefit between the university and the regional/national E&I community, with a platform for these individuals to play a visible and influential role in university life.

Source: MIT-SkolTech: Creating university-based entrepreneurial ecosystems
Ecosystem Enhancement Process

- Preparation of ED & I Mission :: Buy-in from management & all faculties for long term ED&I processes, space allocation for activities
- Formation & goal setting by College ED&I Council from successful entrepreneurs & alumni, local bankers (not to merge with Placement cell)
- Faculty training on E&I facilitation across faculties to enable across the board involvement
- Strong connection with local entrepreneur ecosystem: TRUST & PERFORMANCE
E&I Competency Development Process
Entrepreneur Competencies

- McClelland and McBer (1985)
- 1. Initiative
- 2. Sees and acts on opportunities:
- 3. Persistence
- 4. Information Seeking
- 5. Concern for High Quality of Work
- 6. Commitment to Work Contract
- 7. Efficiency Orientation
Entrepreneur Competencies

- 9. Problem Solving
- 10. Self-Confidence
- 11. Assertiveness
- 12. Persuasion
- 13. Use of Influence Strategies
Entrepreneur Competency Development Process

Step – 1
Awareness & Competency Building, Interaction

Step – 2
Opportunity Identification & Business Exposure

Step – 3
Product Development, Business Plan Preparation & Financing
ECDP : Year 1

- Process to commence in 1st year for students of all faculties & alumni (final year is too late)
- Entrepreneurship Awareness Workshops for covering willing students of all faculties & alumni.
- EC Evaluation & competency enhancement programs
- Successful entrepreneur Interaction Programs
- E-Club membership (only on willingness basis)
ECDP : Year 2 / Prefinal year

- Business Opportunities Workshops
- Visit to Successful enterprises
- Business case challenge competitions
- Run-your-company programs
- Business idea competitions
ECDP: Final year

- Prototyping & Test marketing
- Product marketing plan
- Business Plan preparation (alumni/other entrep. /Students)
- Financing workshops & tieups
- Business launch
Innovation Promotion Process
Innovation Climate

• Student & Faculty E & I Policy
  - Students get credits for E&I activity
  - IP creation & commercialisation given priority in Faculty Performance Appraisals
  - Faculty permitted to co-launch technology startups with students
  - Faculty & student enterprise sabbaticals permitted

• IP Policy
  - IP value sharing policy (institution, industry, faculty, student)
Innovation Infrastructure

- Outstanding research faculty with intl experience
- Strong research labs and programs
- Industry partnership
- Technology Incubators
- Collaboration with external technology Innovators
- Seed & Angel funding tie ups
- IP advisors
Innovation Funding

- Consultancy assignments from Industry
- CSR grants from Large companies
- Startup Action Plan 2016
- Atal Innovation Mission (NITI Aayog)
- BIRAC / NSTEDB / DEITY Programs
- GITA (joint projects with MSMEs)
- MSMED (GOI) Programs
- State Innovation Fund
Innovation Processes

- **Stage-1**: Management Buy-in & ED&IC formed, Willing faculty trained
- **Stage-2**: ECD Processes Launched, Industry & banks roped in
- **Stage-3**: Businesses Launched, Incubator established
- **Stage-4**: Technology Development, Prototyping, Tech startups
Tech Startups : Desired outcome!!

Vignesh Janakiraman
Director at Plasmatech Solutions Pvt Ltd
C/o VIT Incubator
Efficient recovery of valuable proteins from human plasma
IP developed @ VIT
PhD @ Université de Bordeaux
Measuring Progress
Output Indicators

- Technology transfer office throughput:
  - Number of disclosures and patents
  - Number of start-ups/spin-offs
  - Number of licences or licensing success rates
  - Number of licences bearing royalties
  - Income generated from licences
Output Indicators

• Creation of sustainable companies
  – Company survival rate
  – Numbers of companies with more than 20 employees
  – Total money raised from external investors
  – Total sales in the marketplace resulting from IP
  – Total financial value of the companies created
Output Indicators

• Impact of university graduates:
  – Percentage of alumni remaining in or returning to ecosystem
  – Percentage of graduates working in technology-related businesses
  – Percentage of alumni (aged 30-40) engaged in starting new companies or engaged in innovation (self-reported)
  – Wealth created by companies founded by university graduates
Output Indicators

• Broader development of the ecosystem and beyond:
  – Whether people (companies, entrepreneurs, investors, professional service providers) are moving into the region for opportunities
  – Growth rate of all startups and hitech cos in the region
  – The extent to which university PhD students are employed
  – Total employment generated by the ecosystem
  – Whether the university attracts ambitious students and faculty
Thank You!

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References:
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