LEVERAGING DISRUPTIVE INNOVATION TO CREATE IMPACT

VICTOR MULAS
vmulas@worldbank.org

February 2019
GRIPS Symposium

WORLD BANK GROUP
AGENDA

1. **Background:**
   Technology Startups as Vehicle for Greater Impact

2. **Leveraging Start-Up Ecosystems to Increase Impact:**
   How to Create More Technology Startups for Greater Impact

3. **Policy Actions:**
   How to Support Technology Startups for Greater Impact
WHY TECHNOLOGY STARTUPS?

Photo Source: Innovators magazine, https://www.innovatorsmag.com/ireland-has-diverse-startup-ecosystem/
**THE GLOBAL ECONOMY IS CHANGING: VALUE IS MOVING FROM PHYSICAL GOODS TO DIGITAL BUSINESSES**

**Evolution of Trade Value of Goods and Cross-Border Data Flows**


Notes: 2016 value for Merchandise Value of Exports is estimated based on WTO data reported in September 2017 for volume of trade. Cross-border data flows for years 2000 to 2006 are estimated based on data trends. Cross-border data flows are estimated using yearly average utilization rate of internet international bandwidth.
TECH-LED COST REDUCTIONS ARE RESULTING IN THE DEMOCRATIZATION OF INNOVATION AND DISRUPTION BY A GROWING ARMY OF STARTUPS

INCREASE OF UNICORNS: PRIVATE COMPANIES VALUED AT 1B+
TECHNOLOGY STARTUPS ARE EMERGING IN BOTH DEVELOPED AND DEVELOPING COUNTRIES

The United States and China host most of the global private sector of today’s industries and those of the future. Leading technology startups are emerging in countries different from where traditional global industries are. In terms of global technology leading companies (e.g., unicorns) countries such as, Colombia, Finland, India, Israel, Portugal or South Korea are outperforming their potential given GDP levels.
HOW TO CREATE MORE STARTUPS FOR IMPACT?
UNDERSTANDING ECOSYSTEMS: FOUR CATEGORIES OF FOCUS

Skills
- Pool of Talent
  - Teams’ talent pool

Community
- Social network

Supporting Infra.
- Mentors
- Accelerators, Incubators, Other.

Investment
- Seed Funding
- Scale-up Funding
EVOLUTION STAGES OF ECOSYSTEMS: SUSTAINABILITY AND CRITICAL MASS

Sustainability

Nascent  Advancing  Mature
<table>
<thead>
<tr>
<th>Ecosystem Area</th>
<th>Stage</th>
<th>Nascent</th>
<th>Advancing</th>
<th>Mature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Limited number of start-ups, most in early stage</td>
<td>Increased number of start-ups, most in early stage with increasing number of scale-ups</td>
<td>Large number of start-ups in all stages</td>
</tr>
<tr>
<td>Community</td>
<td></td>
<td>Low density of connections</td>
<td>Several clusters</td>
<td>Highly dense, hyperconnected clusters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low number of clusters</td>
<td>High density in clusters</td>
<td></td>
</tr>
<tr>
<td>Skills</td>
<td>Lack of business acumen and experience</td>
<td>Limited business acumen</td>
<td>Business acumen and practical experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very few serial entrepreneurs and limited generations of entrepreneurs</td>
<td>Increasing number of serial entrepreneurs and more than 3 generations</td>
<td>Several generations of start-ups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No substantial exits</td>
<td>Exits start to appear</td>
<td>Successful exits</td>
<td></td>
</tr>
<tr>
<td>Supporting</td>
<td>Mentors are scarce and inexperienced</td>
<td>Mentors are available and they have local practical experience</td>
<td>Plenty of mentors with sound practical experience</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>No international connections</td>
<td>Increasing number of international connections</td>
<td>International hub attracting international talent</td>
<td></td>
</tr>
<tr>
<td>Investment</td>
<td>Gaps in finance pipeline</td>
<td>Finance pipeline with some gaps</td>
<td>No gaps in finance pipeline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very few private sector funding opportunities</td>
<td>Private early stage investment exists</td>
<td>Private early stage finance sustainable</td>
<td></td>
</tr>
</tbody>
</table>
ECOSYSTEM COMMUNITY AND SOCIAL CAPITAL

COMMUNITY AND SOCIAL CAPITAL

Networking Assets create clusters and increase connectivity and social capital among key actors of the ecosystem.

EXAMPLE OF STARTUP SOCIAL NETWORK: WEST BANK & GAZA STARTUP ECOSYSTEM COMMUNITY

Source: World Bank (2018a)
# Networking Assets as Ecosystem’s Multipliers of Social Capital

## Community Building Events
- Meetups
- Conferences, events
- Challenges and competitions

## Skills Training
- Bootcamps
- Entrepreneurial and technical Rapid skills training
- Workshops

## Collaboration Spaces
- Community building spaces (e.g., Co-working Spaces, Maker Spaces, Accelerators, Incubators, etc.)

## Network of Mentors
- Accelerators, Incubators
- Angel Investors, VCs
- Other network of mentors, alumni, etc.

Social network density and clustering increase as ecosystem’s mature. The richer the social network is, the more efficient ecosystems are at creating talent and funding matching opportunities.
International connections allow startup accessing to knowledge and funding not available in local ecosystem.

**STARTUPS ALLOW TO ATTAIN INTERNATIONAL KNOWLEDGE SPILLOVERS FOR LOCAL INNOVATION**
SUPPORT INFRASTRUCTURE: ACCELERATORS AND MENTORS

ACCELERATORS AND MENTORS AS KEY SUPPORT INFRASTRUCTURE

Higher impact on early-stage startup success (i.e., receiving early-stage funding) derived from:

• High-Quality Accelerator Programs

• Mentors from previous founders with Startup experience

Increased probability of startups attending accelerators vs. startups not attending accelerators to receive funding (New York City)

ACCELERATORS ALSO SERVE AS KNOWLEDGE CONNECTORS AMONG ECOSYSTEMS

Community Spaces create social capital in local ecosystems and introduce international knowledge and resources.

Leading accelerator programs act as mega-connectors among ecosystems, providing access to capital and knowledge to startups beyond borders.

Source: Mulas, V. and Qian, K. (2018) Are Accelerators the Secret to Building Truly Great Startup Hubs?, available at: https://singularityhub.com/2018/02/05/are-accelerators-the-secret-to-building-truly-great-startup-hubs/#sm.0005sy97e1c7pek9rfx2mej5n3q3g
HOW ALL THESE TRANSLATE INTO POLICY ACTIONS?
## Sample Policy Actions

Policies are not directly transferable; they need to be adapted to ecosystem’s local (urban/regional) needs/gaps and circumstances

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Nascent Stage</th>
<th>Advancing Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community:</strong></td>
<td>• Competitions, meetups, promotion</td>
<td>• Scale-up spaces</td>
</tr>
<tr>
<td>Developing and strengthening community of entrepreneurs</td>
<td>• Networking spaces: Co-working; Accelerators</td>
<td>• Industry-startup labs/co-creation hubs</td>
</tr>
<tr>
<td><strong>Skills:</strong></td>
<td>• Tech and Business rapid skills trainings; bootcamps</td>
<td>• University-industry matching apprentices platforms</td>
</tr>
<tr>
<td>Increasing skills pipeline for founders and teams</td>
<td>• Increasing university-level technology and business skills/graduates</td>
<td>• Advanced R&amp;D/frontier technology centers and labs</td>
</tr>
<tr>
<td><strong>Supporting Infrastructure:</strong></td>
<td>• Strengthen accelerators</td>
<td>• Industry open innovation and vertical accelerators</td>
</tr>
<tr>
<td>Increasing quantity and quality of accelerators and mentors</td>
<td>• Attraction of mentors; creating networks of mentors</td>
<td>• Increase quality and volume of experienced founder mentors</td>
</tr>
<tr>
<td><strong>Funding:</strong></td>
<td>• Creating and attracting VC funds and angel networks</td>
<td>• Increase competition and volume at ladder of investment levels</td>
</tr>
<tr>
<td>Creating and expanding seed and scale-up funding</td>
<td>• Redirecting Corporate VCs</td>
<td>• Increase scale-up funding; expand public/private capital markets</td>
</tr>
</tbody>
</table>

REFERENCES:


