Role of Start-Up Ecosystems as Engine of Economic Growth; What Are the Key Challenges Facing Start-Up Ecosystems; and How Do They Evolve Through Phases, and Their Impact

Submitted by: Startup Genome
APEC workshop on Startup Ecosystems

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Founder and CEO, Startup Genome  
startupgenome.com
Who We Are

Startup Genome is the world’s leading innovation policy advisory and research firm, having advised more than 100 governments and public and private partnerships in the last 3 years.
Mission

Accelerate the growth of innovation ecosystems through proven policies rooted in practice so every society captures its fair share of the new economy.
Startup Genome’s 3 Pillars

**EVIDENCE-BASED RESEARCH**
- Survey ~100K founders
- 2M businesses + AI
- Global patent analysis
- 100 metrics validated against Performance

**GLOBAL BENCHMARKS**
- 280 Metro Areas
- 100+ Economies
- 4 Phases
- Every Continent

**POLICY EXPERIENCE**
- Advise and *Learn* from clients and experts
- Best Practices
- Global Exposure Through GSER’s 600k Views
The Global Startup Revolution is disrupting industry after industry

- >4% of the global economy
- Total Ecosystem Value of $3.8T
- Growing 10% a year **20% in last 12 months!**
  - 3X to 4X the growth rate of our economies

Within 20 years it will become the largest single sector of the world’s economy
Startups have become the #1 engine of job creation

Large companies are net destroyers of jobs, and this is accelerating with the Fourth Industrial Revolution
Tech was an engine of the last economic recovery
Startups = resilient engine of job creation

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>Industry</th>
<th>Employment CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Health Care and Social Assistance</td>
<td>2.2%</td>
</tr>
<tr>
<td>44-45</td>
<td>Retail Trade</td>
<td>-1.4%</td>
</tr>
<tr>
<td>72</td>
<td>Accommodation and Food Services</td>
<td>0.0%</td>
</tr>
<tr>
<td>61</td>
<td>Educational Services</td>
<td>0.6%</td>
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<tr>
<td>31-33</td>
<td>Manufacturing</td>
<td>-4.5%</td>
</tr>
<tr>
<td>54</td>
<td>Professional, Scientific, and Technical Services</td>
<td>0.1%</td>
</tr>
<tr>
<td>5415</td>
<td>Computer Systems Design and Related Services</td>
<td>2.6%</td>
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<tr>
<td>23</td>
<td>Construction</td>
<td>-7.8%</td>
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<tr>
<td>52</td>
<td>Finance and Insurance</td>
<td>-2.2%</td>
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<tr>
<td>42</td>
<td>Wholesale Trade</td>
<td>-1.8%</td>
</tr>
<tr>
<td>71</td>
<td>Arts, Entertainment, and Recreation</td>
<td>-0.4%</td>
</tr>
<tr>
<td>55</td>
<td>Management of Companies and Enterprises</td>
<td>-0.1%</td>
</tr>
</tbody>
</table>

*Computer Systems Design and Related Services classification (NAICS 5415) refers to “establishments primarily engaged in planning and designing computer systems that integrate computer hardware, software, and communication technologies”*
The Global Startup Revolution is driving the most dramatic value creation in history

6 of world’s top-10 companies were produced by Tech startup ecosystems.

At their peak, the following industries had in the top-10...

• Telecom 3
• Automotive 3
• Semiconductors 2
Unfortunately, the value created by the Global Startup Revolution is greatly concentrated.

Our mission is to break this concentration by learning from each other.
The success of your startup should not depend on your region, gender, ethnicity or social background.

We aim to spread the genome of thriving startup ecosystems. Everywhere.
Ecosystem Development Model: The New Model of Economic Development

STARTUP SUCCESS RATE

ENTREPRENEURIAL ACTIVITY

STARTUP ECOSYSTEM

MULTIPLIERS

GLOBAL CONNECTEDNESS

LOCAL CONNECTEDNESS

TRADITIONAL ECOSYSTEM

RESOURCE S

ECONOMIC IMPACT

\[ \text{ECONOMIC IMPACT} = \text{ENTREPRENEURIAL ACTIVITY} \times \text{STARTUP ECOSYSTEM} \times \text{MULTIPLIERS} \]
Startup Genome’s Startup Ecosystem Development Model

Regional Enabling Factors \times \text{Ecosystem Success Factors} = \text{Economic Impact}

- Increase the number of startups = Grow the funnel
- Increase startup success rate = Change the shape of the funnel

1,000 startups per Million people \times 1\% \text{ scaleup rate} \times \frac{1\text{B}}{1,000} \text{ startups} \times 50,000 \text{ jobs per 1,000 startups} = 10 \text{ scaleups} \times \frac{1\text{B}}{10} \text{ in economic impact} \times 50,000 \text{ jobs} \times 7 \text{ multiplier} = 200,000 \text{ jobs}
Success Factors can be quantified to identify gaps and explain the startup ecosystem performance.

**RESOURCES**
- TEAM
- LOCAL ECOSYSTEM

**NETWORKS**
- RESOURCES
- EXITS
- RESOURCE RECYCLING

**PERFORMANCE**
- ECOSYSTEM VALUE
- GLOBAL MARKET REACH
- STARTUP OUTPUT

**GLOBAL CONNECTEDNESS**
- LOCAL CONNECTEDNESS

**GLOBAL SYSTEM**
- RESOURCE ATTRACTION

**LOCAL SYSTEM**
- STARTUP EXPERIENCE
- TALENT
- FUNDING
- FOUNDER
- ORGANIZATIONS

**ECONOMIC IMPACT**
1. Local community

2. Size & Resources grow with Experience

3. Growth accelerates with impressive exits (Attraction + Activation)

4. Global Competition for Resources and Markets

5. Performance = Scaleups = Economic Impact
The evolutionary path of Startup Ecosystems is fairly predictable
The Lifecycle provides specific objectives for each Phase

**Activation**
- Grow Connected Community
- Increase Early-Stage funding
- Accelerate top startups to $100M exits

**Globalization**
- Inject Global Know-How
- Increase Global Connectedness
- Accelerate top startups to $B Exits

**Attraction**
- Fill Remaining Resource Gaps
- Expand Resources
- Integrate with global ecosystems

**Integration**
- Integrate ecosystem with local economy, laws and institutions
- Drive inclusion and integration
Focus of Activation Phase

1. GROW NUMBER OF STARTUPS
   a) Programs, Events and Media
   b) Engage Universities
   c) Sub-Sector Focus

2. INCREASE STARTUP QUALITY
   a) Mentorship
   b) Talent production
   c) Customer Access

3. INCREASE EARLY-STAGE FUNDING
   a) Angel Expertise
   b) Angel Groups
   c) Capital Injection
Focus is on building the local community - More Locally-Connected startups grow much faster.

**Quarterly Revenue vs Age of Startup**

- **High Local Connectedness**
- **Medium Local Connectedness**
- **Low Local Connectedness**

> 2x revenue growth for startups with High vs. Low Local Connectedness

1. Founder helping Founders
2. Experts & Investors helping Founders
3. Quality relationships between them
What we do together is more important than what we do alone.

Chance of success of Zuckerberg starting Facebook in Africa vs. in Silicon Valley?
From the Globalization Phase, the focus shifts to the production of scaleups and economic impact

1. Bigger is better
2. Resources and support organizations
3. Local Connectedness
4. Global Connectedness
5. Global Market Reach
Global Connections between people and organizations is source of Scaleup Potential

The Global Fabric of Knowledge Between Entrepreneurs

Quality Relationships between Entrepreneurs
The more connected to the **bigger “WE”**

The higher the flow of people and knowledge

The higher our potential to create

**Globally-Leading Business Models**
Global Market Reach is the only way to fully “Realize” your scaleup potential.

- **Global Market Reach (Realize Potential)** (% of Out of Continent Customers)
- **Global Connectedness (Scaleup Potential)** (# of Founder Relationships with Top Ecosystems)

Size of bubble indicates ecosystem value.
Policy Action influences the economic and social outcomes

- **STARTUP SUCCESS RATE**
  - **ENTREPRENEURIAL ACTIVITY**
  - **RESOURCE MULTIPLEXERS**
    - **STARTUP ECOSYSTEM**
    - **TRADITIONAL ECOSYSTEM**
  - **GLOBAL CONNECTEDNESS**
  - **LOCAL CONNECTEDNESS**

- **LEVERS**
  - **PUBLIC POLICY**
  - **PRIVATE POLICY**

**Inclusion & Diversity**
Agenda

1. Intro
2. Importance of Startup Ecosystems
3. Development of Startup Ecosystems
4. Impact of Policy and Role of Government
MORE POLICY ACTION?

MORE EFFECTIVE POLICY ACTION
At the very top, Government policy seems to play a big role in startup ecosystems.

<table>
<thead>
<tr>
<th>Rank</th>
<th>2012</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Silicon Valley</td>
<td>Silicon Valley</td>
</tr>
<tr>
<td>2</td>
<td>NYC</td>
<td>London</td>
</tr>
<tr>
<td>3</td>
<td>London</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>NYC</td>
<td>Tel Aviv</td>
</tr>
<tr>
<td>6</td>
<td>London</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Singapore</td>
</tr>
</tbody>
</table>
What drove the ecosystems with the most dramatic rise in exits and the global ranking?
Global research with policymakers to scores policies against best practice design — for Activation Ecosystems

<table>
<thead>
<tr>
<th></th>
<th>US Peers</th>
<th>ROW Peers</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Miami</td>
<td>Austin</td>
</tr>
<tr>
<td>Funding</td>
<td>180</td>
<td>90</td>
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<tr>
<td>Local Connectedness</td>
<td>20</td>
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</tr>
<tr>
<td>Early Startup Support</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Global Connectedness</td>
<td>30</td>
<td>60</td>
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<tr>
<td>Growth/Market Reach and Mid-/Late-Stage Programs</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Stock Options</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>410</td>
<td>360</td>
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## For Globalization Ecosystems

<table>
<thead>
<tr>
<th></th>
<th>US Peers</th>
<th>ROW Peers</th>
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<tbody>
<tr>
<td></td>
<td>Miami</td>
<td>Austin</td>
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<tr>
<td>Funding</td>
<td>120</td>
<td>60</td>
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<tr>
<td>Local Connectedness</td>
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<td>10</td>
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<tr>
<td>Early Startup Support</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Global Connectedness</td>
<td>60</td>
<td>120</td>
</tr>
<tr>
<td>Growth/Market Reach and Mid-/Late-Stage Programs</td>
<td>90</td>
<td>120</td>
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<td>50</td>
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<td></td>
<td>380</td>
<td>410</td>
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</table>
Selected Globalization Phase ecosystems by policy score vs. Performance — clear relationships

<table>
<thead>
<tr>
<th>Ecosystem</th>
<th>Policy Score</th>
<th>Exits ($B)</th>
<th>2012-2013</th>
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</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td>710</td>
<td>$1.3</td>
<td></td>
</tr>
<tr>
<td>Toronto-Waterloo</td>
<td>550</td>
<td>$0.7</td>
<td></td>
</tr>
<tr>
<td>Stockholm</td>
<td>490</td>
<td>$0.3</td>
<td></td>
</tr>
<tr>
<td>Miami</td>
<td>400</td>
<td>$0.4</td>
<td></td>
</tr>
<tr>
<td>Montreal</td>
<td>400</td>
<td>$0.3</td>
<td></td>
</tr>
<tr>
<td>Helsinki*</td>
<td>400</td>
<td>$0.3</td>
<td></td>
</tr>
<tr>
<td>Austin</td>
<td>330</td>
<td>$3.7</td>
<td></td>
</tr>
<tr>
<td>Atlanta</td>
<td>290</td>
<td>$1.5</td>
<td></td>
</tr>
<tr>
<td>Houston</td>
<td>270</td>
<td>$0.5</td>
<td></td>
</tr>
<tr>
<td>Melbourne</td>
<td>260</td>
<td>$0.6</td>
<td></td>
</tr>
<tr>
<td>Salt Lake-Provo</td>
<td>250</td>
<td>$0.9</td>
<td></td>
</tr>
<tr>
<td>Detroit</td>
<td>180</td>
<td>$0.7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ecosystem</th>
<th>Exits ($B)</th>
<th>Change in # $50M+ exits</th>
<th>Sum of $50M+ exits</th>
<th>Exit Value CAGR</th>
</tr>
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<tbody>
<tr>
<td>Amsterdam</td>
<td>$12.0</td>
<td>8</td>
<td>25</td>
<td>46%</td>
</tr>
<tr>
<td>Toronto-Waterloo</td>
<td>$2.8</td>
<td>10</td>
<td>16</td>
<td>27%</td>
</tr>
<tr>
<td>Stockholm</td>
<td>$34.8</td>
<td>14</td>
<td>27</td>
<td>121%</td>
</tr>
<tr>
<td>Miami</td>
<td>$4.5</td>
<td>3</td>
<td>9</td>
<td>51%</td>
</tr>
<tr>
<td>Montreal</td>
<td>$1.3</td>
<td>2</td>
<td>9</td>
<td>28%</td>
</tr>
<tr>
<td>Helsinki*</td>
<td>$2.5</td>
<td>2</td>
<td>8</td>
<td>39%</td>
</tr>
<tr>
<td>Austin</td>
<td>$1.9</td>
<td>3</td>
<td>11</td>
<td>-11%</td>
</tr>
<tr>
<td>Atlanta</td>
<td>$7.9</td>
<td>4</td>
<td>33</td>
<td>32%</td>
</tr>
<tr>
<td>Houston</td>
<td>$0.3</td>
<td>0</td>
<td>9</td>
<td>-9%</td>
</tr>
<tr>
<td>Melbourne</td>
<td>$1.7</td>
<td>6</td>
<td>16</td>
<td>18%</td>
</tr>
<tr>
<td>Salt Lake-Provo</td>
<td>$11.5</td>
<td>4</td>
<td>6</td>
<td>54%</td>
</tr>
<tr>
<td>Detroit</td>
<td>$5.1</td>
<td>0</td>
<td>8</td>
<td>40%</td>
</tr>
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</table>
Role of Government

Support private actors in building and accelerating the development of startup ecosystem success factors
Public Policy is about Leadership

Do the Right Thing at the Right Time

Focus on 2 Success Factor Gaps

Take them from 0 to 1

1 = sustainable level the private sector can multiply
Most effective Public Policy works *through* the PRIVATE community

Causes a chain reaction

Virtuous cycle of success across many success factors
Role of the Private Sub-Communities

Become locally and globally proficient at playing their Success Factor roles
• Learn by doing and learn from others
• Connect Locally & Globally: learn and mentor, give first

Global System

Local System

GLOBAL CONNECTEDNESS

GLOBAL MARKET REACH

TALENT

FOUNDER

FUNDING

ORGANIZATIONS

STARTUP OUTPUT
Example of Policy not supporting private community

Government-Managed Grants

- Replace angels / weaken angel groups
- Angel provide business and industry expertise, customer introductions, etc.
- Lead to lower rates of exits per $ of capital
Tools and Strategic Planning Path towards effective Policy Action

1. Ecosystem Lifecycle Model

2. Objective Setting relevant to Lifecycle Phase

3. Success Factor Gaps in relation to Lifecycle

4. Peer Benchmarking

5. Prioritization of Gaps & Opportunities

6. Targeted Policy Action (incl development roadmap)
Tool 1: Detailed Quantification of Success Factor Gaps from Startup Founders

Global Market Reach
  - Founder Ambition
    - Globally Leading Product
  - Founder Strategy
    - Targeting Global Market First

Global Connectedness
  - Networking
    - Local Meetings
    - International Travel
  - Immigrant Founders
Tool 2: Detailed Funding Gap Analysis

<table>
<thead>
<tr>
<th></th>
<th>Seed</th>
<th>Series A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Large Rounds</strong></td>
<td>Median Amount &amp; # of FTEs Funded</td>
<td>Median Amount</td>
</tr>
<tr>
<td><strong>Best</strong></td>
<td>% $1M+</td>
<td>% of $10M rounds</td>
</tr>
<tr>
<td><strong>Many Rounds</strong></td>
<td>% Seed-Funded Startups</td>
<td>Survival Rate</td>
</tr>
</tbody>
</table>

**Legend:**
- 🟢 = OK
- 🟠 = Small Gap
- 🟥 = Big Gap
Tool 3: Assess of Ecosystem Performance in terms of scaleup production, which drives economic impact

- $B Club: 0% Performance Gap
- $100M+ Scaleups: 0.13% Performance Gap
- Series A: 1.9% Performance Gap
- Seed: 8.0%² Performance Gap

Percentage of startups in the ecosystem: X%
Tool 4: Assessment of Sub-Sector Strengths

Ecosystem Potential

Low

High

Global Potential

Low

High

Size of the bubble indicates local Startup Output concentration vs Global Startup Output Concentration.
**Tool 5: Assessment of Portfolio of Startup Support Programs vs. Strengths or Strategic Targets**

<table>
<thead>
<tr>
<th>Sub-Sector Focus</th>
<th># of BAIs</th>
<th>Calgary</th>
<th>Edmonton</th>
<th>AB Region 1</th>
<th>AB Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>2</td>
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<td>Life Sciences</td>
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<td>AI and Big Data</td>
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<tr>
<td>Cleantech</td>
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<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Ecosystem**

- **Hub & spoke provincial strategy**: 1

**Increasing Strategic Importance**

*Example only, not based on actual strategic focus or # of BAIs*
Contact

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+49 152 27549074  
adam@startupgenome.com