

# LEVERAGING DISRUPTIVE INNOVATION TO CREATE IMPACT

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# 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:**

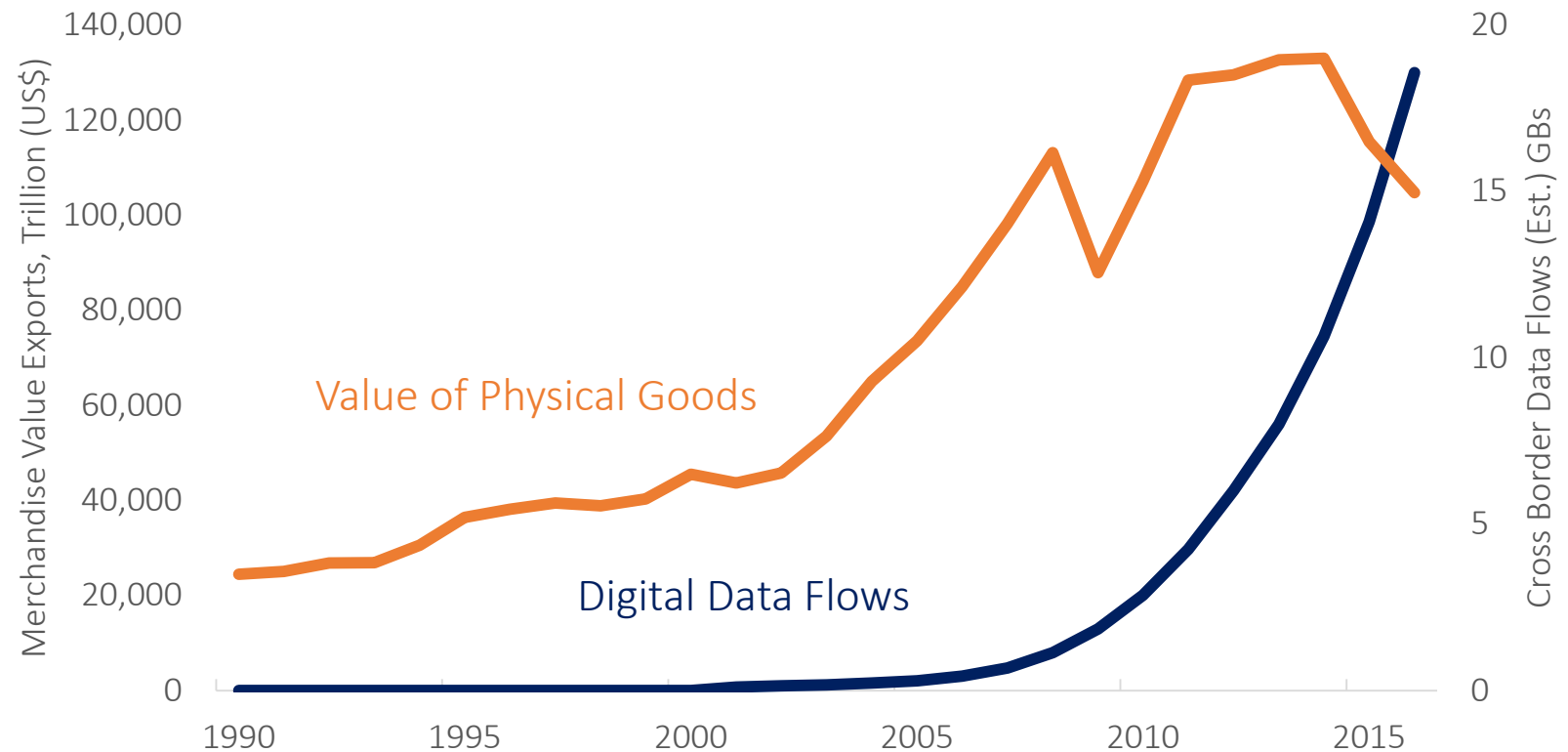
How to Support Technology Startups for Greater Impact



## WHY TECHNOLOGY STARTUPS?

# 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

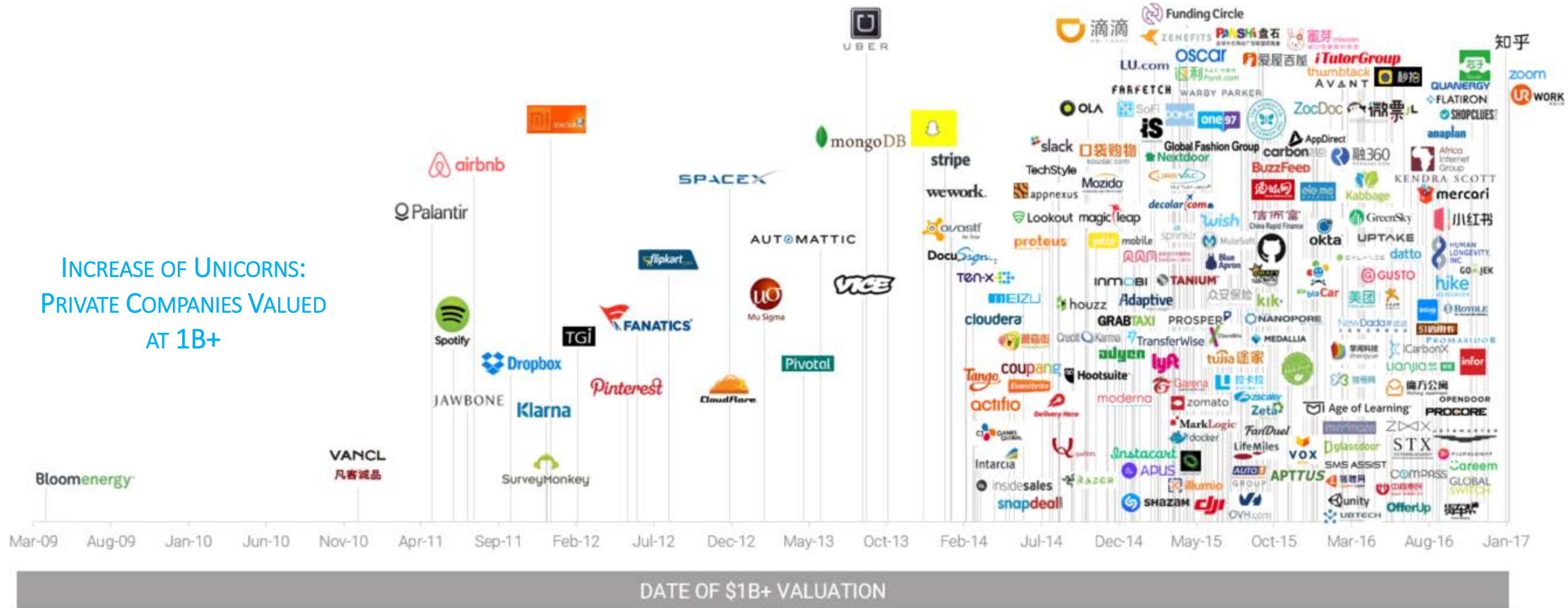


Source: World Bank data for Merchandise Value Exports and Telegeography for Cross Border Data Flows.

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

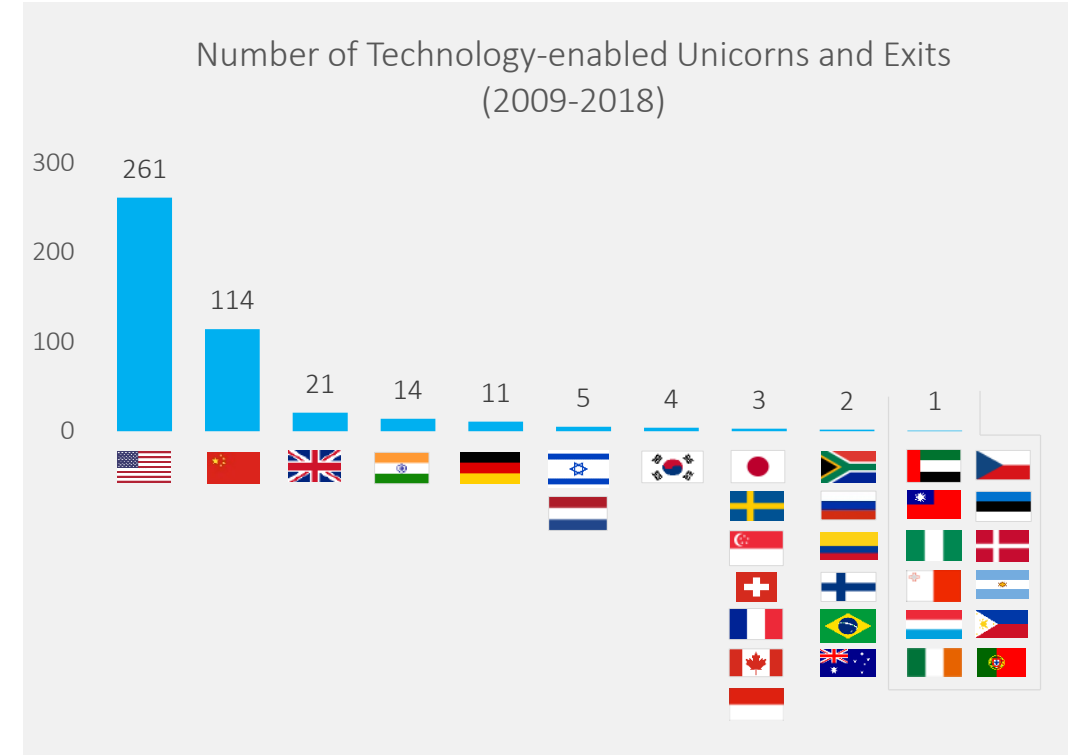
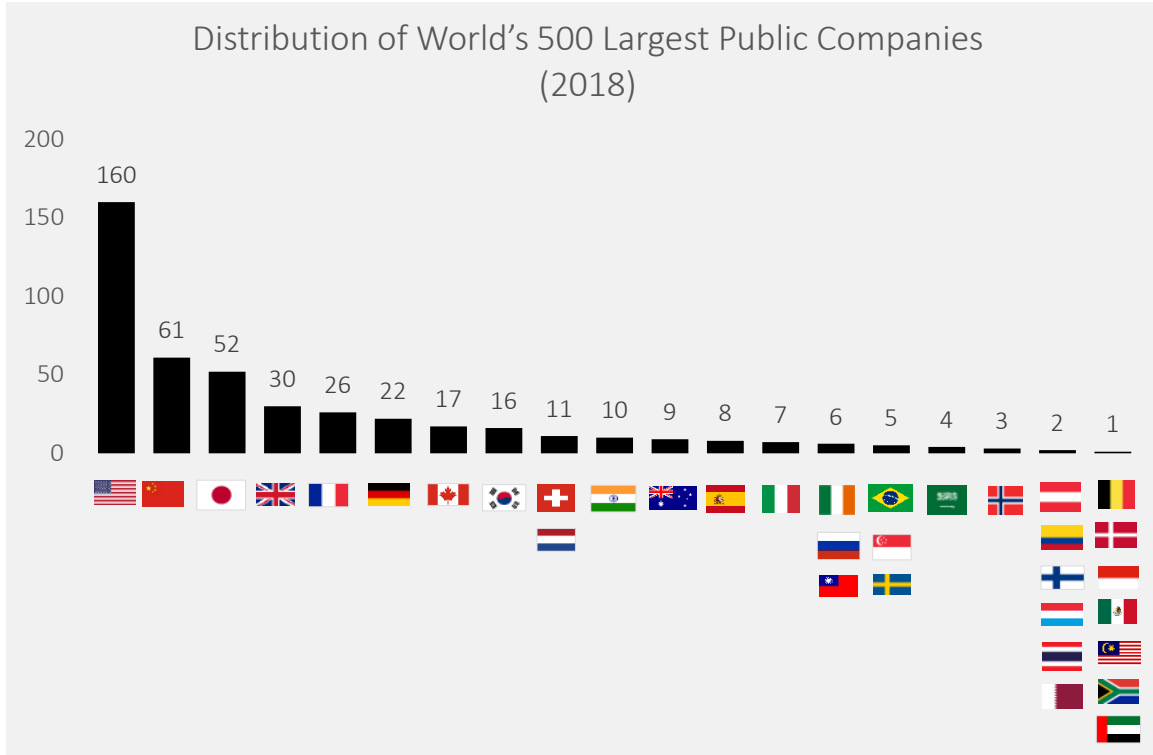
# TECH-LED COST REDUCTIONS ARE RESULTING IN THE DEMOCRATIZATION OF INNOVATION AND DISRUPTION BY A GROWING ARMY OF STARTUPS

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

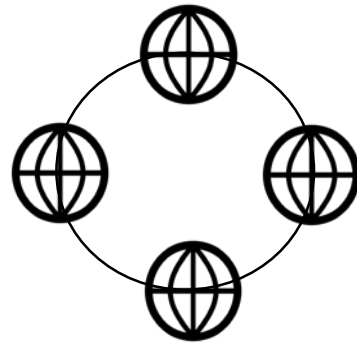
## Skills



Pool of Talent

  
Teams'  
talent pool

## Community



Social  
network

## Supporting Infra.



Mentors



Accelerators,  
Incubators,  
Other.

## Investment



Seed  
Funding

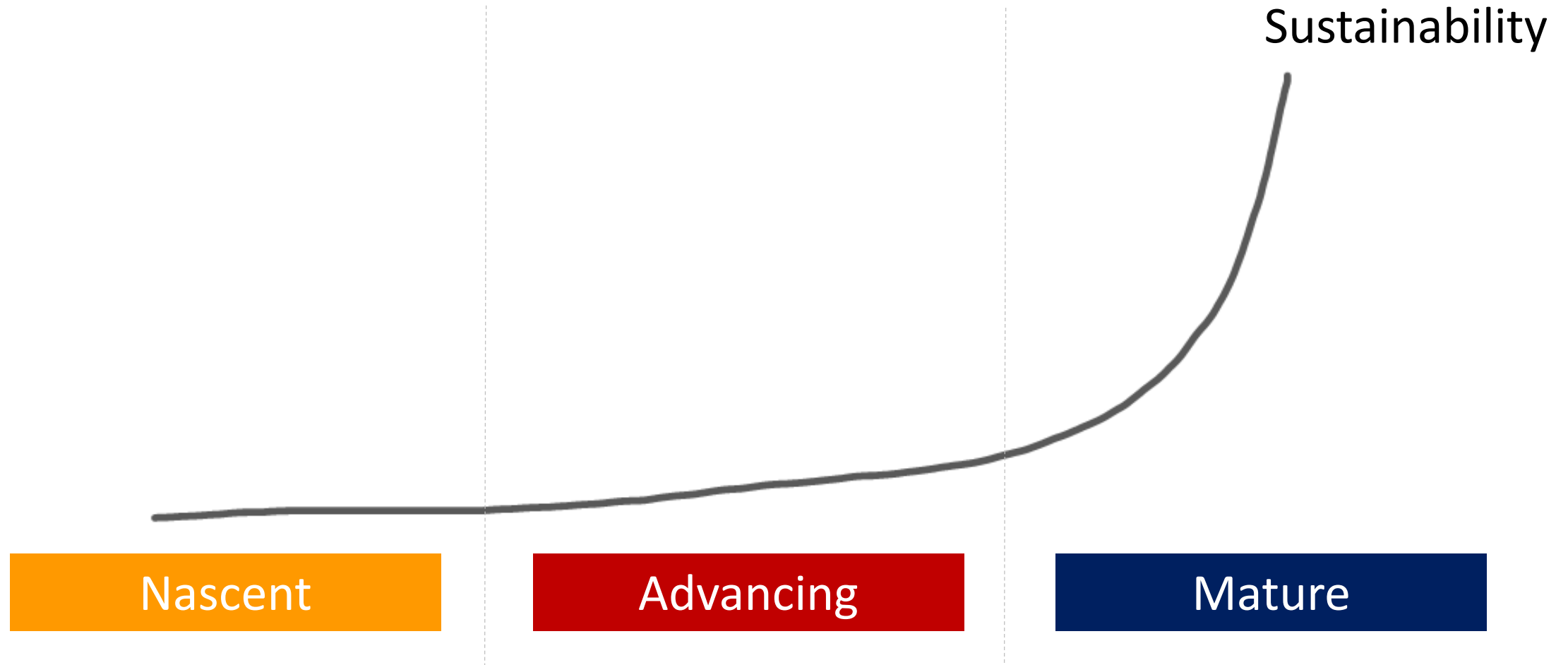






Scale-up  
Funding



# EVOLUTION STAGES OF ECOSYSTEMS: SUSTAINABILITY AND CRITICAL MASS

ILLUSTRATIVE



Ecosystem Area	Stage		
	Nascent	Advancing	Mature
 Community	<ul style="list-style-type: none"> <li>Limited number of start-ups, most in early stage</li> <li>Low density of connections</li> <li>Low number of clusters</li> </ul>	<ul style="list-style-type: none"> <li>Increased number of start-ups, most in early stage with increasing number of scale-ups</li> <li>Several clusters</li> <li>High density in clusters</li> </ul>	<ul style="list-style-type: none"> <li>Large number of start-ups in all stages</li> <li>Highly dense, hyperconnected clusters</li> </ul>
 Skills	<ul style="list-style-type: none"> <li>Lack of business acumen and experience</li> <li>Very few serial entrepreneurs and limited generations of entrepreneurs</li> <li>No substantial exits</li> </ul>	<ul style="list-style-type: none"> <li>Limited business acumen</li> <li>Increasing number of serial entrepreneurs and more than 3 generations</li> <li>Exits start to appear</li> </ul>	<ul style="list-style-type: none"> <li>Business acumen and practical experience</li> <li>Several generations of start-ups</li> <li>Successful exits</li> </ul>
 Supporting Infrastructure	<ul style="list-style-type: none"> <li>Mentors are scarce and inexperienced</li> <li>No international connections</li> </ul>	<ul style="list-style-type: none"> <li>Mentors are available and they have local practical experience</li> <li>Increasing number of international connections</li> </ul>	<ul style="list-style-type: none"> <li>Plenty of mentors with sound practical experience</li> <li>International hub attracting international talent</li> </ul>
 Investment	<ul style="list-style-type: none"> <li>Gaps in finance pipeline</li> <li>Very few private sector funding opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Finance pipeline with some gaps</li> <li>Private early stage investment exists</li> </ul>	<ul style="list-style-type: none"> <li>No gaps in finance pipeline</li> <li>Private early stage finance sustainable</li> </ul>



## ECOSYSTEM COMMUNITY AND SOCIAL CAPITAL

Photo Source: ExpertDojo, <https://expertdojo.com/events/the-biggest-startup-pitch-event-in-the-usa-850-investor-pitches-for-150-expert-dojo-startups/>

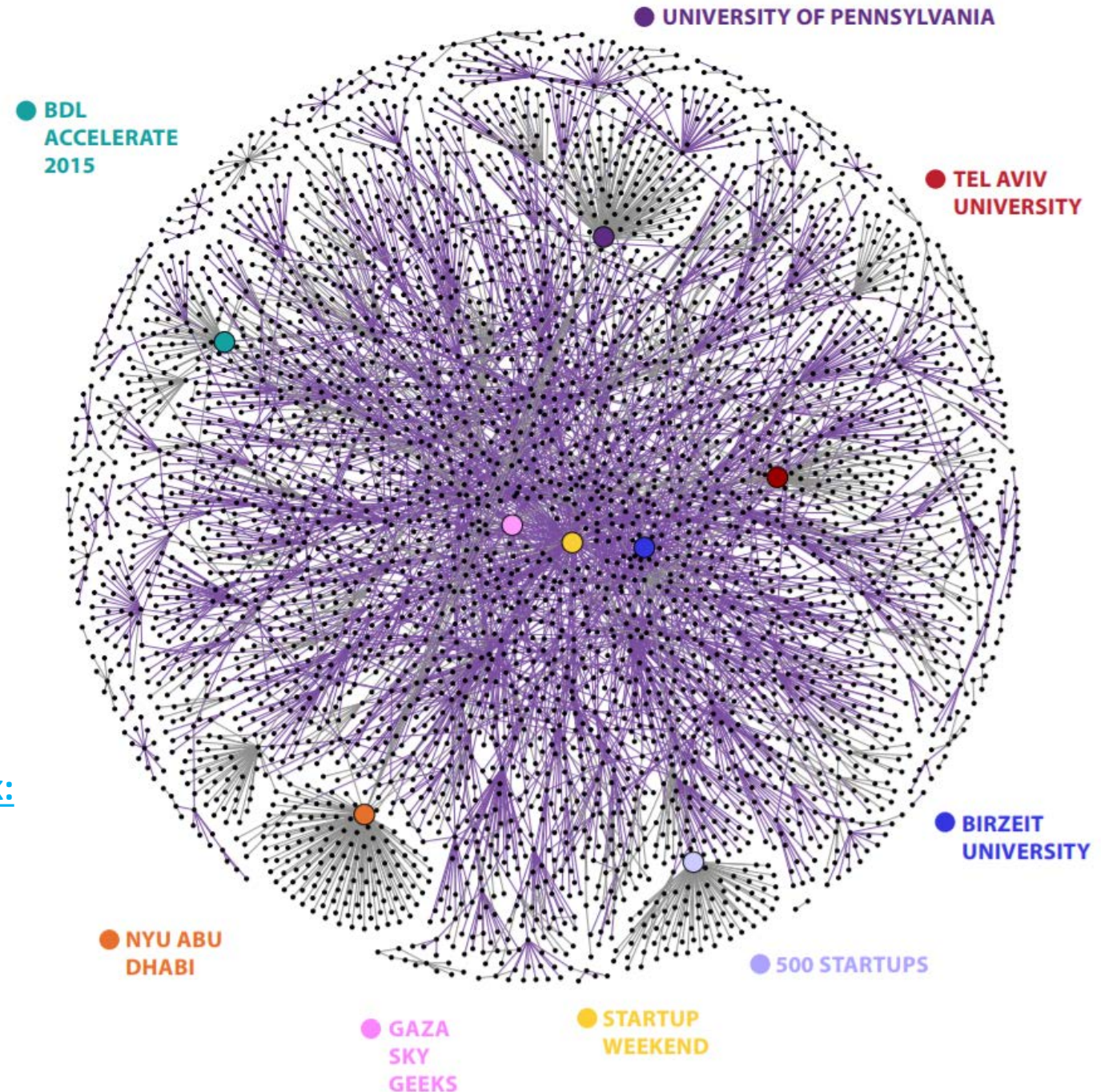


# COMMUNITY AND SOCIAL CAPITAL

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

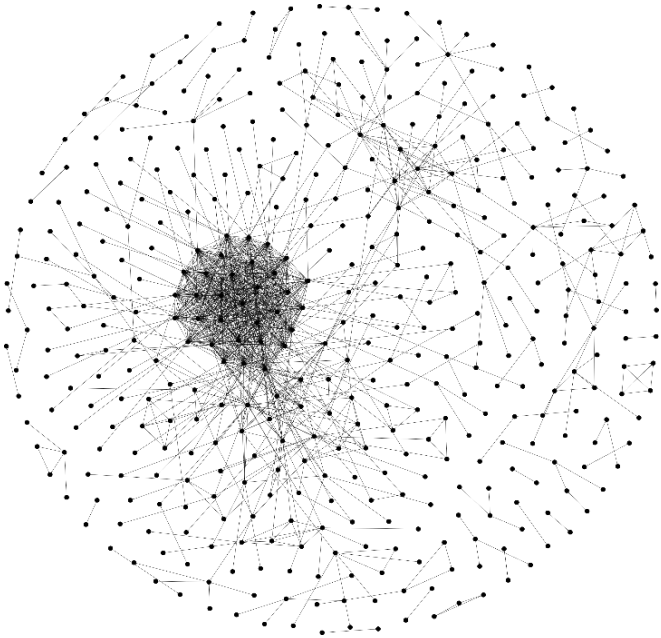
COMMUNITY BUILDING EVENTS	SKILLS TRAINING	COLLABORATION SPACES	NETWORK OF MENTORS
<ul style="list-style-type: none"><li>• Meetups</li><li>• Conferences, events</li><li>• Challenges and competitions</li></ul>	<ul style="list-style-type: none"><li>• Bootcamps</li><li>• Entrepreneurial and technical Rapid skills training</li><li>• Workshops</li></ul>	<ul style="list-style-type: none"><li>• Community building spaces (e.g., Co-working Spaces, Maker Spaces, Accelerators, Incubators, etc.)</li></ul>	<ul style="list-style-type: none"><li>• Accelerators, Incubators</li><li>• Angel Investors, VCs</li><li>• Other network of mentors, alumni, etc.</li></ul>

Source: World Bank (2015)

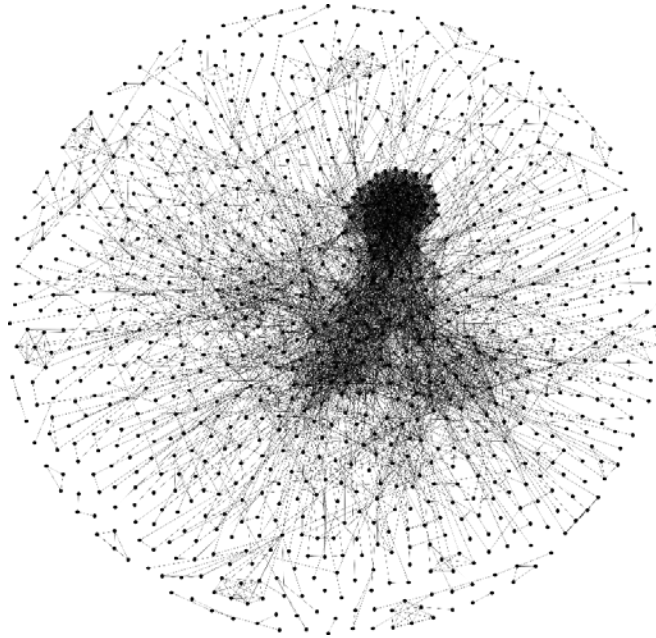


# EVOLUTION OF SOCIAL CONNECTIVITY

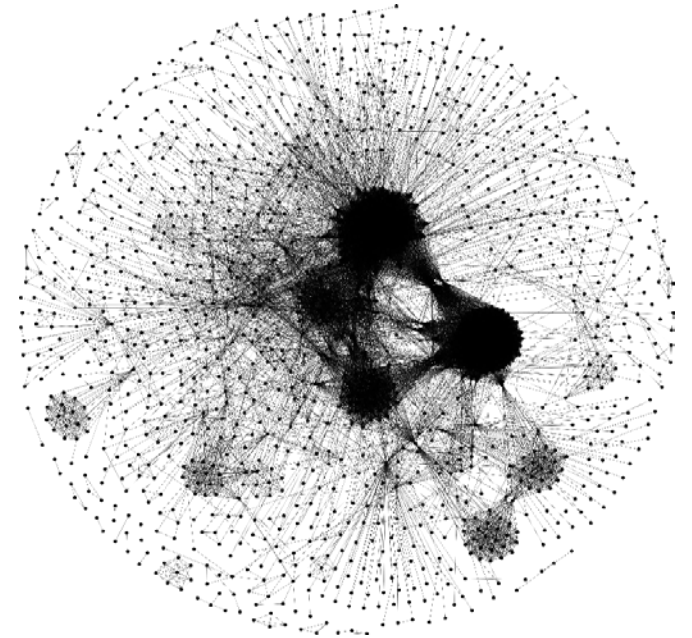
Social network density and clustering increase as ecosystem's mature. The richer the social network is, the more efficient ecosystems are at creating talent and funding matching opportunities.



Dar Es Salaam



Cairo



Medellin

PRELIMINARY

ASIA

LATIN AMERICA

USA

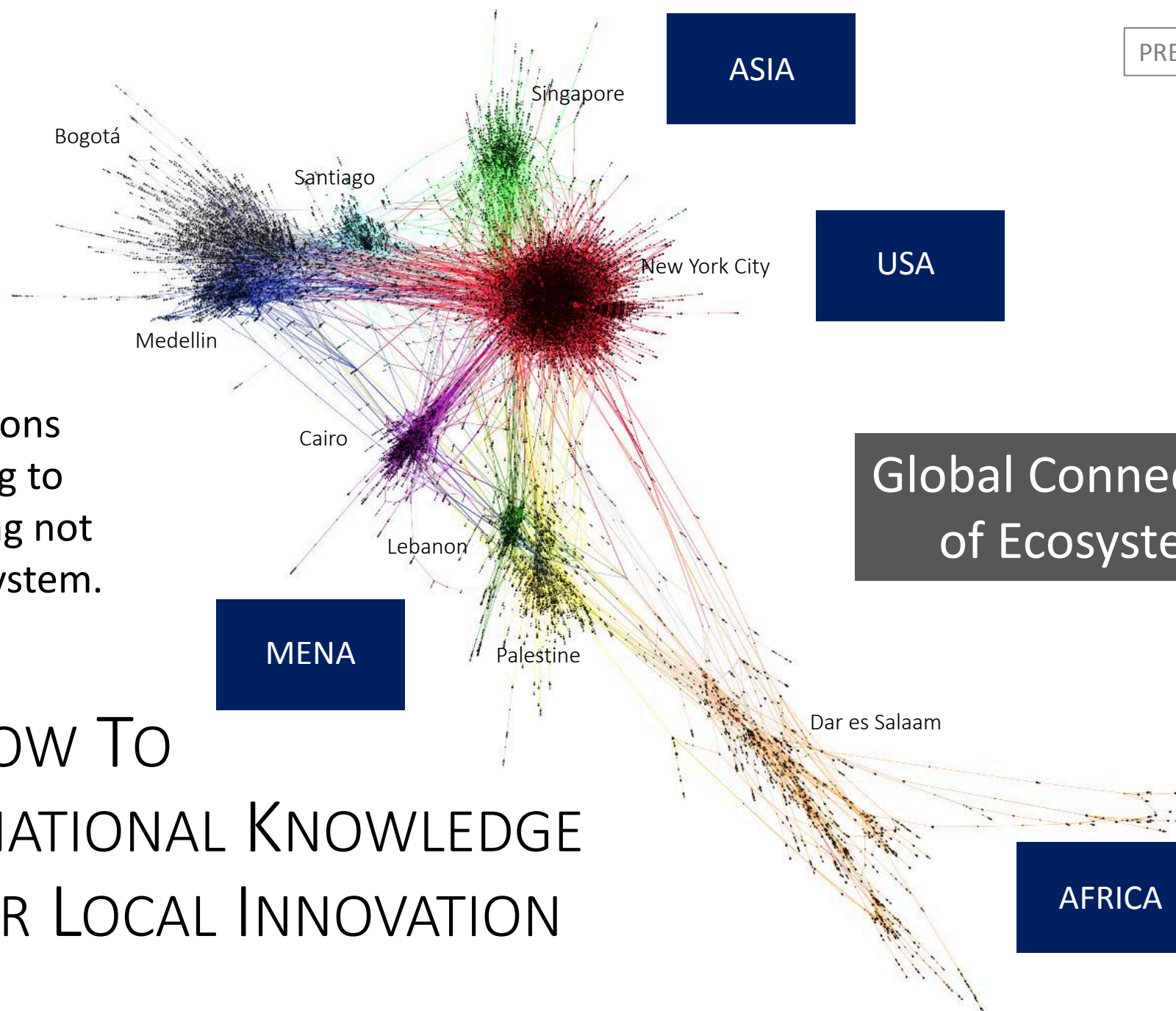
Global Connectivity  
of Ecosystems

MENA

AFRICA

International connections  
allow startup accessing to  
knowledge and funding not  
available in local ecosystem.

STARTUPS ALLOW TO  
ATTAIN INTERNATIONAL KNOWLEDGE  
SPILLOVERS FOR LOCAL INNOVATION







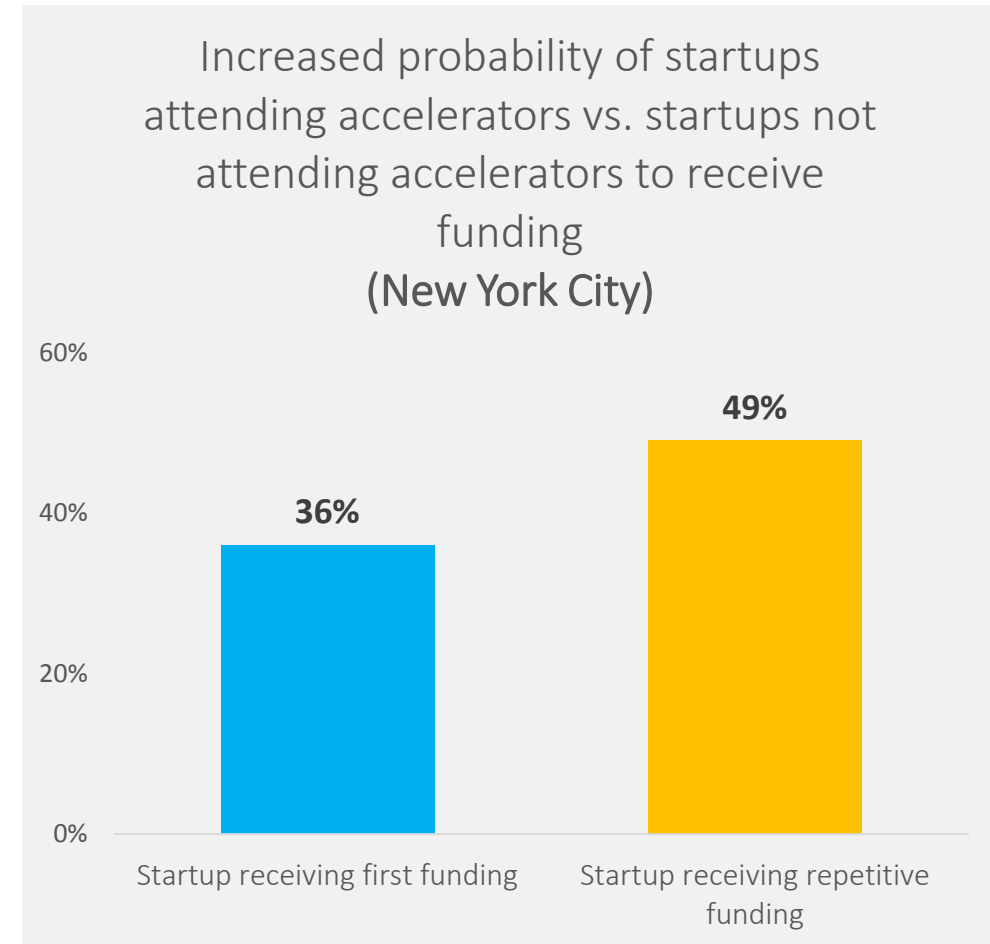
## SUPPORT INFRASTRUCTURE: ACCELERATORS AND MENTORS

Photo Source: Haker Moon, <https://hackernoon.com/why-you-might-build-your-startup-in-china-over-silicon-valley-b23ed7d63951> /

# 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

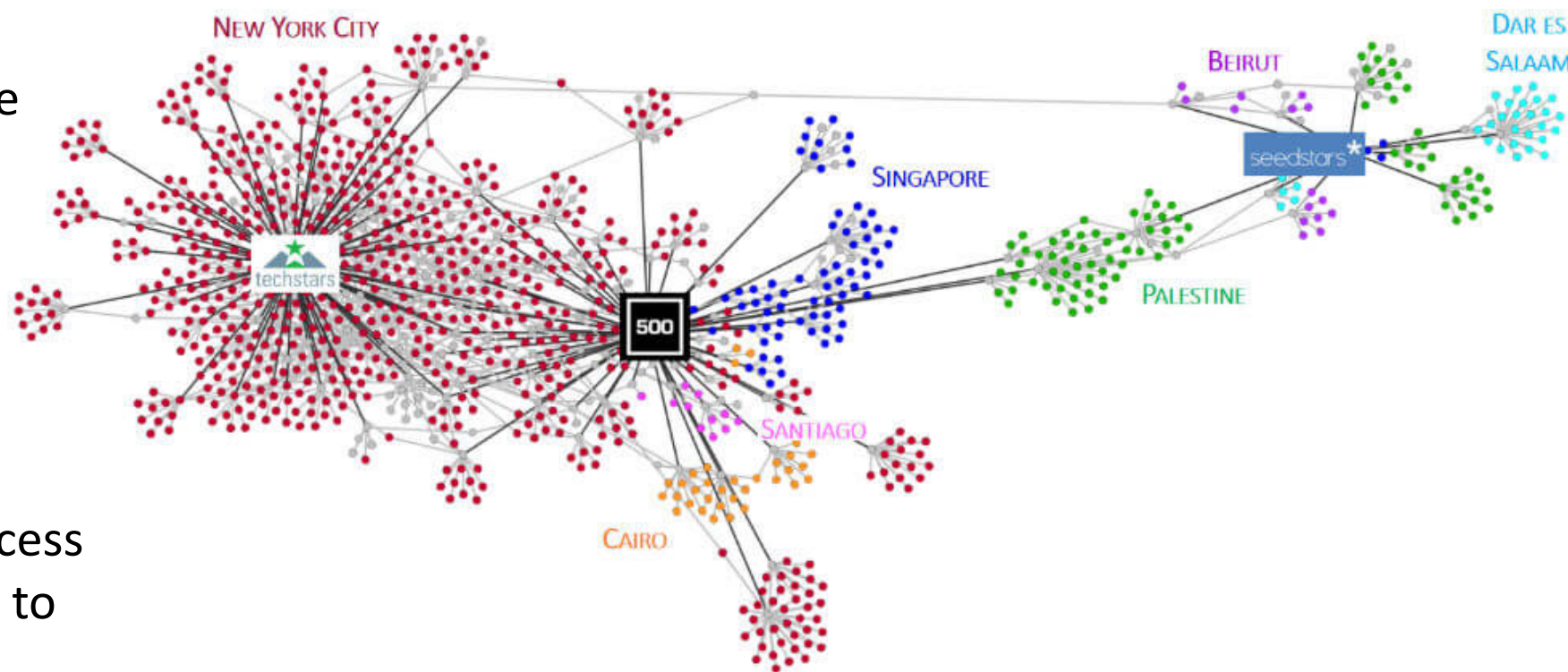




# ACCELERATORS ALSO SERVE AS KNOWLEDGE CONNECTORS AMONG ECOSYSTEMS

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







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

Policy Area	Nascent Stage	Advancing Stage
<b>Community:</b> Developing and strengthening community of entrepreneurs	<ul style="list-style-type: none"><li>• Competitions, meetups, promotion</li><li>• Networking spaces: Co-working; Accelerators</li></ul>	<ul style="list-style-type: none"><li>• Scale-up spaces</li><li>• Industry-startup labs/co-creation hubs</li></ul>
<b>Skills:</b> Increasing skills pipeline for founders and teams	<ul style="list-style-type: none"><li>• Tech and Business rapid skills trainings; bootcamps</li><li>• Increasing university-level technology and business skills/graduates</li></ul>	<ul style="list-style-type: none"><li>• University-industry matching apprentices platforms</li><li>• Advanced R&amp;D/frontier technology centers and labs</li></ul>
<b>Supporting Infrastructure:</b> Increasing quantity and quality of accelerators and mentors	<ul style="list-style-type: none"><li>• Strengthen accelerators</li><li>• Attraction of mentors; creating networks of mentors</li><li>• Retention of experienced founders</li></ul>	<ul style="list-style-type: none"><li>• Industry open innovation and vertical accelerators</li><li>• Increase quality and volume of experienced founder mentors</li></ul>
<b>Funding:</b> Creating and expanding seed and scale-up funding	<ul style="list-style-type: none"><li>• Creating and attracting VC funds and angel networks</li><li>• Redirecting Corporate VCs</li></ul>	<ul style="list-style-type: none"><li>• Increase competition and volume at ladder of investment levels</li><li>• Increase scale-up funding; expand public/private capital markets</li></ul>

# REFERENCES:

- Auserwald, Philip E. 2015. "Enabling Entrepreneurial Ecosystems. Insights From Ecology To Inform Effective Entrepreneurship Policy." Kauffman Foundation Small Research Projects Research, Ewing Marion Kauffman Foundation, Kansas City, MO. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2673843](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2673843).
- Bokhari, Sheharyar, Andrea Chegut, Dennis Frenchman, and Isabel Tausendschoen. Draft. 2018. "Is Innovation Really in a Place? Accelerator Program Impacts on Firm Performance." MIT Center for Real Estate's Real Estate Innovation Lab, Cambridge, MA. [https://mitcre.mit.edu/wp-content/uploads/2018/03/Is-Innovation-Really-in-a-Place-Accelerator-Impacts-on-Firm-Performance\\_030518.pdf](https://mitcre.mit.edu/wp-content/uploads/2018/03/Is-Innovation-Really-in-a-Place-Accelerator-Impacts-on-Firm-Performance_030518.pdf).
- Endeavor Insight and MC Egypt. 2015. "Network on the Nile: The Multiplier Effect at Work in Cairo's Tech Sector." <http://www.cairotechmap.com/networkonthenile.pdf>.
- Feldman, Maryann and Ted D. Zoller. 2012. "Dealmakers in Place: Social Capital Connections in Regional Entrepreneurial Economies." <https://www.tandfonline.com/doi/abs/10.1080/00343404.2011.607808>;
- Fehder, Daniel C., and Yael V. Hochberg. 2014. "Accelerators and the Regional Supply of Venture Capital." <http://dx.doi.org/10.2139/ssrn.2518668>.
- Wadhwa, Vivek, Krisztina Holly, Raj Aggarwal, and Alex Salkever. 2009. "Anatomy of an Entrepreneur: Family Background and Motivation." Kauffman Foundation Small Research Projects Research, Ewing Marion Kauffman Foundation, Kansas City, MO. <http://dx.doi.org/10.2139/ssrn.1431263>.
- World Bank. 2015. "Boosting Tech Innovation Ecosystems in Cities: A Framework for Growth and Sustainability of Urban Tech Innovation Ecosystems." Discussion Paper 100899, World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/23029>.
- World Bank. 2016. "New York: Transforming a City into a Tech Innovation leader." Washington, DC: World Bank Group. <https://openknowledge.worldbank.org/handle/10986/25753>
- World Bank. 2018a. "Tech Start-Up Ecosystem in West Bank and Gaza: Findings and Recommendations." Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/715581526049753145/Tech-startup-ecosystem-in-West-Bank-and-Gaza-findings-and-recommendations>.
- World Bank. 2018b. "Supporting Entrepreneurs at the Local Level : The Effect of Accelerators and Mentors on Early-Stage Firms." Washington, DC: World Bank Group. <https://openknowledge.worldbank.org/handle/10986/30384>
- World Bank 2018c. "Which Countries Are Better Prepared to Compete Globally in the Technology Disruptive Age?." Washington, DC: World Bank Group. <https://openknowledge.worldbank.org/handle/10986/30615>
- Yu, Sandy. 2016. "How Do Accelerators Impact High-Technology Ventures." [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2503510](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2503510).