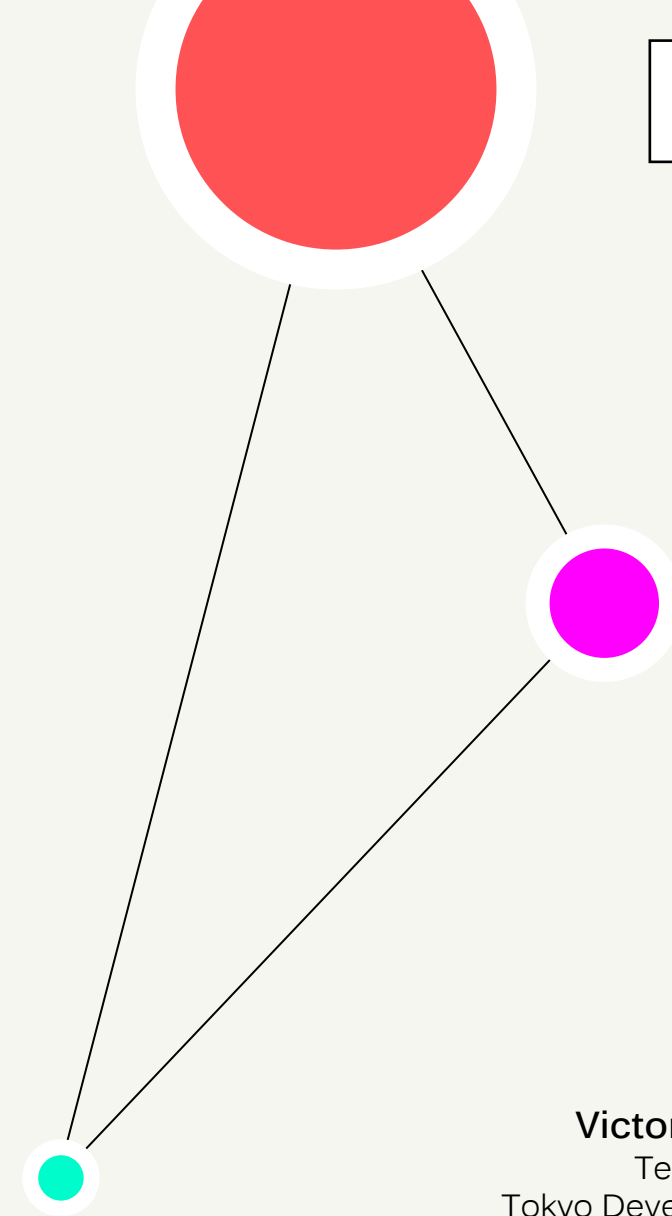
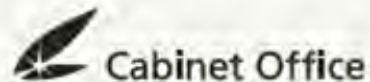


# Boosting Japan's Start-up Ecosystem

Challenges,  
Opportunities and Recommendations

**Tokyo  
Development  
Learning  
Center**



**Victor Mulas**  
Team Lead  
Tokyo Development  
Learning Center

# Technical Note

The findings of this presentation **are supported by primary and secondary data sources**, complemented by insights from **interviews with stakeholders**.

## 6,086

Japanese start-ups and ecosystem stakeholders

The main data sources used for the analysis of Japan were compiled through a survey of **6,086 start-up founders and ecosystem stakeholders**, which was conducted by the **Cabinet Office in 2019** under the guidance of the World Bank team ([Dataset #1](#)).

## 9,122

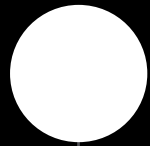
Deep-tech start-ups and investors

Data from **3,131 start-ups and 5,991 associated investors** was leveraged for the international connectivity database ([Dataset #2](#)) and data from **65 accelerator programs** for the accelerator database ([Dataset #3](#)).

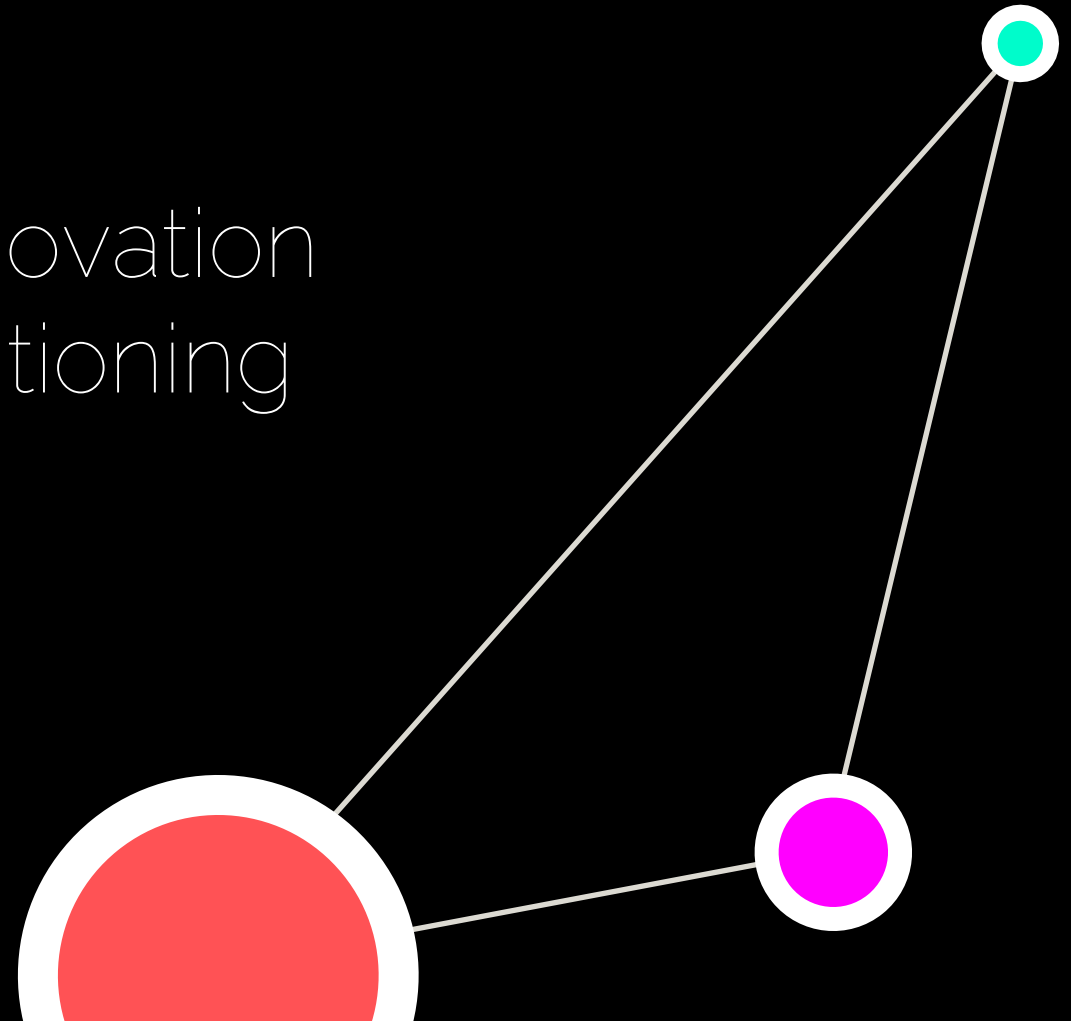
## 185

Stakeholder's interviews

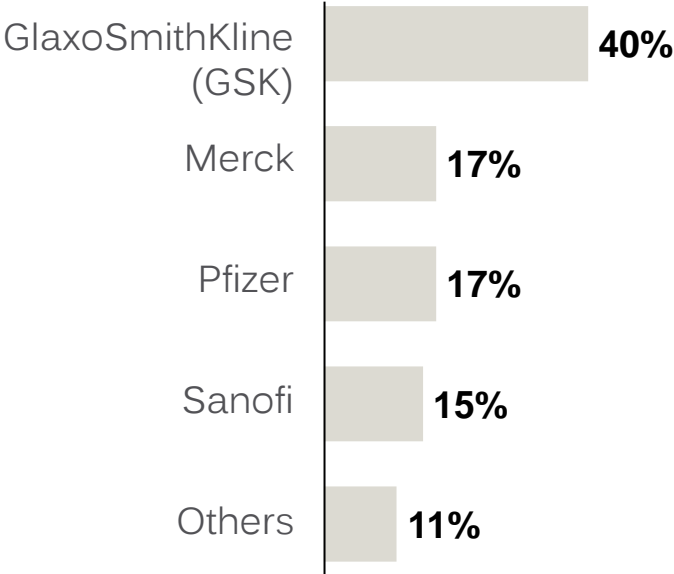
**185 stakeholders** (start-up founders, VCs, angels, academia, universities, start-up campuses) were interviewed in three rounds of interviews in **2019, 2020-1, and 2022** ([Interviews](#)).



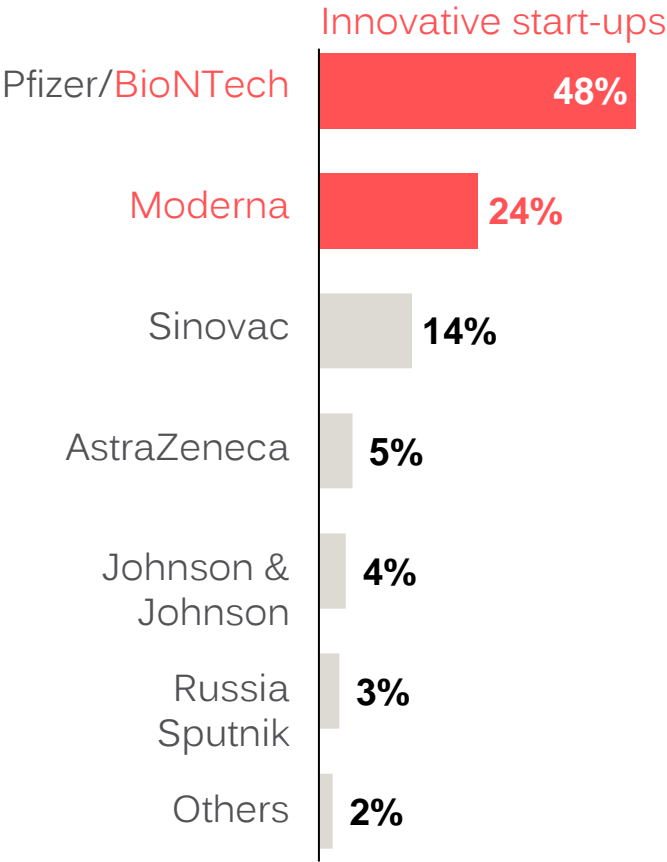
# Start-up-led Innovation and Japan's Positioning



Vaccine Manufacture Share  
by Global Value (2019)



Global **COVID-19**  
Vaccine Market (Q1,2021)



Innovation is shifting to **start-up-led** development and commercialization, even for **deep-tech**.

COVID-19 mRNA vaccinations were largely a product of startup-led innovation.

Sources: (left) [WHO](#)  
(right) [Morningstar](#) (Estimates)

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Start-up-led innovation is advancing **highly sophisticated deep technologies** in strategic fields and creating **new market universes**.

Biotech



Space-Tech



Quantum Computin



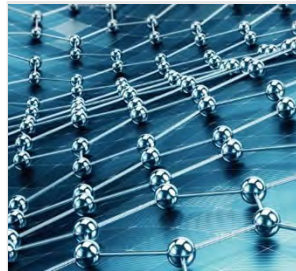
Drones and Robotics



AI



Advanced Materials



Battery Storage



Photonics Electronics



Clean-Tech New Energy

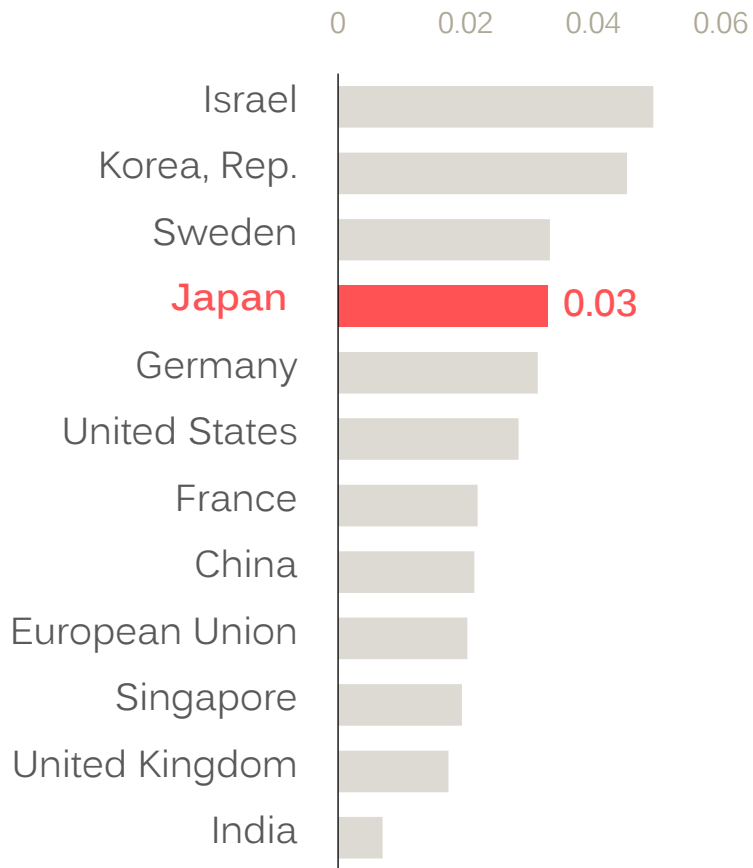


Web 3

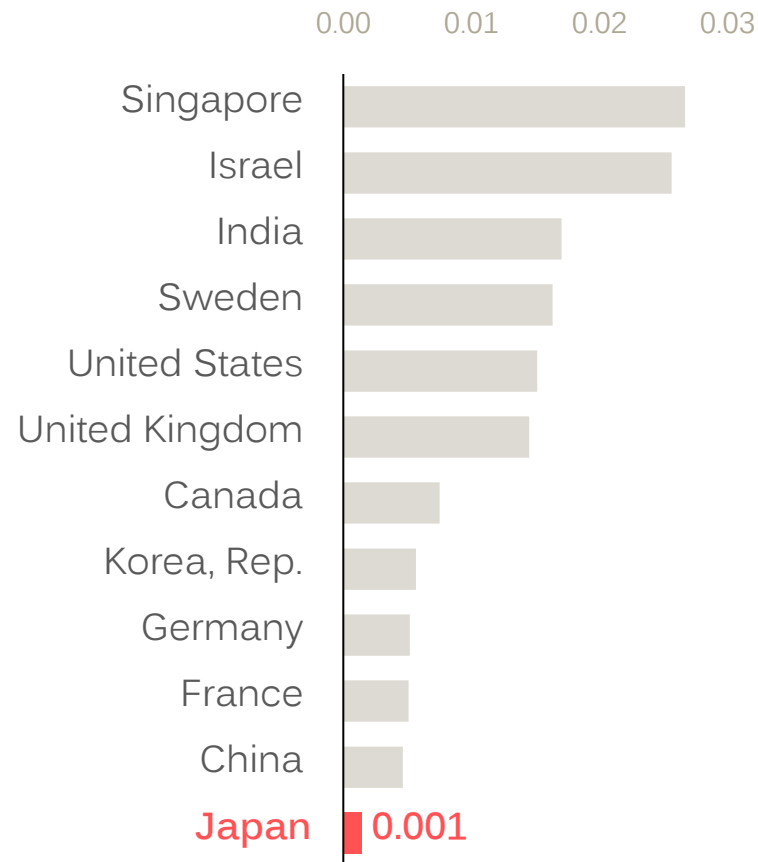


Sources of pictures (right to left, top to bottom):  
[Blalbiotec.com](https://www.blalbiotec.com/); [Omg.org](https://www.omg.org/); [Techcrunch](https://www.techcrunch.com/) (a);  
[Techcrunch](https://www.techcrunch.com/) (b); [Indiewire.com](https://www.indiewire.com/); [HKUST](https://www.hkust.edu.hk/); [NikkeiAsia](https://www.nikkeiasia.com/);  
[Communications of the ACM](https://www.comms.acm.org/); [IAEA](https://www.iaea.org/); [Forbes](https://www.forbes.com/)

R&D Expenditure (per GDP) %



VC Investment (per GDP) %

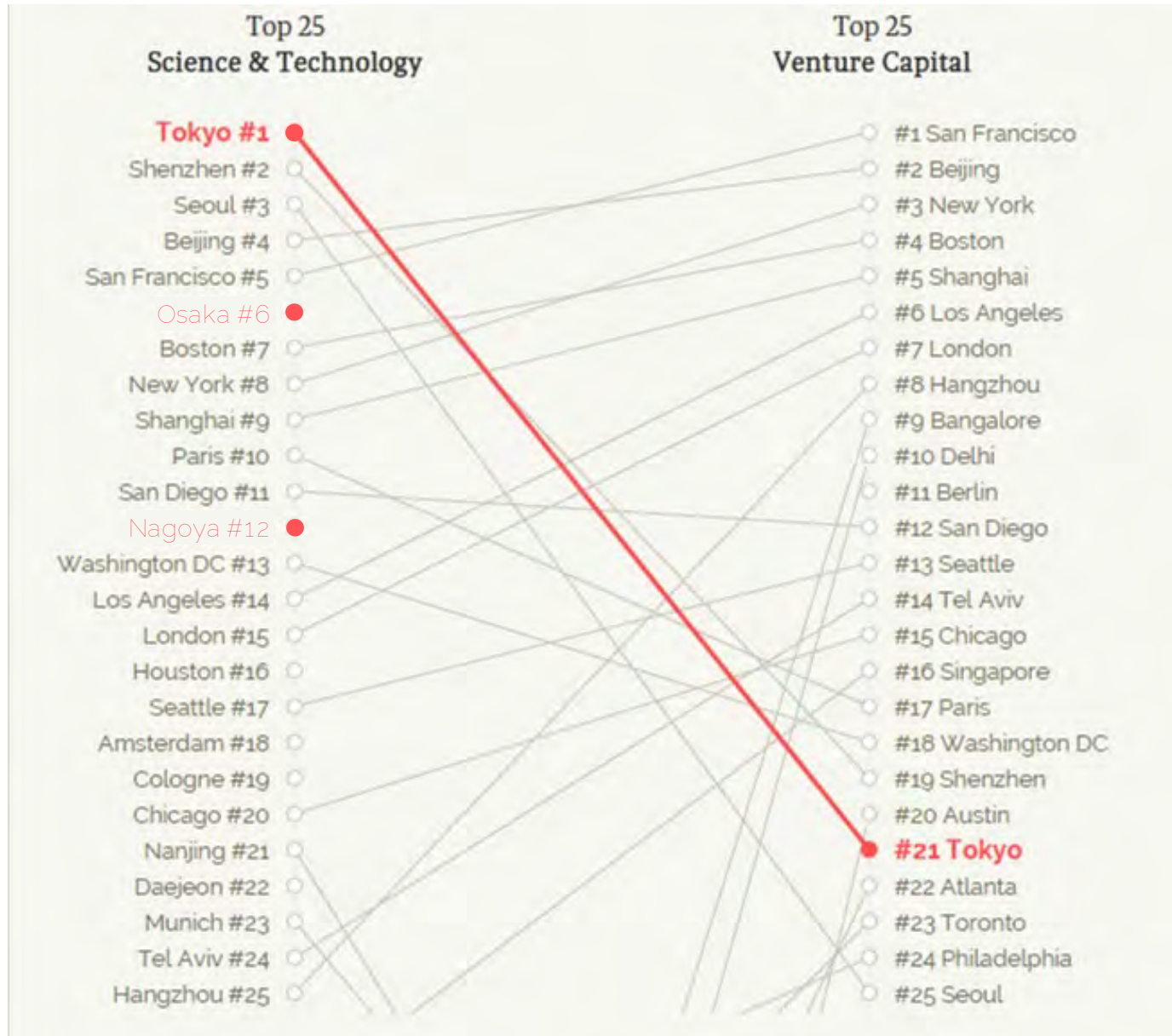


Note: Japan data includes all sources of startup funding

Japan's **innovation ecosystem has not evolved** yet to the new startup-led model.

Whereas Japan is a leader in traditional R&D, **VC investment level is extremely low** for its GDP.

Sources: (right) [Delroom.co](https://delroom.co) for VC investment and [World Bank](https://data.worldbank.org) for GDP  
(left) [OECD Main Science and Technology Indicators](https://data.oecd.org) (2019)

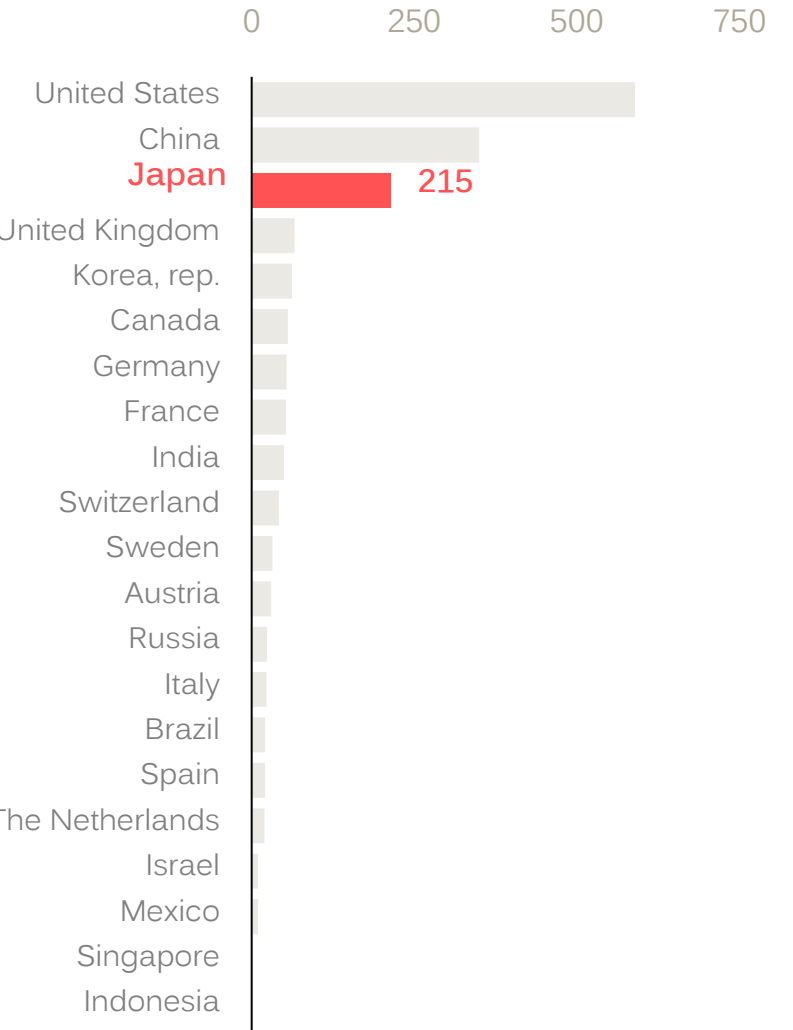


Japan's science and technology clusters are among the best in the world, producing high-quality outputs.

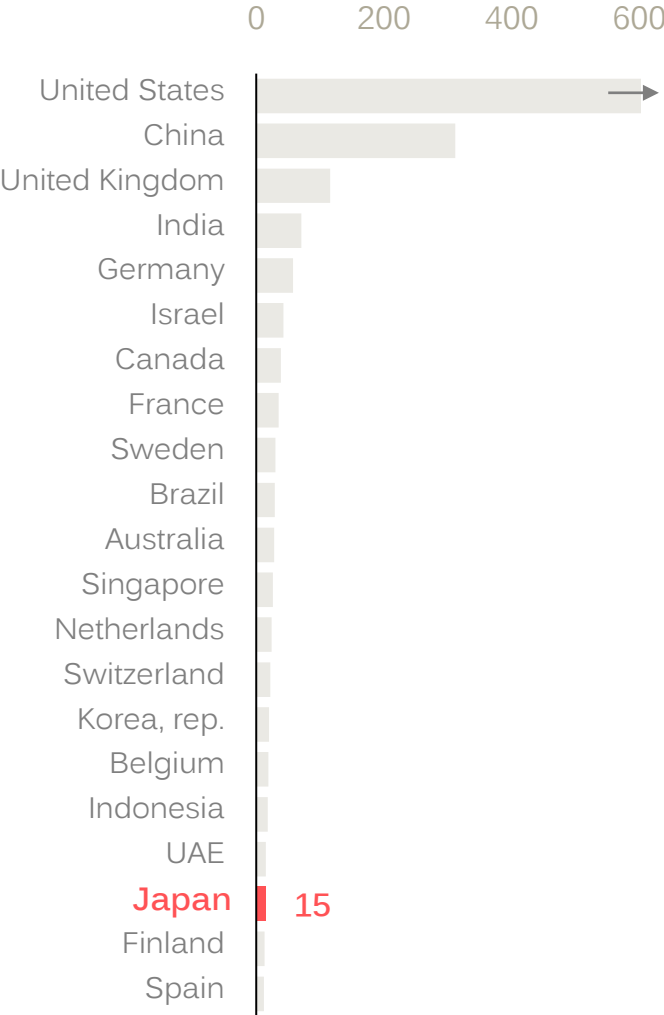
However, Japan does not have VC startup clusters at par to translate this output into the productive economic returns necessary to compete globally.



## Forbes Global 2000 Companies



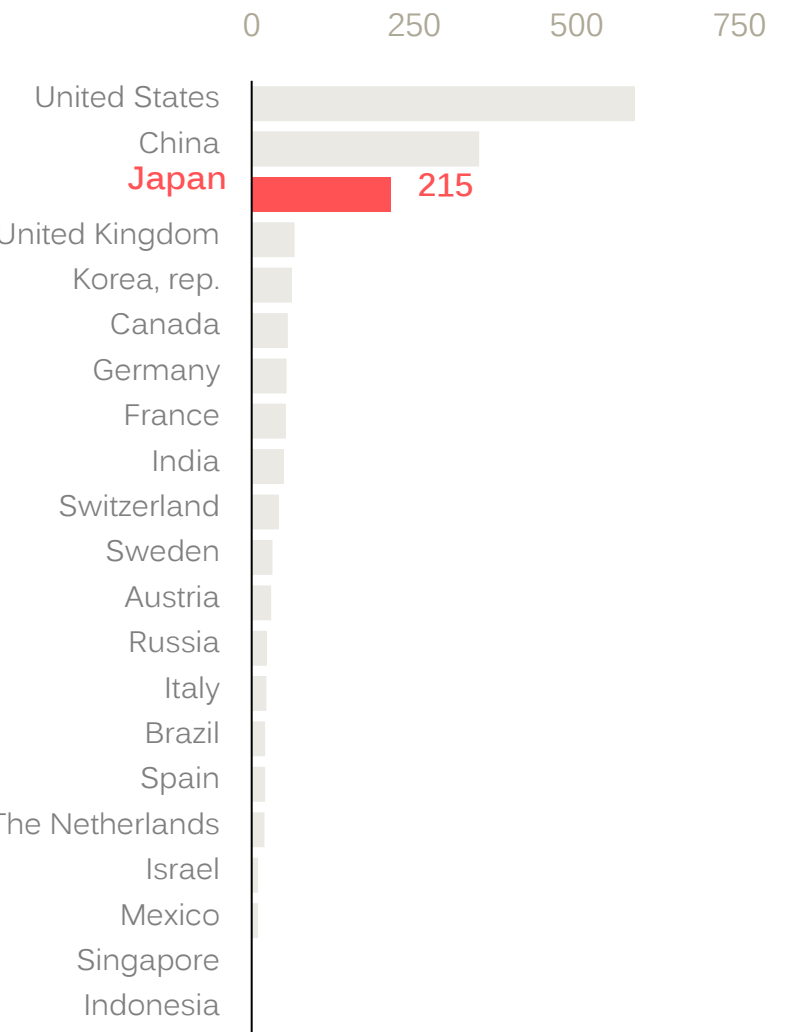
## Unicorns (>USD 1 Billion)



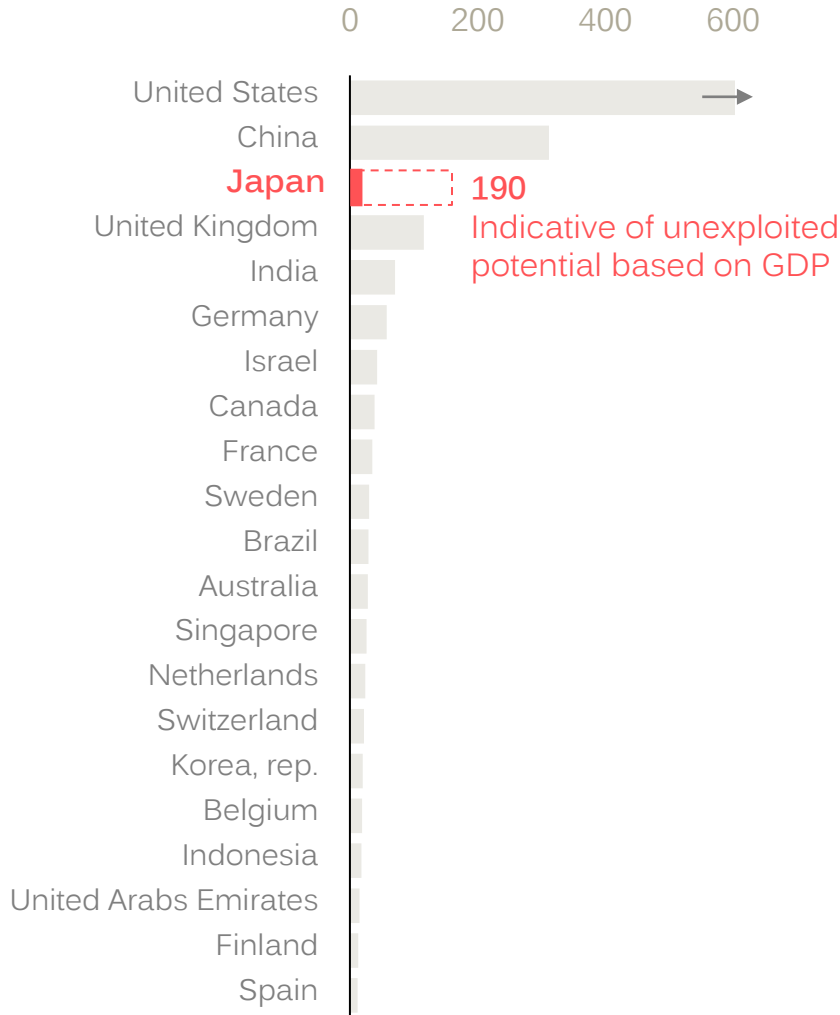
Japan's innovation ecosystem is **not** generating the new industry's global companies, impacting its forward-looking economic competitiveness.



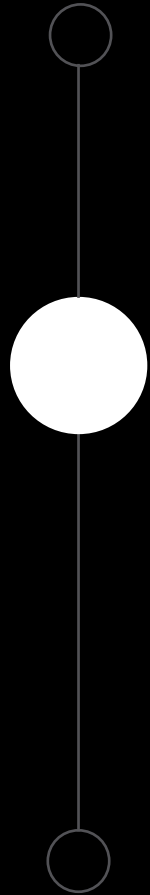
## Forbes Global 2000 Companies



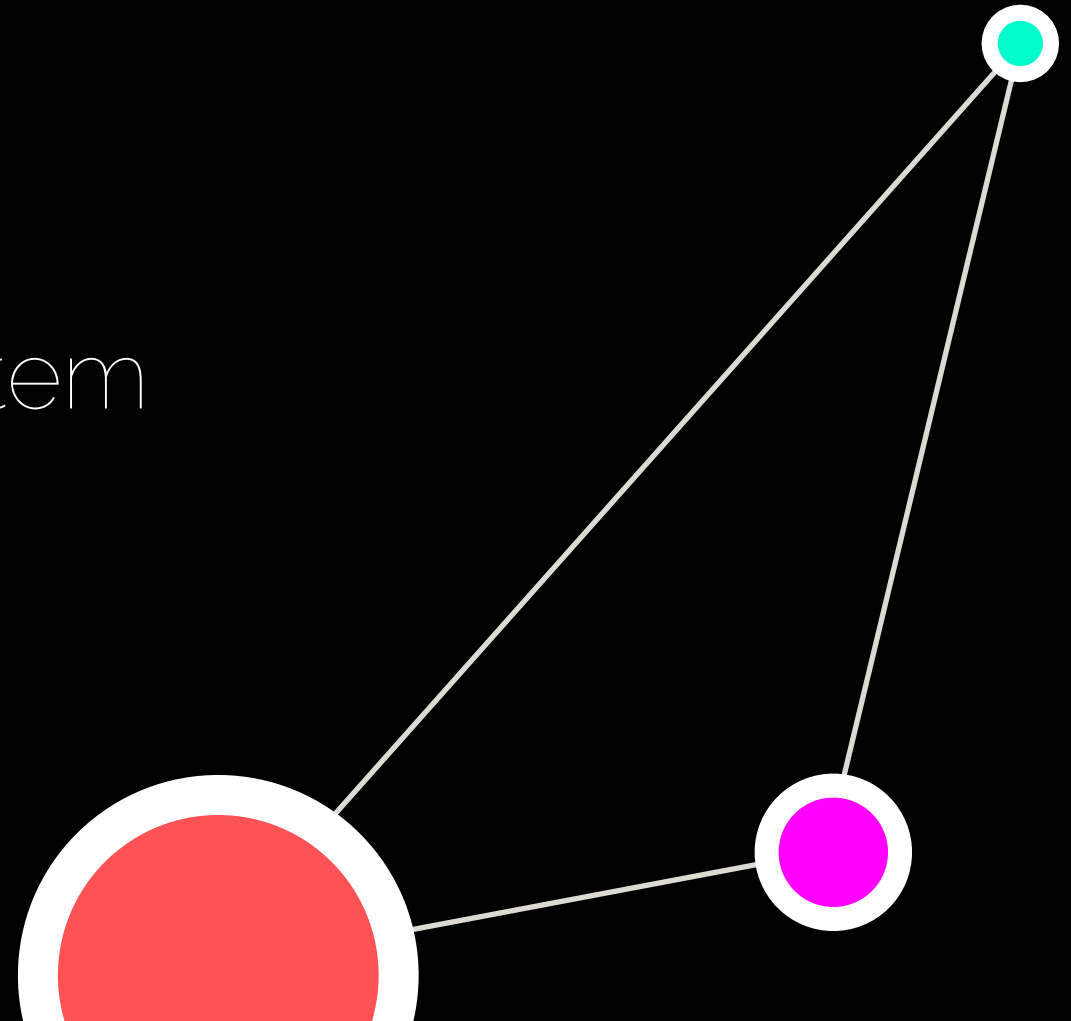
## Unicorns (>USD 1 Billion)



Japan's innovation ecosystem is **not** generating the new industry's global companies, impacting its forward-looking economic competitiveness.



Tokyo  
Start-up Ecosystem



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Start-ups need an ecosystem in which to grow.

4 core elements of the start-up ecosystem for policy action.

## Community / Social Networks

**Social networks of specialized actors that tie all elements of the ecosystem.** They help identify entrepreneurial opportunities, access to finance, and access to information and create resources and spillovers, strategic alliances, and status signaling.

## Support Infrastructure

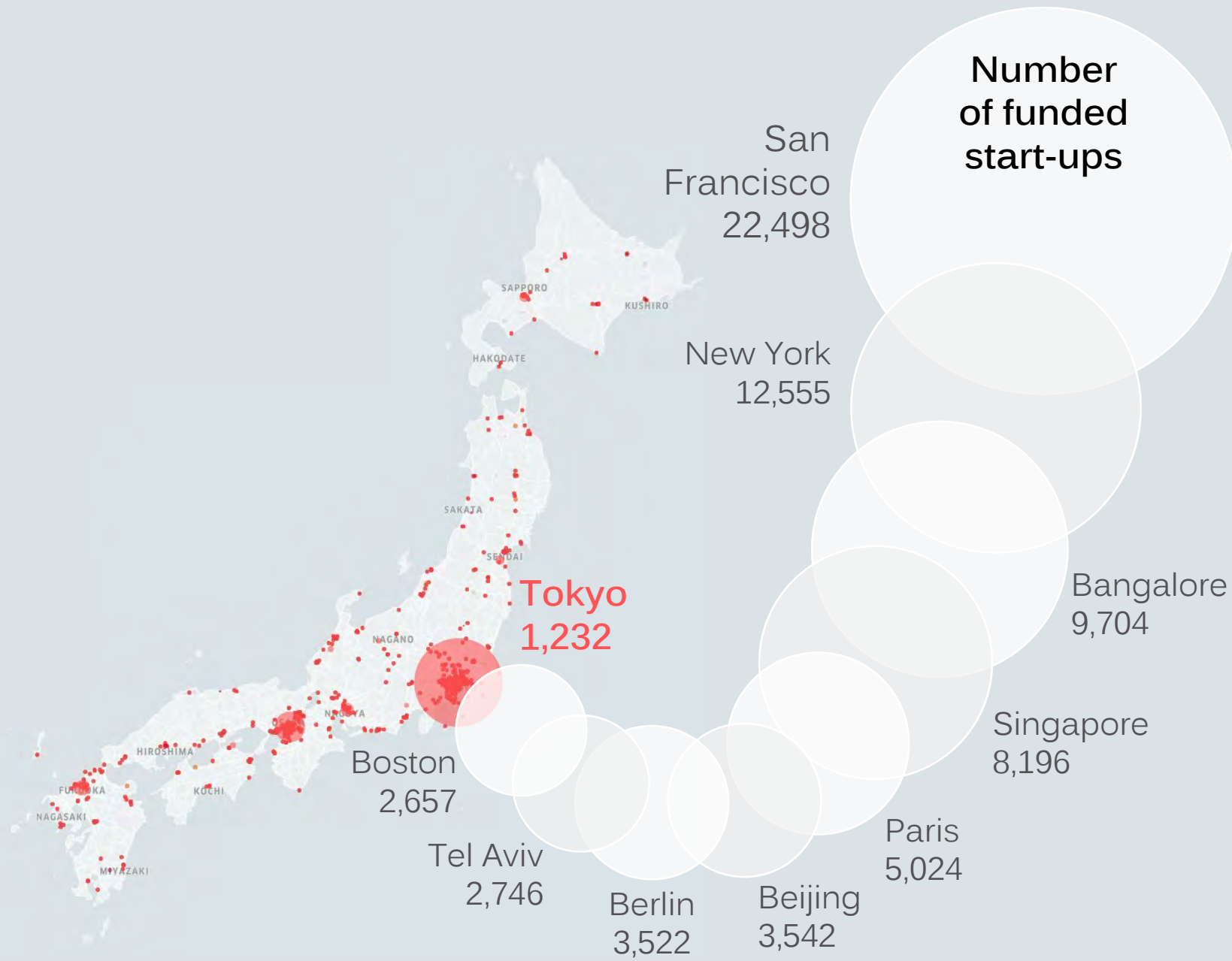
**Support programs for startups to grow. Accelerators and mentors are arguably the most active and renowned actors,** supporting entrepreneurs and startups in the early stages of development, provision of small amounts of seed investment, and active mentorship and networking.

## Investment

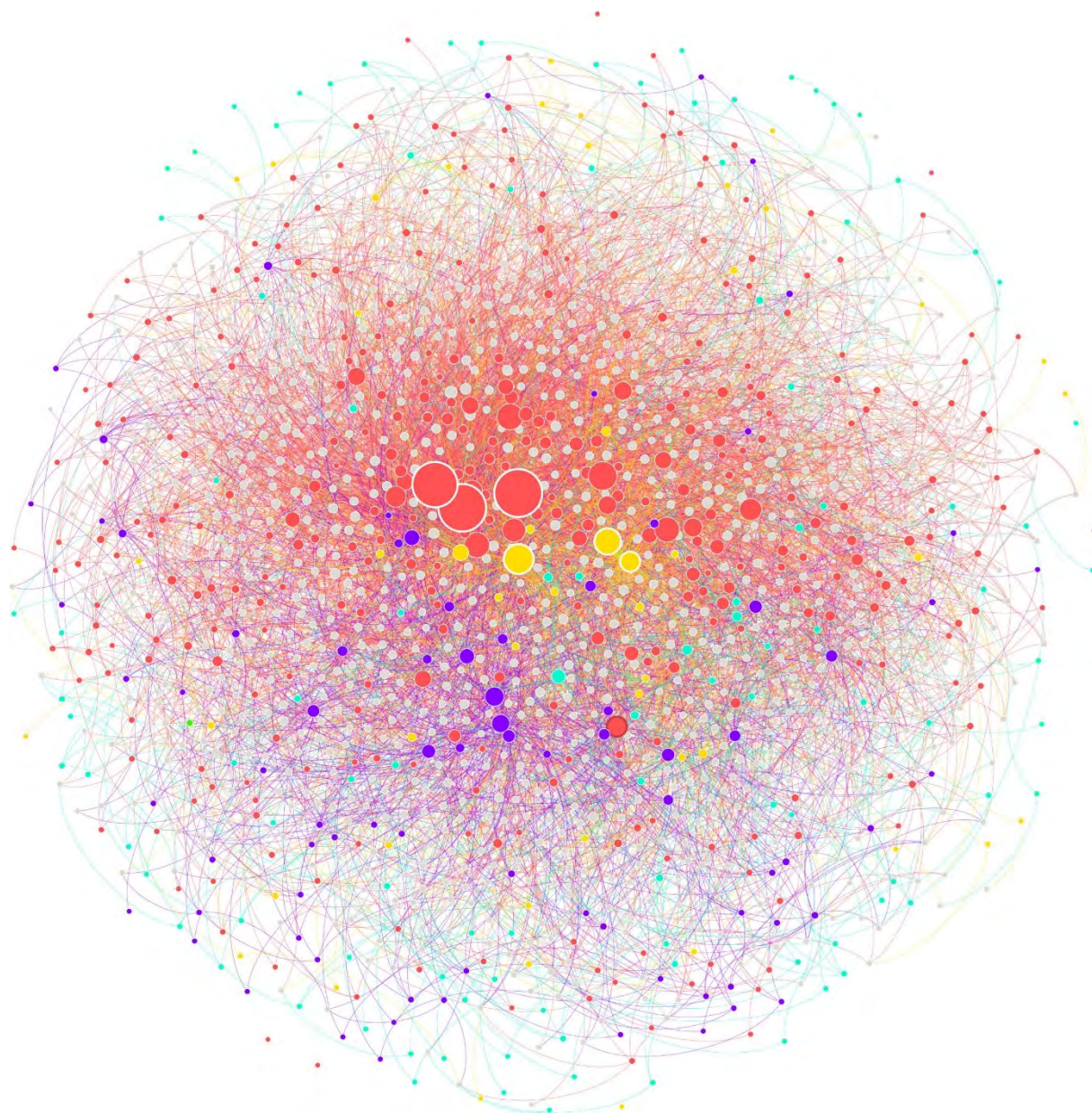
**Specialized funding to allow startup growth.** Venture capital (VC) and angel investors in all stages of the ladder of investment (from seed to scale-up). This is complemented with other funding sources and resources: government grants, corporate funding, finance institutions, etc.

## Skills Infrastructure

**Institutions that provide relevant skills for entrepreneurs to create competitive ventures.** Formal education actors (e.g., universities) with practical entrepreneurial, hands-on programs (curricular or extracurricular). Informal flexible actors (e.g., accelerators, bootcamps) for the non-university population.



Tokyo is today the only true start-up ecosystem in Japan with critical mass, but it is **small on global terms.**



Influence  
based on  
number of  
connections

Investors

Universities

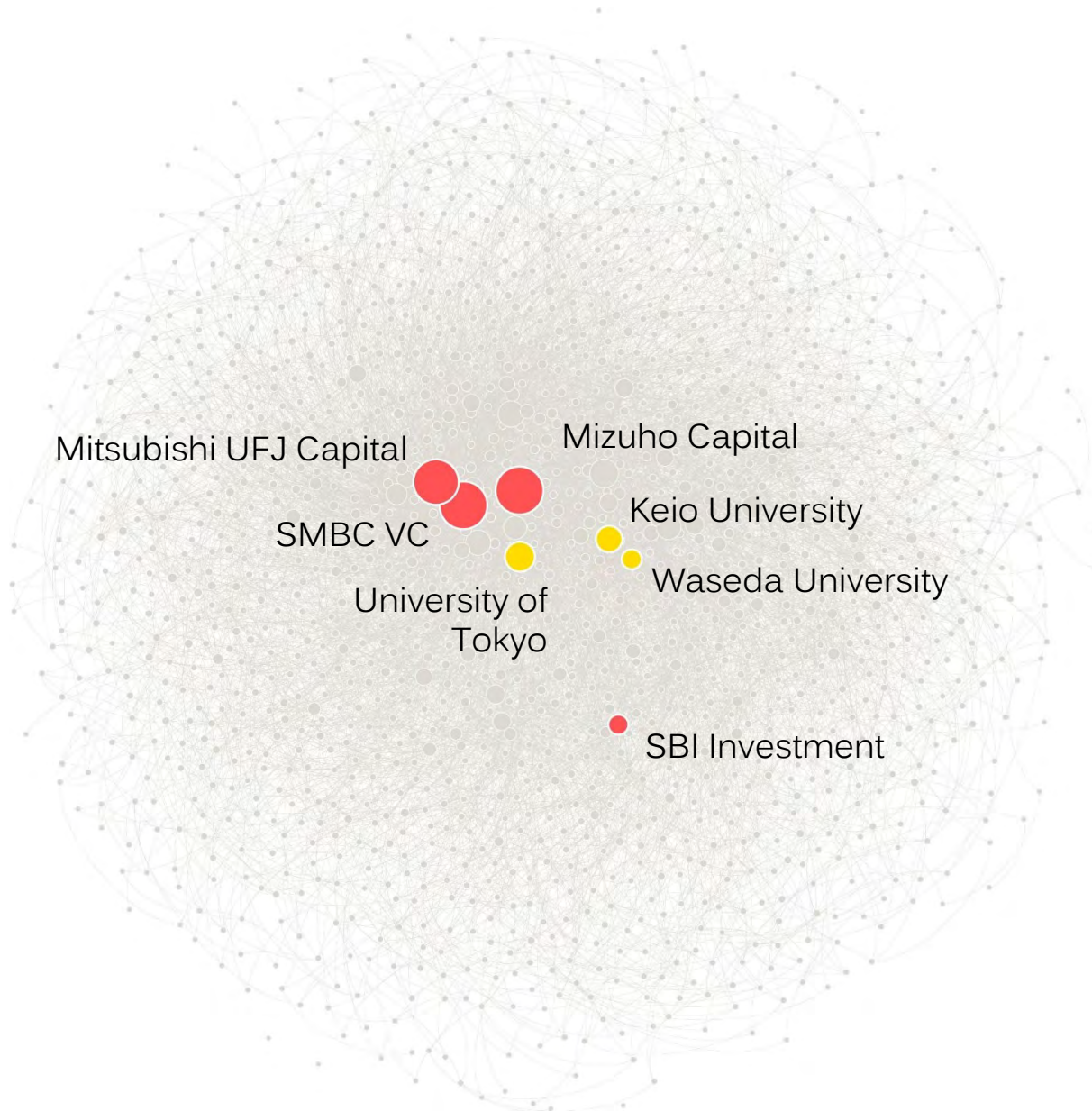
Accelerators

Start-ups

---

Tokyo's ecosystem  
is dominated by  
**traditional  
institutions** that do  
not cater to start-up  
needs, **limiting  
start-up growth and  
innovation.**





Influence  
based on  
number of  
connections

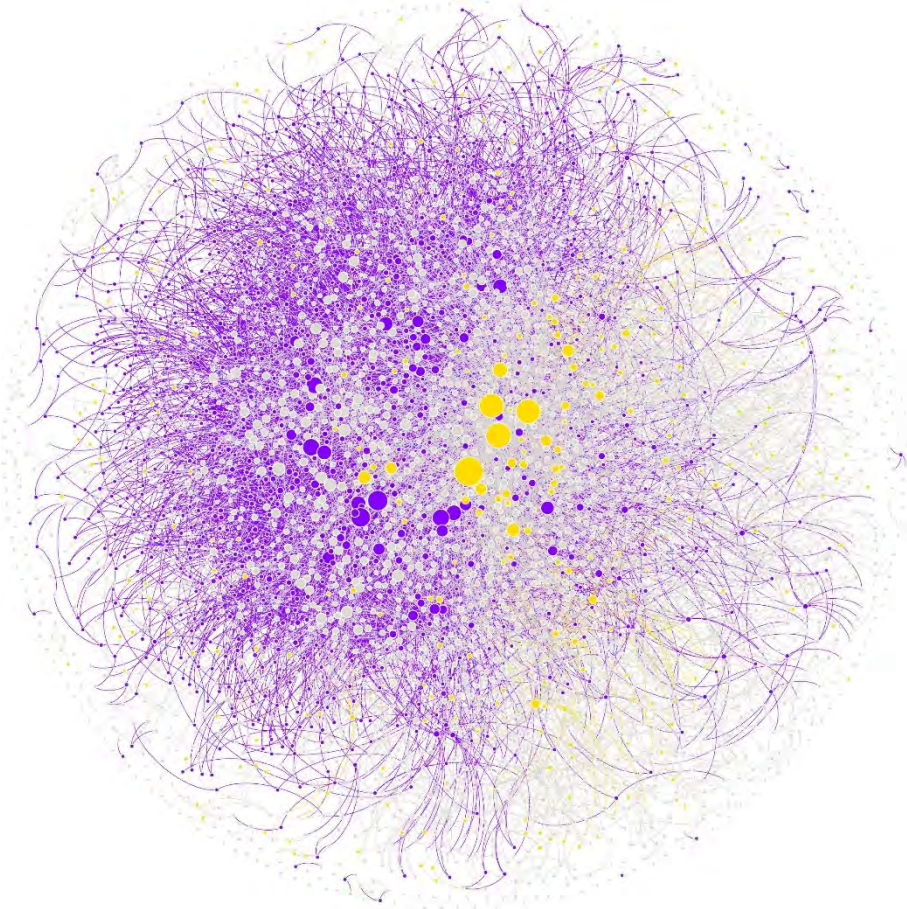
Investors

Universities

Tokyo's ecosystem is dominated by **traditional institutions** that do not cater to start-up needs, **limiting start-up growth and innovation.**

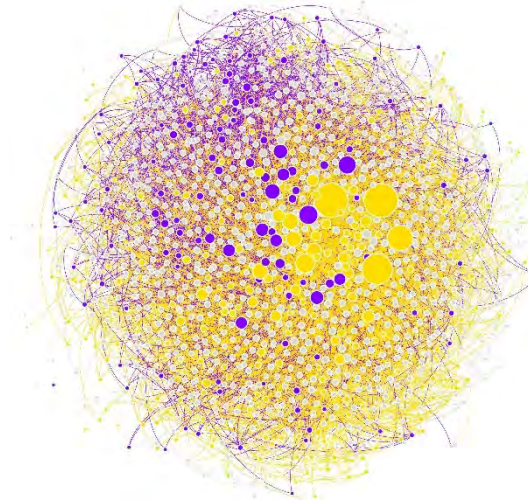
## New York

70% 30%



## Tokyo

24% 76%



Specialized

Non-specialized

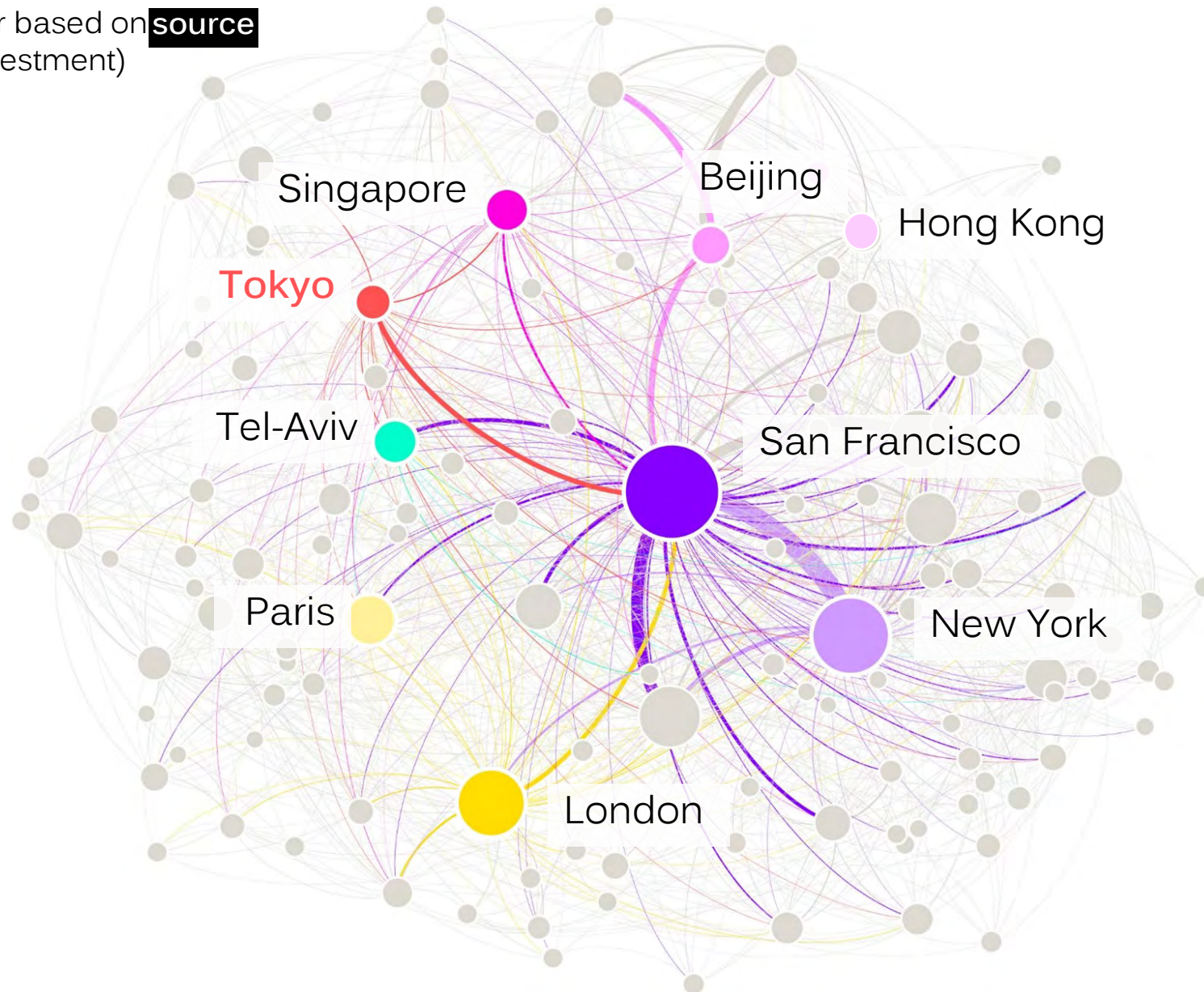
Startups

The start-up  
“growth-driven”  
specialized  
ecosystem in Tokyo  
is very small with  
limited impact.

Tokyo presents the  
reverse image of New  
York and other  
leading global start-  
up ecosystems.



Outbound investment  
(color based on **source**  
of investment)



The ecosystem is predominantly domestic; it has **very little international connectivity.**

Tokyo's only relevant link is with San Francisco for accessing innovation through investment.

| Country        | VC investment | VC per GDP (%) | Market Est. (USD B) |
|----------------|---------------|----------------|---------------------|
| Singapore      | 9.1           | 0.027          | 135.0               |
| Israel         | 10.4          | 0.026          | 129.7               |
| India          | 45.4          | 0.017          | 86.3                |
| Sweden         | 8.8           | 0.016          | 82.7                |
| United States  | 316.3         | 0.015          | 76.6                |
| United Kingdom | 40.2          | 0.015          | 73.5                |
| Canada         | 12.4          | 0.008          | 38.0                |
| Korea, Rep.    | 9.3           | 0.006          | 28.7                |
| Germany        | 20.0          | 0.005          | 26.3                |
| France         | 13.4          | 0.005          | 25.7                |
| China          | 68.4          | 0.005          | 23.5                |
| <b>Japan</b>   | <b>7.4</b>    | <b>0.001</b>   | <b>7.4</b>          |

**\$75 B**

## Investment

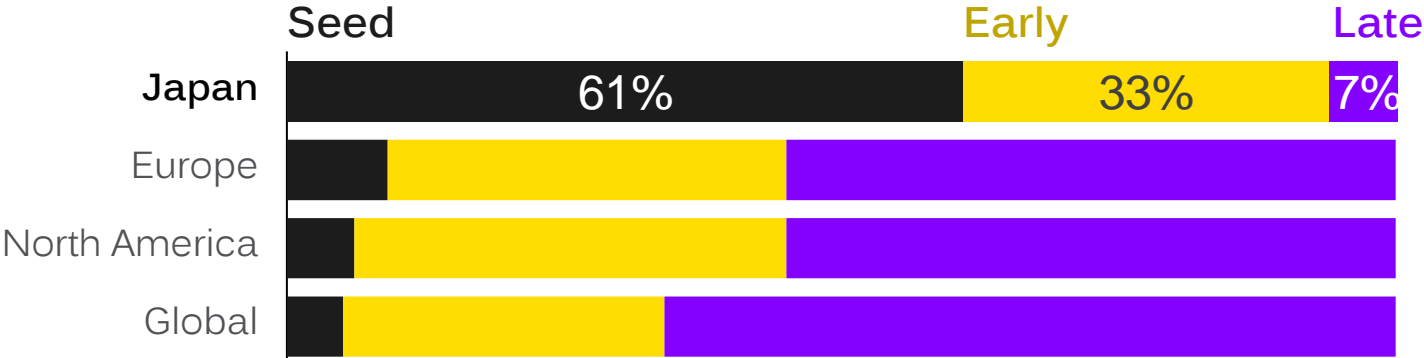
**Japan VC market is small for its GDP.**

Japan VC market potential is about **¥8.6 trillion (\$75 billion)**, to be on par with leading start-up countries.

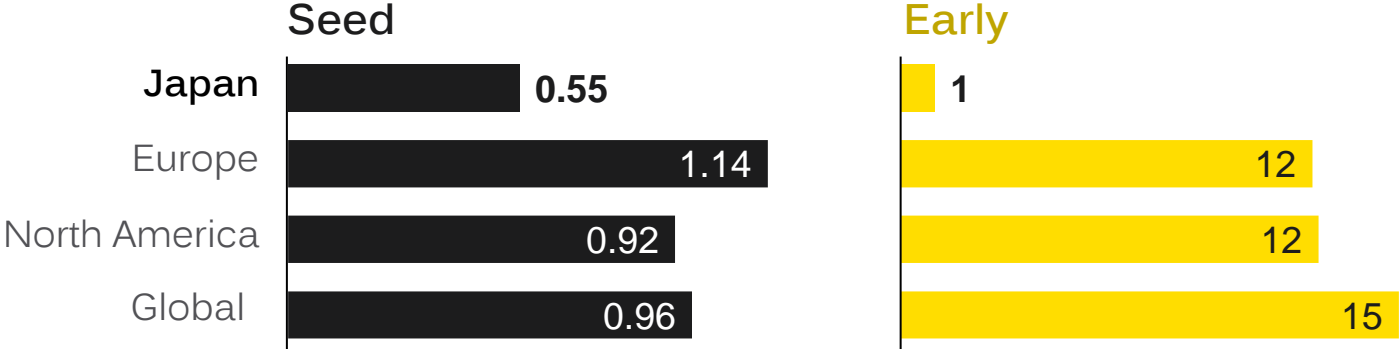
**10x** value growth potential with proper catalyzation.

Note: Japan data includes all sources of start-up funding

## Distribution of VC Investment Stages



## Average Deal Size per Investment Stage Category, USD Millions



## Investment

There are almost **no** risk-investment options for growth and scaling-up.

Growth-oriented capital is disproportionately deployed in **small** stages and ticket sizes.