

GSC:

Global Innovation Competitiveness Dimension

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GSC requires a global critical mass of both innovation supply and demand

1. | GSC needs to address both **supply and demand of innovation** to generate a global competitive advantage in the innovation market
 - Supply of innovation** requires concentration of all innovation agents generating innovation (eg reserachers, universities, RIs, companies, startups, etc.) to create a minimum critical mass for impact
 - Demand for innovation** requires concentration of the agents generating the commercial use of innovation AND the creation of new markets driven by innovation
2. | Concentration of both supply and demand **increases with vertical focus and specialization**
 - The more specialized and connected to specific national assets in each of the supply and demand sides, the more global competitiveness impact (for attraction and retention) it will achieve
3. | To expand impact to Japan innovation market, GSC needs to generate leading innovation cases that achieve success in global market commercialization: the **“Otani effect.”***

A) Innovation Supply:

Hubs are Critical for Supply Concentration

However, they need to have a minimum set of characteristics to be successful:

- Concentrate a critical mass of innovation agents in a **Place** –Dense concentration with friction
- Maximize meaningful interaction – **Activation** and driven encounters
- Provide high connectivity and multidisciplinary – **“Porous” public interaction** at all levels and types of stakeholders

Innovation hubs require a **neutral approach** with an active operation and programming to achieve all these characteristics

Concentration of Innovation Supply:

Models of Innovation Hubs

1. Generic Innovation Hubs



Examples:

STATION F

LAUCHPAD

CIC Campus

- Concentrates **critical mass in a given ecosystem**
- Requires large ecosystem base and strong ecosystem support for growth and scale
- Does not include whole supply chain of innovation
- Does not create sufficient critical mass in specific sectors
- Greater fit with large connected ecosystems

2. Vertical Sector Specific Hubs



Examples:

LAB CENTRAL

MASS ROBOTICS

THE DRIVERY

- Concentrates **critical mass in a vertical** and larger parts of the innovation supply chain (**research to commercialization**)
- Requires **specialized facilities and equipment** (eg labs, prototyping space)
- Requires a strong vertical base, but it does not require a large ecosystem base
- Requires ecosystem support for scale

The more the vertical specialization, the more the Regional and Global Competitiveness



	Generic	Vertical Umbrella Sector (eg Climate Tech)	Vertical Defined Sector (eg LifeScience)	Vertical Defined Subsector (eg Gene and Cell Therapy)
A. Innovation Supply Chain Integration				
Research		++	++	+++
Startup	+++	++	+++	+++
Investor	+	+	+	++
B. Innovation Attraction				
Local	+++	+++	+++	+++
National	++	++	+++	+++
Regional		+	++	+++
Global		-	+	++

For GSC to achieve competitiveness in innovation supply it will require further specialization within the focused sectors

B) Innovation Demand:

Commercialization and Market Creation Models

		Time to Impact	Vertical Focus	Def. of commercial application	GSC Model Included
A.	MIT/Stanford translation ecosystem model	Medium to Long term	Any sector	Public Academia	Included
B.	DARPA/ARPA/ARIA model	Medium to Long term	A number of specific areas/sectors	Public	Partially included
C.	Advance purchasing /Moonshot model <ul style="list-style-type: none"> - Operation WARP speed - NASA LEO market creation 	Short to Medium	One specific challenge (Superspecialization)	Public (National Emergency) Companies (Large single buyer or a concentration of buyers) Creates a New Market	Not yet included

If well executed, Advance Purchasing has maximum impact for attraction to innovation stakeholders globally and for global competitiveness.

GSC focus areas can achieve global market creation power through strategic specialization

	GSC Focus Areas	Supply concentration	Commercialization concentration	Potential for Market Creation
(LS)	Life Sciencies	Requires subsector specialization (eg Cell-Gene Therapy)	Subsector specialization can attract global investors and companies	Largest LS market is in abroad; a national market creation approach can drive national/regional innovation supply hub
(CT)	Climate Tech	Requires subsector specialization (eg solid batteries)	Subsector specialization can attract global investors and companies	Potential for Global Market Creation critical mass through concentration of buying power (corporate and/or public)
(AI)	Artificial Intelligence	Requires specialization and/or combination with GSC focus area (eg AI protein prediction)	Combination + Specialization can create sufficient regional critical mass	Potential for Global Market Creation critical mass through concentration of buying power (corporate and/or public)

Market creation potential can drive global innovation competitiveness through vertical subspecialization. This requires a carefully selected subsector of focus and an inclusion of a mechanism for market creation through Japan's economic assets (eg buyers' scale)*.

*While LS market is dominated by US-buyer scale; Japan's buyer scale has potential to create CT and AI global markets in subsectors.

Recommendations to consider in GSC model to maximize global competitiveness

1. | **Superspecialization of areas of focus** to achieve maximum concentration of both innovation supply and demand
 - Focus on **global concentration for CT and AI**, and **national** with global dimension for **LS**
 - Superspecialization definition criteria needs to consider the following: 1) market creation potential (eg, buyes scale), 2) innovation supply concentration of assets potential, 3) concentration of commercialiation potential and 4) untapped research translation potential.
2. | Assess inclusion of **innovation market creation mechanisms** that concentrate maximum buyer power in GSC to achieve global scale
3. | Connect/integrate other **public innovation demand programs** (eg moonshot, etc.) with GSC and prioritize policies to address **critical gaps in AI market** (eg talent and GPU capacity)
4. | Address generation of globally competitive **talent pipeline** for innovation commercialization and training-by-doing by global leaders in GSC (**“Otani-effect” model**)