Summary Report: Global Startup Campus (GSC) Workshop

Date and Time: Monday, November 11, 2024 10:00 to 11:30
Format: Online (Zoom Webinar)
Timetable: 10:00-10:15 Opening Remarks, Greetings from the Guest of Honor, Introduction
10:15-11:00 Panel Discussion
11:00-11:30 Q&A and Free Discussion
Panelists: Robert S. Langer, MIT Institute Professor
Joichi Ito, Executive Advisor, Office of GSC Initiative Promotion (President, Chiba Institute of Technology)
Themes: Scientific Entrepreneur, Translation, University Startup
Overview: In this workshop, the current state, and challenges of the startup ecosystem in Japan were discussed by comparing the situation in the US, as well as how the Global Startup Campus (GSC) initiative aims to address these challenges.

Robert Langer and Joi Ito at Global Startup Campus Workshop Panel Discussion on November 11, 2024

Key points discussed during the Panel Discussion, Q&A and Free Discussion

1. Robert Langer's Journey from MIT to Groundbreaking Innovations

Joi Ito explained that it would be vital to explore the factors behind Robert Langer's numerous achievements, beyond just awards and institutional metrics, by delving into the story of how Robert Langer reached his current position, starting with the highlights of his journey.

“Bob (Robert Langer) is actually not a person he’s an ecosystem. There’s the Bob Langer Ecosystem and since we’re trying to build an ecosystem here not just a bunch of buildings and institutions, you really have to understand how ecosystems start and how they operate and what the elements are.” – **Joi Ito** –

Robert Langer, after graduating from MIT in 1974, pursued research on medical techniques for cancer treatment and other applications instead of taking high-paying oil company jobs. Despite failing over 200 times, he remained determined and eventually succeeded. His work was published in Science and Nature, but this did not help him secure a teaching position in chemical engineering, which was focused on traditional fields like oil refining at the time. Instead, he obtained a teaching position in nutrition. His persistence through skepticism led to major scientific breakthroughs, founding companies like Moderna, and impacting over 2 billion lives while fostering innovation at MIT.

2. Transformative Leadership and Innovation

Robert Langer highlighted the significance of aiming for transformative change instead of just small improvements. He stressed the importance of accepting failure as part of the journey and persisting through difficulties. Langer also underscored the value of cross-functional collaboration and using positive reinforcement to inspire others, which are central to his innovative leadership style. He believes that it’s okay to fail, stating that while no one wants to fail, it’s better to attempt something with the potential for a significant impact and fail than to not try at all.

“I try to tell my students that it’s important to try to do something major, when you’re making decisions about what you’re going to do with your life, whether you go to a company or whether you’re at a university. To me, you have a choice – you can do something that’s incremental or you can do something that might change the world. And I always tell people to do the latter. Now, that may sound simple, but it really isn’t because if you try to change the world, there’s a very good possibility you’ll fail.” - **Robert Langer** –

3. The Role of Self-Advocacy and Teamwork in Startup Success

Robert Langer emphasized the importance of self-advocacy in driving innovation, as external support can be limited. Persistence and passion are crucial despite initial setbacks. He noted that a successful CEO must blend business acumen with scientific knowledge, and startups now lead innovation, requiring a supportive ecosystem with venture capital, patents, and collaboration.

“So, in the end, it’s just that people are very good at telling you what won’t work. So, if you aren’t your own champion, nobody else will be.” - **Robert Langer** -
“The scientists in the lab could be a CEO, but most of the time I don’t think they are advanced enough to be a CEO. And it’s a team. If you are going to have a company succeed, it’s really a team effort.” - **Robert Langer** –

4. The Shift from Corporate R&D to Startup Innovation

Joi Ito noted a shift in innovation from big companies and university labs to startups, driven by venture funding. Startups now lead innovation due to their efficiency and speed, with large companies often acquiring them. Key factors include access to venture capital, supportive ecosystems, and a cultural shift towards entrepreneurship. In Japan, enhancing venture capital, creating support structures, and fostering a culture of innovation could help build a similar ecosystem.

5. Key Factors that might be missing in Japanese Startup Ecosystem Transformation

Robert Langer mentioned that providing tax breaks for venture capital may be a crucial factor for Japan while there are several cultural and legal elements. There were three key factors that have contributed to the situation in the United States which may or may not be present in Japan.

(a) Capital Gains Tax Laws: Lower tax rates on investments and significant tax breaks for startups in some states encourage investment.
(b) Philanthropy Laws: Substantial tax deductions for donations to universities support research and innovation.
(c) Bayh-Dole Act: This 1980 legislation allows government-funded research to be exclusively licensed to companies, fostering commercialization and startup growth.

Additionally, a supportive culture at institutions like MIT and Stanford, along with advancements in biological sciences, have played crucial roles.

Robert Langer also suggested that to boost innovation in Japan, it would be advantageous to involve retired executives and scientists from top biotech and pharmaceutical companies as advisors for the Global Startup Campus. Additionally, engaging venture capitalists through outreach and providing incentives like tax breaks could be beneficial.

Joi Ito explained the main factors behind the success of the US as its ecosystem and human resources which is built on networks of individuals more than just institutions. One flaw in Japan's ecosystem is the lack of focus on market feedback and intellectual property in the early research phase.

6. The Impact of Individuals on University TLO Success

Robert Langer pointed out that the success of a university's Technology Licensing Organization (TLO) depends on the individuals involved, as shown by former Director of MIT Technology Licensing Office, Lita Nelsen's effective negotiations advancing a brain cancer treatment. However, TLO effectiveness varies, and fostering deep expertise with the right incentives within institutions is essential for supporting innovation and entrepreneurship.

7. Key Strategies for Thriving Entrepreneurial Ecosystems

Robert Langer noted that entrepreneurial ecosystems like Kendall Square and Silicon Valley thrive due to top universities like MIT and Stanford, which attract and nurture talent. These ecosystems grow as role models inspire new startups. Key strategies include investing in fellowships, strengthening universities, and promoting exchange programs to inspire and provide role models for aspiring entrepreneurs.

8. The Power of Networking and People Chemistry in Innovation

Joi Ito described Robert Langer as having an exceptional ability to connect people and ideas, even with his busy schedule. He prioritizes bringing together the right individuals, regardless of personal differences, to work on important projects. This matchmaking and focus on people chemistry are crucial elements in building a successful innovation ecosystem.

Robert Langer highlighted the importance of networking and connecting people to foster collaboration and innovation. He dedicates significant time to bringing together the right individuals, focusing on people chemistry to build a successful ecosystem where everyone contributes to meaningful projects.

"I mean, everything to me is about great people. I would trade the best equipment, the best everything to have the best people." - **Robert Langer** -

9. The Importance of Claims and Legal Expertise in Patent Filing

Robert Langer explained that when filing for a patent, it's crucial to assess whether a scientific paper is significant enough to warrant a patent, focusing on the claims to protect the invention. MIT's TLO and experienced lawyers assist in this process. Patents grant the right to sue for infringement, not to sell, so precise wording is essential. The system encourages innovation by granting exclusive rights for a limited time, after which the invention becomes public, motivating continuous innovation.

Robert Langer also noted that in the 1970s, MIT's technology licensing office was staffed entirely by lawyers. But in 1982, Niels Reimers from Stanford, who was instrumental in genetic engineering patents, spent a year at MIT and transformed the office by advocating for business professionals instead of lawyers, significantly changing MIT's approach to technology licensing.

"I'd always think of lawyers doing patents in two areas. Lawyers who write what's called prosecution, meaning writing the patent and the claims, and lawyers who do litigation." – **Robert Langer** –

10. Evolving University Funding Sources and the Role of Venture Capital

Robert Langer noted the relationship between universities and funding sources has evolved, with venture capitalists now seen as essential for substantial medical advancement funding, bringing valuable experience and networks. Philanthropy complements government funding by supporting innovative projects that might not receive traditional grants, creating a dynamic environment for innovation despite startup success inequalities.

"You know, people used to call venture capitalists and maybe still call them vulture capitalists. And so, a lot of people don't like dealing with them. And I would say if you don't need to deal with them that's probably better. But the challenge in medicine is you need so much money. And so, if you didn't get the venture capital, it's going to be hard to really get advanced enough to make something happen." – **Robert Langer** –

“Some of them are very good and plus they may have a network of people that could be good CEO’s and board members. So having a really good venture capitalists who are visionary is important, but also having venture capitalists that will stick with you in good times and bad, that’s important.” – **Robert Langer** –

11. The Dual Nature of Japanese Business Culture

Joi Ito’ s observation highlights how the strengths of Japanese business culture, such as community harmony and persistence, can also be weaknesses. While less competitiveness can hinder startups, it fosters collaboration. The ”stick-to-it-ness” or persistence is admirable but can sometimes lead to non-commercial ventures. Additionally, the ability to flourish without growth reflects a unique cultural and historical context. He also believes that the less competitive nature of Japanese people, while a strength, can also be a weakness that hinders their ability to succeed as startups.

“There is a stick-to-it-ness of Japanese that I think is special and then I think Japanese tend to be happy without growth. It’s this flourishing without growth is a thing that Japanese have learned how to do. And partially it’s this island thing and a lot of it is the history and even the aesthetic of Japanese. So, obviously it’s the opposite in the US where everybody has to grow, even though when maybe they shouldn’t be growing. And I feel like that combination should be kind of important because the balance is what you want, right? So, I think it would be interesting if the Global Startup Campus could bring successful people like Bob and his ecosystem to Japan, to bring the best in breed of that culture and to see how we can then bridge very unique Japanese cultures.” – **Joi Ito** –

12. Wrap-up: Key Elements for Building a Thriving Startup Ecosystem

a) Sessions like this are invaluable for fostering discussions and sharing ideas on what works and what doesn’t in building a startup ecosystem.
b) Combining strong science and engineering programs with an entrepreneurial spirit at Japanese universities is crucial.
c) This approach has been key to the success of areas around MIT and Stanford and could similarly benefit Japan.
d) Creating a supportive environment for innovation and entrepreneurship is essential for building a thriving startup ecosystem.

-END-