# Governmental Policies toward Forming an Innovation Ecosystem

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#### 1. Introduction

A law revising parts of the Basic Act on Science and Technology (enacted in 1995) was established during the 201st session of the National Diet in 2020, and it was changed to the "Basic Act on Science, Technology and Innovation." In addition, the "Science, Technology and Innovation Basic Plan"<sup>\*1</sup> was created for the fiveyear period starting in FY2021, based on the Science, Technology and Innovation Basic Law in March 2021 (Figure 1). This article will provide a deeper understanding of policies related to forming an innovation ecosystem in the next five years, as indicated in the Science, Technology and Innovation Basic Plan.

#### 2. Positioning within the Science, Technology and Innovation Basic Plan

Based on the addition of "Innovation" in the revisions described above, the Science, Technology and Innovation

Figure 1: Science, Technology and Innovation Basic Plan overview (March 2021 Cabinet decision)



\*1 Science, Technology and Innovation Basic Plan (March 2021 Cabinet decision) https://www8.cao.go.jp/cstp/kihonkeikaku/index6.html

1

Basic Plan set in March 2021 goes beyond discussion of research and development, stipulating creation of societal value and solutions to societal issues by creating and using "Comprehensive Knowledge" that integrates the natural sciences with the humanities and social sciences. While the concept of creation implied by "innovation" has conventionally tended to be taken as behaviors directly related to product development or production activities by enterprises, in the Science, Technology and Innovation Basic Plan, it is understood as a broader subject, creating larger changes in the economy or society and encompassing creation of new value and reform of society itself. This also provides background for the changes to the Basic Act on Science, Technology and Innovation and the additions regarding creation of innovation.

Based on the above, the Science, Technology and Innovation Basic Plan includes a policy to "Form an innovation ecosystem that will be a foundation for creating new industries that co-create value," which the government will work on in the next five years, with the goal reforming society by creating new value and solving societal issues. Also as background to this is the trend in which startup enterprises typified by the GAFA companies, grow very quickly in a short time, overcoming larger enterprises to become huge IT companies and reforming the structure of industry and even lifestyles. Creating innovation is an important driving force in creating startups, and advanced nations are working strategically to form startup ecosystems to support creation of innovative startups. It is important for Japan to also form a world-class startup ecosystem. It is also important to form positive cycles of innovation driven by societal need, creating businesses from the R&D results of startups responding to societal need and creating products and services that become popular around the world. Open Innovation is also necessary for existing large enterprises to collaborate with startups that are utilizing their mobility to face challenges, and universities and R&D companies

Figure 2: Basic policies for startup ecosystem formation (Excerpt from "A Startup Ecosystem Support Package: A new path to growth and overcoming COVID-19," July 2020 Cabinet, MEXT, METI)



\*2 Global base cities: Tokyo area (Tokyo, Kawasaki, Yokohama, Wakou, Tsukuba, etc.), Nagoya and Hamamatsu, Kansai area (Osaka, Kyoto, Kobe), Fukuoka. Driver base cities: Hokkaido area (Sapporo, etc.) Sendai, Hiroshima, Kita-Kyushu.

Figure 3: Startup ecosystem base formation (Excerpt from "Beyond Limits. Unlock Our Potential: Strategies for forming bases for a world-class startup ecosystem,"

June 2019)

## **Basic Policies for Forming a Startup Ecosystem**

With the spread of the COVID-19 pandemic, <u>risks associated with autonomous ecosystem formation have</u> <u>materialized resulting in a major crossroad currently</u>, such as reduced supply of risk management for startups and stagnation of business development and R&D.

Startups, with their mobility, will be key players in driving innovation for reform of society in the future.

Cities will be selected to be the core of the ecosystem, based on the Startup ecosystem base formation strategy (June 2019).

 $\square \quad \underline{\text{The next three years will be a focused support period}} \rightarrow \underline{\text{Startup Ecosystem Support Package}}$ 

#### Startup ecosystem support package



that have seed technologies. The Science, Technology and Innovation Basic Plan requires creation of an innovation ecosystem as described above, closely-connected and interlinked to produce innovation.

#### 3. Forming a startup ecosystem

To form a world-class startup ecosystem in Japan, eight "startup" cities (four as Global Startup Cities and four as Startup cities) were selected in July 2020<sup>\*2</sup>, based on "Beyond Limits. Unlock Our Potential: Strategies for forming the base of a world-class startup ecosystem" (June 2016)(Figure2). In July 2020, the Cabinet, the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Economy, Trade and Industry also compiled, "A Startup Ecosystem Support Package: A new path to growth and overcoming COVID-19," to build startup support systems for a focused support period of three years starting in 2020 (Figure 3).

For example, in its program to expand investment in public and private R&D (PRISM), the Cabinet established a new project to promote formation of a startup ecosystem in FY2020, nurtured startups in the base cities through lectures, individual consultation and network building, and started an Acceleration Program to support overseas expansion and other initiatives. In FY2021, the number of enterprises being supported was expanded, field-specific courses were started so that programs suited to the needs of participating companies could be offered, and other support was provided for activities such as expanding domestic startups overseas, conceiving business plans to attract investment from overseas investors and enterprises, matching specialists with startups and promotional activities<sup>\*3</sup>.

3

<sup>\*3</sup> FY2020 Supplementary budget Program to Expand Investment in Public and Private R&D (PRISM), Policy to enact the startup ecosystem formation project https://www8.cao.go.jp/cstp/gaiyo/ sip/210210/siryo3.pdf

### 4. Forming positive cycles of innovation driven by the needs of society

Based on the concept of innovation described above, as something that creates new value and brings reform to society itself, producing solutions to problems considering the needs of cities, regional areas and society is an important driving force for innovation. The United States has a Small Business Innovation Research (SBIR) system that suggests topics based on the needs of the country, supports a wide range of R&D from the earliest stages, and supports startups and other companies through a multi-stage selection process. With the USA SBIR, government ministries have a duty to spend a fixed ratio of their R&D budgets on initiatives such as startups, operating on uniform rules across ministries, and this has produced many enterprises, such as Qualcomm and iRobot, that have brought innovation to industry and continued to grow.

Japan has also operated our own version of an SBIR since 1999, the Small and Medium Enterprise Technical Innovation System, operated mainly by the METI Small and Medium Enterprise Agency. However, some shortcomings have been identified, such as not being strategic in fields of expenditure, insufficient support for earlier stages of R&D such as feasibility studies and proofs of concept, and the lack of consistent rules for multi-stage selection and evaluation.

In 2020, the Law on the Revitalization of Science, Technology and Innovation Creation was reviewed and revised to strengthen initiatives spanning ministries and agencies and overseen by the Cabinet Office, to make the SBIR in Japan more effective (enacted April 1, 2021). Based on the law, the Cabinet issued "2021 Policy on Expenditure Targets for Funding to Support Specific New Technologies," and "Guidelines for Delivering Designated Support Funding," in June 2021. Through this, a fixed ratio of specific R&D budgets (Specified new technology subsidies, etc.) in each ministry would be allocated to initiatives such as startups, and a target expenditure of 53.7B yen was established. Further, as a consistent set of rules for offering and operating the designated support funds from each ministry, concrete

#### Figure 4: Japanese SBIR



R&D topics were presented based on policy requirements, guidelines were given for public procurement and performance in order to implement results in society using a voluntary agreement system, and plans were made to build an integrated support system spanning R&D through government procurement and use by consumers, with cooperation among ministries and agencies and coordination by the Cabinet Office (Figure 4). These initiatives are building a system that will stimulate new challenges for startups, which are responsible for much innovation.

### 5. Casting off policies of closed innovation and promoting Open Innovation

Implementing results of R&D and other efforts in society quickly and applying them as solutions to societal issues or to create new value is a major issue recently, and Open Innovation is attracting attention as a way to overcome organizational barriers, combine knowledge, technology and management resources, and to promote new initiatives. Businesses are also beginning to move away from policies of closed innovation and toward collaboration with startups that are using their mobility to take up challenges in various fields, and universities and national R&D agencies that possess seed technologies.

To further promote Open Innovation in Japan, the "Japan Open Innovation Prize," has been held each year starting in 2018, to give recognition to initiatives that show strong leadership and originality, and promise to be role models for the future. This is the fourth year that prizes have been awarded\*4, and a variety of participants have been honored, including startups, businesses, universities and local governments. It is hoped that this recognition will help to overcome the barriers of organizations, combining knowledge, technology, and management resources to drive new initiatives and promote advanced projects, thereby accelerating the positive cycles of commercializing R&D results and creating new added value through Open Innovation among the various participants.

#### 6. Conclusion

As discussed above, there is a need to form a startup ecosystem and establish positive cycles of innovation driven by the needs of society, and also to promote movement away from policies of closed innovation toward Open Innovation, based on the Science, Technology and Innovation Basic Plan. These objectives are closely related to realizing an innovation ecosystem, to creating new value in COVID and post-COVID times, and to reforming society to achieve "a society in which all citizens can benefit from the creations of science, technology and innovation," as stipulated in the Science, Technology and Innovation Basic Law.

Cover Art



kyotomeishonouchi arashiyama manka (Full Blossom at Arashiyama on the Oi River) Utagawa Hiroshige (1797~1858)

> Collection of the Art Research Center (ARC) Ritsumeikan University Object number: arcBK06-0013\_004

5