

## **University–Industry partnership policies for university-centered venture ecosystems**

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Japan’s university–industry partnership system dates back to 1983, when joint research programs were established by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), and 1987, when regional centers for joint research were set up. Back then, joint research programs were established as local sites for companies to hold discussions with universities, so they lacked significant impact in promoting joint research for creating true innovation. However, with the subsequent enactment of the Basic Act on Science and Technology, the Intellectual Property Basic Act, and other laws, joint research programs began to include academic contributions to the creation of intellectual property. Yet, little was accomplished, even in terms of business creation, because large corporations and universities were caught in a zero-sum game type of tension in terms of the value assigned to joint research and particularly, the value assigned to intellectual property.

Meanwhile, around 2000, universities started up programs to create venture firms, and after many fits and starts, we have witnessed the creation of venture firms with a market capitalization of over 100 billion yen in recent years. Most of the intellectual property created at universities had been supplied to large corporations, but intellectual property that was transferred to venture firms as an exception was a success in terms of equity value, and some universities even started earning major returns. When this happened, the industry became interested in universities’ venture-firm creation functions. As a result, more partnerships have been formed between large corporations and universities’ venture firms, and efforts have been focused on creating venture firms from the results of research conducted by corporations and universities.

In this context, university–industry partnership programs were positioned as social contribution activities for universities, whose main business is research and education. Nowadays, these programs have come to be regarded as an essential function of university management in that they play a role in university reform. This led to the Guidelines for Enhancing Industry-Academia-Government Collaboration Activities, which were implemented in 2016.

Still, these guidelines were meant only to bolster the usual scheme of joint research by large corporations and universities. Also, they did not factor in any impact from the creation of universities’ venture firms, so they did not do away with zero-sum game attitudes. Consequently, on the policy level, there was virtually no integration between joint research and the creation of venture firms—the two ways in which universities and industry collaborate.

However, empirical analysis of innovations created at universities suggests that the impact of collaborative activities by academia and industry is not merely a unilateral connection between them in terms of joint research but can be viewed as an expansion of the cycles of funding, human resources, and knowledge (intellectual property) in an ecosystem that consists of the four elements of universities, corporations, venture firms, and venture capital. From this perspective, we can see that measures to spur the development of these resource flows need to be implemented, as well as eliminating the problems that are stumbling blocks to the expansion of this ecosystem.

Our proposal includes the following measures for facilitating the current development of university–industry partnerships:

- ① Promote the creation of venture funds that will invest in university- and corporate-sponsored spinoffs and carve-out ventures.
- ② Create a joint venture system for universities and corporations by improving the application of the Act on Partnerships

for Research on Technology and conduct awareness campaigns regarding this system.

- ③ As bases for supplying human resources to local communities, partner with regional financial institutions that operate personnel referral services for local communities using search funds and the like so that universities throughout the country can contribute to regional revitalization.
- ④ Share the ecosystem's system of ideals, which is to direct the flow of funds and intellectual property in the ecosystem through SDGs' ESG guidance and make sure that those who belong to the ecosystem are aware of the risks, including the risks involved in export controls.
- ⑤ Adopt a sponsored model system like the type of sponsored research used in the U.S. as the basic university–industry collaborative research model for companies in Japan and abroad.
- ⑥ For joint research that is akin to consulting, adopt an academic guidance system that is not premised on the creation of intellectual property.
- ⑦ The URA should consider taking responsibility for managing and developing the university ecosystems that university researchers are contributing to.
- ⑧ Show the importance of these measures to the key managers who are in charge of promoting them by giving these managers formal responsibility for ecosystem development.

In summary, in revising the Guidelines for Enhancing Industry-Academia-Government Collaboration Activities, we propose that the focus be not only on enhancing joint research by corporations and universities but also on guidelines that focus on the development of an ecosystem that encompasses venture firms and financial institutions. It was with this in mind that we have proposed the concrete measures given above in items (1) through (8).

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