Current Situation of Academia-Industry Collaboration in Japan

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Japan Patent Office

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Why are Universities important in Research and Development?

- Universities have 19% of total research funding.
- 38% of researchers work for universities.
- The level of academic research is among the best in the world.

**Research Funding**

- Total: **19 trillion yen**
- **Universities 19%**
- **(3.6 trillion yen)**

**Number of Researchers**

- Total: **850 thousands**
- **Universities 38%**
- **(320 thousands)**

Source: Ministry of Internal Affairs and Communications, ‘Research survey report on science and technology’ (2017)

People expect universities to exploit their research outcome for the society.

Contribution to the Society became the 3rd mission of Universities.
<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>Law facilitating tech transfer from universities (TLO law)</td>
</tr>
<tr>
<td>1999</td>
<td>Act on Special Measures concerning Industrial Revitalization</td>
</tr>
<tr>
<td></td>
<td>(Japanese version of Bye-Dole act)</td>
</tr>
<tr>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>Basic Law on Intellectual Property (3rd Mission of University)</td>
</tr>
<tr>
<td></td>
<td>University IP Management Adviser Sending Project</td>
</tr>
<tr>
<td></td>
<td>&lt; Japan Patent Office &gt;</td>
</tr>
<tr>
<td>2002</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>University IP Headquarters Development Project</td>
</tr>
<tr>
<td></td>
<td>&lt; Ministry of Education &gt;</td>
</tr>
<tr>
<td>2004</td>
<td>National Universities were privatized.</td>
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</tbody>
</table>
1. Background

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JPO’s measures (1) : IP Producers

- Send experts on IP management to R&D consortiums
- Support formulating strategies from the IP perspective for effective exit strategies and utilization of IP.
- As of October 2017, a total of 23 IP Producers are being sent to 46 projects.

<Outline of the IP Producer Scheme>

JPO/INPIT

IP Producers

Experts who have experiences working at private companies in dealing with IP issues

Collaboration

Dispatch

Universities R&D Consortiums

Public research institutions

Research Funds

Innovative research results

Companies

Universities

Lawyers, Patent Attorneys, etc.

Other govt. offices

Institutions that provide research funds
What IP Producer’s Do?

Before launching projects

Establish IP Policy

Initial Stage of Projects

Establish a base for IP management
- Support making rules on IP in the project.
- Set up a decision making body on intellectual Property.
- Formulate IP strategy.

Stage of Advancing Projects

Enhance IP management
- Extract all of the inventions out of the projects.
- Support creating a strong patent portfolio.

Final Stage of Projects

Review achievements of IP activities and share information
- Get the picture of all of the IP from the project.
- Confirm the way of IP management and exploitation after the project completion.

After completing projects
JPO’s measures (2) : Academia-Industry Collaboration Adviser

- Send IP experts knowledgeable about business development to universities that are advancing industry-academia collaboration for promoting commercialization of their research results; and
- Support IP management of projects based on industry-academia collaboration directed towards commercialization of research results.
- Total 10 IP advisors on industry-academia collaboration are being sent to 11 universities.

Support for Commercialization Project

- Leader University
- Companies
- Projects for promoting commercialization of research results
- Own new, emerging technologies (patents/software) that have high potential for commercialization

Support for Formulating Commercialization Projects

- Leader University
- Companies
- Establish networks and share information
- Create projects directed towards commercialization of R&D results
- Universities and colleges participating in projects
JPO’s measures (3) : Business Producers

- Send experts on creating new businesses to public organizations for developing local industries; and
- Conduct activities to produce businesses by finding out needs and seeds in areas to which the experts are sent and establishing/using networks between and among local financial institutions and experts.

As of October 2017, three IP producers are being sent to three areas of Japan.
After reviewing the competitive advantages of the technology at a local company, IP producer determined that there would be a need for them in the business field of bicycle rental, and that he developed a strategy for the commercialization.

The product of this local company was decided to be used on rental bicycles in the area where the IP producer was sent.

Developed a bicycle accessory that is a reflection film to be attached to the curved surface of bicycle fenders, so as to improve the visibility of the bicycle.

Completed the product development, but had difficulties in finding markets and developing sales channels.

Enable users to apply specific designs to the reflective parts.

Reflective light bicycle

Source: Website of Sun Chemical

Photo by Tohmatsu
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In 2016, the number of patent applications filed by universities in Japan was 7,223, marking a 3.7% increase from the previous year.

Top 10 Universities in Terms of the Number of Published Applications for Patents (in 2016)

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Name of university</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Tokyo</td>
<td>331</td>
</tr>
<tr>
<td>2</td>
<td>Tohoku University</td>
<td>272</td>
</tr>
<tr>
<td>3</td>
<td>Osaka University</td>
<td>219</td>
</tr>
<tr>
<td>4</td>
<td>Kyoto University</td>
<td>196</td>
</tr>
<tr>
<td>5</td>
<td>Nagoya University</td>
<td>178</td>
</tr>
<tr>
<td>6</td>
<td>Kyushu University</td>
<td>173</td>
</tr>
<tr>
<td>7</td>
<td>Tokyo Institute of Technology</td>
<td>162</td>
</tr>
<tr>
<td>8</td>
<td>Hokkaido University</td>
<td>111</td>
</tr>
<tr>
<td>9</td>
<td>Chiba University</td>
<td>103</td>
</tr>
<tr>
<td>10</td>
<td>Nagoya Institute of Technology</td>
<td>99</td>
</tr>
</tbody>
</table>

Source: JPO Annual Report 2017
The number of IP rights and income from IP activities by universities have been on the rise. In fiscal year 2015, which ended in March 2016, income from IP activities by universities reached a record high of 2.684 billion yen, marking a 34.7% increase from the previous fiscal year. Also, the number of IP rights being actually used by universities reached a record high of 11,872, increasing 9.9% year-over-year.

Changes in the Number of Patent Rights and Income from IP Activities by Universities

* From the survey conducted in fiscal year 2012, the JPO reorganized its way for calculating the number of patent rights being actually used by universities, in cases when universities filed international patent applications under the Patent Cooperation Treaty (PCT) and licensed to others either before or after entering into the national phrase in each country.


* Universities include national, public, and private universities or colleges, including junior colleges, public and private colleges of technology, and inter-university research institutes.
In fiscal year 2015, the number of joint researches between universities and private companies was 20,821, increasing 9.2% or 1,751 compared to the previous fiscal year.

The amount of research funds received by universities for joint research with private companies was around 46.7 billion yen, increasing 12.3% or 5.1 billion yen compared to the previous fiscal year.


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The Prime Minister said, “Japan’s universities are undergoing a transformation. We will strengthen the academia–industry collaboration system and aim to triple corporate investment in universities and research and development entities over the next decade.”

Significance of cooperate investment

- Companies’ needs activate academic research.
- Universities contribute to the society by creating innovation.

For the Scale up of Joint Research (Guideline)

→ Strengthen the management system in universities
→ Commitment to the results
→ Equitable sharing of expenditure