

The next steps for Japan's licensing market

Last year, the Japanese licensing market showed a trend for increasingly creative and innovative IP deals. However, rather than congratulating themselves, executives should push for even more return on investment

By Satoshi Watanabe

Japan is a relatively calm place when it comes to intellectual property. The number of patent lawsuits is relatively small (around 200 cases per year), compared to the United States (which saw more than 5,000 cases in 2015) and China (more than 10,000 cases in 2015). Yet while Japanese companies have not taken centre stage when it comes to significant deals, they are becoming more active when it comes to exploiting intellectual property and building a unique IP ecosystem.

Increasing IP revenues

According to a government R&D survey released on December 16 2016, in 2015 Japan earned ¥3.9498 trillion (approximately \$33.8 billion) from 'technology exports' – defined as the provision of technologies which include patents, know-how and technical guidance. This is a rise of 7.9% on the previous year – the fourth straight year of increases since 2012 and the highest figure ever recorded (see Figure 1).

Figure 2 shows the composition ratio by region for technology exports and imports. The primary destination for technology exports is North America (45.4%), which is also the primary origin of technology imports (71%). Some 36.9% of technology exports end up in Asia, which is also an important source of imports.

Standout deals

Japanese companies signed a number of noteworthy patent licensing and acquisition deals with US companies in 2016.

Panasonic Corporation has become a major supplier to the IP market. In November, it signed a patent assignment agreement with WiLAN's wholly owned subsidiary Micro-Optimus Technologies to transfer the part of its patent portfolio which covers motion sensing micro-electro mechanical systems technologies. Panasonic has been assigning patents to WiLAN on a continuous basis since 2013, with this being the third big deal. The electronics giant has also transferred portions of its patent portfolio to Japanese sovereign patent fund operator IP Bridge, which has used the IP assets in US lawsuits. In addition, Panasonic is now trying to monetise its patent portfolio in a new way to develop software (described below), placing the company at the heart of the IP market in 2016.

Another key player last year was consumer electronics company Funai Electric. In April 2016 it renewed a licence agreement with Rovi for use of its entertainment

discovery patent portfolio in April; while in June there were reports that Funai had signed a partnership agreement with Intellectual Ventures' Invention Development Fund, Xnova, to develop new products utilising Xnova's inventors' network. These moves suggest that Funai is seeking to move away from being an original equipment manufacturer and user of technologies or patents from outside Japan to become a provider of such technologies. This speculation was given greater weight in June 2016, when Funai assigned the portion of its patent portfolio covering user interface technologies for use in smartphones and similar to IP Bridge.

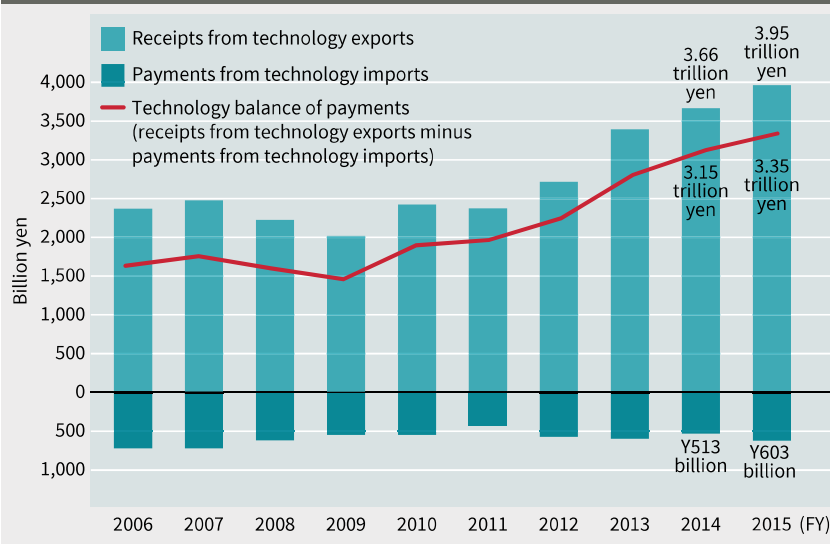
Meanwhile, e-commerce and internet company Rakuten signed a cross-licence agreement with Microsoft in March; while Ube Industries acquired patents for trimethylindium manufacturing technologies and a licence for filling container technologies from a wholly owned subsidiary of the Dow Chemical Company in May.

Licensing out in China

It is thus clear that when it comes to relationships with US companies, Japanese companies continue to act mainly as recipients of technologies or patents. On the other hand, when it comes to Chinese companies, Japanese companies tend to act as technology providers. The following are some examples of deals agreed between Japanese companies and Chinese companies in 2016:

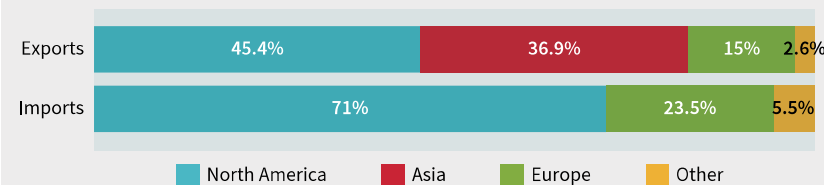
- Photography and imaging company Fujifilm Corporation granted a licence to Chinese drug maker Zhejiang Hisun Pharmaceutical to use its Avignon anti-influenza drug in June. Under this agreement, Fujifilm is receiving lump-sum payments and running royalties.
- Telecommunications company NTT Docomo signed a licence agreement with Taiwan's HTC Corporation for essential patents relating to Wideband Code Division Multiple Access and Long-Term Evolution technologies in November. In response, Docomo dropped all its patent infringement lawsuits against HTC. According to Docomo, it already licenses essential patents in this area to more than 10 companies.
- Oncolys BioPharma, a Japanese drug discovery venture company, granted an exclusive licence for anti-cancer drug Telomelysin (OBP-301) in China, Hong Kong and Macau to Chinese pharmaceutical company Jiangsu Hengrui Medicine in November. Oncolys is receiving a lump-sum payment and milestone payments, as well as royalties based on an annual sales total of OBP-301.

FIGURE 1. Technology balance of payment



Source: Survey of R&D 2016

FIGURE 2. Technology imports by region of origin and exports by destination



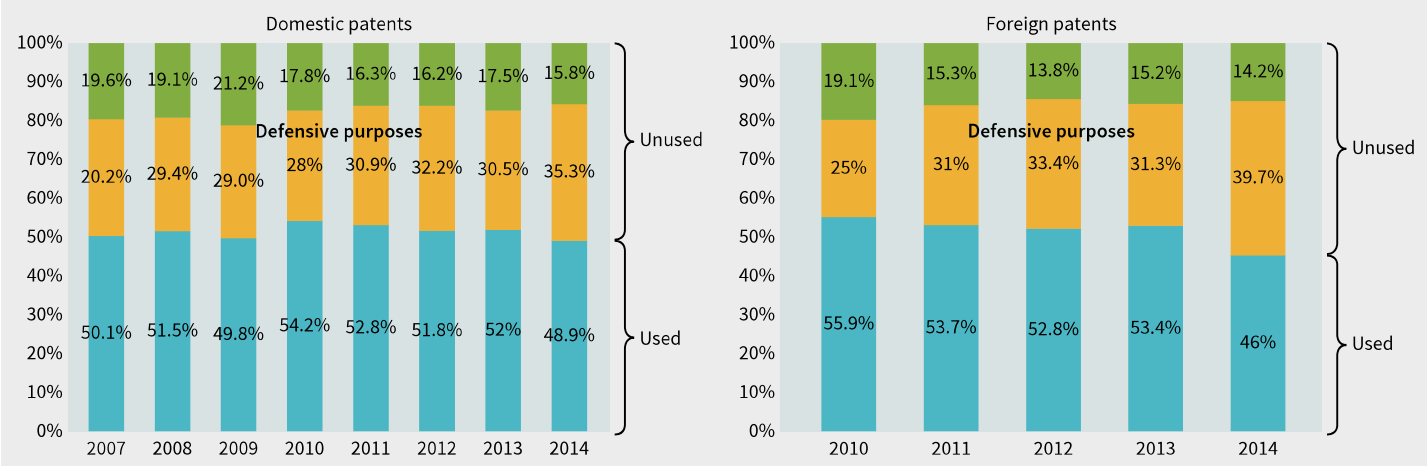
Source: Survey of R&D 2016

TABLE 1. Trade between parent company and subsidiaries

	Amount of trade (Ybillion)	Trade between parent company and subsidiaries (Ybillion)	Ratio of trade between parent company and subsidiaries (%)
Technology exports	3,949.8	2,949.6	74.7
Technology imports	602.6	136.2	22.6

Source: Survey of R&D 2016

FIGURE 3. Utilisation rate of patents



Source: Survey of R&D 2016

Another indication of a shifting market was a report that Apple has started to pay patent royalties to Chinese company Huawei. Huawei leads the pack when it comes to international applications, with 3,898 Patent Cooperation Treaty applications published in 2015, according to the World Intellectual Property Organisation – three times as many as Toyota (1,214) and Panasonic (1,185). This latest development suggests that the time may be not far off when Japanese companies acquire licences from Chinese companies and pay royalties to them.

Deals between group companies

IP deals involving Japanese companies often go unreported – even when they involve large export figures – because 74.7% of exports are traded between a parent company and its subsidiaries (see Table 1). This is probably due to the fact that many Japanese manufacturing companies still apply a strategy of vertical integration, in which they complete their business operations within their group companies and seek operational efficiencies from consolidated production. This is often cited as the reason why Japanese manufacturing companies have been weakened by globalisation. When they do finally embrace horizontal strategies, it is hoped that Japanese companies will make more royalty revenues from non-affiliated companies and improve their international competitiveness.

For the purposes of comparison, when it comes to technology imports, trade between a parent company and its subsidiaries accounts for a mere 22.6% of imports. This is because the headquarters of most Japanese companies – which own most of the IP assets being licensed – are located in Japan.

Promoting patent utilisation

According to the IP Activities Report 2015 – which the Japan Patent Office published after conducting a survey of Japanese companies, universities, research institutes and individuals – the utilisation rate for domestic patents is 48.9%, while that for foreign patents is 46% (see Figure 3). More than half of all patents are unused and are thus debts which companies must pay to maintain even though they generate no revenues. Both companies and the government are becoming increasingly

concerned about this situation and are attempting to promote the effective utilisation of patents.

While it is early days, it does appear that companies are increasingly trying to monetise their patents, although a significant number are reluctant to assert patent infringement claims aggressively during negotiations.

Government encourages technology transfer deals

Open innovation is a challenge when it comes to strengthening the competitiveness of Japanese companies. The government is encouraging large companies to license their unused patents to small and medium-sized enterprises (SMEs). Many SMEs feel trapped – they are nearly always subcontractors for large companies, where they have to compete fiercely with other Asian companies, while at the same time trying to seek ideas and technologies to develop their unique products. However, there are some encouraging signs of the government's growing support for open innovation.

Searches of licensable or saleable patents

To accelerate technology transfer, the government has launched a web-based database – the Patent Licensing Information Database – which is managed by the National Centre for Industrial Property Information and Training and which stores information on licensable or saleable patents belonging to enterprises, universities and research institutes. Anyone can use this database (ie, both register licensable patents and view such patents) without charge. Currently, it holds information on over 30,000 patents. It can also store a seeker's search needs and requests – although this feature is not yet available.

IP business matching

The city government of Kawasaki – which is located between Tokyo and Yokohama – plays an active part in technology transfers between large companies and SMEs. In particular, it encourages SMEs to use large companies' unused patents for their product development. This project is supported by companies from a variety of industries, including Fujitsu, Nissan and Ajinomoto. So far, 25 deals have been signed as a result of this initiative, with the licensed technology being commercialised in 18 of these. These efforts have won the Kawasaki

government plaudits from other city governments, which are now trying to follow suit. Technology transfers from Itoki Corporation, a manufacturer of office furniture and equipment, to Takahashi Construction and DaiwaTech signed in May 2016 were executed under this project.

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In addition, the Japan Science and Technology Agency is developing a business matching scheme between universities and companies by expanding its efforts to learn more about the needs of SMEs and provide support – from joint research to commercialisation.

Technology transfers between European Union and Japan

The EU-Japan Centre for Industrial Cooperation – a non-profit organisation founded with the aim of enhancing industrial, trade and investment cooperation between the European Union and Japan – launched the Technology Transfer Helpdesk in 2016 to accelerate technology transfers between European companies, especially SMEs, and Japanese companies. Of particular interest is the network database, which stores detailed descriptions of technologies and expertise. On the seeker side, this information is extremely valuable for realising technology transfer deals, since many companies in Japan are reluctant to disclose such information so as not to appear weak.

Sovereign IP fund

Japan's sovereign IP fund was established in 2013 and is managed by IP Bridge. The assets under management amount to Y30 billion and account for more than 3,000 domestic and foreign patents.

In 2016 IP Bridge obtained over 200 patents in the field of motor technologies applicable to electronic

Standard-essential patents under threat

Last year saw two major legislative and administrative developments which are likely to have a significant impact on licensing activity in the years to come.

Undermining value of standard-essential patents

In response to recent court decisions on standard-essential patents (SEPs) (eg, *Apple v Samsung* in May 2014), in January 2016 the Japan Fair Trade Commission amended the Guidelines for the Use of Intellectual Property under the Anti-monopoly Act. Under the new guidelines, patent holders' refusal to license or file an injunction against persons that try to obtain a licence under fair, reasonable and non-discriminatory terms could

be regarded as a private monopoly or unfair business practice.

This could possibly undermine a patent holder's position in licensing negotiations and even harm the essential functions of patent rights (ie, exclusivity). Japanese companies tend to think defensively rather than offensively. However, if Japan aspires to be a nation built on intellectual property, companies must be more prepared to act as licensors, while the country's patent system should be tilted in favour of patent holders.

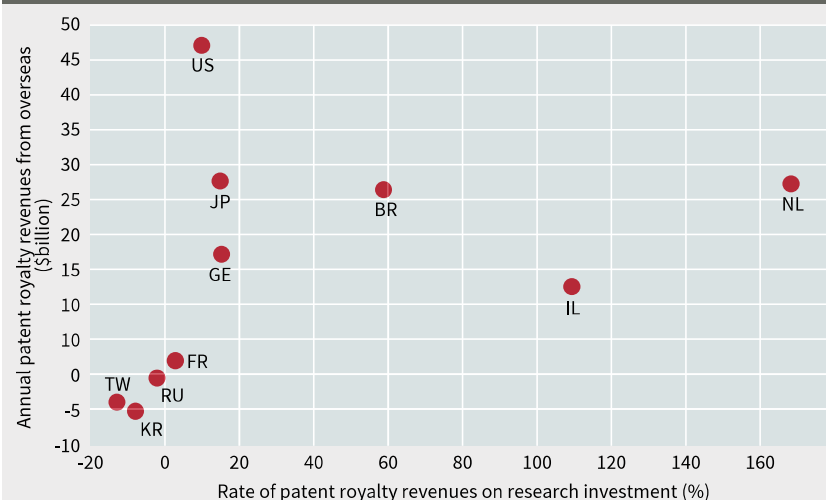
Improving IP dispute settlement system

According to the government's Intellectual Properties Promotion Plan 2016, the following

changes to the IP dispute settlement system are being considered, which would be to the advantage of patent holders:

- a new inspection system, whereby the court assigns a neutral third party to inspect evidence at the accused party's premises. This new system recognises how hard it is to prove infringement (eg, production methods) while protecting trade secrets and aims for the realisation of low-cost discovery;
- a simpler method for calculating damages which exceed usual royalties; and
- improved stability for patent rights which reduces the risk of patents being invalidated in litigation proceedings.

FIGURE 4. Research investment and patent royalty revenues



Source: Nikkei, "Japan's Inventive Faculty Examined from Data", December 26 2016
<https://vdata.nikkei.com/econofocus/invention/>

equipment, home appliances, automobiles and robots from Seiko Epson, as well as Funai Electric's user interface-related patents, as mentioned earlier. IP Bridge is still working hard to improve its patent portfolio.

Most Japanese companies hesitate to transfer their patents to non-practising entities and are unhappy about their IP assets being used for assertion against other Japanese companies. Although IP Bridge did once state that it would not act as a so-called 'patent troll' by making money through litigation, it has since stepped back from this hardline stance. There are reports that IP Bridge filed one lawsuit in the United States against OmniVision Technologies in April 2016 and another against Xilinx in January 2017. Currently it has four US lawsuits in progress – an inevitable consequence of using funds to promote open innovation.

Despite this, it appears that IP Bridge is still struggling to find its own identity. It launched several projects in 2016, including joint research on augmented reality with the Nara Institute of Science and Technology in September and joint research on drug discovery with Kyushu University in October. Also in October, it signed a collaboration agreement with the Malaysia Digital Economy Corporation, which is managed by the Ministry of Communications and Multimedia Malaysia. Further, at the beginning of 2017 it was reported that IP Bridge had partnered with real estate developer Mitsui Fudosan to provide medium-sized companies with services such as patent mining and business development in Asia. It will be some time before the success of any of these projects can be measured.

Private sector efforts to promote open innovation

Some recent examples of investment from the private sector demonstrate how value-added services are promoting open innovation and not merely transferring patents.

Business matching between universities and companies

Securities company Nomura Securities provides a matching site for universities and research institutes called Nomura Innovation Market, which stores more

than 1,500 research items and provides keyword searches and registration for seekers. When it comes to commercialising research, Nomura uses its network and expertise to provide various services – for example, introducing universities and research institutes to venture capitalists or finance institutions, and supporting them through M&A deals or initial public offerings.

Fund investing in technologies from specific research institutes

A fund that invests in companies which use technologies developed by a specific private research institute – the Advanced Telecommunications Research Institute, founded in 1986 – was established in 2015. Under this scheme, the institute provides venture companies with research outcomes and technical assistance. This led to two significant investments in 2016.

Software development for patent licensing

As an incubated company, Swallow Incubate takes an interesting approach. Panasonic granted it a licence for Internet of Things-related patents to develop an application programming interface for implementing these patents. It is not always easy to license or sell patents alone to potential clients – they usually want to see a prototype to review whether the technologies work before deciding to commit. In such circumstances, a licensor, licensee or third party must incur the cost of implementing patented technologies into a product. Swallow Incubate's software will hopefully remove this burden.

Licensing approach for business matching

As mentioned earlier, Japanese companies are taking steps to promote the utilisation of unused patents. As part of this, it is crucial to create a business proposal which makes potential licensees feel happy to collaborate, rather than asserting patents against them. In such situations, a patent may work more as a certificate of technical capabilities rather than an enforcement tool. In addition, the appropriate contact point may be different from a typical IP licensing business (ie, contacting a product planner or designer would be more appropriate than an IP person, who would usually advise a company to avoid using another party's patents by changing the design of its product).

While patent owners might not receive great licensing revenues under this model, it could prove a good fit for the Japanese market – and one that is easily accepted by both licensors and licensees.

Licensing return on investment

Nikkei recently published interesting figures on the relationship between research investment, numbers of patent applications and patent royalty revenues – based on the results of the Japanese government's R&D survey and the Organisation for Economic Cooperation and Development's Main Science and Technology Indicators. Nikkei's figures suggest that Japanese inventions are characterised by quantity over quality, and that Japan lags behind the Netherlands and Israel when it comes to the patent royalty rates on research investment – although it takes the number one spot when it comes to number of international patent applications generated by each \$100 million of research investment.

Figure 4 shows the relationship between research investment and patent royalty revenues. The Y axis

TABLE 2. Top five technologies of Japan, Netherlands and Israel

	Japan	Netherlands	Israel
1	Electrical machinery, apparatus, energy	Medical technology	Medical technology
2	Computer technology	Electrical machinery, apparatus, energy	Computer technology
3	Optics	Computer technology	Pharmaceuticals
4	Transport	Measurement	Digital communication
5	Semiconductor	Basic materials chemistry	Measurement

Source: WIPO statistic database – patent publication by technology in 2015

TABLE 3. Comparison of patent application research expense and royalty revenue

Universities	Research expense per patent application (M JPY)	Royalty revenue per patent application (Ymillion)
Stanford University	198	53.12
Harvard University	369	33.31
University of California	233	27.21
Massachusetts Institute of Technology	199	19.24
University of Tokyo	48	0.18
Kobe University	47	0.15
Keio University	34	0.10

Source: Aahi Research Centre, "Analysis of Activities on Industry-University Cooperation in Japan and US", May 2013

Action plan



The past year saw the continuation of a number of trends in Japan's licensing market, as well as new policy initiatives which could be both promising and troubling for patent licensors:

- Japanese companies saw an increase in both revenue from technology exports and revenue from IP licensing over the past year.
- A number of major corporates continued to work with a range of external partners to create value through intellectual property, including WiLAN, IP

Bridge and Xinova.

- Firms are increasingly looking to exploit licensing opportunities in China, but companies there are catching up quickly on the patent front.
- An increasing number of companies appear to be trying to monetise their patent portfolios, but it is hard to judge how successful they have been.
- Data on Japanese companies' return on investment in IP assets suggests that there is still plenty of room for improvement

indicates the annual patent royalty revenues received from overseas, while the X axis indicates the patent royalty rate on research investment. The Netherlands has roughly the same annual patent royalty revenues as Japan – yet when it comes to the patent royalty rate on research investment, the Netherlands' is more than 160%, while Japan's is less than 20%. Israel's is also high (ie, about 110%). While it is clear that Japan lags far behind these two countries, it appears reasonable to regard them as exceptional, considering other countries' patent royalty rates on research investment.

Both the Netherlands and Israel are small countries – in fact, they are smaller than Japan. The number of patent applications filed in each is also smaller than the number filed in Japan. The Netherlands and Israel file most patents in the medical technology sector, while Japan files the most in electrical machinery, apparatus and energy (see Table 2). This focus on different sectors may be one reason why the Netherlands' and Israel's return on investment is so high – it certainly suggests that Japanese companies

would do well to study the IP strategies used in these countries.

When it comes to research investment and patent royalties, there has always been a marked difference in royalty revenues between Japanese and US universities. Table 3 compares research investment and royalty revenues per patent application in leading US and Japanese universities. It is immediately obvious that the royalty revenues per patent application are higher at US universities than they are at Japanese universities, by two orders of magnitude. Also, the research investment per patent application at US universities generates more high-value patents which are easier to license and to charge higher royalties for. However, the difference between the two countries also suggests a hopeful conclusion: there is much room for improvement in Japan. **iam**

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