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Abstract

A number of international cooperation agreements have come into effect; Vietnam’s SMEs are now facing both challenges and opportunities. They have to see the bigger picture, find their own path and, in particular, figure out how to manage their existing IP assets. They cannot manage this if they have no idea how much their IP assets are worth, and how to exploit them. IP utilization and support for IP management, consequently, has been a substantial issue of every SME, which we must conduct deeper researches on it.

This research will focus on IP utilization and support for IP management in Japan’s SMEs. There are countless situations dealing with investors, venture capitalists and competitors. The use of IP and management driven by explicitness and comprehensive visions help Japan’s SMEs stand out with their IP assets. What lessons can Vietnam’s SMEs learn from them?

Recently, in this increasingly competitive environment, there is “blood in the water”. If Vietnamese SMEs do not have long-term strategies, and if they do not look at various aspects of development, they will not make it only with their IP.

IP utilization and support for IP management may change depending on many different factors. It is very complex and delicate. However, it is critical to have a good understanding of what IP assets SMEs already hold and how to make it give back, irrespective of whether it is in Japan or Vietnam.

The outcomes and results of this research are suggestive and offer an analysis in which Vietnam’s SMEs may consider finding out their vital advantage in terms of IP.

From the viewpoint of Representative Office in Ho Chi Minh City, where IP activities are widely carried out, how to guide or advise SMEs with their IP is also a major issue.

*Key words*: SMEs, IP utilization, IP management, IP valuation, IP commercialization, IP portfolio, IP asset.
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEAN</td>
<td>The Association of Southeast Asian Nations</td>
</tr>
<tr>
<td>AEC</td>
<td>ASEAN Economic Community</td>
</tr>
<tr>
<td>APIC</td>
<td>Asia-Pacific Industrial Property Center, Japan</td>
</tr>
<tr>
<td>GSO</td>
<td>General Statistics Office of Vietnam</td>
</tr>
<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>IPRs</td>
<td>Intellectual Property Rights</td>
</tr>
<tr>
<td>JPO</td>
<td>Japan Patent Office</td>
</tr>
<tr>
<td>NOIP</td>
<td>National Office of Intellectual Property of Viet Nam</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>TPP</td>
<td>The Trans Pacific Partnership agreement</td>
</tr>
<tr>
<td>VCCI</td>
<td>Vietnam Chamber of Commerce and Industry</td>
</tr>
<tr>
<td>WIPO</td>
<td>World Intellectual Property Organization</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
</tr>
</tbody>
</table>
Chapter I: INTRODUCTION: WHY DO I INVESTIGATE IP UTILIZATION AND SUPPORT FOR IP MANAGEMENT IN SMES?

I.1 THE IMPORTANCE OF SMES IN VIETNAM’S ECONOMY

SMEs play a vital role in Vietnam’s economy. According to GSO’s data for 2012; SMEs represented 97.6% of all businesses, employed 46.4% of the total workforce and generated 43.7% of the net revenue of all businesses.

Millions of workers are recruited by SMEs, which has greatly resolved the Vietnam’s employment problems due to population pressure of Vietnam. It is also recognized that the emergence and survival of SMEs heavily rely on their founders and managers who have to be flexible to adapt to market changes. Their leadership and motivational traits, to some extents, create dynamic activities for Vietnam’s economy.

There was a rapid growth in tax and other charges, which SMEs contributed to the state budget during 2008-2012 period, from 425 billion yen in 2008 to 965 billion yen in 2012.

Besides, SMEs have effectively worked in the utilization and promotion of local resources. GSO’s data shown that SMEs have emerged in most regions and areas of Vietnam.

Figure 1. Number of enterprises in Vietnam in 2012
[Agency for Enterprises Development, Ministry of Planning and Investment, 2015]
In 2012, the South East had the highest number of enterprises at 137,569\(^1\), meaning 40% of total number; in which, Ho Chi Minh City took the lead with 109,994 businesses established. Following up was Red River Delta with 110,492 businesses established, and Hanoi represented the second position at the number of 78,506. The remaining 28% was shared by the Northern Midlands and Mountain areas, North Central and Central Coastal areas, Central Highlands and Mekong River Delta.

### I.2 SMES STRUGGLING TO SURVIVE IN VIETNAM

As shown in Figure 1, micro enterprises accounted for 69.3% of the number of SMEs. Notably, a large portion of companies in Vietnam are household businesses until they grow up. PCI 2015 [Legal Department, Vietnam Chamber of Commerce and Industry (VCCI), 2016] stated that 77% of micro enterprises and 69% of small enterprises used to be household businesses. This means that household businesses have to grow up and SMEs have to survive. Nevertheless, the number of either enterprises dissolving / terminating business

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\(^1\) Data included enterprises established but not officially operated yet. Data excluded enterprises which had not been regionally categorized.
IP UTILIZATION AND SUPPORT FOR IP MANAGEMENT IN SMEs

Figure 3. Tax and other charges contributed by businesses (Unit: billion yen) [Agency for Enterprises Development, Ministry of Planning and Investment, 2015]

activities; or temporarily ceasing operations has rapidly increased since 2011. It is very dangerous that corporate bankruptcies have climbed to new heights compared to the number of new firms.

In 2014, 28% of micro enterprises experienced slight loss. For small and medium enterprises, the numbers are 15% and 13% respectively; whereas there was only 9% of large enterprises that experienced slight loss. In spite of representing less than 3% of the total number of businesses, most big companies (83%) earned profit, which reflected a remarkable imbalance in Vietnam’s economy.

In terms of premises, transparency and support system; the perception of SMEs is skewed towards the negative. According to PCI 2015, just 25% of SMEs on average rated local factors of premises as “good”; this amounted to 31% for large enterprises. Approximately, 75% of SMEs confirmed that they counted on connections with state agencies to access information. Around 54% of SMEs considered additional payment as an important part in dealing with tax authorities, and 65% of them thought it was common to pay informal charges to state administrative agencies. These taxes and indirect costs tend to impose a heavy burden on SMEs; plus, with the lack of practical information, SMEs hence barely survive in Vietnam.
Figure 4. Number of enterprises that dissolved, terminated business activities or that temporarily ceased operations compared to enterprises that registered for new establishment [GSO’s data, Annual Report, 2011, 2012, 2013, 2014, 2015]

Table 1  Performance of Vietnamese businesses in 2014
[Legal Department, Vietnam Chamber of Commerce and Industry (VCCI), 2016]

<table>
<thead>
<tr>
<th></th>
<th>Micro enterprises</th>
<th>Small enterprises</th>
<th>Medium enterprises</th>
<th>Large enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substantial loss</td>
<td>4%</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>Slight loss</td>
<td>28%</td>
<td>15%</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>Break-even</td>
<td>15%</td>
<td>10%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Slight profit</td>
<td>50%</td>
<td>64%</td>
<td>59%</td>
<td>50%</td>
</tr>
<tr>
<td>Target profit</td>
<td>3%</td>
<td>9%</td>
<td>17%</td>
<td>33%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

SMEs have been unable to access credit or insufficiently served in spite of various assistance activities offered by both governmental organizations and private projects since 2001. Looking closely at the example of a high-tech agricultural SME, it is still unable to expand its production capacity due to lacking of capital, after three years of exporting to Japan with a series of reliable contracts. Repeatedly trying for loans and being turned down are discouraging the SME. The head of the organization would like to borrow 23.5 million yen; he
said both banks and other support funds required a collateral of 23.5-million-yen collateral. Such credit tightening appears in Vietnam to be very severe for SMEs; SMEs remain small, vanishing or invaded. According to PCI 2015, SMEs were less likely to be able to get financial aids than large enterprises. Approximately, 40% of micro enterprises could access banking or financial loans, 62% and 74% respectively of small enterprises and medium enterprises. On the contrary, this rate was markedly higher at 81% of large enterprises, which could access assistance from banks or financial institutions. Many SMEs have not received any amount requested without mortgage. In fact, around 90% of SMEs stated that the pledge is a must-have credit requirement in Vietnam. Meanwhile, only 82% of large enterprises mentioned it.

In other aspects, the skill gaps have significant implications for SMEs in Vietnam because those enterprises do not have typical training resources. If Vietnamese SMEs would like to become a major part of production chains in AEC, their workforces have to be skilled in meeting quality standards and certifications. Additionally, as evident in Table 4, GDP per person employed (a measure of labor productivity) of Vietnam was 15.1 times, 7.9 times and 2.7 times respectively lower than Singapore, Japan and Thailand in 2015. Even compared to lower middle income countries in 2014, the number for Vietnam was still 1.7 times lower. These numbers genuinely prove that SMEs themselves have to confront with such internal barriers; otherwise, they would be hugely damaged and hardly viable.

It is supposed that for most SMEs, IP assets are usually not sufficient to deliver products or services. The author wonders whether they could derive more from IPRs than major companies with huge IP portfolio. Recently, Vietnam’s SMEs are not strong and not well-equipped enough to

<table>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1,815,186</td>
<td>1,938,587</td>
<td>2,073,655</td>
<td>2,215,353</td>
<td>2,363,284</td>
</tr>
<tr>
<td>Japan</td>
<td>7,199,424</td>
<td>7,315,790</td>
<td>7,363,749</td>
<td>7,427,824</td>
<td>7,505,179</td>
</tr>
<tr>
<td>Lower middle income</td>
<td>1,454,163</td>
<td>1,495,756</td>
<td>1,535,992</td>
<td>1,577,649</td>
<td>-</td>
</tr>
<tr>
<td>Low &amp; middle income</td>
<td>1,892,438</td>
<td>1,960,870</td>
<td>2,019,124</td>
<td>2,077,488</td>
<td>-</td>
</tr>
<tr>
<td>Singapore</td>
<td>14,008,844</td>
<td>13,854,805</td>
<td>14,071,391</td>
<td>14,217,411</td>
<td>14,394,444</td>
</tr>
<tr>
<td>Thailand</td>
<td>2,246,821</td>
<td>2,401,406</td>
<td>2,428,986</td>
<td>2,443,044</td>
<td>2,545,293</td>
</tr>
<tr>
<td>Vietnam</td>
<td>814,398</td>
<td>841,230</td>
<td>876,883</td>
<td>913,005</td>
<td>952,630</td>
</tr>
</tbody>
</table>
survive and grow, so we can understand why they do not consider IP as a priority. But eventually, IP issues will come up when SMEs least expect them, leading to SMEs getting themselves into serious troubles. Another aspect is that for SMEs that pay attention to IP, they are confused as to how to use and develop such special assets.

Many SMEs misunderstand the value of IP assets, and find too difficult to protect and exploit IP while support for IP management is absent or ineffective. How can support organizations improve to assist SMEs better? Vietnam is in the early days of a technology and science-based economy, when SMEs need a considerate help beside their own efforts. It is requested that a coherent system where the support is connected both at the level of local IP activities and government’s strategies (NOIP plays the central role), is closely observed and stably developed.
Chapter II: BASIC INFORMATION AND PREVIOUS STUDIES

II.1 DEFINITION OF TERMS

II.1.1 Small and Medium Enterprises (SMEs)

Based on Law of Vietnam, Decree 56/2009/ND-CP of 2009 on “assistance to the development of small and medium-sized enterprises” defined SMEs as business establishments divided into three levels; according to either the size of their total capital (equivalent to the total assets identified in an enterprise's accounting balance sheet) or the average annual number of laborers (total capital is the priority criterion) [Viet Nam Government, 2009]

Under the Law of Japan, SMEs are defined for each sector by the Small and Medium-sized Enterprise Basic Act (Act No. 154 of 1963: Amended on December 3, 1999). An entity is recognized as a SME by either capital (total amount of investment) or regular workforce [The Small and Medium Enterprize Agency, 1999].

Table 3  Definition of SMEs under the Law of Vietnam

<table>
<thead>
<tr>
<th>Sector</th>
<th>Micro enterprise</th>
<th>Small enterprise</th>
<th>Medium enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of employees</td>
<td>Capital (million yen)²</td>
<td>Number of employees</td>
</tr>
<tr>
<td>Agriculture, forestry and fishery</td>
<td>≤ 10</td>
<td>≤ 94</td>
<td>Over 10 to 200</td>
</tr>
<tr>
<td>Industry and construction</td>
<td>≤ 10</td>
<td>≤ 94</td>
<td>Over 10 to 200</td>
</tr>
<tr>
<td>Trade and service</td>
<td>≤ 10</td>
<td>≤ 47</td>
<td>Over 10 to 50</td>
</tr>
</tbody>
</table>

² 100VND=0.47JPY
Table 4  Definition of SMEs under the Law of Japan

<table>
<thead>
<tr>
<th>Sector</th>
<th>Micro enterprise</th>
<th>Small and Medium enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of employees</td>
<td>Capital (million yen)</td>
</tr>
<tr>
<td>Manufacturing, construction, transportation and other industries (excluding the sectors mentioned below)</td>
<td>≤ 20</td>
<td>≤ 300</td>
</tr>
<tr>
<td>Wholesale</td>
<td>≤ 5</td>
<td>≤ 100</td>
</tr>
<tr>
<td>Service</td>
<td>≤ 5</td>
<td>≤ 50</td>
</tr>
<tr>
<td>Retail</td>
<td>≤ 5</td>
<td>≤ 50</td>
</tr>
</tbody>
</table>

II.1.2 Other terms

“Asset” refers to “any item of economic value owned by an individual or corporation, especially that which could be converted to cash.” [WebFinance, Inc., 2017]

“IP” refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.” [WIPO, 2017]

“IP assets” are collections of intellectual properties – patents, trademarks, copyrighted works, industrial designs, geographical indications, trade secrets – that are strategically chosen for their business value. IP assets have economic value because of their ability to enhance the value and financial return from technologies, products and services.” [WIPO, 2006]

“IPRs” are the rights given to persons over the creations of their minds. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.”

“IP portfolio” is a collection of IP assets belonging to a business enterprise. The portfolio can include different forms of IP, such as patents, trademarks and copyrights, as well as other intangible assets, such as licenses, exclusive distribution contracts and valuable business relationships.”

II.2 IP AND SMES IN VIETNAM

Although recent years have seen gradual improvements in Vietnam’s IP systems, actual results of SMEs are still limited. As evidenced by the paper of Phung Xuan Nha and Le Quan [Phùng Xuân Nhạ, 2013]; among 583 enterprises surveyed of the period of 2009-2011, only
around 10% of them attempted to build new products based on patents; consisting of 30 large enterprises and 16 SMEs. Sadly, none of mentioned SMEs owned any patent.

The placements of trading partners on the priority watch list of Australia, Canada, US etc. indicates that particular problems exist with respect to IPR protection, enforcement, or market access for persons relying on IPRs; which are fatal weaknesses of Vietnam as soon as the TPP comes into effect. IP disputes will likely occur and seriously hurt Vietnam’s SMEs. Illustrated in the Global Competitiveness Report 2014-2015 of World Economic Forum (Table 5) [World Economic Forum, 2014], Vietnam ranks 105th/144 in terms of “IP protection”. Meanwhile, Singapore, China and Thailand are in the positions of number 2, 53 and 104 respectively.

IP enforcement certainly demonstrates the role of the government authorities. However, corresponding to IPR protection or overall IP management, Vietnam’s SMEs do not put much effort in order to protect their products or services efficiently. Taking a SME producing automatic swing cradles for instance, the director chose to change the designs every time counterfeit products were found, instead of filing industrial design applications. He assumed that the registration took too much time without a favorable response. It is hence reasonable to understand why “PCT patents, applications/ million pop.” has a tiny value at 0.2 and that Vietnam ranks 93rd/144 for this indicator. In terms of “capacity for innovation”, Vietnam is not appreciated either with the value of 3.5, ranking 95th/144.

Figure 5 illustrates the number of Vietnam’s patent applications between the years 2011 and 2015. It can be seen that the number filed by Vietnamese is relatively low compared to the number filed by foreigners from 2011 to 2015 (from 8.9% to 13.1% respectively). Although there are increases through the years from 301 applications in 2011 to 583 in 2015, these numbers are quite small.

Regarding utility solutions applications, which is a strength of Vietnamese inventors, the situation has been handled better. The number of applications filed by Vietnamese have increased year by year since 2011. Unless it is a common knowledge, an invention shall be protected by mode of “Utility Solution Patent” when it satisfies two conditions that are being novel and being susceptible of industrial application, excluding one more protection mode of “Invention Patent” in which an invention involves also the inventive step.
Table 5  Institutions and Innovation pillar of Vietnam, China, Singapore, Thailand
[World Economic Forum, 2014]

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Vietnam</th>
<th>China</th>
<th>Singapore</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value</td>
<td>Rank/144</td>
<td>Value</td>
<td>Rank/144</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP protection</td>
<td>3.1</td>
<td>105</td>
<td>4.0</td>
<td>53</td>
</tr>
<tr>
<td>Innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity for innovation</td>
<td>3.5</td>
<td>95</td>
<td>4.2</td>
<td>40</td>
</tr>
<tr>
<td>Company spending on R&amp;D</td>
<td>3.2</td>
<td>63</td>
<td>4.3</td>
<td>23</td>
</tr>
<tr>
<td>University - Industry collaboration in R&amp;D</td>
<td>3.3</td>
<td>92</td>
<td>4.4</td>
<td>32</td>
</tr>
<tr>
<td>Availability of scientists and engineers</td>
<td>3.8</td>
<td>87</td>
<td>4.4</td>
<td>43</td>
</tr>
<tr>
<td>PCT patents, applications/ million pop.</td>
<td>0.2</td>
<td>93</td>
<td>11.7</td>
<td>34</td>
</tr>
</tbody>
</table>

Most SMEs in Vietnam start with innovative products or new concepts, which they themselves have no idea on how much these IP assets are worth. Vietnamese inventors, following their passion for science and technology, mainly concentrate on improving their products in line with operational requirements, and forget that capital is one thing that SMEs lack the most for large-scale or long-term projects. The invention process does not always comprise potential risks only, but also the raw material budget, technician wage, appraisal cost and other spending for sales. As explained in the previous section, Vietnam’s SMEs that find it too difficult to appeal for financial aids, usually either fund IP projects either with their own money, or by putting up their family’s properties as collateral. Looking at Table 5 again, in spite of the upper middle position for “company spending on R&D” (ranking 63rd), “university - industry collaboration in R&D” and “availability of scientists and engineers” for Vietnam are far behind Singapore, China and Thailand. As a matter of fact, many inventions (even patents) of Vietnam’s SMEs do not appear useful for commercial success. Their projects are unable to
 IPs cannot prove the value of their IP assets once potential investors ask about it.

Due to the complexity of IP issues, the entire IP support system has been improved. But there must be more comprehensive policies and drastic measures to assist Vietnam’s SMEs in facing the challenges ahead.

II.3 IP AND SMES IN JAPAN

Although the number of total patent applications has slightly decreased in recent years, there have been increases in the number of patent applications filed by SMEs, which is an evidence of the activity of SMEs’ initiative and the effect from their support system in Japan.
On the aspect of exploiting substantial resources, SMEs are now the major users of the IP system in Japan with 65%, 57%, 53% and 60% respectively for trademarks, industrial designs, utility models and patents in 2015. Furthermore, SMEs are becoming increasingly active and influential in processing their own applications. According to Figure 9, 19.1% of written explanations for accelerated examination belong to SMEs. Once a SME has requested for an accelerated (appeal) examination, they will submit a written explanation. It has to comprise the following notes; the situation related to filing of an accelerated (appeal) examination, the disclosure of prior art documents, the comparisons between the invention and the prior art, etc.

However, Figure 7 represented another viewpoint that the number of patent applications filed by SMEs just accounted for 9.1%-11.3%, which possibly seen as a small percentage compared to the number in Japan, 99.7%. Somehow, the spread of IP utilization in SMEs is still inefficient.

According to the Global Innovation Index (GII), which annually ranks the innovation performance of many countries and economies around the world, based on a series of indicators [WIPO, 2016]; Japan was in the position of 20th/125 in 2011, 25th/141 in 2012, 22nd/142 in 2013, 21st/143 in 2014 and 19th/141 in 2015. This report mentioned “innovation” concerning not only quantitative measurements, but also qualitative ones such as university performance,
Figure 7. Number of patent applications

Figure 8. Percentage of Users in 2015
[Data of JPO³]

³ Personal Communication with Mr. Mibu, JPO
the reach of scholarly articles and the international dimension of patent applications that Japan has held the top places within the high-income group through the years.

The leaders with responsibilities in the area of IP also understand that it is very complex to assist SMEs struggling with many problems. Correspondingly, Japan has implemented several comprehensive policies and strategic programs on supporting IP since 2009 after the global economic downturn; in which, JPO plays a central role and cooperates with the relevant organizations to operate this support system for SMEs.

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*Figure 9.* Percentage of written explanations for accelerated examination by categories

5,323 written explanations for accelerated examination for four months investigated (July, October of 2013 and January, April of 2014) [Data of JPO⁴]

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⁴ Personal Communication with Mr. Mibu, JPO
Table 6  Knowledge & technology outputs pillar of Japan
[WIPO, 2016]

<table>
<thead>
<tr>
<th>Knowledge &amp; technology outputs</th>
<th>Score 0–100 or value (hard data)</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge creation</td>
<td>56.3</td>
<td>10</td>
</tr>
<tr>
<td>Domestic resident patent app./bn PPP$ GDP</td>
<td>58.0</td>
<td>1</td>
</tr>
<tr>
<td>PCT resident patent app./bn PPP$ GDP</td>
<td>8.9</td>
<td>1</td>
</tr>
<tr>
<td>Domestic res utility model app./bn PPP$ GDP</td>
<td>1.3</td>
<td>21</td>
</tr>
<tr>
<td>Scientific &amp; technical articles/bn PPP$ GDP</td>
<td>15.6</td>
<td>49</td>
</tr>
<tr>
<td>Citable documents H index</td>
<td>694.0</td>
<td>6</td>
</tr>
<tr>
<td>Knowledge impact</td>
<td>39.4</td>
<td>59</td>
</tr>
<tr>
<td>Knowledge creation</td>
<td>56.3</td>
<td>10</td>
</tr>
<tr>
<td>Knowledge diffusion</td>
<td>50.0</td>
<td>14</td>
</tr>
<tr>
<td>Royalty &amp; license fees receipts, % total trade</td>
<td>3.5</td>
<td>5</td>
</tr>
<tr>
<td>High-tech exports less re-exports, % total trade</td>
<td>12.4</td>
<td>16</td>
</tr>
<tr>
<td>Comm., computer &amp; info. services exp., % total trade</td>
<td>0.3</td>
<td>105</td>
</tr>
<tr>
<td>FDI net outflows, % GDP</td>
<td>2.8</td>
<td>23</td>
</tr>
</tbody>
</table>

Table 7  Creative outputs pillar of Japan
[WIPO, 2016]

<table>
<thead>
<tr>
<th>Creative outputs</th>
<th>Score 0–100 or value (hard data)</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intangible assets</td>
<td>44.8</td>
<td>73</td>
</tr>
<tr>
<td>Domestic res trademark app./bn PPP$ GDP</td>
<td>33.8</td>
<td>67</td>
</tr>
<tr>
<td>Madrid trademark app. holders/bn PPP$ GDP</td>
<td>0.4</td>
<td>42</td>
</tr>
<tr>
<td>ICTs &amp; business model creation</td>
<td>73.1</td>
<td>14</td>
</tr>
<tr>
<td>ICTs &amp; organizational model creation</td>
<td>60.6</td>
<td>37</td>
</tr>
<tr>
<td>Creative goods &amp; services</td>
<td>35.9</td>
<td>24</td>
</tr>
<tr>
<td>Online creativity</td>
<td>33.1</td>
<td>42</td>
</tr>
</tbody>
</table>
II. 4 REVIEW OF RELATED STUDIES

- **The Cost approach, the Market approach and the Income approach**

“The cost approach is based on the economic concept of substitution: A purchaser will never pay more to buy an IP asset than he or she would pay to obtain a substitute of equal utility.”

Although there was no need to have economic reference or income stream from the use of IP assets, the cost approach was rarely used to value IP. It did not count the factors of risk, trend and period, which largely affected its accuracy.

“The market approach assumes the efficiency of free markets of willing buyers and sellers for determining the value of patents. In a free market for an IP asset, there is competition and equilibrium. The market forces of supply (sellers) and demand (buyers) will reach an equilibrium point, which is how the market price of the IP asset is determined. Clearly, each IP asset is unique and is not fungible so this approach establishes the price by analogy to the market price for similar IP assets.”

The market approach was clear enough for parties in technology licensing agreements due to its database on royalty rate. But in the case of an early-stage technology, there would not exist a comparable IP asset, which was already priced and traded. In other cases, confidential data associated with IP gave parties no reference.

“The income approach determines the value of a patent by discounting the future economic impact at the appropriate discount rate over the life of the IP asset. The methods under this category are all centered on evaluating these future cash flows and then discounting them back at a discount rate to achieve a present value.”

The income approach was a good way to capture the value of IP assets that generated relatively stable and predictable income. However, sales numbers might change out of all recognition, leading to the impossibility of predicting future revenues.

- “Pricing the IP of Early-Stage Technologies: A Primer of Basic Valuation Tools and Considerations” by Richard Razgaitis [Razgaitis, 2007]
Six methods introduced in this chapter were similar to the basic approaches above. Nevertheless, Razgaitis carefully analyzed that the price could consist of any combination of running royalties, fixed payments, common stock (equity), R&D funding, lab equipment,

Table 8  Ten sources of value relating to IPRs by Richard Razgaitis

[Razgaitis, 2007]

<table>
<thead>
<tr>
<th></th>
<th>Rights to practice the technology (patents, trade secrets, copyrights, trademarks)</th>
<th>IPRs included</th>
<th>Field/ territory</th>
<th>Degree of exclusivity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Commercial data</td>
<td>Production drawings, material balances, operating statements, training or technical assistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Future improvements</td>
<td>From licensors, from licensee, from other licensees, rights to, payment(s) for</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Right to sublicense</td>
<td>Conditions for, split of fees, improvements/ grant backs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Patent expenses</td>
<td>Maintenance costs, patent prosecution, foreign filing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Defense of patents</td>
<td>Oppositions, interferences, declaratory judgment actions, claims of ownership</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Infringement issues</td>
<td>Studies and opinions, freedom to practice, suits against infringers, suits by third parties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>General indemnity</td>
<td>Product liability, ownership issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Quality control</td>
<td>Testing, laboratory services, trademark policing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Regulatory approval</td>
<td>National regulatory agencies and listings such as the U.S Food and Drug Administration, U.S Environmental Protection Agency, Toxic Substances Control Act</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

consulting services, grant backs, or access to other proprietary buyer resources. He listed ten sources of value, from the perspective of a licensor of early-stage technologies; which were quite practical to consider in researching modern IP valuation issues.

- **The Patent Asset Index** by Holger Ernst and Nils Omland [Holger Ernst, 2011]

Recognizing the limitations of the previous benchmark methodologies, Ernst and Omland created a new one along with general guideline for improvement. They took “portfolio size”, “market coverage”, “technology relevance”, “competitive impact” “patent asset index” and “validation” into account, by retrieving patent data for all relevant countries worldwide from the respective databases. It is especially useful with the global chemical industry at first.
However, due to its more accurate assessment of a firm’s patent portfolio in relation to its competitors than other similar methods, it becomes an indicator of innovativeness and sustainable competitive advantage in many other industries.

**Figure 10.** In-house IP management structure
[Yoshida, 2016]

- “IP Management for SMEs” by Yoshiharu Yoshida [Yoshida, 2016]

  The research suggested an in-house IP management structure having two stages: A+ and A++. In addition, the management of industrial property rights was introduced in terms of specifying an invention of a technology and the device of an article, similar works of design and trademark. It also referred to trade secret, which has rarely been mentioned in previous studies with regard to IP management. Remarkably, the research gave examples of strategies for IP utilization including leading position establishment in a niche market, branding strategy, patent pool and IP secured loan.

- Materials of Distance Learning Advanced Course “IP Management” (DL-450) by WIPO

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There were eight modules in the course: “IP management: Introduction and an Overview”, “Economic Perspectives on IP management”, “Innovation and IP Protection”, “IP Value and Finance”, “IP and Commercialization”, “Online IP Management”, “Strategy for IP Management” and “Open Source and Development - Managing IP Flexibilities and Public Domain”. Subsequent to Introduction module, WIPO used management examples and established industry methodologies to illustrate and explain IP asset identification, IP incubation, IP commercialization, IP valuation, and IP taxation. Furthermore, these materials provided an in-depth look at commercial activities in the digital area, then they ended with a module on strategic IP management.

Figure 11. Recommendation of intellectual asset management
[Yoshida, 2016]
Chapter III: METHODOLOGY

III.1 THE APPROACH AND RESEARCH QUESTIONS

The research adopted qualitative methodology, in which the author pursued investigation by combining two qualitative types that were “narrative” and “case study” [Sauro, 2015] for responding to the two issues below:

**How Japan’s SMEs use IP assets?** – IP assets were something unique that people created so that business had to make them actually work somehow. Perhaps many of Vietnam’s SMEs did not yet understand or were not truly convinced that IP could be a powerful tool to add value to their companies. The author wanted to find out if the situation was different in Japan, where IP utilization had been promoted for years with firm determination. Is it true that the thoughts and practices of Japanese SMEs stimulated their IP as useful assets?

**How to assist Japan’s SMEs in some aspects of IP management?** – IP management has been extensively studied and thoroughly defined as a comprehensive process, comprising innovation, IP identification, IP protection, IP valuation, IP commercialization, IP in digital environment, etc. Becoming curious about the practical aspects of this process in Japan, the author wanted to concentrate on the ways that support organizations are influencing SMEs to suitably protect their technologies and reputation (IP protection), appraise IP assets of their own and of others (IP valuation), and bring innovative products or services to market (IP commercialization).

Each business had particular insights about the issues raised in the proposed research questions, and hence processed them differently. Every single consultant also had his or her own ideas, so the author thus takes up qualitative methodology to objectively understand as much as possible. Data was collected through multiple types of sources including documents, reports and some in-depth interviews. Results are to be exploratory and analysis is explained from the author’s perspectives.
III.2 RESPONDENTS FOR THE INTERVIEW

For effective interviews, the author brought up questions to obtain information from three types of respondents: SMEs, support organizations and JPO.

- **SMEs** who have directly created and exploited many IP assets in Japan deserved a lot of thoroughly research about them. Within this short study, the author simply explored and analyzed empirical issues regarding the questions raised. It is hoped that there will be further researches on the matters of IP valuation and management in SMEs that were so challenging.

  In detail:
  Mr. Mitsuhiro Takasaki, Engineer Inc.

- Remarkably, the author found out that the local (prefectural) support centers, private (law) firms and entities offering special assistant services are providing feasible ideas due to their real experiences in assisting SMEs. Indeed, their judges and methods much attracted the author’s attention.

  In detail:
  Local (prefectural) support centers:
  Mr. Mitsuru Noguchi, Saitama Yorozu Support Center
  Mr. Shigeto Mike Hatae, Mr. Masashi Saigo, Mr. Masato Hamasaki, Tokyo Metropolitan SME support center
  Private law firms:
  Mr. Tetsuya Habu, Habu Patent Office
  Entities offering special assistant services
  Mr. Hiroaki Kuwajima, Linkers Corporation
  Mr. Tatsuya Ito, Patent Result Co., Ltd.
  Mr. Hideki Otsuyama, Innovature Co. Ltd.

- Last but not least, **JPO** and its particular committee has abided by its vision that is user-oriented, assisted the government to shape IP policies at the central level and activated the support process for SMEs for many years. Therefore, they are one of the must-have respondents here.

  In detail:
• Furthermore, the author had the chance to talk to some members of the Japan Patent Attorneys Association (JPAA) - IP Management Consulting Committee about the situation of IP utilization and support for IP management of SMEs in Japan.

III.3 QUESTIONS FOR THE INTERVIEW

Among the questions raised for each respondent, there was a mix between “open-ended” ones and “instructive” [Columbia University, 2016] ones categorized into the following four groups:

The specific questions for each type of respondent are shown in the Appendixes, which comprised all minutes of the meetings between the author and respondents under supervision of APIC’s senior researcher. In the case of questions that the respondents did not answer, the author searched information from other resources, then analyzed based on the noted one.
## Table 9  Summary of the questions

<table>
<thead>
<tr>
<th>Overview</th>
<th>SMEs</th>
<th>Support organizations</th>
<th>JPO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Learned about SME awareness about their own IP assets</td>
<td>Personal views of respondents on IP awareness of SMEs</td>
<td>Gathered information on IP law and relevant policies of Japan involving SMEs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP utilization</th>
<th>SMEs</th>
<th>Support organizations</th>
<th>JPO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Discussed IP utilization in an open manner. The author thus gained a better insight into Japan’s SMEs</td>
<td>- What kinds of IP consultation, matching services, and/or metric (IP valuation) services offering SMEs</td>
<td>- What kinds of assistance offering SMEs</td>
</tr>
<tr>
<td></td>
<td>- Failure cases of SMEs</td>
<td>- Experiences or plans to support SMEs with IP utilization</td>
<td>- Experiences or strategies to support SMEs with IP utilization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IP management</th>
<th>SMEs</th>
<th>Support organizations</th>
<th>JPO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- The obstacles in adopting young technologies (R&amp;D activities) or new concepts</td>
<td>How to support SMEs</td>
<td>- To suitably protect their technologies and reputation (IP protection)</td>
</tr>
<tr>
<td></td>
<td>- Leadership and team working to bring IP-based products or services into market</td>
<td></td>
<td>- To appraise IP assets (IP valuation) (depend on specific respondents)</td>
</tr>
<tr>
<td></td>
<td>- “IP valuation” might be vague and confusing to many SMEs. The author therefore posed both instructive questions and open-ended ones, to look for the qualities or standards of SME IP-based products/services</td>
<td></td>
<td>- To bring innovative products or services to market (IP commercialization)</td>
</tr>
<tr>
<td></td>
<td>- The ways SMEs get positive earnings from their IP assets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support system for SMEs in Japan</th>
<th>SMEs</th>
<th>Support organizations</th>
<th>JPO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Structure of support system for SMEs in Japan - Briefly learnt about duties of some organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Recognized comments of respondents on how to improve the system</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter IV: RESULTS AND ANALYSIS

IV.1 IP UTILIZATION IN JAPAN’S SMES

It is no coincidence that Japan is well known for innovative, intriguing and sometimes plain bizarre products or services. They all started with basic ideas, essential needs and actual problems, which the author recognized through frank discussions with Japanese inventors or consultants. The prominent features are constituted of the hard working and the principles towards achieving the goals.

Never afraid to try something new, clear determination helps Japan’s SMEs the most with their IP assets. There is no ladder on which they can easily step up to success, indeed. Yet the “hard-to-remove” problem sounded simple, as no previous tool could perform two actions at the same time until the “Neji-Saurus” appeared. General pliers were slippery since their jaws had only horizontal grooves, so developers at Engineer Inc. tried cutting vertical grooves. They found that pliers with verticals grooves alone had already been released by a competitor, and those such pliers were still slippery in many cases. Next, they added an angle to the top jaws

Table 10 Comparison of the IP management between two examples of Japanese SMEs

<table>
<thead>
<tr>
<th></th>
<th>Needs/ Problems</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engineer Inc.</strong></td>
<td>A screw was just too tight and could not be removed, or that the head of a screw broke off just at the moment you turned the handle of the screwdriver.</td>
<td>In order to remove a difficult screw, it was necessary to undertake two actions simultaneously: tightly gripping the screw while also turning it. “Neji-Saurus” of Engineer Inc. is capable of removing hard-to-remove screws.</td>
</tr>
<tr>
<td><strong>Company A</strong></td>
<td>Electric parts such as sensor, crystal devices had been made by old technologies that were too big and heavy without high precision.</td>
<td>Develop an apparatus for continuous inspection of temperature characteristics, in response to the smaller and thinner, high-precision quartz crystal devices and sensor devices.</td>
</tr>
</tbody>
</table>

10 The case introduced by Mr. Noguchi of Saitama Yorozu Support Center
of “Neji-Saurus” so that they could get a firm grip upon the screw’s outermost perimeter horizontally. This produced the maximum torque, and allowed the pliers to turn the screw smoothly. Ever since, “Neji-Saurus” has been selling exceptionally well in the field of household tools, under the catch phrase of “one in every household, one in every department, and one in every section.” [Takasaki, 2012]

The IP assets of Engineer Inc. are properly exploited and developed, following the M_P_D_P theory designed by its leader. In which:

- M stands for Marketing when they find out the opinions and needs of customers, and it is not enough that the majority reflects the real needs. From experience obtained through “Neji-Saurus”, they pay attention to judging whether or not an existing product meets the real needs, or a new invention should be created. The IP digital library and commercial database, as their roles, answer questions that cannot be addressed through simple query and reporting techniques.

- P stands for Patent, which is considered as bottleneck of SMEs in general theory. There still exists a gap in IP awareness between big companies and SMEs, partly due to the lack of IP staff and in-house attorney. Even if SMEs try to contact a patent attorney, they barely understand IP issues. Therefore, Engineer Inc. has increased its level of IP awareness, which has brought it many invention awards and grand Prixes. But a detailed story about IP awareness in Japan’s SMEs will be analyzed below.
• D stands for Design, again, depending on the awareness of managers. A product with an unattractive appearance is not appealing to users, even though it may have excellent function. “Neji-Saurus” itself won the Good Design Award, thanks to the advice of industrial designers.

• P stands for Promotion that influences SMEs favorably via various ways such as websites, social networks etc. with fair costs.

In the case of Company A, they develop a management style focusing on IP through an in-house invention system and increasing awareness among their employees. It is recognized that the demand of electronic devices such as temperature feature testing equipment, sensor chip, exterior inspection equipment, etc. has grown rapidly in recent years. This SME has taken advantage of its know-how and the superior technology it has that their competitors do not reach the said goal, which is generations of apparatuses for continuous inspection of temperature characteristics, in response to the smaller and thinner, high-precision quartz crystal devices and sensor devices. Although Company A described itself as a manufacturer developing, designing, producing and selling facilities for sensor and crystal devices, it enhances its competitiveness by properly using IP human resources.

Japan’s SMEs, as mentioned, have further strengthened their IP assets and actually turned them into IP-based products and services, which generate positive earnings. Conglomerates or large enterprises likely have diversified IP portfolios with famous brands, core technologies, trade secrets etc., and rich experience in the field of IP. Japan’s SMEs do not have said kinds of advantage, but their awareness of IP is rapidly developing. Going back to the example of Engineer Inc., its team works as one to promote the development and sale of new products by working on the theory of M.P.D.P. The respondent of Engineer Inc., who is their leader, said there were three “patent fools” that he learned through his failures as follows:

• Fool obtaining a patent: Valuable know-how is leaked due to obtaining the patent at an inappropriate time

• Fool missing a paten: Infringed or counterfeit goods appear due to missing the right time to obtain the patent

• Fool just keeping a patent: Merely keeping a patent is insufficient. It has to be combined with M.P.D.P

He mentioned the “IP Management Skills Test,” as a national examination that measures knowledge and practical skills about “creation”, “protection” and “utilization” of IP. He thinks it is a good way to learn about IP, and encourages his staff to take the test. In fact, eighteen employees of Engineer Inc. have received certificates from this test program. It is significant
for them to have a background in IP, so that they themselves can deal with basic IP issues. Then, if there were complicated scenarios, they would contact a patent attorney or lawyer. Even so, they are prepared to understand the legal advices of patent attorneys or lawyers, take in the situation and make a smart choices. Engineer Inc. has a good leader; also, it upholds teamwork and true cooperation is exhibited by its staff. The newest promotion video of Engineer Inc. is made with its employees in the dining room of their company on the fourth floor. Their keen awareness of IP, visionary leadership and teamwork spirit help them very much in bringing the world innovative products.

In successful cases of IP utilization, IP assets have contributed admirably to the achievements of Japan’s SMEs. However, learning from IP failure cannot be separated from this research, since it affects the survival of SMEs. Take a real lawsuit in Japan for instance; Company N was one of subcontractors of control devices for consumer electronics production lines. In 1970s, a few of its technicians of them developed an automatic egg grading and packing system, in which the control mechanism of transfer speed cancellation dramatically reduced physical damage to the eggs. Accordingly, its sales performance was substantially improved in spite of the role of a subsequent manufacturer. When an overseas competitor whose market share was taken over by Company N sued it for patent infringement in the 1980s, things changed. The claimed damage had amounted to six hundred million yen, equivalent to the annual turnover of Company N at that time. It almost dealt a fatal blow to Company N whose managers and staff did not have any idea about what is called “prior art”. After three year of fighting the lawsuit with their patent attorney and lawyer, they paid a settlement of forty million yen, and woke up in IP.

IPRs provide their holder with several opportunities, but it is not just about writing a letter that accuses others of patent infringement and charging them. The leader of Company N supposes that it is more complicated, yet it has a potential. The company N has held monthly meetings; discussing whether to file a new patent; considering competitive advantages to maintain IPRs till which point of time before extinction; and estimating the impacts of other players in the same fields. Although there may not be many suppliers of automatic detection systems in the egg industry, Company N does not see patents as ornaments. Such reviews are necessary. Also they have not forgotten to expand into the foreign market with seven overseas patents, and two subsidiary companies in Malaysia and China.

The leader assumes his SME to have a different corporate culture, which permeates through all its employees, instead of merely pursuing a scale expansion. Learning from the past, Company N, on one hand, suitably protects all in-house products and makes use of IP assets,
and on another hand, splits the profits from the IP litigation settlements or licensing royalties with its staff. Its leader wants to show his employees the pros and cons of IP disputes, which he himself has experienced. In addition, this is an effective way to foster in-house innovation. By these kinds of practical methods, IP awareness is raised in the entire company.

For a small subcontractor, Company N has won a series of technological awards, and kept properly making proper use of knowledge and IP for the benefits of the egg industry, not only in Japan, but also all over the world.

The second failure case represented another type of SME that manufactured and sold its own products. Company X was forced to pay licensing royalties for its own technology because it had showed its own new product to another large company without thinking of its patentability in advance. In its mind, the company had simply made a sales call to promote it to someone it already had business with. However, it was much more complicated when the large company took the liberty to patent the new product and demanded licensing royalties. Later, company X recognized the importance of IP protection and IP utilization.

IV.2 SUPPORT FOR IP MANAGEMENT IN JAPAN’S SMES

Japanese government’s IP Policy Outline was launched in 2002, and aimed to make Japan an IP-based nation. Ever since, annual IP policies of this nation have focused on supporting SMEs to promote regional IP utilization, strengthen IP management and efficiently resolve IP disputes.

The “Overview of the IP strategic program 2016” released by the Cabinet Office [Intellectual Property Strategy Promotion Bureau, 2016] spells out that IP collaboration and detailed IP management should become pervasive among SMEs and within the agriculture, forestry and fisheries industries. There are three “to-be-taken” measures, consisting of encouraging IP use, assisting SMEs with IP management, and promoting IP in agriculture, forestry, fishery etc. Notably, it is required to have comprehensive support, from acquisition to utilization, in order to use the TPP as an opportunity for overseas expansion.

IV.2.1 The measures taken by JPO

The overview of support for SMEs below is quite complete, and includes assistance from application status before requesting examination, request for examination/examination/registration, utilization and overseas expansion. It is consistent with the whole life of most IP
assets. More importantly, JPO has financial cooperation, in which it or its partners provide SMEs information and financial support to promote the use of loans by companies that have acquired IPRs, and of IP business valuation reports under the IP financing program shown in Figure 15.

In terms of human resource, IPRs specialists, consisting of JPO staff, patent attorneys and lawyers disseminate various support measures and understand relevant users’ needs. They do not exclude trade secret management from the concerns of SMEs, because it is still one of the effective ways to protect business IP. And no matter what is in the middle, the ultimate goal should be commercialization, which would bring real benefits back to SMEs for reinvestment.

J-Plat Pat developed by JPO contained around one hundred million publications as of March 2015, and is an extremely useful digital tool for IP search. Although the majority of the currently published patent documents in Japan are only available in Japanese and in machine-translated English, users are able to freely access this substantial resource. J-Plat Pat also offers searches over “Publication DB of trial & appeal decisions,” which is rarely seen in other online libraries. With regard to the comfort level and ease of use of J-Plat Pat, it gets a lot of

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Figure 13. Overview of the support for SMEs [Data of JPO]

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11 Personal Communication with Mr. Mibu, JPO
positive feedback from experts. The author, in two occasional visits to the different support organizations, received different comments on J-Plat Pat. One of them found it friendly and easy in use, but the other one suggested an enhancement for the purpose of public use. These ideas were interesting, which reflected the public interest in J-Plat Pat, and the encouragement to improve it in order to serve diverse types of potential users.

Recently, IP experts in Japan are preparing and implementing IP finance under a scheme called “chizai-kinyu”. “Evaluation report of IP-based business” enables local financial institutions to grasp the actual conditions of a company and its growth potential through its own IP. This material is drafted in details, expressing the real situation of an IP-based SMEs. They have to use their own IP assets such as patent(s), trademark(s), etc. and the report evaluates their technological strength, growth potential and management ability.

By providing such written evaluations, which respond to the demands of financial institutions that do not have many in-house IP specialists, Japan’s SMEs may properly get and secure loans from financial institutions.

In the author’s opinion, the scheme shows that Japan has moved up to the next step of IP valuation, where it does not just assess IP assets, but also puts up such reports in order to

![Website of J-Plat Pat][INPIT, 2016]
Figure 15. Support for making IP business valuation reports
[JPO’s data]12

estimate the contribution of IP assets to the total value of the whole company. Remarkably, “chizai-kinyu” facilitates the visualization of the value and evaluation of IP assets, and then raise awareness of IP among a lot of financial institutions. The scheme eventually aims at the realization of the IP of SMEs as valuable assets.

IV.2.2 The measures taken by local (prefectural) support centers

Yorozu Support Center plays a more significant role in collaborating industry-industry and industry-academia, by providing the financial aid and offering the consultations. Considering IP support activities at the local level, the author had the chance to talk to the chief coordinator of Yorozu Support Center in Saitama Prefecture (SIPC), where about 2,900 manufacturing companies operate, many with high-level basic or processing technologies for producing medical equipment. Saitama is working toward a suitable industry agglomeration that will serve the development and marketing base of life science-related companies.

The large enterprises have IP divisions to support other divisions within their companies. But SMEs do not, so the IPR Center of SIPC is their IP division. Since every SME has its own specific characteristics, the IPR Center of SIPC has changed to adapt to new situations.

12 Personal communication with Mr. Mibu, JPO
The duties of the IPR Center of SIPC are multifaceted in terms of IP creation, IP protection and IP utilization. It defines its assistance as a one-stop service, including the establishment of industry-university cooperation, IP dissemination (seminars), support in IP management etc. It recognizes the challenges of SMEs that consist of professional human resources shortage, IP infringement and joint research with big companies. Consequently, the IPR Center of SIPC offers a wide range of services, which are free of charge.

SIPC conducts a survey annually to receive feedback from local businesses. It sends a questionnaire asking about the level of satisfaction. In fact, the survey’s results determine the budget of each prefecture for the next fiscal year.

Lately, SIPC focuses more on helping SMEs in management, following the strategy of the government and prefecture’s action plans. SMEs may find the national strategy complicated and paper-based. Therefore, prefectural authorities try to make their action plans friendlier and easier for SMEs. The general scheme is designed by the prefecture, but the support center is the one executing the programs. There is a collaboration between internal human resources, patent lawyers and IP advisors to assist SMEs.

Figure 16. Outline of IP support activities of SIPC\textsuperscript{13}

\textsuperscript{13} Personal Communication with Mr. Noguchi Mitsuru, Saitama Yorozu Support Center
The Tokyo Metropolitan SME support center (TMIPC) was established by the Tokyo Metropolitan Government to formulate and implement “Tokyo Strategy for SMEs to exploit their IP”. TMIPC provides the services below:

- **IP consultation provided by advisors:** Experienced advisors offer IP consultation for free in many fields such as machinery, electricity, chemistry, IT etc. Attorney-at-law or patent attorneys are on duty in the afternoon only, but they can join in consulting on an as-needed basis.

- **Dissemination and Education:** TMIPC organizes various IP seminars for SMEs, and annual IP symposia focusing on specific topics. TMIPC also builds up SMEs’ IP networking and study group, in order to reinforce IP infrastructure and incorporate IP support policies into administration. In addition, it publishes IP manuals and successful cases on IP matters, providing SMEs with a rich array of IP information resources. TMIPC sets up a support system for SMEs to select patent attorneys.

- **Subsidization for foreign IP applications:** (in terms of financial aids for filing applications abroad, patent searches and “Global Top Niche” companies.)

- **Support for introducing an IP strategy to SMEs:** (Development of “Niche top” companies): The key point is concentrating on “strong leadership” of SMEs’ top management.

- **IP commercialization:** TMIPC holds seminars, give SMEs assistance on contract negotiation, marketing, commercialization. And especially, through coordinators, TMIPC offers SMEs matching assistance to link SMEs with large companies.

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14 Personal communication with Mr. Sagae, TMIPC
IV.2.3 The measures taken by private (law) firms

- Habu Patent Office

IP management has two steps in total, which are clarifying the IP and effecting other companies with seven functions. Mr. Habu emphasizes the importance of visualizing the company’s strengths, in which every SME has to determine the worth of its IP assets. Then this is followed by maintaining these kinds of technological developments and other business results as assets of the company, rather than personal ones. The company should enhance originality, ingenuity and employee motivation at once. For example, a press machine maintenance company considered a wide range of accumulated experience and IP knowledge. Also they compiled the originality and ingenuity of its employees into manuals, which it then shared within company. The company did not forget to file patent applications, and they transformed itself into a “knowledge-intensive

![Diagram: Seven functions of IP management](image)

*Figure 18. Seven functions of IP management*  

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15 Personal communication with Mr. Habu, Habu Patent Office
enterprise”. Function 4 in Figure 18, which belongs Step 2, figures out that IPRs may help SMEs prevent their competitors’ access to market. Patent rights are one way of recovering investment and boosting R&D activities. In another way, SMEs can license or franchise other entities in order to expand the market. For a strong IP portfolio, there is no need to include many IP assets. Probably only one but practical and strong patent is needed. It strengthens negotiating position of SMEs with customers and suppliers. The next function states that as soon as IP assets are sufficient to deliver products and services, then the products and services convey the SMEs’ strengths to outside; SMEs may express their characteristics through IP. It is also supposed that this stage needs a suitable marketing or PR program. For the final function, Habu suggests developing cooperative relationships, in which parties share IPRs and/or jointly manufacture IP-based products with each other. Of course, manufacturing all products in-house is not a bad choice to prevent know-how leaking to competitors. However, it is too dependable to limit the number of product types. Additionally, it narrows the SMEs’ manufacturing capacity and innovation.

It is not likely for Japanese SMEs to have a clear and comprehensive IP management strategy. Even if they did, it would often become a mere formality rather than a real action plan. Therefore, the main points are to specify what the corporate competitiveness is and to concentrate on the customer’s needs. Meanwhile, the advantages of IP show up.

IV.2.4 The other supporting services in Japan

• Linkers

Linkers provides a matching solution between its clients, who are large enterprises such as Toyota, Panasonic, Olympus etc. and quality Japan’s SMEs through a cloud-sourcing platform and network of coordinators. There exists an interesting trend in Japan that the big companies need reliable manufacturers, who possibly offer them original equipment, prototypes and quick volume production. And Linkers, in the middle, based on the specific queries of its clients, may find the right contractors to supply such things, being Japanese SMEs. Previously, it was more complex to both large entities and SMEs meeting each other through Internet search, business meetings, trade shows or personal connections. Although such methods are still efficient, they are time consuming and lack of high accuracy.

Linkers, through its platform and network of coordinators, sets up an advantageous access to suppliers’ intelligence such as technology and product information under development,
management capacity, past business records of accomplishments and production flexibility, which is not open to the public nor in academic papers. The comprehensive coverage of over 1,700 industry professionals across Japan helps to find the best SMEs partners.

Although it is not to be denied that people still exploit the basic quantitative valuation methods mentioned in Chapter II, some inconveniences so frequently arise that Japan’s SMEs and their support organizations have been encouraged to seek other applicable methods. Japan is one of the countries that has a large amount of patents or patent applications in the world. However, people did not have a simple and efficient method to measure the importance of each one beside the assessment of a specialist. The problem with such assessment is that every specialist appraises patents or patent applications according to his or her own ideas; it is possibly subjective and variable.

- Patent Score
  “Patent Score” has been developed to solve such problems of customers, and objectively evaluate patent quality. In the case of academic papers, the citation has been used to measure the degree of attention. The more cited by other resources, the more it is referred in academic studies. Similarly, for patents or patent applications, it has been found that legal status could be used to measure the degree of public attention. We can put up not only citation data, but
also other factors such as licenses, objections and so on, as demonstrated in Figure 20. The tendency for patent longevity is analyzed by legal event type. Looking at Figure 21, for each type, “Patent Score” sets up formulas, which are scoring weights to predict the maintenance rate.

“Patent Score” is able to evaluate patents or patent applications thoroughly and objectively. Another good point in using “Patent Score” is that we may have a method to appraise companies from a technical viewpoint. Previous financial data used to be the only way to evaluate a company’s value, but now we have other ways. Some customers in the financial market use it for first screening to assess the companies they are going to invest in. Figure 22 states that each parameter is normalized by technical field and filling year. Lately, the resulting number of parameters exceeds eighteen million.

In short, support organizations in Japan are trying hard to help SMEs establishing an IP trading system where IP information is sufficiently used and IP activities are widely carried out not only in domestic but also overseas markets.

16 Personal communication with Mr. Ito, Patent Result
Figure 21. Patent Score: Principal 2 “Scoring weights”\textsuperscript{17}

Figure 22. Patent Score: Principal 3 “Technical field and filing year”\textsuperscript{18}

\textsuperscript{17} Personal communication with Mr. Ito, Patent Result
\textsuperscript{18} Personal communication with Mr. Ito, Patent Result
Chapter V: IMPLICATIONS AND RECOMMENDATIONS

V.1 FOR VIETNAM’S SMES

Vietnam’s SMEs are struggling hard, this is inevitable. However, they have assistance as listed in the next section. One advice that the author can give them is: “Please identify the IP portfolio of your company.” This is not about the quantity, but the quality of IP assets with an ultimate goal of commercialization. Then, build up a comprehensive IP strategy to stick with. At any stage of the process, SMEs may have the support of many organizations, depending on with whom they themselves tend to interact with.

V.2 FOR NOIP AND THE INDUSTRIAL PROPERTY ASSISTANCE AT LOCAL LEVELS

V.2.1 For NOIP

On the NOIP side, the review and recommendations are led by the subjective opinions of the author. Vietnam joined WIPO in 1976, and has been a member of many WIPO treaties such as Patent Cooperation Treaty (PCT), Madrid Protocol, Bern Convention and so on. In terms of

![Diagram](image)

*Figure 23. Basic concept of the support for IP*
the legislative system, the IP law of Vietnam has been designed and amended in line with the modern legal framework, followed by a series of implementing rules or regulations. Recently, Vietnam is drafting a national IP strategy and endeavoring to review the IP law, its guidelines and the relevant laws responding to the TPP. NOIP aims its efforts at using IP to serve the economic restructuring process, innovation and technology growth and business ecosystem development; in which IP enforcement, IP valuation and IP financing could make valuable contributions.

However, still, the number of unsolved applications have been a result of insufficient infrastructure, lack of human resource and cumbersome procedures. Other IP support activities, particularly for SMEs, have been proven ineffective in Chapter II.

The author, therefore, tentatively suggests for the national IP strategy of Vietnam and its following action plans to NOIP as below:

Firstly, for the national IP strategy, it seems reasonable to suggest it should share a clear vision, in which IP is not a final destination, but a tool to commercialize innovative domestic products and IP-based services. It is not necessarily long, consisting of strategic goals, guiding principles and a monitoring-evaluation mechanism. More importantly, the national IP strategy

Table 11  Recommendations for NOIP

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<th>In progress</th>
<th>Implications and Recommendations for NOIP</th>
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<tr>
<td><strong>For the national IP strategy</strong></td>
<td>Formulating the national IP strategy</td>
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<td><strong>For following action plans, in which:</strong></td>
<td>Designing and exercising action plans, in which:</td>
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<tr>
<td>• Developing the guidelines of evaluating IP assets and research results</td>
<td>• Strengthen IP actual use of all entities (particularly SMEs)</td>
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<td>• Improving ICT system</td>
<td>• Frequently review and check performance process to make sure that issues raised are properly solved</td>
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<td>• Match supply and demand of IP</td>
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<td>• Link existing networks and establish trusted and friendly database(s)</td>
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should not far exceed the scientific, technical and economic capabilities of Vietnam. We have the strategic goals in order to try our best, not to exaggerate our abilities. On the other hand, a discrete system could not take full advantage of IP for national development. Academia-industry collaboration, private-public partnership, state-local connection etc. should be strengthened and seen as a focus within it.

As the following action plans in that NOIP performs main duties, previously out-of-date ICT system is now being improved by a professional IT company. In the improved system, the author expects that an online registration system will simplify the administrative procedures, and IPLib, the existing online IP search tool on NOIP’s website, will be advanced. The new digital database could be more sufficient and efficient, adding mandatory resources such PCT applications, Madrid applications to Vietnam etc. Among recent searching fields of IPLib such as name, address, date etc.; the author recommends specific fields for local statistics that help to gather data of IP activities from all cities and provinces of Vietnam.

In addition, NOIP should concentrate on strengthening IP use of businesses responding to local conditions by practical projects; in which there are mentioned collaborations. The frequent reviews plus performance checks have to be taken into account, to make sure that issues raised are properly resolved. Considering the commercial aspects of IP, there exist demand and supply, so the questions of who and how to offer matching service need to be answered soon.

With regard to IP valuation, Vietnam is taking the first steps, but it is full of potential. In the author’s opinion, NOIP ought to prepare to have trusted and friendly database(s) specifically for the purpose of promoting innovative products and useful technologies of the SMEs of Vietnam. It is possible to link existing networks and find an effective method to exchange information, which are fundamental to appraise the contribution of IP assets to business value.

As the final recommendation, the author believes that the joint initiative between JPO and NOIP for supporting Japanese and Vietnamese SMEs will be beneficial for both of them from double aspects. No matter what IP issues are contained in the initiative, it would help our SMEs to be prepared for challenges ahead.

V.2.2 For industrial property assistance at local levels

Most measures taken at these levels are under the control of the Departments of Science and Technology of the cities and provinces in Vietnam (DOSTs). In addition to earlier
recommendations to NOIP, the author proposes for DOSTs to better understand their markets, identify the strengths and weaknesses of local IP assets, and actively protect and take regional advantages. Tightening their bond with NOIP certainly is important, but considering other cooperation should not be excluded. For instance, an international friendship in developing IP human resources sounds distant, but it has its own possibilities such as between the Yorozu Support Center in Japan and DOST, provided that both parties share a common vision and get benefit from the cooperation.

The author has heard about some kinds of technology exchange, center for design and manufacturing new equipment and so on; which should be somehow connected to each other, for the purpose of timely providing and collecting the latest tech news and innovation. We are not going to become a “speedy”, “one-stop” support organization right away, but at least, we will improve our quality in assisting SMEs.

V.3 STUDIES IN THE FUTURE

Recently, Vietnam and Japan have different degrees of technological integration and IP development. However, on the way to reach our respective targets, we probably face similar problems, which the author has basically studied in Chapter IV, or which will be researched in the near future. Again, success is the best, but it is not too desperate to learn from mistakes.

Also within this mini-dissertation, the author recognizes that Japan has moved up to the next step of IP valuation that is IP financing. There are a lot of things that Vietnam has to look carefully to examine how much IP assets represent in corporate value. It will lead to new performance metrics or financial methods that are so challenging.

Furthermore, other issues on IP management ask for their different-detail support, which is impossible to fully discover in the extent of this paper. For this reason, I hope that there will be further research on this complicated issue.
Acknowledgements

Thanks for countless gifts all of you have offered me, and thanks to my family for their love and support.

It is a pleasure to acknowledge my deep gratitude to Dr. Yorimasa Suwa, Senior Researcher of APIC for his thoughtful supervision; and to Ms. Asako Watanabe of APIC for her kind coordination.

I would also like to express my sincere appreciation to Professor Takashi Iwamoto of Keio Business School; and to Ms. Yasuko Tanaka, President & CEO of S-Cube Corporation; who have been my wonderful advisors in this program.

Moreover, my best regards go to each and every respondent of all interviews. I truly appreciate their information, and their material instructing me.

I am grateful to JPO for the scholarship, to APIC or Japan Institution of Promoting Invention and Innovation for their tireless assistance and to NOIP for their permission.

I wish you all the best.
References


Appendixes

Appendix I: Minutes of the interview to Mr. Takasaki, Engineers Co.
Date and time: July 21st 2016, 1.00-2.30pm
Location: Meeting space in APIC office, 3-4-2 Kasumigaseki, Chiyoda-ku, Tokyo 100-0013
Attendees:

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<td>1</td>
<td>Mr. Mitsuhiro Takasaki, CEO, Engineers Co. - Interviewee</td>
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<td>2</td>
<td>Ms. Trang Nguyen - Interviewer</td>
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<td>3</td>
<td>Dr. Yorimasa Suwa - Supervisor</td>
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Mr. Takasaki looked through the figures in Ms. Nguyen’s Country Report. He found some of them relatively similar to Japan’s situation of SMEs. For instance, SMEs represent over 90% of all businesses; employ 60% of total workforce in Japan.

Mr. Takasaki suggested assisting Vietnamese SMEs in increasing the number of domestic patent applications. SMEs usually have no knowledge on IP, and they need to switch on somehow.

Mr. Takasaki mentioned “IP Management Skills Test” as a national examination, which measures knowledge and practical skills about “creation”, “protection” and “utilization” of IP. He thought it was a good way to find out about IP. He has encouraged his staff to participate this test.

I. About INTELLECTUAL PROPERTY (IP) ASSETS

1. How do you think about the use of IP by SMEs? How should IP be integrated in your business plan?

IP is very important to not only SMEs but also large companies for two reasons. Firstly, when someone makes something new, and they have good sales number on it. However, they have no idea about IP; one day they will get a letter from lawyer(s) informing that they infringed others’ IPRs. So before starting anything, there should be search on whether you infringe IPRs of others or not.

Secondly, when someone makes something actually new, they had not filed an application, they have no IPR on it. One day, other companies will copy them. In both cases, company would get troubles if they did not know about IP.
2. What do you think about short-term goals of IP and long-term IP strategy of your business?

We do not set up a detailed amount of budget for IP management. We consider case by case: new product A, new product B or new product C, which one should be filed as patent, utility model, design, trademarks etc. Alternatively, we keep it secret. Then we have discussions with patent attorneys, sometimes, with lawyers.

3. Is there IP Division or the person in charge of IP in your company?

If yes - Please describe its main tasks
If no - Please talk about how your business manages the IP asset(s)

No. We will discuss on IP issues, but it comes to patent attorney’s job to cope with complex problems.

4. Has your business had any experiences in IP search?

If yes - Please specify the database(s) or resource(s)
If no - What do you think about IP infringement? What is your opinion in using service of IP professional(s) to carry out detailed search result(s)?

We search on J-PlatPat. In addition, we use IP service of patent attorney.

II. About IP EVALUATION

5. How do you think about IP evaluation?

I invented the theory of “M_P_D_P”, in which:

- M stands for Marketing: When researching the opinions and needs of users, real needs are not always identified through the opinions of the majority. Also necessary is the capability of identifying actual user needs, as well as judging whether or not an existing product meets these needs, or whether a new invention can be created.

- P stands Patent: It is necessary to begin with a prior art search in order to judge whether or not the invention is novel. Patent acquisition is important in order to protect your own creation and once a patent is granted, rights may be exercised in order to build a brand.
- **D** stands for **Design**: A product with an unattractive appearance is not appealing to users, even though it may have excellent functionality. Design is an essential factor to ensure the wider dissemination of an excellent product.

- **P** stands for **Promotion**: Active sales promotion is necessary in order to advertise to the public that this really is an excellent superior product.

We keep evolving “M_P_D_P” theory in our company.

6. **For “outward licensing”, what type(s) of license does your business prefer? What do you think about the price of recent outward licensing agreement(s) of your business?**

   Recently, we have patents in Japan, China, US or EU; but we do not have “outward licensing”.

   Our capacity is not enough to license others. The patent itself must be very powerful; hence, it is able to be licensed to US companies.

   However, based on “M_P_D_P”, if our patent is not so much competitive, but we have nice design, we will focus on marketing and promoting our products. That’s we do in Japan, also in US or EU.

7. **Do you think your business will ever consider being a licensee for new technology?**

   I will ask my staff to search for information on what factories, who the licensor is, what kind of technology etc. Then there is possibility for it.

**III. About COMMERCIALIZATION**

8. **How does your business cooperate with other SMEs?**

   We have many connections with other SMEs, in not only Osaka, but also other regions. Before discussing further, we had signed non-disclose agreement.

9. **In your opinion, is there any differences between commercialization of trade secret(s) or know-how and commercialization of other IP assets?**

   Our products are hand tools, which are easily reversed in technology. So we prefer protected by patents.
IV. About SUPPORT SYSTEM FOR SMEs

10. Has your business ever had assistance from governmental organization(s) or private project(s)?
If yes – Would you please specify the organization(s) or project(s)?
If no - Did you fail to have their assistance? Or, has your business never considered external support?
Yes, Mitsubishi Bank

11. What kind(s) of support your business has had from above organization(s) or project(s)?
What was the criteria for these supports?
Financial support.
I talked to them about my vision, the patents, sales numbers etc.
In Japan, the banks have changed the way they lend SMEs. They see that SMEs have IPRs or potentials. They themselves have knowledge on IP.

12. What do you think about support system for SMEs in Japan?
It is good.

13. Do you have any ideas on how governmental organizations or private projects could improve to assist Japanese SMEs better?
Maybe an additional support on PCT fee, such as 50% of it.
The main point is that we must build strong brands, from products’ brands to a corporate brand. They stand for the business’ image and quality.

(End of document)
Appendix II: Minutes of the interview to Mr. Kuwajima, Linkers Co.

Date and time: July 29th 2016, 10.00-11.30am
Location: Linkers’ Head Office, Kaumigaseki Building 5F 3-2-5 Kasumigaseki, Chiyoda-ku, Tokyo 100-6005
Attendees:

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<th>Name and Title</th>
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<tr>
<td>1</td>
<td>Mr. Hiroaki Kuwajima, Senior Vice President, Linkers Co. - Interviewee</td>
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<td>2</td>
<td>Ms. Trang Nguyen - Interviewer</td>
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<td>3</td>
<td>Dr. Yorimasa Suwa - Supervisor</td>
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Mr. Kuwajima briefly introduced himself and Linkers.

Linkers, which was a corporation established in 2012, provide the matching solutions between clients and Japanese SMEs through cloud-sourcing platform.

Linkers has around 200 clients that are large enterprises, including Toyota, Panasonic, Olympus, etc. Sometimes, they do not have the whole technology or human resource within their companies. Consequently, there are growing demands for external resources in terms of original equipment manufacturer, prototyping, and quick volume production.

In the past, many final products were made in Japan. However, things have changed since 1990s because of domestic high cost. Japan’s companies moved their assembly factories to Thailand, Vietnam, Indonesia, Mexico or East of Europe to bring down the cost of product. Those big players asked SMEs to make prototypes or specific details. Previously, SMEs used to provide ingredients only and their role had overlapped and become indistinct. The completely manufacturing process has restructured that has been more open.

For example, Mitsubishi has their own factories but their traditional contact lens makers do not have any ideas of sensing technology connected, so they need a partner. It is the reason why everything changes. Both sides (large enterprises and SMEs) need a platform effectively matching demands of technology and suppliers of production capacity or sometimes IP so on. Linkers consults around 2000 industrial experts who can understand situations and figure out what types of technology demanded. For example, SME A does not have this patent, but SME B has the specific capacity to produce said prototype. These kinds of information are not open. However, 2000 experts all around Japan collaborated with Linkers get it. They are coordinators who will suggest and promote the specific SMEs who own requested technologies.

We have connection with local governments, and they themselves know officials who has knowledge on local SMEs and large companies. Many people are doing jobs of coordinators,
beside their full-time job. But we have limit to some areas because of local authorities in such as Ho Chi Minh City or Yokohama where officials capable of matching SMEs with large companies. Maybe, it goes up globally.

I went to a motor company who had a lot of patents which were unsuccessfully released as final products. They remained in the situation of R&D, and the company needed a partner to make patents for real business or someone just simply to purchase their patents. It was not easy at all; either they did not have any platform to do that. In US, many patent traders try to match patent holders with advisors. In Japan, it is different that there is no similar IP dealing. The company had shown us their 250 patents in which there were seven big ones they wanted to find partners to commercialize. Because Linkers could access almost SMEs through our platform, there was high possibility they could get the right matching. It is one of the ways to handle the nice companies having IP to Japan’s SMEs.

There had existed some business offering similar services, but they did not extend to our coverage. We focus on many fields of technologies such as automobile, precious metals, petrochemical etc. which those companies did not have such extent coverage. Also, we have geographical coverage all over Japan, and a wide network with 350 organizations across industrial academia (university, local authorities, local banks etc.)

1. How do you think about the use of IP by SMEs? How should IP be integrated in your business plan?

I think a lot has been done by SMEs before IP protection. It is very difficult to use IPRs. Also, I myself barely define either SMEs or large enterprises. In my opinion, not many Japan’s SMEs know how to protect their IP. If they had innovative technology, they would never disclosure it. Although they cannot find clients or expand business, they may assume that it is more effective not to disclosure their uniqueness. So, how they survive? Because they have been protected in a whole vertical supply chain. Even though they do not do any marketing, large enterprises still go and ask them to do this or that. In the process, Japan’s SMEs bring up their own strength such as production capability, prototyping capability etc. Quality of SMEs is very high. More interesting, the moto here is trying to get access to undisclosed IP or information through a network of industrial experts. It is kind of distinctive in Japan. That is why many academic experts in Japan could not answer what is really going on behind since it is non-disclosure information or trade secret, particularly with technology outside of Japan. Therefore, I doubt if it is useful of IP, which I myself define broadly, in Japan.
Japan’s SMEs try to keep their IP confidential, but they are capable of disclosing their IP portfolio. Why us? Because they trust in the coordinators between themselves and large enterprises. Why our service keeps growing up? Take an example, if Panasonic went straight to an SME, they knocked the door and said that they would like to discuss on SME’s IP. The SME would shut the door as Panasonic were not their customer for a long time. Consequently, making trust relationship between large companies with SMEs is very difficult in Japan. However, once you have a specific coordinator who does understand the SME and recommend him/her a client, the SME will be more open and talk to client.

My standpoint is Japan’s SMEs have no idea how to integrate IP in their business plan. It is supposed to be time and money consuming to them. In case you have a broad definition of IP, how to connect innovation with different technologies, they can be more flexible to discover what they have as IP within their company.

2. Could you specify how to get information from Japan’s SMEs?

It is complicated for large enterprises looking for the right SME who can satisfy their requirements or the right person help their innovation process. Since it is time consuming, sometimes you just google it, or you go to exhibitions, or you ask your friends if any company has needed technology. No matter which ways you go with, they are not comprehensive. They are just by chance. However, as I mentioned earlier, Linkers has the network of 2000 experts who widely known about recent technologies, and, a broad database including orders of large clients and calls for expected technologies.

Large enterprises put up some background conditions for their suppliers. Then the coordinators recommend a couple of individual SMEs (input info of SMEs). Based on input info, large companies decide whether SMEs meet or miss their conditions through phases. Finally, it turns into only one SME adopted by the large enterprises.

Linkers’ engineers have designed the software running our platform.

So, we use the platform with experts to find out about IP portfolio of SMEs. 2000 experts exactly know what types of SMEs have the expected IP. Creating human network, we can understand the technologies of local companies. For detail, our database does not require IP info; it depends on clients’ needs. Large enterprises raise up questions on technical issues, SMEs will answer them. It is not necessary to be issues in terms of IP.
Through the process, we have accumulated the database. The key point is needed info and their spread-out.

3. In your experience, is there IP Division or person in charge of IP in SMEs?
   I have no experience working with IP Division or person in charge of IP in SMEs.

4. Does Linkers has a plan to offer the service of IP search?
   We just agreed to develop a new service last week but it was not a kind of patent search. As we have more than 20,000 files of SMEs’ technologies, we agreed with a couple of local banks to provide our service once they registered and get IDs. We are able to give them info over 40 or 50 companies, but it is not free matching service. At least, they can access the portfolio of 40 or 50 technology companies.

5. Do you have idea bring it to a higher level of IP search?
   Next week, we will get started to discuss on it. As we hold many conversations on past technologies, in near future of one or two years, it is possible that we offer IP search. But right now, physically, we based on human resource.

6. What do you think about IP valuation?
   I think it is about how IP can be used for the final products or R&D; or how much IP can be applied. First, it should be filed for patent or so on. Alternatively, you supply components to your clients.
   Plus, it depends on managing options.

7. In your opinion, how to commercialize an IP-based product(s) or service(s)?
   It depends on IP. SMEs themselves put IP in their products for sales. On the other hand, ideally, they license others for loyalties. In case of infringement, there is possibility to suit for damages, although there is risks to fail the suit also.
   In my opinion, some Japan’s SMEs hate to file patent applications due to the publicity of their own technologies.
   However, if you held a patent, you could announce your exclusive rights, which were recognized by financial institutions. For instance, local banks, through our platform would bring SMEs to our clients.
   Furthermore, we are middlemen offering SMEs chances to sell their IP
To summarize, there are following ways to commercialize IP-based product(s) or service(s)

- Keep them secret and commercialize themselves.
- File IP applications; get patents/certifications to license them.
- Assign to others but it takes cost and time. Even very big companies in Japan do not have idea on how to sell their whole portfolio. So, I do not think SMEs can do this way.

8. Do you recommend clients potential technologies on the analysis of your own database? Are such recommendations relating to IP or not?

The coordinators do. Or SMEs directly answer our clients. Sometimes it is relating to IP, but not always.

9. Do you make non-disclosure agreement with your clients?

There have been agreements, which clients did not want to show off their name. In some cases, SMEs asked to work with coordinators only.

Our commitment based on reliability and jurisdiction, reflecting in all contracts.

(End of document)
Appendix III: Minutes of the interview to Mr. Noguchi, Saitama Yorozu Support Center

Date and time: September 14th 2016, 10.00-11.30am
Location: The office of Saitama Industrial Promotion Public Corporation, 10F Sonic-City Bldg., 1-7-5 Sakuragi-cho, Omiya-ku, Saitama 330-8669
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<td>Mr. Mitsuru Noguchi, Chief Coordinator,</td>
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<td>Saitama Yorozu Support Center,</td>
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<td>Saitama Industrial Promotion Public Corporation - Interviewee</td>
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<td>Ms. Trang Nguyen - Interviewer</td>
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<td>Dr. Yorimasa Suwa - Supervisor</td>
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<td>Mr. Ichiro Katsuki - Interpreter</td>
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Mr. Noguchi introduced himself and IPR Center of SIPC.
- 1996, IPR Center of Saitama Prefecture established
- November 1999, patent support project launched (office/Saitama Prefecture)
- Project of patent e-library (ibid.)
  - April 2004, project of supporting patent information utilization (ibid.)
- May 2004, venture support center established
  - March 2005, the first pioneer activities
- May 2005, IP Comprehensive Support Center of Saitama established
  - April 2006, university-industry collaboration in Saitama
  - April 2008, the second pioneer support activities
  - April 2011, third pioneer support activities
- IP Comprehensive Support Center officially worked
  - April 2014, developed guideline for the year’s activities

Mr. Noguchi had worked as an automobile researcher of Honda for many years before he joined the initiative of government at Saitama Prefecture that was patent support project in 1999.

All consultation and database of IPR Center of SIPC are free of charge.
Later he explained IP general scheme and IP comprehensive support system for SMEs of IPR Center of Saitama Prefecture. Their assistance includes:
- General counseling/ consulting
- Attorney/ Patent attorney consulting
• Support in filing for a patent overseas
• Support in developing IP strategy

The large enterprises have IP divisions to support other divisions within their companies. But SMEs do not, so IPR Center of SIPC is their IP division. Since every SME has their own specific characters, IPR Center of SIPC has changed to adapt to new situations.

The duties of IPR Center of SIPC are multifaceted in terms of IP creation, IP protection and IP utilization. They define their assistance as one-stop service, including the establishment of industry-university cooperation, IP dissemination (seminars), support in IP management etc.

They recognize the challenges of SMEs that consist of professional human resources shortage, IP infringement and joint researches with big companies.

Most of SMEs were not much interest in IP over ten years ago. However, things have actively changed due to government’s policies, JPO’s support and major IP legal cases such as Nippon-Posco, designs of iPhone etc. SMEs’ awareness on IP has been largely raised.

SIPC conducts survey annually to get feedback from local businesses. They send the questionnaire asking about satisfaction of the. In fact, the survey’s results determine budget of each prefecture for the next fiscal year.

Lately, SIPC more focus on helping SMEs in management, following strategy of government and prefecture’s action plan. SMEs may find the national strategy complicated and paper-based. Therefore, prefectural authorities try to make their action plans friendlier and easier for SMEs. The general scheme is designed by prefecture, but support center is the one executing programs. There is a collaboration between internal human resource, patent lawyers and IP advisors to assist SMEs.

IP is a very broad definition, when they mention IP that means there are two ways: SMEs either concentrate on core competent (strength) or move on with new areas.

Saitama is the home to many R&D companies, many hospitals and much population. Saitama is working toward a suitable industry agglomeration that will serve the development and marketing base of life science-related companies. About 2,900 manufacturing companies operate in Saitama City, and many of them have the high-level basic and processing technologies to produce medical equipment.

Mr. Noguchi showed some examples relating to IP issues:

• Restructure and new technology development
The SME had a breakthrough improvement in techniques of surface printing. It challenged inlaid technology with high-quality painting.

For a variety of fine grain high value-added products, the SME filed a patent and several trademarks.

The SME developed to apply it in metal parts and start a new business.

2009 Manufacturing Award (traditional crafts sector)

- **Build the strategy of IP commercialization**

  The SME succeeded in enhancing an equipment characterized continuous temperature.

  They changed their strategy on IP that exploited in-house invention system and enlighten their employees. The founders, in fact, are former engineers of very big company.

  The change in IP-oriented management brought them Saitama Prefecture’s Industrial Technology Award in 2010.

- **Development of a new refrigeration medium for food transport**

  IPR Center of SIPC supported to generate business in the development of a high-performance refrigerating medium born from food manufacturing materials.

  The SME sought to gain greater freedom in its distribution of refrigerated and frozen foods. By blending materials, it uses in its own processes, the SME discovered a new reusable-refrigerating medium that was freezable in household refrigerators. It sought to translate this discovery into business.

  It filed for a patent based on the basic characteristics of the new refrigerant and data on its efficacy for cold storage.

  The center provided it with support in acquiring subsidies for refrigerant blending and installing package equipment as steps toward making the refrigerant commercially viable.

  Prospects for use of the refrigerant in actual products are shaping up, and the company is currently developing a transportable cold-storage box and engaged in market development.
2015 “Venture spirit” award of the Eiichi, Shibusawa Business Awards, Saitama Prefecture, “Encouragement prize” of the Japan Academic Society for Venture and Entrepreneurs

IPR Center of SIPC themselves is capable of conducting IP search in their own database under the initiative of government or in J-PlatPat.

Mr. Noguchi thought of IP Database of Japan is something they can be proud. It is easy for Japan’s SMEs themselves to look for information with these kinds of tool.

In some cases, large enterprises are ready to assign others their inventions once they find them out of their commercial extent.

Japan’s SMEs also take very active role in R&D activities and IP management. If they were not able to solve the problems, they would go to IPR Center for advice. Usually, the support centers are the first ones giving SMEs general consultation. After that, based on situation, SMEs may contact patent attorney or IP professional.

The first priority of the support center certainly is a comprehensive data effectively assisting SMEs in Saitama Prefecture.

(End of document)
Appendix IV: Minutes of the interview to Patent Result Co.

Date and time: September 15th 2016, 14.00-15.00pm
Location: Patent Result Office, Akihabara Square Bldg. 4F, 5-3-2, Asakusabashi, Taito-ku, Tokyo 111-0053
Attendees:

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<td>1</td>
<td>Mr. Tetsuya Ito, Manager, Business Promotion Group, Patent Result Co., Ltd. - Interviewee</td>
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<td>Ms. Trang Nguyen - Interviewer</td>
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<td>Dr. Yorimasa Suwa - Supervisor</td>
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Mr. Ito briefly introduced Patent Result and “Patent Score” which was the key service of his company.

Patent Result was founded in 2007 by some member of IPB, which was the former company had launched “Patent Score” in 2005. IPB run multiple deals, but lately, they transferred all the patent analysis business to Patent Result.

Patent Result has 378 clients in manufacturing industry. 22 of them own more than 10,000 patents in Japan, such as Honda, Toshiba, Fujifilm and so on. Also, 17 of their clients are based in financial industry. The numbers of their clients from universities/research institutes and government-related organizations are 47 and 4 respectively.

“Patent Score” is a valuation of patents; based on publicity know information such as citation, bibliographic data and legal events.

1. What is the background of “Patent Score”?

Japan is one of the countries that has a large amount of patents in the world, but people have been recognized not all the patents are important, some of them are not useful.

However, people did not have any method to measure the importance of each patent beside some specialists’ judgement. The problem of specialists’ judgement is that every specialist appraises patents by their own ideas. It is possibly subjective and variable.

“Patent Score” has been developed to solve such problems of customers, to evaluate patent quality objectively.
In case of academic papers, the citation has been used to measure the degree of attention. The more cited by other resources, the more it is referred in academic studies. Similarly, for patents, we found that legal status could be used to measure degree of attention from public. We can put up not only citation data, but also other factors such as license, objections and so on.

Although “Patent Score” method is systematical, the greatest feature is that we can exploit it for all the patents equally. It does not depend on who will judge. Another good point using “Patent Score” includes we may have a method to evaluate companies from the technical viewpoint. Former financial data used to be the only way to appraise company’s value, but now we are able to have another way. Some of our customers in financial market use it for first screening to judge companies they are going to invest.

2. What are the principles of “Patent Score”?
   - Principle 1: Attention to a patent can be parameterized by its legal events.
- Principle 2: The tendency for patent longevity is analyzed by legal event type. For each type, we established formulas (scoring weights) predicting the maintenance rate.

- Principle 3: Each parameter is normalized by technical field and filing year. The resulting number of parameters exceeds 18 million.

3. What are the resources of “publicity know information”?

The data bought from Japan, US and Europe
4. How to use “Patent Score”? 

Clients pay fee to have an account accessing “Patent Score”. After one day training, they may conduct searches by themselves.

We offer a user-friendly database, especially designed to assist our customers to filter data, collect information by specific fields, and objectively evaluate patents.

(End of document)
Appendix V: Minutes of the interview to Mr. Habu

Date and time: September 26th 2016, 16.00-17.00pm  
Location: Habu Patent Office, Roje-Niban-cho, 11-4 Niban-cho, Chiyoda-ku, Tokyo 102-0084  
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<td>1</td>
<td>Mr. Tetsuya Habu, Attorney - Interviewee</td>
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<td>Ms. Trang Nguyen - Interviewer</td>
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<td>Dr. Yorimasa Suwa - Supervisor</td>
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<td>Ms. Haruko Nishikawa - Interpreter</td>
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Mr. Habu briefly introduced himself. He had worked as a banker for twelve years, in which he had seven years in charge of venture companies (venture capital). During that time, he was approaching the mortgages that included IPRs of SMEs, whom he always wants to support. This was one of motivations to set up his own patent office fifteen years ago. He thinks his case is quite particular among other patent attorneys in Japan who used to be engineers or lawyers. He has experience of doing business and helping IP management. In 2004 when JPO got started to focus on strategies relating to SMEs, they asked him to be a member of project committee. He conducted interviews with the SMEs who had been successful in IP utilization and management in Japan, and gathered information, which appeared in his books and papers. For the last five years, he usually gives lectures on how to use and manage IP assets, beside his job as a patent attorney, whose most of clients are venture companies. He also joins in private projects assisting SMEs with their industrial property.

Every SME owns their unique technology or service, which they themselves have to determine. It may help them to get a chance cooperating with large scale companies. The point is they must have IPRs which turn into their advantages in the contracts with big companies. Otherwise, SMEs get no choice but saying yes to requests of major enterprises. It is likely that innovative products become “big hits” thanks to patents, but most SMEs are just subcontractors or suppliers in Japan. If SMEs do not aware their uniqueness and benefits brought back by them, they will keep doing routine work only.

There are broad definitions of IP and IPR. IP is much engaged in corporate activities such as R&D, design developments, product or service planning and so on, then it may turn into inventions, know-how, product designs, brands, etc. And if companies want to have
exclusive rights to those kinds of their IP, they will register them to have chances getting patents, industrial designs, or trademarks.

1. What activities considered as IP management?
   IP management refers to many activities as following:
   - Creating inventions, filling out patent applications and obtaining patent rights
   - Controlling trade secret (know-how)
   - Applying for trademark registrations and obtaining trademark rights
   - Licensing IPRs (copyright, patents, etc.)
   - Taking measures against the infringement of IPRs
   - Maintaining IPRs
   - Implementing a compensation system for employee inventions
   - …
   SMEs have to clarify their IP, and use it influencing others.

2. What are seven functions of IP management?
   (1) Visualizing the strengths of your company
   In Japan, most of SMEs do not know what their characteristic technologies are although they try to make something new every day. They have orders from customers, figure out how to adapt typical enquiries, and improve their products and services. But still, they are confused of what is their uniqueness, what is novelty. They assume it is just internal process.
   My advice here, is looking around at recent innovative steps, which will help them to determine what the new features of their products or services are. They can ask patent attorney or examiner for such objective evaluation. My office does not provide this kind of direct search, but it is a good way searching IP database to gain knowledge, and visualize the strengths of SMEs.
   (2) Maintaining technological developments and other business results as assets
   SMEs should make the creation become assets of companies, which are not personal assets, before registering them for IPRs. Due to the fact that employees may be hired by a third party, the technology itself (if employees own it) will be transfer to third party.
   I think it is sufficient to keep know-how or inventions as secrets, maintain them as company assets, then get IPRs.
(3) Promoting originality, ingenuity and employee motivation
(4) Preventing IP infringement
(5) Strengthening your negotiating position with customers and suppliers
    Not only horizontal power of defending IP from competitors, but also vertical capability such as business relationships with customers and suppliers, is target of IPRs.
(6) Conveying the strengths of your company to outsiders
(7) Developing cooperative relationships
    SMEs actually prefer partners, who are able to cooperate with them developing IP-based products or services to competitors, who may access taking advantage of their new technologies.

For example, a material manufacturer used to deal with IP assets with very close manner, they had not disclosed any innovative steps. However, they changed their mind later filing a lot of patent application, in order to engage in mass manufacturing. The more patents they had, the less risks threatened them. They recognized if they had owned only one product, they would have failed as the product had failed. But if there had been many products, they would have survived in spite of the failure of one single product. They used IPRs to efficiently license partners their technologies.

It is also easier for SMEs to negotiate with big companies with IPRs. The point I want to say that SMEs should use IPRs finding partners rather than countering competitors. Sometimes in Japan, they just focus on protecting their technologies by IPRs, and forget to exploit IPRs for the purpose of technical development or business expend.

3. *Tell me about the example of Nabell Corporation (Nabell).*

Nabell is a manufacturer that specialized in camera bellows. They had intended to expand their business to include “functional covers”. They filed a patent application, and knew their technology would increase value to make proposals.

Nabell achieved a large share market of the medical equipment thanks to laser beam machine, which they had seen as a proposal-oriented product at the very first.
4. Could you share your experience in putting up IP asset as collateral? Was there any case, in which IP assets successfully deposited as a pledge?

Actually, the banks in Japan have not accepted IP assets themselves as an independent collateral due to the fact that technologies change so quickly, and their value decrease day by day. A pledge has to be something very valuable such as business premises, machines etc.

I think, it is not about IP assets as collateral, it about how IPRs can contribute to the total value of company. The banks just assess value of the business to grant loans.

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Appendix VI: Minutes of the interview to Mr. Samejima

Date and time: October 3rd 2016, 14.00-15.00pm
Location: Uchida & Samejima Law Firm Office, Toranomon Twin Bldg. East 16F, 2-10-1, Toranomon, Minato-ku, Tokyo 105-0001

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<th>Mr. Masahiro Samejima, Founding Partner, Attorney at Law, Patent Attorney, Uchida &amp; Samejima Law Firm - Interviewee</th>
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1. **Is there any prominent characteristic of IP utilization of SMEs in Japan different from other countries?**

   I think we should begin with the history of IP support in Japan. In 2004, JPO decided to set up a program assisting SMEs in IP, in which I was assigned as the chairman of committee. Previously, Japan’s SMEs had some nice technologies. However, there was a gap between IP management and corporate management that was why JPO started mentioned project.

   99% of all businesses in Japan is SMEs. Some of them do not conduct any R&D activities, they just manufacture things for large companies, and they are out of target of IP management.

   I think only around 20% or 30% of SMEs in Japan, who really carries out R&D activities or owns competitive technologies, should have IP management. The IP cost seems so high that most CEOs of SMEs do not get full motivation to do it.

   We still have to solve many issues of IP management.

2. **Please specify the project supporting SMEs in which you are the chairman?**

   We have specifically developed an IP consultation method to SMEs, which is totally different from ones applied in large companies. Each “local branch” of METI in Nagoya, Hokkaido, Osaka etc. has adopted this method locally, aiming at local development.

   In 2008 or 2009, this program had a pause. They have recovered the project since 2011 with advisory system in every prefecture. Following that, the government has set up a wide range of IP support, including IP consultation, technology transfer, IP financing, and so on.
3. By “IP financing”, do you mean “chizai-kinyu”?

Yes, but it is not about IP valuation, which in my opinion, we do not need it. The banks were very cautious about mortgage five years ago. If the clients did not have good land, factory etc., they could not have had financial aids. Unfortunately, venture companies or SMEs did not have such properties. In 1997 or 1998, they began to focus on patents (IP) as mortgages. With this concept, valuation of patent was very important. However, the concept is changing currently. We now concentrating on competitiveness or future cash flow of the business. Consequently, IP valuation is not a concern anymore. Provided that a business has a strong patent, they may get future cash flow created by such IP assets. But if they had weak technology, they could not enter the market and get cash flow. That is substantial function of IP in order to achieve competitive advantage.

Recently, we are considering IP portfolio of a business to predict corporate’s cash flow in some years later, not the value of IP itself. We are just checking if IP is strong enough to continue the cash flow. It is the new concept of IP financing that we started in 2013.

4. Would you let me know the meaning of IP portfolio?

For example, if a SME has five fundamental patents that no one else owns, they cover a monopoly market. If another SME gets one fundamental patent, and enters the market, there are two objects in this market.

We are analyzing patent portfolios, and finding out if a SME has a chance to monopolize the market by fundamental patents, even if the market itself is small. Based on the competitiveness of products or technologies, we may predict future revenue by such IP assets.

There are local banks that tried evaluating IP assets of their clients but they were very confused. We are going in a different way which targets IP financing rather than IP valuation with some professional advisors.

5. How do you have information about the technologies?

The large companies organize conferences disclosing technologies they need or they offer others to develop.

6. What is your advice for SMEs in Vietnam?

Think of ways to increase number of quality patent (obtain good patents).

Motivate business activities linking with advanced technologies.

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Appendix VII: Minutes of the interview to Tokyo Metropolitan IP Support Center

Date and time: October 4th, 2016, 9.30-11.00am
Location: Tokyo Metropolitan Small and Medium Enterprise Support Center (TMIPC) Office, Sorimachi Shoji Building 1F, 1-3-5, Taito, Taito-ku, Tokyo 110-0016

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<td>Mr. Shigeto Hatae, General Manager, Tokyo Metropolitan Intellectual Property Center, Tokyo Metropolitan Small and Medium Enterprise Support Center - Interviewee</td>
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<td>Mr. Masashi Saigo, Intellectual Property Adviser, Tokyo Metropolitan Intellectual Property Center, Tokyo Metropolitan Small and Medium Enterprise Support Center - Interviewee</td>
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<td>Mr. Masato Hamasaki, Assistant Manager, Tokyo Metropolitan Intellectual Property Center, Tokyo Metropolitan Small and Medium Enterprise Support Center - Interviewee</td>
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<td>Ms. Trang Nguyen - Interviewer</td>
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<td>Dr. Yorimasa Suwa - Supervisor</td>
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<td>6</td>
<td>Ms. Sayaka Takeda - Interpreter</td>
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Mr. Hatae briefly introduced TMIPC as following:

- TMIPC was established by the Tokyo Metropolitan Government to formulate and implement “the Tokyo Strategy for SMEs to exploit their IP”
- Purpose: to promote creation, protection, and exploitation of IP by SMEs
- Position: an IP department functioning for SMEs
- Support Hubs: TMIPC has three support divisions in Jyoto, Jyonan and Tama.

TMIPC provide the services below:

- IP consultation provided by advisors: Experienced advisors offer IP consultation for free in many fields such as machinery, electricity, chemistry, IT etc. Attorney-at-law or patent attorneys are on duty in the afternoon only, but they can join in consulting on an as-needed basis.
- Dissemination and Education: TMIPC organized various IP seminars for SMEs, and annual IP symposia focusing on specific topics. TMIPC also builds up SMEs’ IP networking and study group, in order to reinforce IP infrastructure and incorporate IP
support policies into administration. Besides, there are publication of IP manuals and successful cases on IP matters, providing SMEs rich IP information resources. TMIPC set up a support system for SMEs to select patent attorneys.

- Subsidization for foreign IP applications (in terms of financial aids for filing application abroad, patent search and “Global Top Niche” companies.
- Support for introducing an IP strategy to SMEs (Development of “Niche top” companies): The key point is concentrating on “strong leadership” of SMEs’ top management.
- IP commercialization: TMIPC holds seminars, give SMEs assistance on contract negotiation, marketing, commercialization. And especially, through coordinators, TMIPC offers SMEs matching assistance to link SMEs with large companies.

Among 18 questions given TMIPC in advance, the interviewer directly raised up some key questions to interviewees as following:

3. Do you think IP awareness is improved among SMEs in Japan? Please specify.
   Yes, it is. Japan’s SMEs are strengthening their IP activities proved by the increased numbers of patent applications, PCT application and trademark application recent years.

5. In your experience, is it easy to exchange information with your clients, particularly in cases of SMEs?
   Here in TMIPC we keep info of our clients confidential. Although there’s no kind of paper non-disclosure agreement, but we have confidential commitment that we have never disclose any invention prior to its official publication.

6. What do you think about innovative products or new concepts of Japan’s SMEs? Please specify.
7. Could you share some examples in which customers choose products/services of Japan’s SMEs rather than others’ ones? Please specify why.
8. Are their innovative products and new concepts potential enough to attract investors or financial institutions? What are the key factors that affect the possibilities of Japan’s SMEs to have some investment or loans based on IP?

   The interviewees showed two prominent cases of SMEs:
• Seberu Pico Jewelry Clasps & Findings: They have factories in Japan, Thailand, and the Philippines. They meet the needs of customers with flexibility through extensive product knowledge and speedy service. They also have strong communication skills and are experienced in the export business.

• Aspect, Inc. is opening up a new future with AM (3D Printing) systems having characteristics of high-speed processing, ease of material exchange, original control software, running cost reduction, high equipment reliability, and superior part accuracy.

IP is one of the requirements. The bank will look at the growth potentials of SMEs in their market if they have IP assets. If they do not, maybe the bank find them unsafe to fund. IP, consequently, is necessary but does not guarantee loans. Basically, the fixed assets such as lands, factories, etc. are very important to supplemental role of IP assets.

9. In your experience, to what should SMEs pay attention in their licensing/ franchising agreements?

At least for manufacturing, I think licensing/ franchising agreements rarely happen in Japan; they pay more attention to exclusive rights. However, open or closed strategy becomes popular. For a specific core technology, they want to keep their IP exclusive. Others would like to attract more players and expand market. Each company designs their own plan, up to their purpose of opening for license/ franchise or closing for core technologies.

Recently, Japan’s SMEs are learning about licensing/ franchising. And in future, this matter soon get more important.

11. Why should IP be protected by IP rights? In your opinion, do most of SMEs in Japan have clear strategies on IP protection and maintenance? How to improve the situation?

I think it is not sufficient enough. Many SMEs do not pay attention to IP, and if they do, they have no ideas to manage their IP assets. They usually come to us for basic knowledge on IP.

14. Is trade secret or know-how important to Japan’s SMEs? Please specify

It should be judged case by case. If you were sure about there would be no company file the application, you should keep it as trade secret. Furthermore, protected period is limited within 20 years. If you prefer a longer time, you may keep it as trade secret also. However,
other companies possibly reverse your technology, so you have to choose wisely. After get consultation, they have their own flexible plan on the matter.

17. In general, do you have any idea on how IP support system could improve to assist Japan’s SMEs better?

- We have to get which direction SMEs go for their IP assets, what they truly seek. We provide support, but we do not want companies to rely on subsidization forever. Too much support is an obstacle to independence.
- Again, it is very necessary to enhance IP awareness among SMEs. Although there has been substantial spending for SMEs, the number of patent application is not correspondingly big.
- There should exist easily accessed and friendly IP database such as Patent Scope or Korean due to big gap in IP info use between large enterprises and SMEs. We appreciate the current ones, but it is better to have a global standard system.
- IP support has been improved lately, but I think SMEs probably maintain IP knowledge of their HR. Or even they should assign someone in charge of IP issues.

The interviewer received from the interviewees the references for remaining questions as below:

1. What has been the role of small and medium enterprises (SMEs) in economy of Japan?
https://www.jpo.go.jp/shiryou/toushin/shingikai/pdf/tizai_bunkakai_09_paper/03.pdf

2. What do you think about the importance of Intellectual Property (IP) Law and relevant policies to SMEs?
3. Do you think IP awareness is improved among SMEs in Japan? Please specify.

4. What kind(s) of service(s) does your organization offer SMEs? Please specify why your organization offers it (them). What are the (expected) results?
http://www.tokyo-kosha.or.jp/chizai/service/jigyoannai.pdf

10. What are the major difficulties to exploit young technologies or new concept of SMEs? Do you have any specific suggestion on this?
http://www.tokyo-kosha.or.jp/kosha/jigyouguide/index.html

16. Please talk about support system to SMEs in Japan in terms of IP.

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IP UTILIZATION AND SUPPORT FOR IP MANAGEMENT IN SMEs

Appendix VIII: Minutes of the interview to IP Promotion Division of JPO

Date and time: October 6th, 2016, 10.00-11.30am
Location: JPO
Attendees:

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<tr>
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<th>Name and Title</th>
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<tbody>
<tr>
<td>1</td>
<td>Mr. Yoshiaki Mibu, IPR Specialist for SMEs, IP Promotion Division, General Affairs Department, JPO - Interviewee</td>
</tr>
<tr>
<td>2</td>
<td>Ms. Nobue Yazawa, Assistant Director, SMEs Policy Planning Section, IP Promotion Division, General Affairs Department, JPO - Interviewee</td>
</tr>
<tr>
<td>3</td>
<td>Mr. Yusuke Toyoshima, Assistant Director, Developing Country Cooperation Section, International Cooperation Division, General Affairs Department, JPO - Observer</td>
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<td>4</td>
<td>Ms. Trang Nguyen - Interviewer</td>
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<td>5</td>
<td>Dr. Yorimasa Suwa - Supervisor</td>
</tr>
<tr>
<td>6</td>
<td>Ms. Chihiro Koyano - Interpreter</td>
</tr>
</tbody>
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Ms. Yazawa and Mr. Mibu briefly introduced IP support to SMEs of JPO as following:

In 2003, the Cabinet released IP Policy Outline, which included the core visions over IP issues in it. Ever since, they have launched annual IP strategic programs following the said Outline, in which JPO play central role to implement these programs.

Around 25 staff of JPO are in charge of planning SMEs/Regional IP support measures in nine blocks nationwide.

The specific measures are represented below:
In addition, Ms. Yazawa and Mr. Mibu briefly introduced support for making IP business valuation reports as following:

1. Support for making IP business valuation reports

- IP business valuation reports, which evaluate SMEs' business activities involved with intellectual property, will be made by research companies and provided to financial institutions at no cost, in order to promote financing for SMEs based on their intellectual property.

In fiscal year 2015, around 150 reports were made and provided to financial institutions.
Ms. Yazawa and Mr. Mibu answered questions in details:

3. How has IP Law and relevant policies of Japan involving SMEs changed for the last 14 years?

Japan had faced a very competitive period of 1995-1996. After that around the beginning of 2000s, the government felt that it was urgent to come up with the idea of a national IP policy. Correspondingly, the IP policy outline officially launched in 2003 by Japan’s Cabinet, in which supporting SMEs was one of core parts. Then year by year, the Cabinet has released IP strategic programs implementing national IP policy outline.

In 2013, the basic policy on IP was renew, which reflected all relevant elements, including economic factors. It also mentioned supporting SMEs was considered as an important pillar, needed to be enhanced.

6. In your experience, is it easy to exchange information with SMEs in terms of IP issues?

One of our missions is raising IP awareness among SMEs. We have met many SMEs all around Japan, tried to give them instructions, and given presentations using successful and failure cases of IP. Basically, I think SMEs are happy to gain knowledge. Sometimes, SMEs themselves ask for further discussion.

We try hard to promote SMEs’ understanding over IPRs. Additionally, we provide information on support schemes for SMEs. If SMEs have a particular IP problem, we will offer first assistance. For further professional consultation or advises, we will connect them with respective specialist.

11. What are the major difficulties to exploit young technologies or new concept of SMEs? Do you have any specific suggestion on this?

JPO is not in charge of this part, of which other SMEs agencies are taking care.

12. In your opinion, do most of SMEs in Japan have clear strategies on IP protection and maintenance?

Some of them do but many of SMEs do not have their own IP strategies.
15. Is trade secret or know-how important to Japan’s SMEs? Please specify

There are many factors to be taken into consideration in selecting protection measures such as patent or trade secret. SMEs are required strategically to make a selection considering the legal perspective, business and R&D policy and the market environment.

18. In general, do you have any idea on how IP support system could improve to assist Japan’s SMEs better?

Although we have a comprehensive menu assisting SMEs, not many of them recognize our measures. The main point is raising their awareness over these measures that much help SMEs with their IP use and management.

22. Regarding to “Examples of IP Failure Cases” of slide 19 in attached file. Please explain in details (When the cases happened, SMEs’ names, what products, arguments etc.).

Case 1: Nabel Co., Ltd (founded in 1964, 122 employees)

A failure in IP right led Nabel to manage company by focusing on patents. They have increased their share in the global market by using the world’s top level technology protected by many patents as their advantage. Also they convinced the importance of IP to all employees with the main following IP strategy:

• Exclusive use if developed technology (strong deterrent effect on counterfeits)
• Prepare filing details that takes into account the possibility of lawsuits
• Indication of strong will that the company will not shy away from lawsuits
• Utilization of patent DB as data on technologies
• The patent DB is a gold mine of information and it is possible to learn the trend of R&D using the DB
• Convince the importance of IP to all the employees

Inventors also participate in the interview examinations
Part of the damages or settlement money obtained is equally distributed to all the employees.

Case 2: Name of the SME was not disclosed

The SME did not own IP right although they themselves had developed the product, which they made sales calls to a large company. The large company took the liberty to patent product and demanded licensing fees. Consequently, the SME was forced to pay
demanded licensing fees, and realized that the technical level of their product was good enough to earn IPR.

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