

SOME MEASURES TAKEN BY JAPANESE SMALL AND MEDIUM ENTERPRISES IN THE RECENT TWO DECADES TO PROMOTE RESEARCH AND DEVELOPMENT ACTIVITIES AND SUGGESTIONS FOR VIETNAM

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Abstract:

The article briefly analyzed some key challenges for research and development (R&D) of Japanese small and medium enterprises (SMEs)² in recent two decades, including the funding and human resource development issues. Then, some solutions were presented in the paper to remedy obstacles and promote R&D activities of Japanese SMEs. Finally, based on those lessons learnt, some recommendations were made to promote R&D of SMEs in Vietnam.

Keywords: Japanese SMEs; R&D; Challenges; Solutions.

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1. Introduction

SMEs play a very important role and position in the Japanese economy. According to the Japan Small and Medium Enterprise Agency (2014), Japanese SMEs play a key role in supporting for local economic development, solving social problems and creating employment. Quantitatively, SMEs not only accounted for nearly 99.7% of total number of businesses in Japan and created about 70% of jobs in business sector, but also was the major contributor to the GDP of the country. Only the manufacturing SMEs shared more than 53% of Japan's GDP (*Japan Small and Medium Enterprise Agency, 2013*). Blair (2010) assessed that SME was

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² Presently, the concept of Japanese SMEs is defined according to 1999 Basic Law on SMEs, using 2 criteria as starting capital (VKD) and number of employees (SLD) of the enterprise. SME's specific criteria depending on specific industry sector, namely: (i) for SMEs in manufacturing sector, VKD ≤ 300 million Japanese Yen (JPY) and number of Labor ≤ 300; (ii) for SMEs in wholesale sector, starting capital ≤ 100 million JPY, number of Labor ≤ 100; (iii) for SMEs in service sector, starting capital ≤ 50 million JPY and number of employees ≤ 100; (iv) SMEs in retail sector, starting capital 50 million ≤ JPY and number of employees ≤ 50.

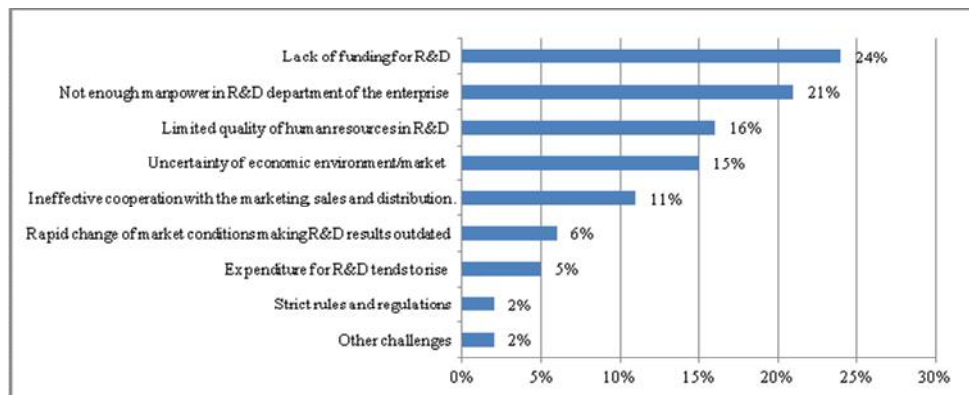
“the backbone of the service sector” and “an important part of the supply chain for production and export” in Japan. It could say that the stable development of SMEs is of great significance for Japan.

However, the economic recession in Japan lasted from 1990s until now has pushed the country’s SMEs into a very difficult situation. The number of SMEs reduced nearly 50% during the period 1990-2012 (Hori, 2004; Japan Small and Medium Enterprise Agency, 2014). To be adaptive to the economic context change, Japanese SMEs paid much attention to R&D in order to promote innovation, thereby enhancing SMEs’ competitiveness, gradually overcoming the difficulties for stable development.

Using the method of reference literature analysis and synthesis, this paper presented and analyzed in a preliminary manner some major challenges for R&D of Japanese SMEs over the recent twenty years and measures for remedy of obstacles by these enterprises. Based on these lessons learnt, the paper proposed a number of recommendations to improve the quality of R&D activities of SMEs in Vietnam.

2. Some key challenges for R&D of SMEs in Japan in the recent two decades

In the context of prolonged economic recession and limited resources of the country, Japanese SMEs faced many difficulties when implementing R&D activities. The result of the survey entitled “*Survey on the innovation situation through the creativity and R&D of companies*” conducted in December 2008 by Mitsubishi UFJ Research and Consulting by Co., Ltd. (Figure 1) showed the two biggest challenges for R&D of SMEs in Japan, i.e lack of funding and constraints in human resources.



Source: Compiled from document “2009 White Paper on SMEs in Japan”

Figure 1. Challenges for Japanese SMEs in conducting R&D

Note: The data were collected from responses of Japanese SMEs involved in R&D. Each questioned enterprise had the right to choose one or more alternatives; therefore, the total number of alternatives converted into percentage of responses per number of surveyed businesses may be greater than 100%.

2.1. Funding for R&D

Due to limited resources, Japanese SMEs generally had to rely on external sources of funding for their R&D activities. However, this kind of funding declined sharply in recent two decades.

The most important funding source for SMEs was from commercial loans of private banks and credit institutions. However, the shock of “asset price bubble” in the early 1990s made bad loans to the Japanese banking system sharply increased (*An Hung, 2009*). The 1997 financial crises in Asia and the 2008 global financial crisis also fueled negative impact on the system. Therefore, loans from private sector for SMEs in Japan declined accordingly, especially for R&D projects which were potentially risky. *Olanoff (2014)* considered that in the context of the country's stagnated economy for decades and the financial crisis occurred with high frequency, private financial institutions of Japan tended to provide loans for large enterprises as they were of higher efficiency with lower credit risk.

Another major funding source for R&D of SMEs in Japan coming from large enterprises also fell sharply. *Fukao (2013)* thought that before 1990s, SMEs in Japan had often benefited from the resources for R&D transferred from large enterprises through “supplier - buyer” tight relationship and close geographical location. However, these investments dropped sharply due to policy changes of large enterprises. From 1990s to present, major Japanese large enterprises have extended the supply chain of equipment and components worldwide, moving their manufacturing plants abroad and even strengthening R&D activities abroad.

2.2. Lack of manpower, especially skilled labor

In the two recent decades, Japan has faced with an increasingly serious problem, i.e aging population. While keeping the retirement age is 65, the number of young people participating in the labor market of Japan failed to compensate the shortfall as a result of low birth rates started from tens years ago. Moreover, due to the closed culture and xenophobic policy of Japanese businesses it created “a form of internal labor market and closed company” (*Luu Ngoc Trinh, 2004*). So foreigners found very difficult to participate in the labor market of Japan. The shortage of labor supply had significant impact on manpower of SMEs in Japan.

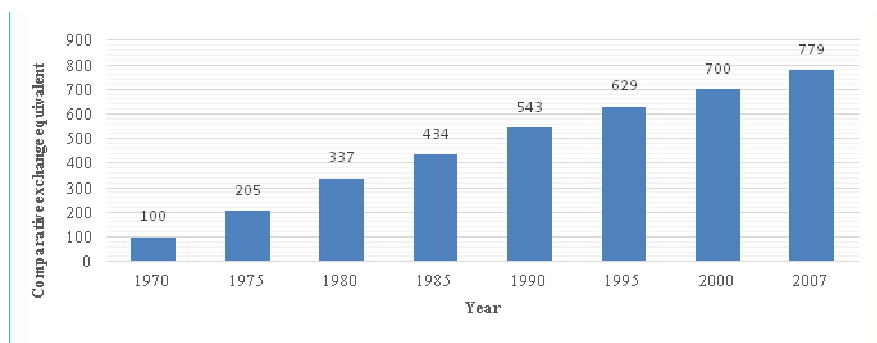
On the other hand, Japanese SMEs could not afford to pay competitive salaries compared with large enterprises, especially in market segments with highly specialized labor. *Shimizu (2013)* showed that after the economic crisis, the large Japanese enterprises used to enhance their manpower by hiring full-time workers. Thus, it forced Japanese SMEs to increase the number of non-regular workers. With such a high percentage of non-regular workers, Japanese SMEs faced many difficulties in training of skilled workers as well as retaining capable, qualified personnel.

Enough funding and high-quality workforce were prerequisite conditions for companies to conduct efficiently R&D. Therefore, in order to promote R&D, Japanese SMEs were forced to find appropriate solutions to overcome limitations on capital and labor as discussed above.

3. Some solutions for SMEs in Japan to promote R&D over the two recent decades.

Faced with the challenges mentioned above, Japanese SMEs had taken some positive measures to increase funding and improve the quality of human resources with the aim at enhancing quality and efficiency of R&D activities.

3.1. Actively promote investment in R&D



(Original expenditure in 1970 exchange equivalent to 100)

Source: Compiled from the "2009 White Paper on SMEs in Japan"

Figure 2. Growth in R&D expenditure of Japanese SMEs

Despite of difficulties in mobilizing funding for production and business due to the country's long economic downturn, Japanese SMEs remained a priority given for R&D funding. Data in Figure 2 showed that R&D spending by SMEs in Japan in 2000 (three years after the Asian financial crisis) was up nearly 30% compared to that of 1990. This level of spending continued to increase, until 2007, it was 1.5 and 2.5 times respectively

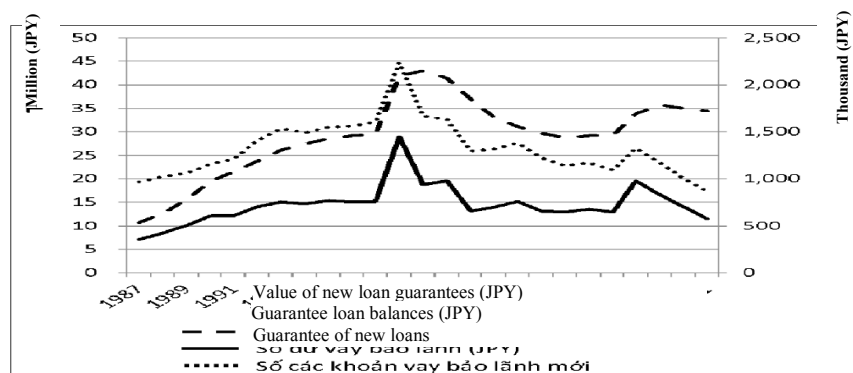
higher than in 1990 and 1980. It should be noted that the number of Japanese SMEs fell by almost 50% in the period 1991-2012, accordingly it meant the average R&D expenditure per Japanese SMEs increased sharply compared to the previous periods.

Actively giving priority for R&D investment had partly contributed to solve the problem of lack of R&D funding for Japanese SMEs. However, this solution was effective in some extent, given the limitation of overall financial resources of SMEs. Therefore, assistance given to Japanese SMEs so that they can mobilize external resources for R&D may be the most efficient and more radical solution for the problem.

3.2. Leveraging State policy support for credit guarantee

The difficulties of Japanese SMEs in accessing funding from commercial banks, i.e lack of collateral assets or great level of credit risks, can be minimized through the use of effective credit guarantees tools provided by the Government.

The trend of selecting guaranteed loans of Japanese SMEs started after the asset price crisis occurred in 1991 and particularly strong when the financial crisis hit Asia in 1997. Despite of the bad debt problem in Japan (due to consequences of burst asset price bubble) was basically solved in the early 2000's making the demand for credit guarantee go down, the number and value of guarantee loans of Japanese SMEs remained strong (Figure 3). According to Shimizu (2013), the guaranteed loans of Japanese SMEs in 2011 was JPY 0.87 million in the total of JPY 34.4 trillion, approximately accounted for 14.01% of the total loans of these SMEs.

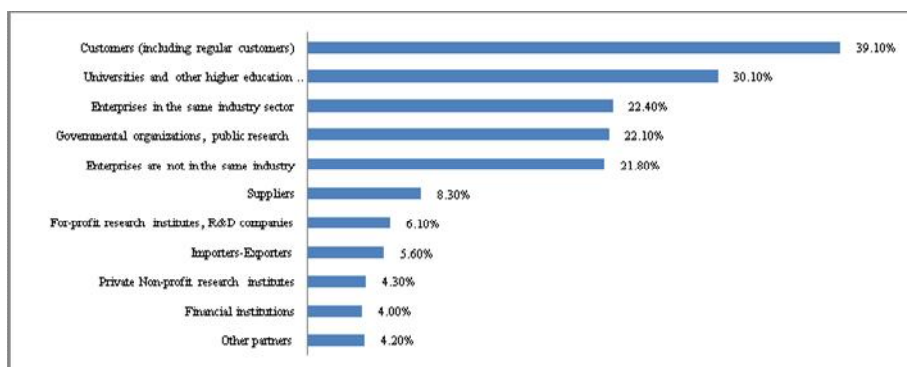


Source: Compiled from “The Role of SMEs in Japan's Political Economy”

Figure 3. Use of credit guarantee of Japanese SMEs (1987-2011)

3.3. Strengthened cooperation with universities

R&D cooperation with universities has a great influence on Japanese SMEs (Kazuyuki, 2004). Through this cooperation arrangement, Japanese SMEs can take advantage of modern facilities and highly qualified human resources of partners to carry out R&D activities, thus improving the competitiveness of enterprises. Thanks to an effective solution for limited funding resources of Japanese SMEs, the cooperation with universities has been accelerated by enterprises in recent two decades. Statistics showed that universities were the second most important partner in R&D cooperation as per the perception of Japanese SMEs.



Source: Compiled from "2009 White Paper on SMEs in Japan"

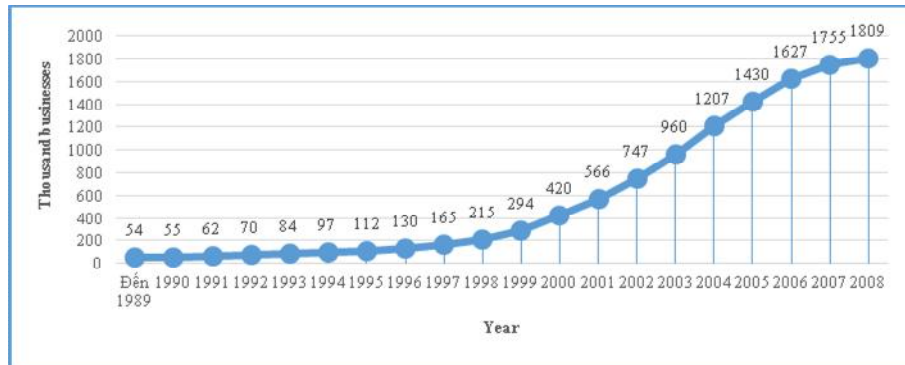
Figure 4. Cooperation partners of Japanese SME in R&D

Note: The data was based on responses of Japanese SMEs engaged in R&D. Each questioned company had the right to choose one or more options; Therefore, the total number of options (equivalent in percentage of number of responses on the number of surveyed enterprises) may be greater than 100%.

The increased cooperation between SMEs and universities in Japan was also reflected through the strong growth of the "university venture"³ in recent twenty years. "University venture" was a mechanism for an effective coordination, enable to promote technological development, enhance commercialization of products of science and technology and innovation, beneficial for both universities and SMEs based on strengths and advantages of each party. The data in Figure 5 showed that the number of

³ The concept of "University ventures" was introduced in the document "2011 White Paper on SMEs in Japan" including: (i) the newly established companies with a view to commercializing patents, new technologies or business models developed from studies in universities; (ii) the companies having had partnership with universities within 05 years since establishment with the aim at commercializing technology and technological know-how owned by the company founder; (iii) the enterprises have been technology transferees within 05 years since establishment to maintain or develop their existing business; (iv) The other venture businesses closely linked with universities, such as the students' venture business projects based on the relationship with universities or venture business projects receiving funding from universities.

“university venture” in Japan increased nearly 33 times in the period 1990-2008.



Source: Compiled from “2011 White Paper on SMEs in Japan”

Figure 5. Growth in number of “university ventures” in Japan (1990-2008)

The increasing trend of cooperation with universities in two recent decades has supported actively to settle the problem of R&D manpower in Japanese SMEs in terms of shortage in quantity and poor in quality. This solution also enabled Japanese SMEs to overcome a part of the lack of funding problem for R&D activities. In general, this was a quite comprehensive and efficient solution.

It could be said that the above solution correctly focused on solving the problem of lack of funding and limited human resources for R&D of Japanese SMEs whereby making contribution to promote R&D of these enterprises.

4. Suggestions for Vietnam

Compared with Japanese SMEs, Vietnamese SMEs⁴ were born later and worked in an economy with a lower level of development. Vietnamese SMEs also face with great difficulties in human and financial resources (even at more serious level than Japan) in the organization of production, in general and in R&D, in particular. Therefore, the experience of Japanese SMEs as presented above is a good basis to help suggest some measures to promote R&D activities of SMEs in Vietnam, as follows:

Firstly, Vietnamese SMEs should be fully aware of the important role of R&D for sustainable growth of businesses rather than just consider it as

⁴ The first legal basis for SMEs in Vietnam was the Law on Company and the Law on Private businesses promulgated on 21st December 1990 by the Parliament of Socialist Republic of Vietnam at its VIII-th session.

“anonymous activity additions” (World Bank and OECD, 2014)⁵. Change in perception will promote Vietnam SMEs to take appropriate measures, actively make more investment in R&D activities.

Secondly, Vietnam has been implementing a number of policies on financial support (including using credit guarantee instrument) to assist SMEs with funding to carry out R&D activities (including technology innovation projects, application of clean production technologies, development of new products, etc). Vietnamese SMEs need to actively capture information, prepare counterpart resources at the highest possible level in order to take advantage of these policies in an effective manner.

Thirdly, Vietnamese SMEs need to pay due attention to the cooperation with academia sector. Though, so far this cooperation has not really been effective, mainly via technology transfer from universities to businesses, but this modality has more growth potential in the future. Universities, research institutes and scientists tend to link research with practical needs. Vietnamese SMEs should take advantage of this opportunity to actively propose practical subjects for cooperation with universities and research institutes to maximize the use of high-qualified human resources and modern research facilities of partners to effectively address the issues of concern.

Finally, besides the effort of Vietnamese SMEs, the State support should be strengthened. State authorities should provide appropriate incentive policies such as tax, financial, administrative reform, etc in accordance with national conditions to encourage and facilitate SMEs to promote R&D activities.

5. Conclusions

In recent twenty years, Japanese SMEs faced with difficulties in implementing R&D. Out of which, the two most critical challenges were the lack of funding and limited human resources. To cope with these, Japanese SMEs took a number of measures to actively increase investment in R&D, efficient exploitation of state policy on credit guarantee and strengthened cooperation with universities, research institutes. Based on the experience of Japan, four proposed recommendations can be used to promote R&D of Vietnamese SMEs.

For obtaining full and more comprehensive results, this study could continue to develop in the direction of more in-depth and broader analysis on measures taken by Japanese SMEs to promote R&D in the context of prolong economic recession in Japan lasted from 1990's to present./.

⁵ World Bank, OECD (acronym of Organisation for Economic Co-operation and Development).

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