論　文

Innovation Process of Japanese SMEs Triggered by Emerging Market Development －Possibility of Expanding the Reverse Innovation Theory to SMEs－[1]

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Abstract

This paper analyzes the effects of emerging market development on small and medium enterprises (SMEs), focusing on the relationship with innovation. Specifically, this paper uses a case study of a Japanese SME to clarify (1) what sort of innovation is accomplished locally by SMEs through emerging market development and (2) what the effects of innovation accomplished in the emerging markets are on the SMEs' operations in their home countries.

The case study revealed the following three points. First, encounters with discontinuities in emerging markets promote the development of new management resources by SMEs and lead to the accomplishment of innovation at the local locations. Second, when innovation accomplished in emerging markets is taken back to the home country, SMEs accomplish innovation in their home country operations. Third, the factors involved in accomplishment of the innovation process are (1) the existence of an owner manager who is familiar with the emerging market, (2) utilization of outside resources, and (3) flexible allocation of management resources.

The conclusion of this paper is that the reverse innovation theory suggested by Trimble and Govindarajan (2012) may apply not only to large companies but may also be expanded to SMEs.

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1 Introduction

In recent years, as Japan's domestic market has progressively shrunk due to the decreasing population, etc., more Japanese SMEs have engaged in development of emerging markets, which are growing remarkably. Among them, emerging Asian countries where growth is conspicuous, such as China, India, and ASEAN, etc., are attracting attention. Developing emerging markets are quite meaningful for SMEs that desire to grow in the future.

On the other hand, a diversity of consumers with varying income levels exists in the markets of emerging countries. Even large companies experience difficulties in developing emerging markets, and so SMEs are searching for ways to pursue development. For this reason, there is a need to study the emerging market strategies not only of large companies but also of SMEs.

However, in the existing studies, the analyses of SMEs' emerging market development are not enough. In particular, they have no clarification of effects of emerging market development on SMEs. Elucidation of this point is important in studying SMEs' expansion into emerging markets. Therefore, this paper is an exploratory research on the relationship between emerging market development and innovation on SMEs. Specifically, this paper uses a case study of a Japanese SME to clarify the following two points:

(a) What sort of innovation is accomplished locally by SMEs through emerging market development?

(b) What the effects of innovation accomplished in the emerging markets are on the SMEs' operations in their home countries?

Next, after first reviewing the existing research on emerging market strategies, the hypothesis of this research is set forth. Then, the case study is described, and the observations are discussed. Finally, the conclusion, implications, and related issues are stated.

2 Background Literature

(1) Emerging market strategies in international management theories

In international business theory heretofore, the discussion has dealt mainly with companies in advanced countries and has centered on entry into advanced countries' markets which are in a similar stage of economic development and have similar business practices and customs (Amano, 2010). For this reason, companies that are opening up emerging markets need to consider strategies that differ from the traditional strategies discussed until now (Arnold and Quelch, 1998).

Reflecting this trend, there is an increasing amount of international management research that is focused on emerging markets. This is not only because emerging markets are growth markets but also because there is a gap with the conventional international model, and so theoretical and empirical development can be anticipated from the research (Amano, 2010).

Shintaku (2009) analyzes the development of emerging countries from the perspective of market strategy. Shintaku offers three product strategies for opening up emerging markets: (a) release of low-priced products, (b) added-value price strategy, and (c) development of localized products. In addition to research from the market strategy perspective, research has also been done that analyzes from the perspective of management resources strategy. Because of the many restrictions that exist on management resources in emerging markets, Shintaku and Amano (2009) maintain the importance of the perspective that examines how development and accumulation of management resources are carried out in the host country in the process of market development and how the resources gained thereby are effectively utilized.

An important concept of emerging market development is the "discontinuities" between advanced countries' markets and emerging markets. Amano (2010) says that companies from advanced countries encounter "discontinuities" in emerging markets because conditions in emerging markets differ qualitatively and quantitatively from the advanced markets where the companies have experienced success. Two such discontinuities are (a) market conditions and (b) management resources (Amano, 2010, Usui and Uchida, 2012). The discontinuities pointed out in market conditions include large differences in income levels, undeveloped market infrastructure, and lack of product knowledge on the part of consumers. Regarding management resources, Amano (2010) states that, because the strategies of companies in advanced countries are formed based on the advanced markets and management resources also depend on those countries to a large extent, the companies face issues when they enter emerging markets where the conditions greatly differ.

When an advanced company encounters discontinuities in emerging markets, what sorts of innovation occur? Trimble and Govindarajan (2012) present the concept of "reverse innovation." This is the innovation which is first created in developing countries and then is taken back to wealthy countries. The concept includes not only product innovation but also innovation in the business models for manufacture and sales. To accomplish reverse innovation, it is necessary to reconsider not only the existing strategy but also the mindset, global organization, and project unit.

In this way, research on emerging market development is making gradual progress from diverse viewpoints such as management strategy theory and innovation theory. However, the construction of theories on emerging market strategy is still in the exploratory stage (Amano, 2010). Moreover, the research has targeted large companies. There has not been adequate discussion on whether or not it is applicable to SMEs.

(2) Emerging market strategies in SME theories

What sort of research is being conducted concerning the emerging market strategies of SMEs? In recent years, research has begun to accumulate on successful examples of domestic sales in China (JETRO, 2010, etc.). A characteristic of this research is that it introduces detailed a case study. Tange (2012) revealed that when Japanese SMEs open up emerging markets, they succeed by releasing added-value products in niche markets before other companies do so, endeavor to maintain the quality of the products and services offered, and convince customers of their products' value. Ota and Tang (2012) says that companies in emerging markets should concentrate on strengthening marketing as part of their plan to build their brand.

The prior research on SMEs' emerging market strategies is sparse. The existing prior research mainly focuses on market strategies. Moreover, there is almost no research like that of Trimble and Govindarajan (2012) which considers the relationship between the development of emerging markets and innovation made in domestic and foreign locations.

Building on the above, this paper analyzes the relationship between innovation in emerging countries and innovation in the home country in the emerging market strategies of SMEs.

(3) Hypothesis formation

In emerging markets, companies encounter restrictions on resources and capabilities which differ from those in advanced countries (Amano, 2010). Some sort of change in the market, such as a change in the composition of the population or an increase in income level, will stimulate innovation (Takeishi, 2001). Based on this, when SMEs engage in development of emerging markets and encounter some sort of change, there is potential for innovation to occur. Innovation is more likely to occur if a local base is established rather than if products are exported from Japan. Thus, Hypothesis 1 is proposed as follows.

Hypothesis 1: When SMEs encounter discontinuities in an emerging market, they accomplish innovation at their local location.

Moreover, according to Trimble and Govindarajan (2012), development of emerging markets has the potential to impact not only innovation at the local locations but also innovation in the home country operations. In fact, looking at Japan Finance Corporation Research Institute's "Results of Study on SMEs' Foreign Expansion," among the SMEs that engaged in foreign direct investment, those that reported an increase in sales and the number of employees at locations in Japan exceeded the number of SMEs that reported a decrease. This can probably be taken to indicate that SMEs' overseas expansion may have an effect of some sort on the operations in the home country.

However, this result by itself does not adequately elucidate the process that connects overseas expansion to innovation in home country operations. Innovation is a behavior that creates knowledge and utilizes knowledge. Knowledge is an output of innovation, and simultaneously, it is an input for the next innovation (Goto, 2001). Knowledge and resources gained through the development of emerging markets have the potential to be the input for a new innovation. Thus, Hypothesis 2 is proposed, as follows.

Hypothesis 2: Innovation in emerging markets promotes innovation in SMEs' home country operations.

(4) Research Methodology

Verification of the above hypotheses was conducted using a case study. The reason why the case study method was selected is because a case study provides more abundant, in-depth information than a survey does. Because there are a few cases of Japanese SMEs that have succeeded in opening up emerging markets and these cases are unique, the method of using a single case study was judged to be appropriate and was adopted (Yin, 2009).

The object of the case study is SME A which set up a production and sales base in China and developed the local market. This company was chosen because it was judged to accord with the objective of this paper since it produces rice wine, which is a product deeply rooted in Japanese tradition and culture. So, it seemed to encounter more discontinuities in the market than companies in other industries do when they enter into the emerging market.

In implementing the case study, an effort was made to collect information from multiple angles. Naturally, information was collected from various public sources, and interviews were also conducted for three hours with the management on two occasions, in October 2009 and August 2012. On those occasions, the headquarters and brewery were also inspected. Furthermore, interviews were conducted by multiple persons, and information was collected through semi-structured interviews. The interview records were reviewed by multiple persons and then confirmed by SME A.

3 Case Study

SME A has 10 million yen paid in capital, and 5 employees in Japan, except seasonal workers. It is an old rice wine brewery which started in 1853. In 1995, the company built a brewery plant in Tianjin, China, with the aim of procuring the cheap rice available in China to make high-quality rice wine there.

SME A decided to enter China when the present president of SME A heard that "there are companies making rice wine in China" in the fall of 1994. Moreover, he learned that the companies already making rice wine in China were not major companies but several SMEs. He thought that since the market was already mature in Japan, his company would have greater opportunities in China where the market had future potential for expansion. At that time, he took over the management of SME A from his father, former president, and preparations began to launch operations in China.

However, in order to produce rice wine in China, there was an issue to be overcome, which was that, in China, there were no skilled craftspeople called *toji*, who were well-versed in the craft like in Japan. *Toji* are the top people in charge of rice wine brewing in Japan, and they direct the making of rice wine based on their finely-honed instincts and experience. The rice wine-making process is complex, and *toji* have handed down the techniques for a long time. Their role is important because it is they who decide the flavor and quality of the rice wine.

Although there are no skilled craftspeople, how did SME A produce rice wine in China? SME A created a production process manual predicated on management by numbers at their Tianjin plant. To prepare the manual, SME A took the following steps. First, the company president learned about rice wine making from *toji* in Japan. Next, the company utilized the research results of external research institutions concerned with rice wine brewing. For many years in Japan, the Brewing Society of Japan and the National Research Institute of Brewing have been engaged in research on rice wine brewing and have produced research results on making rice wine of reliable uniform quality. The production manual for the launch of the rice wine brewery in China incorporated the research results of these types of institutions as well as the rice wine-brewing knowledge of the company president himself.

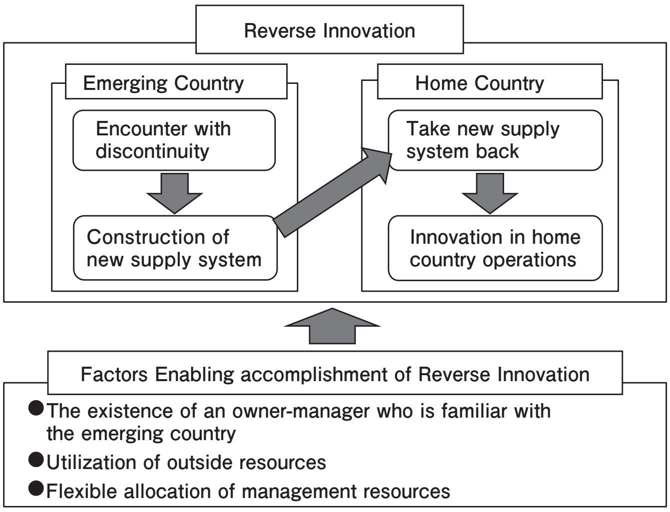
The production manual was organized so that even local employees could produce rice wine. For example, before steaming the rice which is the raw ingredient in rice wine, the water content of the milled white rice is measured because the percentage of water content varies with each lot. Corrections are made so that it reaches an average water content of 14%; furthermore, the percentage increase in weight when the water content reaches 28% is calculated, and water absorption trials are conducted. Next, how many seconds the rice should be soaked in water is estimated. The amount of pressure and length of time for steaming is also decided. In this way, rice wine-brewing know-how was standardized in the manual.

To carry out management by numbers, the company introduced the latest equipment outfitted with sensors for numerical management. For the milling process, the company installed a computer-controlled milling machine that cost over 20 million yen. Thanks to this, the rice could be polished precisely and in optimal conditions to 35% of the original grain size in three days and nights. For the *koji*-making process which serves to convert the starch of the steamed rice into sugar, the company purchased expensive equipment that can replicate expert techniques using numbers. In this way, SME A overcame the obstacle to production posed by the lack of skilled craftspeople in China with thoroughgoing numerical management and compilation of standardized procedures in a manual.

After expanding to China, the company initiated domestic sales in China starting in 1996. Since Japanese restaurants had just started to increase as Japanese companies rushed to expand into China, SME A targeted Japanese restaurants in China.

However, in China at that time, there were still traces of the socialist planned economy, and so no local companies existed that could safely be entrusted with distribution, including the task of inventory management. The local wholesalers were essentially state-run businesses that lacked inventory management know-how and had unreliable bill collection operations. So, SME A constructed a direct sales network by setting up offices in coastal cities where there were many Japanese restaurants, and it had its own salespeople deliver to the local Japanese restaurants.

Figure 1. Innovation Process of SMEs Triggered by Emerging Market Development



Source : author.

To construct a direct sales network, SME A's president himself became involved in the education of salespeople. Rice wine is a delicate product that is sensitive to high temperatures, light, and the passage of time. The salespeople were taught about the importance not only of quality control during shipment but also about quality control at the destination. For instance, delivery should be limited to the amount that can be consumed in a week, and the stock at the destination should be arranged so that the first rice wine in is the first rice wine out, such that the oldest is used first. The president also trained the staff in credit management. In addition to collection methods, he also taught credit-rating methods such as checking on the level of customer activity, the cleanliness of the restaurant, and the appearance of the employees. Currently, SME A has 30 salespeople, and all of them are from Tianjin. All of the salespeople were hired from one area with the aim of mitigating friction among them.

The rice wine produced in China is sold in 1.8-liter bottles for 110 RMB (approximately 18 USD). The shipment volume of the Tianjin brewery has increased 25% annually for the past three years. Some is exported to Japan, but most is sold to Japanese restaurants in China. The company has expanded to cover nearly 80% of the Japanese restaurants in all of China.

4 Results

The following three findings were revealed by the case study of SME A (Figure 1).

(1) Encounters with discontinuities in emerging markets lead to the accomplishment of innovation at the local location.

In the course of opening up an emerging market, SME A tackled the development of new management resources in the areas of both (a) production and (b) distribution. As a result of succeeding in the development of new management resources, it can be seen that the

Table 1. Discontinuities in Emerging Markets and Development of New Management Resources

Discontinuities	Innovation
(1) Production : Skilled craftspeople did not exist in China	◆ Standardized procedures in a manual
(2) Distribution : Reliable distributors like those in Japan did not exist in China	◆ Constructing a direct sales network ◆ Hiring and training salespeople itself

Source: author.

company realized innovation whereby it built a supply system that differs from the one it uses in Japan.

For (a) production, the company introduced a new production process at its China location that uses thoroughgoing numerical management and compilation of standardized procedures in a manual. This production method is vastly different from the one used in Japan, which depends on the finely-honed instincts and experience of the skilled craftspeople. For (b) distribution, the company built a direct sales network by setting up offices in coastal cities and having its own salespeople deliver to Japanese restaurants in each region. This is in stark contrast to the situation in Japan, where there are many reliable rice wine wholesalers, and breweries entrust distribution to them.

So, what was the factor that led SME A to engage in the innovation? The factor was the discontinuities faced in the emerging market, namely the lack of skilled craftspeople and distributors (Table 1).

In (a) production, the company faced a discontinuity due to the fact that *toji,* who are a key presence in Japan, did not exist in China. SME A aimed to produce genuine rice wine in China, but it was faced with the fact that *toji,* who are skilled craftspeople, did not exist in China. It would have been difficult to dispatch a *toji* from Japan because most of them are becoming aged and because differences in the living environment of emerging countries and advanced countries are particularly large. Therefore, a new production process consisting of thoroughgoing numerical management and compilation of standardized procedures in a manual was introduced in China.

In (b) distribution, the company faced a problem that reliable distributors like those in Japan did not exist in China at that time. When SME A expanded to China in 1995, traces of the socialist planned economy remained, and a distribution industry had not yet developed. In response, SME A built a direct sales network by hiring and training salespeople itself and having the salespeople deliver rice wine to local restaurants. Thus, SME A encountered various discontinuities in the Chinese market which stimulated the development of management resources by SME A and led the company to innovate by constructing a new supply system.

(2) Innovation accomplished in emerging markets is taken back to the home country operations.

By taking the knowledge acquired through opening up an emerging market back to Japan, SME A accomplished innovation in its domestic operations. SME A subsequently introduced in

Japan the new production process consisting of thoroughgoing numerical management and standardized procedures in a manual which was created in China. Following the success in China, the president realized that the same methods could be applied in Japan.

As a result, in Japan as well, high-quality rice wine brewing that does not rely on the instincts and experience of skilled craftspeople became possible. The rice wine produced with the new production process achieved such high quality that it was awarded a gold prize winning in the Annual Japan Sake Awards.

As a result of achieving this innovation, SME A's production volume in Japan has remained unchanged since 1995 when it expanded overseas. Given that the volume of rice wine consumed in Japan nationwide has declined by half since 1995, SME A is performing exceedingly well. Behind this performance lies the fact that the company can reliably produce high-quality rice wine thanks to the introduction of numerical management and standardized procedures in a manual. Actually, looking at the company's production items in Japan, the rice-polishing ratio is high, and the percentage of items with high unit prices and high-quality rice wine is higher than previously.

By taking back to Japan the new supply system developed in an emerging market, SME A realized innovation in its home country operations. This result indicates that the theory of reverse innovation proposed by Trimble and Govindarajan (2012), in which innovation first created in emerging countries are taken back to advanced countries, may be applicable not only to large companies but may also to be expandable to SMEs.

(3) Three factors enable the accomplishment of innovation.

What are the factors that enabled the accomplishment of this innovation by SME A? Three factors were extracted from the case study.

(a) The existence of an owner-manager who is familiar with the emerging market

The first factor that may be pointed out is the existence of an owner-manager who is familiar with the emerging market. SME A's owner-manager learned the Chinese language in junior high school by studying on his own. In college, he studied law, particularly Chinese law. Following college graduation, he was involved in the development of a production system at an auto manufacturer. After that, he worked for a trading company where he was in charge of screening investments in China before succeeding SME A. So, the fact that there did exist an owner-manager who was familiar with the Chinese market, including the language and other aspects, and the fact that he was actively involved in innovation in production and sales as one of the top people at domestic and foreign offices is likely to have been a factor in SME A's accomplishment of innovation. He learned rice wine making from the skilled craftspeople in Japan, and created the production process manual by himself. Trimble and Govindarajan (2012) point out the importance of the manager's mindset and company-wide organizational reform in carrying out reverse innovation. In the case of SME A, it can be seen that, while organizational reform is not observed, the manager does play a large role. It may be said that, for SMEs to achieve reverse innovation, the role of an owner-manager may be the most important.

(b) Utilization of outside resources

The second factor that may be pointed out is skillful utilization of outside resources. SME A compiled a standardized production process in a manual for rice wine in China. For doing this, the company used the knowledge of outside experts called *toji* who are in Japan and the research results of outside research institutions concerned with rice wine production. Based on this information, the owner-manager compiled the production process manual. Trimble and Govindarajan (2012) state that, for multinational companies to engage in reverse innovation, it is important that a local growth team (LGT)[3] be able to utilize the company's global management resources. For SMEs with scarce management resources, skillful utilization not only of their own management resources but also of external resources is an important factor for realizing reverse innovation.

(c) Flexible allocation of management resources

The third factor that may be noted is that the owner-manager flexibly allocated management resources in China. The owner-manager of SME A decided in 1994 to enter the Chinese market because of its future growth potential. Subsequently, the company aggressively invested in its Chinese location rather than in Japan, where economic decline was ongoing. For numerical management of the production process, expensive machines were installed, and after that, investment was made in plant expansion as the shipment volume rose. Looking at employees, the Chinese location employs 48 persons, which is far more than the headquarters in Japan where only five employees work except seasonal workers. Amano (2010) points out that it is difficult for companies in advanced countries, which tend to divide their own management resources among existing customers and investors, to reallocate resources to an emerging market. SMEs such as SME A differ from the large companies postulated by Amano (2010), and so it is possible for them to carry out bold reallocation of resources at the decision of the manager. This is likely to be an important factor for the realization of reverse innovation by SMEs.

5 Conclusions and Implications

This paper analyzed (1) What sort of innovation is accomplished locally by SMEs through emerging market development and (2) What the effects of the innovation accomplished in the emerging markets are on the SMEs' operations in their home countries. The following three points were elucidated by the case study.

First, encounters with discontinuities in emerging markets promote the development of

[3] LGT is a special organizational unit for realizing reverse innovation. It is a small entrepreneurial cross-organizational unit that physically exists in emerging markets (Trimble and Govindarajan, 2012, pp.92-93).

new management resources by SMEs and lead to the accomplishment of innovation at the local locations. Second, when innovation accomplished in emerging markets is taken back to the home country, SMEs accomplish innovation in their home country operations. Third, the factors enabled the accomplishment of this innovation process are (a) the existence of an owner-manager who is familiar with the emerging market, (b) utilization of outside resources, and (c) flexible allocation of management resources.

The conclusion of this paper is that the theory of reverse innovation proposed by Trimble and Govindarajan (2012) applies not only to large companies but can also be expanded to SMEs. At the same time, differences were observed in the reverse innovation of the SME and that of large companies as described by Trimble and Govindarajan (2012). In the case of the SME, (1) the role played by the manager is larger than that played by organizational reform and (2) utilization of not only the company's own management resources but also of external resources is an important factor for success.

The contribution of this paper is that it clarified, at least partially, the relationship between innovation and the effects of development of emerging markets on SMEs. In particular, it has clarified the process connecting the development of emerging markets and the innovation at home country locations. Moreover, the analytical results of this paper can be applied by SMEs that are seeking to achieve reverse innovation. By knowing the three factors that enable reverse innovation when companies engage in development of emerging markets, SMEs may be able to realize innovation in their home country operations.

Meanwhile, the issues in this paper requiring further study are as follow. The paper's conclusion was derived from a single case study, and so to generalize to other companies, quantitative research is probably necessary. Moreover, it is necessary to analyze diverse forms of reverse innovation such as the reverse innovation of products which Trimble and Govindarajan (2012) discuss at length, and not only reverse innovation in production and sales as analyzed in this case study. In addition, there are SMEs that have not realized reverse innovation in advanced countries even though they did achieve innovation in emerging countries. It is necessary to clarify what the issues are in achieving reverse innovation to find out why they cannot (or have not) done so.

In the future, the author would like to engage in further study of the above points.

＜References＞

Amano, Tomofumi (2010) "Perspectives of Emerging Market Strategy and International Business: Adapting to the Discontinuous Markets.", *International Business Studies*, Japan Academy of International Business Studies, 2 (2), pp.1-21 (in Japanese).

Arnold, David J. and John A. Quelch (1998) "New Strategies in Emerging Markets.", *MIT Sloan Management Review,* 40 (1), pp.7-20.

Goto, Akira (2001) "What is Innovation Management?" *Introduction to Innovation Management,* edited by Hitotsubashi University Institute of Innovation Research, Nikkei, Inc, pp.1-23 (in Japanese).

JETRO (2010) *Case Study Report on SMEs' Success in Selling Domestically in China* (in Japanese).

Japan Finance Corporation Research Institute (2012) *Results of Study on SMEs' Foreign Expansion* (in Japanese).

Ota, Kazuki and Shenrui Tang (2012) "Analysis of Factors in Successful Marketing in the Chinese Market.", *Osaka University of Economics' Papers,* 63 (3), pp.11-38 (in Japanese).

Shintaku, Junjiro (2009) "Issues and Strategies of Japanese Companies in Developing Emerging Markets.", *Journal of JBIC International Research Office,* no.2, pp.53-66 (in Japanese).

Shintaku, Junjiro and Tomofumi Amano (2009) "Strategies in Emerging Markets: Changes in market and resource strategies.", *Papers on Economics,* University of Tokyo Economic Society, 75 (3), pp.40-62, (in Japanese).

Takeishi, Akira (2001) "Patterns of Innovation: Occurrence, Spread, and Evolution.", *Introduction to Innovation Management,* edited by Hitotsubashi University Institute of Innovation Research. Nikkei, Inc, pp.68-98, (in Japanese).

Tange, Hideaki (2012) "SMEs' Marketing Strategies for Development of Emerging Markets: Focusing on consumer goods manufacturers who develop markets in China and other Asian countries.", *SMEs' Innovation – Collection of Papers vol.31,* edited by Japan Academy of Small Business Studies, Doyukan (in Japanese).

Trimble, Chris and Vijay Govindarajan (2012) *Reverse Innovation: Create Far From Home, Win Everywhere,* Harvard Business School Review Press.

Usui, Tetsuya and Yasuo Uchida (2012) "Issues in Continuities and Discontinuities of Resources in Emerging Market Strategies.", *International Business Studies,* Japan Academy of International Business Studies, 4 (2), pp.115-132 (in Japanese).

Yin, Robert K. (2009) *Case Study Research: Design and Methods,* SAGE Publications, Inc.