Abstract: There are very few existing studies that focus on the internal headquarter organization in relation to knowledge transfer or innovation in overseas units. It is almost as if there is an implicit assumption that headquarter members ought to be proactive in transferring knowledge or information to overseas units. Thus, this study investigates the bottlenecks of the process in the transfer of product development tasks to overseas units, with particular focus on the psychological resistance of headquarter engineers. A detailed case study of a Japanese automobile supplier revealed the following problems that were faced by headquarter engineers: lack of motivation to business in emerging markets, perception gaps about original developers, and a high turnover rate of local engineers. Next, how the psychological resistance of headquarter engineers, which originate from these problems either directly or indirectly interferes with the transfer of development tasks, was explained by two paths, that is, decline in motivation toward...
information sharing and technical advices, and lack of communication channels. To promote the overseas expansion of development tasks, which is necessary for emerging market strategies, it will be critical to manage the causes and effects of the psychological resistance of headquarter engineers.

Keywords: global product development, task transfer, psychological resistance of headquarter engineers, emerging markets

Introduction

Cases of Japanese firms trying to expand their product development tasks abroad have been increasing since late 2000s. A number of major firms, including Toshiba, Fuji Film, Clarion, Hitachi, Toyota, Honda, and TDK, have sought ways for speedy response to emerging market needs by establishing product development units onsite and increasing the employment of local engineers. ¹ Furthermore, according to the Survey of Overseas Business Activities, conducted by the Ministry of Economy, Trade, and Industry in July 2013, the expenditure ratio on overseas research and development for 2012 was a record level of 4.4%, which was highest ever. From these facts, Prahalad and Doz (1987) and Bartlett and Ghoshal's (1989) observations that “Japanese business are characterized by products standardized by headquarters that are expanded overseas in a globally integrated manner” are becoming less and less applicable to current Japanese businesses. This is because the need for dealing with diversified overseas markets and the number of overseas development units to meet that needs have been increasing for products deployed overseas.

In most cases, development functions intended for overseas expansion are limited to the minimal tasks necessary to promptly respond to the local customers’ various and heterogeneous needs.\(^2\) This is because the process of transmitting each of the local customers’ demands to headquarters, requesting applied development works, and waiting for the responses are inadequate for emerging market businesses that are highly competitive and require more speed than usual. In other words, there has been a shift of dividing the development tasks, which used to be concentrated on headquarters, between the advanced technology development and standard product development at headquarters, and tasks necessary for locally adapted design of existing products at local units.\(^3\)

However, although a number of Japanese firms are challenging the overseas expansion of product development tasks, it seems difficult. The author conducted field researches of multiple firms on this topic from 2008 to 2014, and found out that both engineers in local units and headquarters have complaints and dissatisfaction toward each other. For instance, engineers in local units often express dissatisfactions such as “the only concerns of Japanese expatriates are decisions and evaluations made by headquarters,” “engineers in headquarters do not share information timely,” and “they would not understand, no matter how hard we explain the issues of local markets to them.” Conversely, engineers in headquarters often give opinions such as “local engineers quit their

\(^2\) Contents of local development tasks include a broad range, including simple attachment design modification, designing compatibility with local parts, material change design, and development corresponding to local needs. However, in most of the cases observed in case studies, local development is applied design based on existing products from headquarters, and the discussion of this study is limited to the overseas expansion of such local development tasks.

\(^3\) For a discussion on product development, refer to Kuwashima (2012, 2013), and Kuwashima and Fujimoto (2013).
job so easily” and “because development is the very core of our firms’ competitiveness, it needs a lot of care when transferring tasks.” These mixed complaints from both sides have lasted for years and remain as it was.

The global expansion of development tasks by Japanese firms is a critical subject of research in terms of major strategic change and implementation of it by multinational corporations, which have concentrated their development functions in home country since their establishment. In particular, the expansion of development tasks to developing countries, which have a high technological gap with Japan, as opposed to Western developed countries that have equivalent or better technical resources, might have certain uniqueness in its contexts. This study aims to understand the causes of bottlenecks in the process of expanding development tasks to emerging markets.

This paper will begin by reviewing existing literatures. This will mainly be an exploration of global R&D-related studies to search for answers related to research questions of this study. This will be followed by a methodology, and a description of a case study centered on three causes and two results of the psychological resistance of headquarter engineers. Finally, this study will conclude with a simple introduction of some approaches adopted by firms to solve these bottlenecks, and discussions.

**Literature**

Finding hints to this study’s research question in existing literatures, there are following questions that are similar in terms of their concerns. The first is what factors influence efficiency of knowledge transfer between headquarters and local units, and the second is what are the necessary conditions for promoting innovations in local units. Table 1 shows representative studies
focusing on the aforementioned questions, divided into three categories (i.e., headquarter organizational factors, local units organizational factors, and channels connecting headquarters and local units) based on the perspective of this study.

The field of research in which the most active discussions have taken place is about the channels connecting headquarters and local

<table>
<thead>
<tr>
<th>Headquarters</th>
<th>Local Centers</th>
<th>Channels</th>
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<tr>
<td>① Internal Organization Factors</td>
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<td>① Control and Communication</td>
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<td>① Global Teams</td>
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| ② Top Management Incentive |
| ② Control and Communication |
| ② Media Richness |
| ② Global Teams |

| ③ Global Teams |
| ③ Control and Communication |
| ③ Media Richness |
| ③ Global Teams |

Table 1. Classification of preceding researches
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units. In particular, there are many studies on control and communication mechanisms of headquarters, as well as studies on global teams as an effective means of knowledge transfer. For instance, Martinez and Jarillo (1991) and Nohria and Ghoshal (1997) suggested that different strategic roles of overseas subsidiaries decide necessary coordination mechanisms of them. Furthermore, there are increasing studies that focus on global teams as an effective method for multinational corporations to utilize knowledge and information dispersed around the world. For instance, Govindarajan and Gupta (2001) tested the condition under which a global team’s performance gets higher, and they found out that factors including goal clarity, team member variations, and trust among members are positively related to better performance of the team. In addition, Lagerstrom and Andersson (2003) indicated the importance of periodic meetings and social exchanges. Essentially, the major concerns of research in this category were to find effective methods and important factors to connect headquarters and subsidiaries around the world.

At the same time, there are many studies focused on the internal organizational factors of overseas subsidiaries. The main focus of these discussions is on what types of conditions and factors can encourage innovations and knowledge transfer in overseas subsidiary organizations. For instance, Ghoshal and Bartlett (1988) tested influencing factors on innovation performance of overseas subsidiaries with slack resources and autonomy as independent variables, while Asakawa (2001) tested this with internal information connectivity, and Li, Poppo, and Zhou (2010) with the accessibility of the local supplier’s network.

Unexpectedly, there are very few studies focusing on headquarters’ internal organizational factors when discussing multinational corporation’s knowledge transfer and innovations of local subsidiaries. A possible reason for this is an implicit assumption that
Table 2. Summary of researches on global R&D of Japanese firms

<table>
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<tr>
<th>Author (Year), Journal</th>
<th>Problem</th>
<th>Sample</th>
<th>Summary of Analysis Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papanastassiou and Pearce (1994), R&amp;D Management</td>
<td>What are the characteristics of overseas R&amp;D labs of Japanese businesses?</td>
<td>JETRO research materials, survey of Japanese businesses located in the UK between 1992 and 1993 (19 collaborating companies)</td>
<td>• In Europe, with its increasingly competitive market, R&amp;D is attached to local production facilities for responding promptly to market and environmental changes.</td>
</tr>
</tbody>
</table>
| Odagiri and Yasuda (1996), Research Policy  | What are the determining factors of overseas R&D in the case of Japanese firms? | Data collected in 1990 of 222 overseas labs and 254 manufacturers across 18 industries (Toyo Keizai).    | • The purpose and motives of R&D differ in developed (Europe and America) and developing (Asia) countries.  
• There are no differences in determining factors in overseas R&D expansion between Western and Japanese firms.                                                     |
• Japanese companies particularly preferred cooperation with American universities.  
• Both had different goals.                                                                                                                                                                                             |
• Most of these emerge from R&D affiliated with Western businesses purchased in the late 80s.  
• Overseas R&D of Japanese firms is delayed compared to Western firms.                                                                                                                                               |
| Penner-Hahn and Shaver (2005), Strategic Management Journal | Does internationalization of R&D increase the number of patents? | Patent analysis of 65 Japanese pharmaceutical firms from 1980 to 1991. | • Only firms that possess research abilities regarding the technology which they wish to incorporate from the outside can benefit from R&D internationalization. |
• The cause is domestic inter-business networks, such as affiliation systems.                                                                                                                                              |
| Berry (2006), Strategic Management Journal  | How do firms with different technological and market positions use overseas R&D? | 641 Japanese firms that had overseas R&D from 1994 in the manufacturing industry from 1974 to 1994 (Toyo Keizai materials). | In various industries, firms that are in a technologically leading position invest more in overseas R&D, though they may not be dominant in market shares. |
| Kurokawa, Iwata, and Roberts (2007), Research Policy | What is the flow of global knowledge in Japanese firms in America?    | Survey of 79 Japanese R&D units in America, 30 interviews with local sites, and 10 interviews with headquarters. | • The more knowledge flows from headquarters to overseas R&D, the worse the local R&D performance becomes.  
• This characteristic is unique to Japanese firms.                                                                                                                                                                     |
“headquarter members proactively try to transfer knowledge and information to overseas subsidiaries.” But are headquarter members really gladly transferring information and knowledge to overseas subsidiaries? If this assumption is true, then there should be no complaints from overseas subsidiaries that information is inadequately shared. Therefore, this study will try to find causes that hinder the overseas expansion of development tasks, with more focus on the headquarters’ internal organization. This might provide a more balanced perspective on the accumulation of preceding studies. Table 2 is a simple summary of the studies that attempted to understand the characteristics of Japanese firms’ global R&D. These studies, conducted between 1994 and 2007, mainly use quantitative data from the early 90s for analysis. These studies deal with a similar flow of knowledge transfer from home country to overseas, and there also are no discussions on the headquarters’ internal attempts to transfer R&D functions overseas.

Method

This study use a qualitative case study method that is effective for in-depth understanding of complex social psychological phenomena in realistic contexts (Yin, 2003). One of the important values of qualitative research is its ability to describe and understand the interactions, meanings, and processes among people that compose an actual organizational setting (Gephart, 1997). Because concepts and theories regarding the research questions of this study have not been sufficiently developed in the preceding researches, the author took a grounded theory approach to observe the processes of transferring development tasks between headquarters and overseas units, as well as mutual interactions between engineers of both sides.

The major data sources were interviews, and secondary sources such as business documents, newspaper, and periodical articles
were also referred. Interviews were conducted with headquarters and six overseas subsidiaries with development functions of the Japanese multinational corporation A. Twenty-two interviews were conducted between May 2008 and November 2013 using semi-structured questionnaires. In addition, actual field researches were conducted in the Japanese headquarters, China, India, Korea, and Thailand.

The units of analysis were product development engineers in three different positions. Since engineers are the main actors of product development, interviews and analysis were conducted with Japanese engineers in the headquarters’ business unit, Japanese expatriate engineers in overseas units, and local engineers employed in local units, with focus on their mutual interactions.

Analysis

The keyword that arose from coding and analysis of interview data was “psychological resistance of headquarters engineers.” The analysis results are summarized in Figure 1. The following sections

![Figure 1. Psychological resistance of headquarter engineers: Causes and results](image)
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will explain the three causes of why psychological resistance arises in headquarters engineers, what types of actions this psychological resistance directly or indirectly causes, and the two results that lead to the obstruction of transferring development tasks.

Cause 1: Lack of motivation

First, the most frequently cited cause of psychological resistance in the interviews with both headquarters and overseas subsidiaries was that headquarter engineers do not have high motivation to transfer tasks to development units in emerging markets. In other words, the headquarter engineers, who have devoted much effort seeking higher technology and quality in product development for developed countries, do not find low cost product development tasks for emerging markets attractive or motivating. For this reason, it is difficult for them to find motivation to spend their own time and effort advising technical knowhow to Chinese or Indian engineers. As can be seen in the following interview citation, this lack of motivation is one of the causes for the psychological resistance against supporting product development for emerging markets or engineers in overseas units.

Those of us who manage product development for emerging countries are hated by the engineers of business units. Engineers are motivated when trying to develop something better in technology than existing one. When the engineers would not understand and resist, we had to resort to the president’s order to make them do so. (From an interview with Japanese headquarters, January 2012)

As mentioned earlier, the preceding researches have hardly addressed the motivation of headquarter members toward information or technology transfer to overseas units. However, the degree of this type of motivation in headquarter members, who have
accumulated various technologies for long time and can easily learn or access them, is an important factor that can determine the possibility and effectiveness of transfer itself.

**Cause 2: Original developer’s awareness gap**

The second factor can be said to be a problem caused by differences in the culture of engineer groups across countries. Incidentally, there are differences in mindsets about “who the results and merits of development belong to.” In Japan, they stress the originator, from whom the initial idea or design came from, or who started the development. On the other hand, particularly in China, there is a tendency to think that the results belong to whoever eventually makes it commercially viable. These differences in mindsets can be the source of troubles when transferring technology or knowledge developed in Japan to engineers in, for example, Chinese subsidiaries.

For material and production engineering technologies, which is one of the strength of many Japanese firms, Japanese headquarters have invested a huge amount of managerial resources for their developments. There are cases where, for instance, when a production technology that took more than 10 years of effort to develop is introduced to an overseas subsidiary, the technology is made commercially available in a short time. In this case, local engineers tend to believe that the success is a result of their own efforts, and declare this to others, resulting in deep displeasure of Japanese engineers to hear this. This causes the Japanese engineers, who experience troubles like this and take offense to them, to have strong resistance to transfer technology and knowledge to overseas engineers. Furthermore, the feelings of anxiety, mistrust, and resistance spread to fellow engineers, who hear about the experiences of other engineers within same organization.

In cases where engineer groups cooperate across borders and
cultures, many studies have indicated the need for promoting socialization in order to share each other’s values, work procedures, and understanding the nature of the cooperation (Ambos & Schlegelmilch, 2004; Govindarajan & Gupta, 2001). These differences in mindsets toward development results may not be understandable without a socialization process through mutual exchange. While intangible, these differences in mindset cause strong suspicions on the side transferring the technology or knowledge, and can be an important factor in bothering effective task transfers to overseas units.

**Cause 3: High turnover rate of local engineers**

The third cause that bring out psychological resistance of headquarter engineers is the sense of anxiety caused by high turnover rate of local engineers. This was frequently indicated in interviews mainly in India and China. While local engineers can be trained 2–3 years in Japan, there are many cases in which they are drawn by a higher salary offered by a competitor, and they quit after coming back to their home units. Although engineers’ job hopping is considered usual in many foreign countries, Japanese engineers, who have worked for the same firm since they started working, find this difficult to understand, and this becomes a factor that causes them anxiety.

Considering this did not particularly become a problem in building development units in Europe and the United States, which have a similarly high turnover rate of engineers, why does this become a major factor of anxiety in emerging countries? This is because there is a big difference between the Western firms that many Japanese firms regard as an object of study (Hamel, 1991) and the firms in emerging markets, in which there is a large disparity in technological competence, thus many local firms seek to learn and catch up with Japanese firms. Therefore, even though the turnover of engineers in
local units has not caused a serious problem of technology leaks, the high mobility of engineers in emerging markets causes anxiety to Japanese engineers in headquarters. As long as this anxiety is unresolved, headquarter engineers can hardly be expected to proactively proceed with task transfer to local engineers.

What type of actions does the psychological resistance of headquarter engineers resulting from these three factors manifest as, and how does this lead to the obstruction of task transfer to local engineers? The two resulting factors that arose from the interview analysis will be discussed in the following section.

**Result 1: Decline in motivation toward information sharing and technology advising**

Headquarter engineers with psychological resistance to transferring tasks to local engineers take such actions as neglecting to provide key information or communicating goals (e.g., developing a product that meets local needs) without disclosing necessary means. While they may be involved in product development projects for emerging markets, headquarter engineers can voluntarily adjust the degree of how much information to share or technology to advise. Therefore, headquarter engineers with psychological resistance to transferring tasks to emerging market units, due to the three factors discussed above, will provide merely formal and minimal sharing of information and technology.

Such actions of headquarter engineers can be indirectly heard from interviews with local engineers. For instance, there are statements such as “information is only shared upon request, and it is mostly done late,” or “as much as we tell them the product needs for local markets, this is never reflected in decisions, which gives us a sense of frustration.”
Result 2: Lack of communication channels

If Result 1 is the direct and outward one, a more indirect result is that communication channels between headquarters and local centers are not built adequately. The communication channels discussed here refers to the means and methods of communicating information between local and headquarter engineers. When a communication channel, consisting of precisely defined points of contact (e.g., window person) and communication processes, is established between headquarters and overseas subsidiaries, information exchange might happen more smoothly compared to cases when it is not. Since headquarter engineers who have the aforementioned psychological resistance do not consider it important to build communication channels with the local sides, they do not take action from their side.

Oppositely, local engineers desire a clear communication with headquarters due to the need for learning from technological knowledge and knowledge accumulated in headquarters (Kim, 2013a). However, headquarter engineers have more accessibility to financial resources and decision-making power necessary for building a channel than local engineers. Therefore, this can be considered as a factor that prevents the transfer of tasks to local units.

Discussion

This study demonstrated three causes of psychological resistance of headquarter engineers and two resulting bottlenecks when transferring product development tasks to units. Recently, there are cases where headquarters recognized such problems, and they
attempted to deal with them. While more empirical studies and evaluations about these challenges are necessary in the future, three directions of these countermeasures will be introduced below.

The first is the “inpatriation of local engineers” that many firms have been adopting recently. Contrary to expatriates, who are personnel of parent company dispatched to an overseas subsidiary, inpatriates are defined as personnel employed at an overseas subsidiary and are sent to the parent company during a certain period (Arimura, 2009). Unquestionably, this is conducted in parallel with the traditional expatriate system, and the purpose of inpatriation is to transfer headquarters’ knowledge to overseas units through local personnel (Kim, 2013b). When task transfer is obstructed by the psychological resistance of headquarter engineers, there is a high possibility that task transfer through the inpatriation of local engineers will be more efficient. A number of automobile firms are implementing a system of inpatriating local engineers for 2–3 years in Japan on a scale of several hundreds of people when it is large. This will systematically provide an environment and experience that will understand Japanese way of working and mindset and be conducive for networking that will lead to future communications.

The second is headquarter development heads taking the initiative for task transfer. There are cases where the heads of headquarter technology departments regularly visit local development centers to directly introduce technologies. For instance, in the case of chemical maker B, which established a development center in Hangzhou, China, in 2012, is making an effort to strengthen competence for product development directed at local manufacturers. Thus, the head of the technology division visits the China unit once a month for guidance, and this gesture is promoting the cooperation and

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4 Examples of countermeasures are taken from interview contents conducted between 2013 and 2014 with multiple businesses (including automobile, automobile parts, chemistry, and machinery).
motivation of headquarter engineers. When attempting a strategic shift, such as overseas transfer of development tasks, the powerful leadership of top managers has great efficacy. Such top–down approaches may be more necessary when business unit leaders and their affiliated engineers have psychological resistance to task transfer.

The third is the utilization of short-term project teams. In the case of firm A, which has been the main data source for this study, a three-year project team was established to give engineers of each business unit a push while managing connection with overseas units, and the joint product development that came about through this. When psychological resistance occurs as previously stated, it is difficult to expect for product development to progress as scheduled by leaving it to the business units alone. Therefore, a small-scale team (22 people) that would provide full-time management of coordination and development schedule was established. Certainly, this method may bring about short-term results; however, it might need continuing efforts to mitigate the underlying psychological resistance and opposition of headquarter engineers.

This study conducted an in-depth case study of firm A, focusing on factors within the headquarters organization that obstruct the transfer of development tasks to overseas units. As many Japanese businesses are expanding their development functions overseas, discussions in this study may provide a hint as to what type of management is necessary locally, at headquarters, and in the channels between them. In other words, the fact that the psychological resistance of headquarter engineers has become a major bottleneck to transferring tasks to overseas units, and the suggestion of its causes and results may provide an indication of where management ought to focus on.

However, while the theme of this study is related to international business, it is also deeply concerned with organization theory. In
particular, further review of the literatures\textsuperscript{5} on organization routine (March & Simon, 1958; Nelson & Winter, 1982), organization inertia (Hannan & Freeman, 1984), and resistance to organizational change, and discussion based on these will be necessary and is a subject for further research.

Acknowledgements

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References


\textsuperscript{5} Highly relevant sources include Sato (2014a, 2014b), Takahashi (2015), and Mitomi and Takahashi (2015).


Psychological resistance of headquarter engineers interferes product development task transfer

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