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Research Knowledge Transfer to Other Sectors within the Company

—Case Analysis at IT Company A—

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Knowledge is important resource in companies (Nonaka and Takeuchi 1995). Knowledge management is the critical problem for them to get superior position in the race with other companies. There are a lot of research for knowledge transfer between organizations as important topic in knowledge management. Knowledge created by research (research knowledge) could be one of the most competitive knowledge for companies. However, many companies have found difficulties in the process from research to market via development and commercialization (Markham et al. 2010). It suggests that research knowledge has such an extremely high degree of specialization that the transfer does not proceed sufficiently with the idea of knowledge as a thing and unilaterally transferring it as seen in the conventional idea of knowledge transfer (Szulanski 1996). With this circumstance, this research investigated the new process for commercialization of research knowledge.

This research set the purpose that building a theoretical model for transferring the research knowledge to organizations of other occupations within the same company for commercialization. The case for analyzing was major Japanese IT vender A. The methodology for collecting data was semi-structured interview. Grounded theory approach (Saiki-Craighill 2008, 2016) was adopted to analyze collected data.

Findings of this research are as below: The overall process fits into the knowledge transfer model of Szulanski (1996), and each category analyzed by GTA was able to accommodate each stage of implementation, execution, coordination, and integration. However, as a preliminary step to the transfer of knowledge from the research department to the business department, which was the original purpose, the transfer of knowledge from the business department and customers and the co-creation of knowledge by the research department, business department, and customers are performed at the introduction stage. It became clear that it was happening.

Compared with the knowledge transfer framework proposed by Lavis et al. (2003), this case has two major differences. The first is "who should the research knowledge be transferred to?" In this case, the business division on the receiving side searches for a sender who has the knowledge, so this item itself is the result of this interview. There is a gap. The second was "who should transfer research knowledge?" The important

difference is that the knowledge to be transferred already has trust, not the trust in the transfer messenger that Lavis et al. Focused on.

A comparison with the five-step process model by Liyanage et al. (2009) revealed that the beginning and end were the same, but the intermediate process was significantly different. The difference is that every other knowledge is converted, and knowledge is acquired after recognizing the advantages. In addition, the method of clearing one point was different for the four preconditions, and the feature was that the knowledge absorption ability of the receiving side was transferred according to the absorption ability.

A comparison with the characteristics of services compared to goods by Okabe (2019). It was suggested that the provision of technology by the research department in this case may have been value co-creation by the research department, business department, and customer, which does not apply to the conventional knowledge transfer model.

With the findings shown above, “Knowledge Co-creation Model for Research Knowledge Commercialization” was obtained. The features of this model are as below:

First, the target is a company that has a research department independent of the business department and has the purpose of utilizing the research knowledge created in the research department for the business. This purpose is achieved by co-creating knowledge between a business division with knowledge in business and a research division with knowledge in research.

The beginning of knowledge co-creation is the occurrence of problems in business divisions. The business unit collects information to solve the problem, but the information collection destination must include the research department. Provide research concepts when requested for information. The research concept is what kind of problems can be solved by using research knowledge is important. Next, the business division verifies whether the research concept obtained matches the business concept that solves the problem. If so, the business unit provides the research department with business knowledge about the customer. In the research department, we co-create knowledge with research knowledge and business knowledge together with the business department. The purpose of co-created knowledge is to judge the value of the customer. Once the knowledge is co-created, ask the customer to verify the value of that knowledge. Even if it is not OK as it is, knowledge can be obtained from the customer feedback. Based on the knowledge from the customer, knowledge co-creation can be performed again, and the value can be verified again for the customer. As a result of value verification, if it is verified that the co-created knowledge creates sufficient value

from the customer, that is, if business negotiations proceed, business knowledge about the product is transferred to the research department. Then, the research department co-creates knowledge with the business department based on the value-verified knowledge and business knowledge about the product. The knowledge thus created is transferred to the business division, and the research knowledge commercialization activity ends.

In the conventional knowledge transfer, the problem can be solved only when the problem is clear, and it costs a lot to change the specifications on the way. For example, when the business environment has changed since the research knowledge was transferred to the business division. This is because the products of the business division are not suitable for change compared to the research knowledge. By using this model "knowledge co-creation model (commercialization of research knowledge)" and transferring research knowledge as close to commercialization as possible, it is possible to respond to changes in the VUCA business environment.

The theoretical implications of this paper are roughly divided into two points.

The first point is that research knowledge is provided through the information gathering process on the knowledge receiver. In many conventional studies, the recipients were investigated in advance and the recipients were provided correctly. This research showed the process that leads to knowledge transfer by becoming a trusted partner from the knowledge receiving side.

The second point, which is more important, is that it shows the knowledge co-creation process. In previous research, a model has been proposed in which the other party is investigated in advance, knowledge is transferred correctly, and knowledge is created according to the knowledge absorption ability of the recipient. In this research, we show a new form of research knowledge commercialization process in which knowledge providers and recipients verify the value created by the stakeholders of the recipients and co-create knowledge that is valuable to the recipients.

The practical implication of this research is that this research proposed a model "Knowledge Co-creation Model for Research Knowledge Commercialization", which described a series of processes from the occurrence of problems in the business division to the knowledge co-creation of research knowledge and business knowledge with customers and the transfer of research knowledge to the business division. By this model, the research-development gap, commonly referred to as the "valley of death" can be overcome and will be possible to respond to a VUCA business environment.

This research is based on qualitative data through an interview survey. In order to improve the validity of this model, quantitative data and analysis is necessary.

Since this research focus on transferring and creating knowledge within one company, it is necessary to analyze whether this model is effective for other companies as well. On the other hand, since this model also has universality, there is a possibility that similar models will hold for other types of relationship between research and business.

Keywords: Knowledge Co-creation, Research Knowledge, Knowledge Transfer, Knowledge Creation