The Role of Weak Ties in Diversification Strategy

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Abstract: This study provides an analysis of the successful diversification process from the perspective of "weak ties." Weak ties bring about new knowledge that does not overlap existing knowledge and are therefore useful to firms entering new markets. This study analyzes the diversification process using the example of Tokai Buhin Kogyo Co. Ltd., which successfully diversified from automobile components to medical equipment. The company’s president initiated the formation of weak ties, which the company then developed into strong ties so that it could acquire the knowledge and competence needed for entering the medical equipment business. As a result, the company was able to successively overcome three types of critical obstacles—technological, regulatory, and market—to diversifying into the medical equipment business.

Keywords: diversification, weak ties, medical equipment, automobile components

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1. Introduction

This study is an analysis of the process of successful diversification from the perspective of “weak ties” (Granovetter, 1973).

Despite increasing pessimism about the competitiveness of the Japanese machinery industry, which has played a leading role in Japanese economic growth, there is growing interest in diversification into the medical industry, which is seen as a next-generation source of growth. This study takes the example of a firm that successfully diversified from the automotive industry into the medical equipment industry, and from the perspective of “weak ties,” it observes the process of how the company succeeded in this diversification effort over a moderately long period.

Ties can be classified into “strong ties” and “weak ties” (Granovetter, 1973). There are well-known analyses of the effectiveness of strong ties in the automotive industry. Strong ties between automobile manufacturers and their suppliers have contributed to the competitive advantage of Japan’s auto industry (Clark & Fujimoto, 1991; Fujimoto, 1997). At the same time, the effectiveness of weak ties in acquiring useful new information is also well known (Granovetter, 1974). This aspect is known as “the strength of weak ties” (Granovetter, 1973). Strong ties promote incremental innovation, such as quality improvements and finely tuned responses to delicate needs, while weak ties tend to promote radical innovation through new information and revolutionary ideas (Wakabayashi, 2009). Weak ties can thus be useful in diversification in that they bring about new information and raise the potential for entry into new markets.

According to prior research that analyzed the relationship between ties and management performance, it is not enough for a firm to have only strong ties or only weak ties. Moreover, firms having a proper balance of both have the best performance (Uzzi, 1996, 1997; Uzzi & Gillespie, 1999). These studies suggest that both strong and weak
ties are necessary for diversified companies to generate good performance.

However, little research has been done on how firms can form weak ties and leverage them in the diversification process, as well as at what point do strong ties become necessary.

2. Method

The analytical method used in this study is a single case study that examines the process of how a company achieved diversification and what kind of ties were formed in doing so. It has been pointed out that Granovetter’s (1973) definitions of strong and weak ties are ambiguous and that there are some logical leaps on his theoretical development (Takahashi & Inamizu, 2014). This study refers to Granovetter (1973) in defining ties as being based on “the amount of time” spent in relationships and engaged in “the reciprocal services,” with lots of time spent indicating strong ties and little time spent indicating weak ties.

This study focuses on the following two points. First, how did a company that had grown in the automotive industry, where strong ties were prevalent, form weak ties?

Second, were both weak ties and strong ties necessary for successful diversification? At what point did strong ties become necessary? How did the strength and role of these ties change over time?

The analysis in this study focuses on Tokai Buhin Kogyo Co. Ltd. (hereinafter, Tokai Buhin), a rare example of successful diversification among small- and medium-sized parts manufacturers. The firm was founded in Shizuoka Prefecture in 1947 as a manufacturer of screws and developed into a screw manufacturer for automobiles. However, the company entered the medical equipment industry in 2003 because it was concerned about
having over-reliance on automobiles.

Data for this analysis was gathered from industry publications and newspapers, as well as through interviews with Nobuyuki Morita, the company’s president, Mitsuteru Hirano, its factory director, and Katsunori Ueda, the director of the Pharma Valley Center, an organization that promotes the medical industry in Shizuoka Prefecture.

3. Characteristics of the Medical Equipment Industry

The medical equipment industry is expected to grow globally due to advances in healthcare in developing nations. In addition, Japan is highly dependent on imported medical devices for therapeutic use, so there is room for growth for this business even in Japan if Japanese companies can improve their competitiveness.

The medical equipment business is characterized by research and development in its upstream processes and mass production and sales in its downstream process, which makes it very similar to other manufacturing industries. It differs, however, in that the Pharmaceutical Affairs Law requires that such distinctive processes as “clinical trials,” “applications,” and “approvals” take place between these upstream and downstream processes.¹

Medical equipment under the Pharmaceutical Affairs Law includes Class I “general medical devices,” which pose the lowest risk to the human body, Class II and Class III “controlled medical devices,” and the highest risk Class IV “specially controlled medical devices.” Class I general medical devices can generally be sold with only a notification, but such devices often do not survive in the market because of low barriers to entry. Class III controlled medical devices

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¹ Although the law in force is the Pharmaceutical and Medical Device Act, the law discussed in this paper is the former Pharmaceutical Affairs Law, as that was the regime under which Tokai Buhin pursued diversification.
and Class IV specially controlled medical devices require review and approval by the Incorporated Administrative Agency, Pharmaceuticals and Medical Devices Agency (PMDA), which makes market entry difficult. It is easier for companies to enter the market with new Class II controlled medical devices (Institution for Medicine and Engineering Integration [IMEI], 2010), as the process is simpler than in the case of Class III and Class IV devices, and private registered certification bodies usually handle the registrations and approvals.

Diversification into medical equipment was considered to be difficult because it was hard to acquire knowledge of the Pharmaceutical Affairs Law. In this study's example, Tokai Buhin was successful within such a difficult environment.

4. Case Study

Tokai Buhin’s diversification process can be divided into the following three stages.

(1) Entering the market for micro screws for hard disk drives (HDDs): Overcoming technological barriers

The first stage was the company’s entry into the HDD micro screws business in 1999, as a means of escaping its reliance on the automotive industry. This formed the technological foundation that enabled them to enter the medical equipment industry and to form new ties with a certain lubricant manufacturer.

The small HDD screws made by the firm for an overseas company, Company Y, were made from special stainless steel that was very hard. Because the stainless steel was so hard, molds could not be used in small-lot processing, so refinements had to be made. While discussing these refinements, President Morita and the manager responsible for this product happened to see a TV show about the
successful development and production of continuously variable transmissions (CVT) for automobiles. The show mentioned the critical nature of lubricants during the CVT production process. The Tokai Buhin management thought that maybe it would help to use a lubricant in making their screws.

After seeing the show, President Morita contacted the lubricant manufacturer, and researchers from there quickly came to see Tokai Buhin. The researchers suggested that they could help Tokai Buhin improve its research and development in an area where it was weak. Both companies collaborated in developing a lubricant that enabled the mass production of stainless steel screws. This development succeeded right away, and Tokai Buhin was able to start mass production, taking orders only one-and-a-half months after it asked to work with the lubricant manufacturer. Afterward, the two companies engaged in the joint development of lubricants, and Tokai Buhin developed technologies for processing micro screws through the in-house development of image selection machines.

(2) Obtaining a marketing authorization holder license: Overcoming regulatory barriers

The second stage was the acquisition of a first-class marketing authorization holder license in 2004. As seen below, this was made possible through ties with healthcare centers and medical-related companies.

One day, an acquaintance, a medical doctor, contacted Tokai Buhin and told them about the difficulty he was having with titanium screws used in finger joints. He asked Tokai Buhin if they could make such a screw, and President Morita decided to work on this, given that the company was then focusing on healthcare and had developed even more advanced technologies for micro screws. At the time, Morita did not have knowledge of medical care, so he started out by discussing the topic with local hospitals and healthcare
centers. He was fortunate to have the opportunity to visit the factory of a healthcare company that was a testing facility. Because he was so enthusiastic, the company he was visiting placed an order for Tokai Buhin to build and produce a prototype. Thus began Tokai Buhin’s foray into the medical equipment industry.

Tokai Buhin later launched a titanium division at its Amagi factory, and medical-related firms and healthcare centers advised the company to acquire a first-class marketing authorization holder license if it was serious about working in the industry. Morita began working on this immediately, but it was no simple matter, given the regulations on safety controls and quality assurance and the need to create standards. The company took direction from medical industry consultants and the relevant prefectural government departments and expended much time and effort. Its diligence enabled it to obtain this license in six months. Because of the great expense, however, the company ran a deficit for three years before it could secure sales channels and expand its business.

(3) Development of sales channels: Overcoming market obstacles

The third stage was the creation of sales channels starting in 2006. This was made possible by the new ties that Tokai Buhin made with certain distributors.

It started with repeated inquiries from an animal hospital and a client company as to whether Tokai Buhin could make veterinary implants. President Morita hesitated as this would require approval from the Ministry of Agriculture, Forest and Fisheries, but he decided to proceed because the requests were very strong.

All inquiries were actually from the new business development department at Japan’s top foreign-affiliated importer and distributor of medical devices used in orthopedic surgery. After Tokai Buhin contacted this company, its representatives started calling on Tokai Buhin every day and soon told Tokai Buhin that they had actually
been looking for a company to make implants for Japanese people, not for animals. They knew that foreign-made implants made for non-Japanese people were larger and did not fit the average Japanese physique very well, which placed a burden on the human body. Implants became widespread in Japan after Japanese orthopedic surgeons studied in the West and returned to Japan, resulting in foreign-made products having a market share of 90%.

Several key members of the foreign distributor had a plan to create a new company on their own. President Morita provided a conference room adjoining Tokai Buhin’s plant, and every other Saturday, key members of both companies met to share know-how from their respective areas of expertise. After holding these meetings for about two years, they set up an elite unit. The new company initially focused entirely on selling Tokai Buhin products, and it had a strong sales force. For Tokai Buhin, it was an important opportunity to develop distribution channels. At the same time, Tokai Buhin acquired an ISO-13485 certification for quality assurance and beefed up its organization for manufacturing and selling its own branded medical products.

Tokai Buhin succeeded in developing implant products that fit Japanese bodies. They started developing and selling Class II and Class III medical devices (IMEI, 2013) and grew to become a manufacturer of its own brand of medical equipment.

5. Conclusion

This study analyzed a company’s successful diversification into medical equipment based on the concept of weak ties.

First, the actions taken by the company’s top management enabled the formation of weak ties, which in turn enabled the company to acquire new knowledge that it needed. Most of the company’s ties were strong, but it was able to create weak ties because its
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top management had created a strong strategy. This suggests that if the top management regards networks as important and leverages these networks in their business, business performance will grow over the long run (Nakano, 2011).

Second, Tokai Buhin turned its weak ties into strong ties. Specifically, by increasing the amount of time spent with new companies and organizations, Tokai Buhin exchanged information and created mutually helpful relationships. Here as well, the top management took the lead in strengthening ties. This suggests the importance of converting weak ties into strong ones in the process of scaling up diversification efforts.

Third, through these ties, Tokai Buhin was able to successfully diversify into the medical equipment industry by gradually overcoming three types of barriers: technological, regulatory, and market.

This study merely shows the possibility of a relationship between diversification and ties. It was not meant to identify the general mechanisms governing successful diversification. This would require further analysis, including the applicability of this concept to other cases.

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References

Clark K. B., & Fujimoto, T. (1991). Product development performance: Strategy, organization, and management in the world auto industry. Boston, MA: Harvard University Press.
Fujimoto, T. (1997). Seisan shisutemu no shinkaron [Evolution of
Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360–1380.

Granovetter, M. S. (1974). *Getting a job: A study of contacts and careers*. Cambridge, MA: Harvard University Press.

Institute for Medicine and Engineering Integration (IMEI). (2010). *Iryokiki heno sannyu no tameno gaidobukku* [Guide book for entry into medical equipment industry]. Tokyo, Japan: Yakujinipposya (in Japanese).

Institute for Medicine and Engineering Integration (IMEI). (2013). *Iryokiki heno sannyu no tameno stadiibukku* [Study booklet for entry into medical equipment industry]. Tokyo, Japan: Yakujinipposya (in Japanese).

Kono, H. (2015). Takakuka wo sasaeru yowai tsunagari no keiseito sono kyoka [Forming and strengthening weak, broad ties that support diversification: The example of Tokai Buhin Kogyo’s expansion into the medical equipment industry]. *Akamon Management Review, 14*(8), 413–432 (in Japanese).

Nakano, T. (2011). *Sosyaru nettowaku to soshiki no dainamikusu* [Social networks and organizational dynamics]. Tokyo, Japan: Yuhikaku (in Japanese).

Takahashi, N., & Inamizu, N. (2014). Logical weakness of “the strength of weak ties.” *Annals of Business Administrative Science, 13*, 67–76. doi:10.7880/abas.13.67

Uzzi, B. (1996). The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review, 61*(4), 674–698.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly, 42*(1), 35–67.

Uzzi, B., & Gillespie, J. J. (1999). Corporate social capital and the cost of financial capital: An embeddedness approach. In R. Leenders & S. Gabby (Eds.), *Corporate social capital and liability* (pp. 446–459). Boston, MA: Kluwer Academic.

Wakabayashi, N. (2009). *Nettowaku soshiki* [Network organizations]. Tokyo, Japan: Yuhikaku (in Japanese).