

J-Firm Auto Supply

Robert E. Cole

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Robert E. Cole, Omron Distinguished Professor, Doshisha University

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Introduction

As Nakamura Taishiro, Chief Technology Officer and Board member of J-Firm Auto Supply, strolled through the firm's state of the art R&D facility in Mie Prefecture, he found himself thinking of how impressive this new facility was compared to the firm's humble beginnings. The firm was now capable of sophisticated nanotechnology research and it used cutting edge simulation technology. These kinds of activities represented a tremendous growth in the firm's capabilities. While J-Firm had R&D facilities in the United, Europe and Southeast Asia, this facility at Mie was at the heart of the R&D development process for the firm. Like many Japanese manufacturing companies, J-Firm had operated with the view that technology must be developed in-house, and in-house meant it must be developed domestically and held closely, where it would not be lost to competitors. It had proved a highly successful formula.

Notwithstanding, he also found himself worrying about the firm's future. The firm had experienced tremendous growth from its modest beginnings as a supplier to only one of the major Japanese OEMS to its eventual large scale business from four Japanese OEMs and as well as foreign OEMs. As he saw it, the firm's biggest challenge was to figure out how to continue to grow revenues at the high rate the firm had experienced over the last 20 years. At the same time, he believed that they needed to improve their profit performance to fund more aggressive R&D investment. Current operating profit stood at a mere 4%. The company prided itself on not borrowing which meant that all investment in R&D had to come from profits. With such modest profit margins, opportunities for investment were greatly limited. Moreover, the global competitive environment was undergoing rapid change and success was hardly assured.

J-Firm specialized in what are increasingly called "engineered commodity products" --midway between custom/ system integrated products and simple

commodity products. Its family of products included gears for transmissions, oil pumps and differentials. They also manufactured specialized bearings, and driveshaft universal joints and constant velocity joints. Their manufacturing competencies were in forging, machining, and assembly. These were products that a variety of other firms were capable of producing. As a consequence, despite the fact that these products involve a high degree of technology, contribute unique value added, and were critical to the functioning of the automotive product, they command only a modest price premium compared to the larger system products that many of their global customers were demanding. Moreover, long term, Nakamura is concerned about the rise of a large number of Chinese competitors which are improving rapidly and have low labor costs. The key to success for this family of products is finding a way to differentiate oneself from other competitors. J-Firm has done this largely through service. They prided themselves on working closely with customers over time as they designed their products for specific makers. This involved paying very close attention to customer requirements and working with them in an iterative process to meet their needs.

Changing Times

In the 1960's and 1970's, J-Firm developed its capabilities primarily in the Japanese market. Then, in the early 1980's, it became leader among Japanese automotive suppliers in aggressively building plants in the U.S. and then Europe as it started to sell its main products to overseas Japanese plants. More recently, Japanese OEM customers greatly expanded their operations overseas to grow their businesses and J-Firm followed and also started to sell products to foreign customers. In the past, they only needed to forge relationships with domestic car companies. Now there are complex alliances such as that between Renault and Nissan and Japanese OEM's have a presence in new places like Eastern Europe. European manufacturers like Volkswagen and Mercedes Benz have production facilities in the U.S. and new production plants are being established in places like China and Brazil.

In short, there has been tremendous globalization and J-Firm is struggling to establish partnerships with these various entities. With the Japanese domestic market already beginning to shrink with the aging population, developing new business relationships overseas has become critical to sustaining their growth trajectory. To keep existing alliances and build new ones, Nakamura believes J-Firm must build up their currently modest overseas R&D capabilities to get better and more timely information about customers requirements and to be able to work collaboratively on product design. Moreover, he believes that they can not cover the rising needs and opportunities with just Japanese developed technology. Increasingly, good technology can be found and developed around the world. In addition, a projected shortage of R&D workers in Japan

as a result of demographic changes is still another reason to expand R&D sites abroad. All these developments point to the need to build up their tech centers in U.S., Europe and elsewhere. What does that mean, however, for their historic focus on domestic-based R&D as the driving force of the company? Moreover, what is the best way to build up these global sites given their current status and how should they be integrated into overall R&D activities? Moreover, can this be done without damaging their domestic R&D capabilities?

The challenges are different in different parts of the world. Europe is hardest to supply because of the high level of indigenous technology, demanding customers, and the presence of strong competitors. The U.S. situation is quite different with the machine tool industry stagnant and the local auto industry in decline. However, opportunities in the U.S. present themselves in the expansion of Japanese producers and in the replacement market but the latter would require considerable investment to build up a strong sales network. ASEAN represents still another situation where there is strong pressure on J-Firm from many Japanese companies located in ASEAN to provide local R&D. Here they might need a Tech Center as a hub to provide services to these Japanese customers rather than just new and upgraded R&D sites. China presents still another challenge. Initially, J-Firm thought it could just transfer their technology to China in the form of exports but the local companies have been improving rapidly. There is also movement by the local automakers to shift purchasing to local producers and local competition is intensifying. Under these conditions, J-Firm feels strong pressure to locate facilities in China and to grow the local Tech Center to keep pace with them. How can they do that and still protect their proprietary technology? All these different challenges made Nakamura's head spin.

The Current Situation of Globally Dispersed R&D Units

These challenges are still further amplified by the current state of their existing overseas R&D sites. As Nakamura thought about the status of the various overseas R&D sites in relation to the home company, he was struck by their isolation from one another. They have their own data systems with no shared database. Personnel in the overseas R&D units have little knowledge or opportunity to work on the emerging technology and designs being developed at the Mie facility. Nor do they have any significant regularized contact with other overseas units.

The domestic R&D staff, after being recruited directly from school, goes through rigorous and standardized training programs. One consequence of these shared experiences is that Japan-based R&D researchers rely heavily on tacit knowledge (shared unspoken assumptions) to do their work. By contrast, the overseas R&D staff undergo different training regimes depending on their geographic location. Moreover,

many of the overseas R&D staff are hired as experienced workers and have had different corporate experiences shaping their approach to R&D work.

The differences between the domestic R&D workers and those overseas mean that they often had different views on such fundamental matters as how to analyze a problem, how to conduct an experiment and how to organize work tasks. Further aggravating these differences is often a language barrier. While many of the Japanese R&D workers have good reading skills in English, they lack English oral skills, or if they have them, they are often too shy to try to use them. Correspondingly, few of the overseas engineers had Japanese language skills.

All in all, these differences made it difficult for researchers to work collaboratively across national boundaries. Somehow these barriers needed to be mitigated or eliminated. But how? Nakamura had talked with consultants at a major Japanese management consulting firm about this matter. They argued that Japan's unique social relationships based on standardized career training, promotion and long term employment continue to be key to Japan's success. Any efforts to dismantle these systems, they said, would cause Japanese firms to lose a major competitive advantage.

For the most part, the overseas R&D sites were engaged in adapting Japanese designed products to the local market and served as monitoring posts. They had no direct relationship with local automakers in their respective countries. Personnel dispatched from the Mie facility and sales engineers assigned to the respective markets were responsible largely for working with these overseas customers. Employees at the local R&D sites were not expected to exercise autonomous or very creative action; instead they were just supposed to follow orders issued by the home office. In short, these local R&D units, often consisting of 20-30 engineers, were quite disconnected from the firm's core strategic activity, designing and developing new products.

Still another problem was that the quality of talent in the overseas R&D sites, particularly in the U.S. and Europe, often did not match that of the domestic R&D workers. To be sure, the firm felt no need to recruit superstars. Indeed, Nakamura believed that superstars created too many problems and interfered with good teamwork. Still, he acknowledged that better talent for some of their overseas R&D sites would be helpful. The firm often blamed the difficulty of recruiting abroad on the fact that they were an auto parts company and thus did not have the name recognition that large Japanese OEM automakers had. J-firm did not even bother recruiting at major U.S. and European engineering schools but aimed their efforts at a second tier level. Moreover, because not much was expected from these overseas R&D units, J-firm invested relatively little in training and upgrading the existing talent. All these problems were aggravated by the fact that J-firm tended to pay below market wages in the U.S. and Europe. This was in response to pressure from corporate HR to minimize the salary differences between domestic and overseas R&D site employees.

The promotion opportunities for foreign nationals in overseas R&D sites is limited. At best, they might hope to rise to Director of the local unit but further opportunities up the corporate hierarchy do not exist. This depresses motivation for the most talented. The net result is a sub-optimization of local talent in these units. A major consequences of this underutilization is that turnover of employees was high. The loss of IP associated with this turnover ironically is used to justify not giving important tasks to these units. In short, there is a self-fulfilling prophecy in which lack of challenging work led to high turnover and loss of IP which is then used to justify not giving these units more challenging work.

Conclusion

Nakamura drew a figure to capture the dilemma the company faced (See Figure 1). In essence, he believed that the company had created a vicious cycle which perpetuated an underutilization of overseas R&D assets. The challenge Nakamura sees is how to transform this vicious cycle into a virtuous cycle that will bring about the integration of these overseas R&D operations into the mainstream of product development and thereby enable J-firm to work locally with overseas customers on a close and continuing basis. Only in this way, he believes can J-firm continue to grow their business. As he reflected on all the challenges he had just reviewed, he wondered what direction to take and was it really possible to integrate and coordinate these units in a way that better utilized upgraded overseas R&D assets without jeopardizing its domestic R&D assets. He had presented his ideas to the Board a few months earlier and they had enthusiastically supported his analysis and had authorized him to work with a small team to put together plan of action. What policies should be central to their action plan? Many competing possibilities filled his head. Could he achieve his dream for the firm of developing overseas R&D units whose capabilities were comparable to the domestic R&D department? If so, he thought J-Firm Auto Supply could truly become a global corporation!

