

Beyond Mass Production: The Development of the Japanese System

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During the last decade there has been increasing interest in the origins and the development of the Japanese production system (JPS). This article briefly outlines my theory of the origins and development of the JPS. Earlier theories regarding the JPS can be divided into three general categories. The first category thought that the JPS was underdeveloped and as the country became more prosperous it would converge on a Western type model. The second category believed that the basis of JPS was the superexploitation of workers and supplier firms and as such had no relevance to other countries. The final category held that the JPS was an outgrowth of the unique Japanese culture based on rice cultivation and the Confucian way of life. These scholars believed that the roots of the JPS were centuries old.

Understanding of the JPS requires an examination of the following two features: the internal labor-management relationships and the relationships between firms. The structures on both relationships were drastically reorganized in the Post World War Two period. This discussion describes the emergence of the current labor-management relationships and then turns briefly to the supplier relationships that have developed in Japanese industry.

Labor-Management Relations

In the immediate postwar period Japan experienced near-total economic collapse. Simultaneously, there was extremely rapid unionization accompanied, sometimes, worker takeover and operation of entire factories. Also, the U. S. GHQ purged leading industrialists and divided the zaibatsu firms. In 1950 the influence of the growing Cold War and the conflict in Korea prepared the groundwork for a counteroffensive by business aimed at purging radicals from the work force. This offensive succeeded; in its wake a new labor-management structure was created whose features included:

long-term employment for regular workers, wages with a significant seniority component, enterprise unions and a blurred division between blue-collar and white-collar employees. Many Western scholars mistake this arrangement for “paternalism,” because they do not understand its historical roots.

This labor-management structure created a quite different context for the evolution of the Japanese industrial system. For example, in the U. S. workers organized into industrial unions. Work was characterized by functional specialization, a strict separation between management and workers and a job-linked compensation system. The Japanese system of long-term employment meant that the firm captured the returns for training investments, thus providing much greater incentive for training. Japanese workers received employment security but did not have a job-linked compensation system, this provided management great flexibility in deploying workers in constantly changing configurations. The organization of work was on a team basis. In contrast, U. S. management and engineers retained full responsibility for quality, machine maintenance and production improvement. In Japan workers discharged many of these duties. The Japanese system emphasized worker involvement and especially the capabilities of the workers to contribute to the improvement of the production process.

The Japanese system evolved into what some scholars term the “learning factory.” For Japanese firms the factory is more than just a production location. It is an institution that not only produces, but is constantly learning to improve production. In this sense, the factory resembles a laboratory that is experimenting and searching for better production methods. Western business treated the factory as finely tuned machine that, once designed and established, need only be kept running smoothly. The Japanese saw the factory more as an organism made up of living parts, so it was fluid, constantly evolving and improving.

Interfirm Relations

Interfirm relationships in Japan also evolved quite differently from the U. S. In the U. S. large firms like General Motors developed two strategies for parts and components acquisition. For important parts assemblers simply purchased the parts supplier and integrated it as a subsidiary. The other parts were purchased through market transactions based on bidding. This became the basis of Coase and

Williamson's dichotomous distinction between "market and hierarchy." Whereas, U. S. economists believed either markets or hierarchies were the only ways to arrange supplier-assembler relationships, Japanese industry developed quite different inter-firm relationship patterns.

It is difficult to identify exactly when the current pattern of Japanese assembler-supplier relations was established. According to Takahiro Fujimoto in the pre-war period there were some "black box" relationships, but these were not prevalent throughout industry. However, in the postwar period close long-term relationships between assemblers and suppliers developed in many industries. In these relationships the assemblers often depend upon specialist suppliers to develop parts for their new products. In contrast to the U. S.-style open bidding system, Japanese assemblers and suppliers share information before the actual purchase contract signing.

The key advantage of the Japanese system is that it transcends the market or hierarchy problem by communication and an emphasis on the long-term nature of interfirm relations. The drawbacks of the pure market transactions are that the information communicated is limited to price and specifications. Often, the assembler is subject to opportunistic behavior by the supplier. For the assembler the incentive is to drive price down without regard to the survival of the supplier. On the other hand, with internalization the supplier firm is no longer subject to survival pressure and can lose its ability to collect information from the marketplace. The result often is inefficiency and an inability to develop innovative technology of its own due to its focus on its single customer. The entire system severely limits information flow. This can contribute to a deterioration of the entire production infrastructure. And, this is exactly what happened to the U. S. supplier base.

Conclusion

Japan developed a sophisticated and advanced industrial system for the production of manufactured goods. The labor-management system emphasized learning and continuous improvement. Similarly, supplier relations encouraged suppliers to constantly decrease costs and improve products and production processes. As a result, in manufactured goods the JPS has become a model for all countries. Many countries are seeking to adopt Japanese techniques either through Japanese transplants or a "Japanization" of home country firms.

And yet, today the JPS confronts dilemmas caused by its own success. First, the increasing value of the yen makes export from Japan more difficult. In response, many Japanese assemblers and suppliers are establishing overseas facilities. This has two important effects: It decreases the need for Japanese manufacturing employment and increases pressure to abandon the long-term employment system. Also, moving production facilities offshore weakens longstanding relationships with suppliers, as there is insufficient demand. The suppliers must also either move offshore or face a smaller market in Japan. This so-called “hollowing-out” phenomenon may become an intractable problem in the future.

The second dilemma for Japanese industry is that the establishment of many overseas factories means that these firms must manage non-Japanese employees and buy parts from non-Japanese firms. Will foreign employees and suppliers be integrated into the Japanese model or will they remain simply overseas “hands” unable to contribute the firm’s overall mission? The answer to this question will decide whether Japanese firms become Japanese firms with overseas operations or global firms. Japanese firms must decide what is the essence of Japanese management that is applicable globally.