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The U.S. Automakers' Reaction To The Japanese
by Paul A. Smith

America's love affair with the mechanical "horseless carriage"—the automobile—has spanned decades, mobilized our society, and changed our way of life. By 1980, nearly 84 percent of all U.S. households owned at least one car, and 44 percent of those households (37 percent of all households) owned two or more automobiles (Orski 1980).

The U.S. auto manufacturers are primarily located in one locale, Detroit, Michigan, although each firm has assembly plants scattered across the country. For years, the products sold in the U.S. market were primarily American built, but that is changing. Never before has the future source of cars sold in America been as uncertain as it is now. Imports are playing an important role in the market, and the primary source of these cars is Japan.

The U.S. auto industry is an oligopoly whose primary players are "The Big Three"—General Motors Corporation, Ford Motor Company and Chrysler Corporation. General Motors markets its cars under the Cadillac, Buick, Oldsmobile, Pontiac, and Chevrolet insignias. Ford markets its cars under the Lincoln, Mercury, and Ford brands and Chrysler under the Chrysler, Plymouth, and Dodge nameplates.

This paper will look at the success of the Japanese automakers in the U.S. market and explore how the U.S. automakers reacted to the success of the Japanese.

A Brief History

Many think the automobile is a twentieth century invention and frequently associate Henry Ford with it. However, Ford never "invented" any part of the automobile; his achievements were built upon the work of others. Ford is responsible for the introduction of the moving assembly line in the auto industry, but the honors for the first car are shared by Gottlieb Daimler and Karl Benz of Germany in late 1885 (Lacey 1986). Daimler-Benz is still in business today.

As late as 1960, car manufacturing was centered primarily in Western Europe and the United States, with each market relatively well insulated from foreign competition. The U.S. automobile-consuming market, which was realizing rapid growth, accounted for a large percentage of the world's automotive demand. As Orski (1980) points out, the domestic auto producing industry was the unchallenged giant in the sixties, commanding a 48 percent share of world output and facing international competition only in the luxury and subcompact markets, for which it did not fight very hard. Volkswagen was making inroads into the U.S. market, but Japan had yet to produce a car that could compete internationally.

During the 1970s, the Japanese automakers came alive in the U.S. market. The mid-1970's oil crisis made it clear that fuel-efficient small cars were the answer to rising gasoline prices. Japanese cars were small and fuel efficient, and by the mid-seventies the production quality of their cars was superior to those being built in Detroit. Iacocca (1984) notes that perhaps one of the greatest blunders on the part of any U.S. manufacturer during this time was Ford's scrapping of $2 billion worth of future product development. Sensing that a major depression was imminent in 1975, Henry Ford II gave the order which caused the number two automaker to lag further behind GM. The decision eliminated many of the products that Ford needed to remain competitive, including small cars and front-wheel-drive technology, and shifted its customers to
Japanese-produced small cars.

Prior to the oil crisis, there were a few domestic attempts at producing small cars. In 1971, GM introduced the Vega under the Chevrolet nameplate and Ford introduced the Pinto. Both cars were aimed at the low-end of the market, selling for an advertised $1,995. However, both had quality problems that proved to be disastrous.

Also in 1971, Chrysler purchased 15 percent of Mitsubishi Motor of Japan and arranged to import some of Mitsubishi’s small cars under the Dodge and Chrysler nameplates (Iacocca 1984). Unfortunately, this joint venture took place at the same time the public perceived Chrysler as being a producer of poor-quality automobiles, so Chrysler was not able to gain a significant advantage in the import market at that time.

Labor costs in the U.S. were also rising during this time period. By 1979, the Japanese held a $2,000 cost advantage over the U.S. manufacturers for each car they built. Recent empirical work (Stafford 1981, p. 38) indicates that wages grew more rapidly in the central manufacturing and heavy industrial sectors than in any other sector of the economy during the 1970s.

Once implying cheap products, “Made in Japan” was by this time associated with high-quality, affordable cars. Japanese automakers such as Toyota, Datsun, Honda, and Mazda increased their market shares during this time period and built the foundation that caused the problems that would plague Detroit for years to come.

During the 1980s, U.S. automakers finally reacted to the Japanese threat. According to King (1986, pp. 6-7), overall, imports made up almost 30 percent of total U.S. sales. Small car imports from Korea, Yugoslavia, and even Greece are expected to join Japan in capturing 45 percent of the 1986 low-end sales. Chrysler and Ford stand to lose the most from this shift since half or more of their cars compete in this segment. Even in the middle and higher price ranges, the Germans and the Japanese may take 15 percent of sales in 1986, up three percentage points from 1985.

By 1980, with more than 120 million cars on the road—one for every 1.2 licensed drivers in the country—U.S. automobile demand was close to saturation (Orski 1980). But market saturation does not mean that sales will come to an abrupt halt. Continued growth of population and new households, plus growing demand for second and even third cars, should fuel continued market growth for the rest of this century. With each passing year, a rising proportion of the market will consist of replacements, anticipated to be 90 percent by 1990 according to industry estimates reported by Orski (1980). Because replacement decisions can easily be postponed, a market that relies heavily on replacements tends to be more sensitive to cyclical swings of the economy.

The Japanese Success Secret

Why have the Japanese been successful in the U.S. market? First, because of rising gasoline prices caused by OPEC oil embargoes, demand shifted to smaller, more fuel-efficient cars. Prior to this shift in demand, Japan could not carve a significant niche in the U.S. market. Not until high levels of inflation, coupled with a definite price advantage on the part of the Japanese, could the imported cars begin to develop their own markets.

Secondly, an abundant supply of cheap labor, along with an abundance of cheap parts, enabled Japan to hold on to its cost advantage. Detroit concedes it cannot afford to produce small cars; it simply cannot make a profit sufficient for staying in business. Rice (1985, p. 31) reported that Honda could build a fully-equipped Accord for about $8,000. That was $1,000 to $1,500 less than it cost General Motors to build a comparably equipped version of its Oldsmobile Calais or Buick Somerset at its highly automated Lansing plant. Ford, with a less modern plant in Kansas City, spent $1,500 to $2,000 more to build a comparably-equipped Topaz or Tempo in the same timeframe.
For years companies like Chrysler produced big cars and then spent money convincing the American public that big cars were what it wanted. Thus, U.S. firms were production-oriented in their product mix, whereas Japanese firms were market-oriented. Any time a firm is producing what buyers demand, basic economics says that the firm will be able to sell its product.

Finally, the Japanese products have evolved to meet the tastes and demands of U.S. buyers. More powerful, yet fuel-efficient engines, a softer ride, more glass, and more interior room have been added to recent imports to help bolster sales.

One of the main reasons for Japan's industrial ascendancy was the manipulative planning on the part of Japan's Ministry of International Trade and Industry (MITI). MITI's job is to determine which industries are critical to Japan's future and then to help them in their research and development efforts. After World War II, MITI targeted the auto industry, among others, as a critical industry. Thus, the economic destiny of the Japanese automaker was not left up to the free market totally but had the financial backing of the Japanese government through MITI. Production capacity, because of the influence of MITI, has gone from 100,000 cars in the 1950s to over 11 million today (Iacocca 1984).

The U.S. Lag

Why didn't the U.S. firms keep pace with the market? It appears that the U.S. firms did not fully comprehend the situation. The automakers attempted to be like each other, but they did not attempt to make cars that the public wanted to buy. O'Donnell and Andresky (1982, p. 133) state that even at a time when compacts and sub-compacts comprised 60 percent of the market, GM regarded the important small car market as "an unpleasant aberration that would vanish, if there was justice in heaven." They further write that GM Chairman Roger Smith argued that, if a technological change suddenly made it possible to make gasoline out of seawater such that the price of gasoline would drop a nickel, Japanese penetration of the U.S. market would cease to exist. This argument ignores the fact that the Japanese penetration is based on more than fuel economy and it is further proven false by the recent decrease in retail gasoline prices coupled with little change in sales patterns.

Perhaps the biggest reason the U.S. firms did not meet market demand and produce small cars has to do with profitability. Analyst Arvid Jouppi feels that in times of extraordinarily low demand, old notions about a proper return on equity are simply beside the point and should not be applied. "Companies that neglect market share because the return on equity looks thin will pay dearly for it later when demand strengthens," he states (O'Donnell and Andresky 1982, p. 133).

U.S. Firms React

How did the U.S. firms react to the Japanese success? At first glance, it might seem that the U.S. firms simply started building better cars that were more in line with demand and that they did so to stay in business. Though partially true, this notion is far from totally descriptive of what U.S. firms did.

One of the first changes involved joint-ventures with foreign firms, mostly Japanese. Maralyn Enid writes in Business Week (1985) that within a few years, U.S. companies will be selling more than 750,000 units brought in from the Far East while making an additional 600,000 Japanese-engineered cars in North American factories. The cost will be about 250,000 lost jobs in the U.S., but the move should allow U.S. companies to turn a profit on what is now often a money-losing operation.

Firms may undertake a joint-venture for many reasons including avoiding competition or sharing research and development results. The problem with managing a joint-venture is
that the parent company is, in effect, exercising control over a direct competitor. Even if the joint company is confined to production only, the parent firm still controls the supply of the competitive product. However, no firm will enter a joint-venture unless it is profitable for it to do so.

Each of the Big Three has engaged in some sort of joint-venture. General Motors joined with Toyota and formed NUMMI (New United Motor Manufacturing Inc.) to produce the Chevrolet Nova. Modeled after the Corolla Sprinter sold in Japan, the Nova was coveted by GM since it had nothing in its product line that was comparable. The advantages for GM are utilizing an idle plant in Fremont, California; being able to bring a car into production in substantially less time and at a lower cost than it would do otherwise; and observing firsthand the Japanese secrets for building small cars at a profit, something GM hasn't been able to do on its own. Toyota, on the other hand, gets a firsthand look at U.S. labor practices while simultaneously being able to produce cars in the U.S., a valuable condition should trade restrictions be tightened.

Chrysler has also entered into a joint-venture—with Mitsubishi of Japan. As Enid reports (1985), the two firms have agreed to build up to 180,000 small cars at a still-to-be-selected U.S. site. Each partner will sell half the output through its own dealer network beginning in 1988. Chrysler will also raise its ownership of Mitsubishi to 24 percent. As a result, roughly 42 percent of Chrysler's car sales will come directly from Mitsubishi (in the form of imports) or the joint-venture. Mitsubishi already supplies subcompact Colts and Ram 50 mini-pickups to Chrysler along with many of the engines used throughout the Chrysler line. Enid points out that since the joint-venture company will have no pension liability or health care costs for retired workers, labor costs will be lowered. Labor costs should also be lower because the company anticipates reduced wages and flexible work rules in exchange for recognizing the United Auto Workers as the bargaining agent for its blue collar employees. This will give Chrysler an avenue to observe and learn Japanese management techniques. Mitsubishi, the distant number three automaker in Japan, will benefit by obtaining a plant in the U.S. that it could not otherwise afford. Enid contends that its new plant will be closer to its own dealer network and give it access to the U.S. market in the event new trade restrictions are imposed.

Like the other members of the Big Three, Ford also has negotiated a joint-venture. But, unlike the others, Ford's joint-venture is with Italy's Fiat. Ford and Fiat rank No. 1 and No. 2, respectively, in the European market, accounting for 26 percent of unit sales in that market (Taggiasco, et al 1985). Ford views the merger as a combination that will result in small-car know-how that will challenge even the Japanese. Although most of the output will be aimed at the European market, shipping small cars to the U.S. based upon demand is a possibility (Taggiasco, et al 1985). The main advantage to Ford in the venture is the joining with one of only a few European automakers that demonstrates profitability. Fiat's advantage from entering the venture is increased market power in its home market.

The automakers have also introduced new product lines of their own design to compete with the Japanese—and with each other for that matter. For General Motors it is the introduction of Saturn Corporation, and for Chrysler it is the innovative mini-van.

Saturn was originally designed to be a computer-designed car stressing high quality and utilizing both manufacturing techniques and construction materials totally new to the industry. It was to be a paperless company with little or no inventory at the dealer level. A paperless company is one where all ordering is done directly to the factory via a computer terminal rather than by using paper order forms. Customers would determine how they wanted their car built and then take delivery of it in two to three weeks. Saturn would accomplish the fast delivery time with
the use of computer technology and innovative inventory and assembly practices. However, GM has recently started cutting funding for the Saturn project. Whether the firm can produce a car by the targeted 1990 date (if at all) is still to be seen. Perhaps the greatest risk is that if Saturn fails, it may mean the end to American superiority in introducing new product lines (Buss, et al 1986). On the other hand, if it succeeds, GM will most likely use the technological advances it gains from the less-profitable small cars and apply them to its higher-profit big cars.

Much of Chrysler’s strength can be seen in its mini-van, the front-wheel drive hybrid of a car and a van. Chrysler sold 148,000 mini-vans during the introductory model year of 1984 with no television and little print advertising (Flax 1985). While Chrysler was doubling its production, it took GM and Ford two years to introduce competing models and only Toyota competes among the imports.

Ironically, the mini-van was developed at Ford in the early 1970s by Harold Sperlich (now president of Chrysler) and others but was shelved by Henry Ford II after market research indicated annual sales of less than 600,000 units (Flax, 1985). Lee Iacocca (former President of Ford, now Chairman of Chrysler) and Sperlich bet $700 million on the product and put it into production. Many of the needed parts were already being made by Chrysler including engines, transaxles, and some steering parts used in the production of K-cars (Flax 1985). As a result, the average profit per mini-van runs somewhere between $2,000 and $4,000 per unit, and it has carved out a new market niche for itself that has been left almost completely unchallenged by the Japanese (Flax 1985).

New plants designed to cut costs and improve product quality have been opened recently, most notably the Chrysler Sterling Heights and GM Buick City plants. This is another method U.S. automakers used to become more competitive.

For Buick, the goal was to build a world-class quality car that was cost-effective and that utilized new and innovative manufacturing techniques. The Buick City concept is based on eleven elements designed to eliminate waste. These include synchronized production; plus or minus zero performance to schedule; planned maintenance; problem visibility and resolution; small, specialized work units; reduced set-up times for retooling; process improvements; employee involvement; just-in-time inventory; changes in span of control; and efficient use of facilities.

The primary purpose of implementing the Buick City concept was to make GM more competitive with the Japanese automakers. Since the American public considered U.S. products to be different from the imports with reference to quality, quality needed to be stressed in order to maintain, or even regain, market shares.

According to Stone and Guith (1985), with this concept, parts are made for specific cars and at a specific rate and this production rate is geared to a predetermined production number each shift. Also, quality of supplier parts is required with the goal of suppliers providing 100 percent reliable parts 100 percent of the time. A sense of teamwork is fostered such that the next operator is treated as if he is the ultimate consumer, and workers only pass perfect products to that customer. There is a guarantee that if a person's job is eliminated because of technology or productivity improvements, the employee will be retrained. Buick City also pays closer attention to ergonomics—the relationship between the person and the job. The plant further utilizes just-in-time inventory which means reduced handling and warehouse costs. Almost half the size of a normal U.S. assembly plant, this facility closely resembles a Japanese plant.

The concept does present some problems for GM. Despite a substantial investment in the highly roboticized plant, it is less efficient than the labor-intensive joint-venture plant in Fremont, California. GM has learned that simply organizing work more efficiently and giving workers more say can produce more
impressive results than millions of dollars worth of robots (Hampton, et al 1987). In essence, Japanese-style management is proving to be more effective than a highly capitali­zed, fully automated manufacturing plant.

Sterling Heights is Chrysler's answer to improved quality and a more efficient operation. As Dauch (1985, p. 48) explains, the plant incorporates computer-integrated manufacturing, just-in-time inventory practices, technologically advanced assembly operations, added emphasis on system and component reliability testing, and employee involvement in environmental concerns. According to Dauch, this process, called "in-line sequencing" by the company, allows Chrysler to accomplish its goal of building a world-class automobile.

The automakers have also reacted by cutting their overall fixed costs, trimming their operations in an attempt to lessen the per unit cost advantage of the Japanese. They have cut their costs over the past few years by massive layoffs (both of union and non-union company employees); closing many of the older, less productive and more costly, plants; and making many of the changes mentioned earlier that are incorporated in the new plants.

Chrysler has cut its costs on items that directly affect the "America" program—a restyled Omni/Horizon with a base sticker price of slightly less than $6,000 (Sease 1986). Previously, the car had many options and packages available which made possible some eight million permutations of the car. Under the America program, Chrysler made many items standard so that the possible permutations have dropped to 42 and exterior color options have dropped to six from 13. Two-tone paint options have also been banned saving a second trip of the car through the paint shop, plus the hand-masking of it by workers making over $13 per hour (Hyatt 1986).

An overabundance of production accounts for one of the major sources of financial losses in the auto industry, especially when a price war in the form of cut-throat financing ensues. Such was the case in late summer and early fall of 1986 as GM dropped its financing rate on new car sales to 2.9 percent. That move was followed by Ford's drop to 2.9 percent, Chrysler's drop to 2.4 percent and American Motors' drop to zero percent.

Diversification and integration are other ways the U.S. automakers are trying to stay competitive and profitable. Because of stringent requirements made by the automakers, they are finding it easier to take over suppliers than to purchase parts from outsiders. The carmakers have determined that diversification is the smart way to go; the profitable future is not necessarily parked in the garage. By the year 2000, GM wants non-auto sales to be 20 percent of its business compared with 4 percent in 1984 (Hyatt 1986). Ford and Chrysler also have plans for heavy diversification.

These automakers are buying firms involved in financial services, farm equipment, and aerospace, all areas in which there is little foreign competition. GM's acquisitions of Electronic Data Systems and Hughes Aircraft should help to improve the profit stability of the automaker for years to come.

Conclusions

U.S. automakers' reactions to the success of the Japanese have been to lessen the cost difference between Japanese and U.S. cars and to shift market shares from the Japanese back to the U.S. companies. The moves have been designed to improve profitability and restore confidence in the eyes of the American buyer regarding product quality.

Perceptions of product quality were at an all-time low in the early 1980s. "And for good reason," stated Iacocca (1984, p. 270). "We shipped a lot of crap out of Detroit in our day." That perception has changed and the U.S. auto industry is, at least temporarily, surviving, in part because of improved quality, decreased costs, new technologies, joint-ventures, diversification, and integration.

It appears there no longer exists a "U.S."
auto market; such a phenomenon is antiquated. Any company wishing to compete in the automobile industry in the future must move its sights from a domestic to a global operation. The automobile market is now worldwide with all firms entering all markets. The key to survival for any producer is to actively pursue these international markets.

Should the U.S. producers have ever fallen as far behind as they did? Probably not, but they were not prepared for change. Perhaps the leaders of the auto industry forgot the words of the late Alfred P. Sloan, Jr., Chairman of GM from 1937 to 1956, who said:

There have been and always will be many opportunities to fail in the automobile industry. The circumstances of the ever-changing market and ever-changing product are capable of breaking that business organization if that organization is unprepared for change—indeed, in my opinion, if it has not provided procedures for anticipating change. (O'Donnell, et al 1982, p. 131)

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