A COMPARATIVE STUDY OF AUTOMOBILE INDUSTRY BETWEEN JAPAN AND KOREA

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Abstract

This paper presents the results of comparative research between the Japanese and Korean automobile industries on the result of quality management and the improvement. Japanese vehicles have been seen as reliable, low maintenance, and good quality cars. Japanese manufacturers developed several important quality management purposes and unique vernacular standards. Meanwhile, though the Korean automobile history is not very developed, Korea's automakers are trying hard to get rid off the weak brand image and keep abreast of Japan’s and the Detroit Big Three. Besides, there is a comparison of similarities and differences between Japanese and Korean automobile industries and the problems and challenges they encounter.
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Introduction

In recent years, Japanese automobiles have become so popular in the world because of the good quality and reliable reputation. Several quality management purposes such as Kaizen, Six Sigma, and total quality management etc, have been developed in Japanese corporations. This paper will discuss how they practice these standards. Although Korea’s vehicles have been seen as low quality and high maintenance costs, Korea’s automobile industry grows so fast to earn the market shares within a decade. I am curious as to how they got rid off the weak brand image, which had a negative impact on their long-term sales. Therefore, I am researching a comparative study between the Japanese and Korean automobile industries and comparing the similarities and differences between Japan and Korea’s automobile industries.

The Background of Japan’s Automobile Industry

An Overview of Japan’s Automobile Industry

In June 1967, the General Agreement on Tariffs and Trade (GATT) Kennedy Round negotiations for across-the-board tariff reductions agreed to lower tariffs. It was agreed that tariffs would be reduced by 50% during the five years beginning from July 1968 (Japan’s Auto Industry: Capital Liberalization and the Growth of Exports). Because the barriers have to be decreased, the Japanese government took action to help the domestic industries to confront their foreign competitors.

Toyota bonded with Hino in 1966 and with Daihatsu in 1967, creating its own group, while Nissan absorbed Prince in 1966 and later established a tie with Fuji Heavy Industries,
forming the Nissan Group. In June 1971, Mitsubishi established capital and operational ties with Chrysler. In September of that year, Isuzu created an alliance with General Motors. Mazda and Ford concluded a capital tie-up in November 1979, and Suzuki also forged an alliance with GM in 1981 (Japan’s Auto Industry: Capital Liberalization and the Growth of Exports).

After the shocks of two oil crises in the 1970s, the domain of the world’s automobile industry changed tremendously. The oil crisis brought a step to Japan of rapid growth in the economy and had a profound impact on the automobile industry. The Japanese automobile industry was transformed to an export-oriented industry and became the biggest automobile manufacturing country in the world. However, with the increasing export of Japanese cars and the rising trade deficits in America, the Japanese automobile industry confronted the pressure of investment in foreign countries since the 1980s. In response to such situations, the Japanese government had no choice but to implement voluntary export restraints (VER), which would impose a ceiling on exports of passenger cars to the United States. Therefore, the Japanese automobile industry faced pressures from the Japanese government to decrease the amount of export cars and lower the growth rate. In order to overcome these outside pressures, Toyota, Honda, and Nissan Motors decided to invest abroad for overseas productivity.

Rationalization of the Industry in Japan

The Industry Rationalization Promotion Law was adopted in March 1952 to implement the new government policy of tax deduction and low-interest government loans. The automobile, steel, machine tool, and electric communications equipment industries were designated as key industries that needed to be rationalized. The provisions of this new policy gave those industries tax advantages and made low-interest government loans as well
(Japan’s Auto Industry: Internationalization Strategies). Thus, the cost reduction gained by the automobile companies allowed them to improve the quality of their products, and enhance their competitiveness. Japanese automakers used this advantage to advance their manufacturing technology to become one of the most powerful auto-making countries in the world.

**Japan’s Internationalization Strategies**

In spite of the difficult global export environment in the 1973 oil crisis, Japan's export markets in the US and Europe have continuously been expended with cars of high reputation for excellent performance and fuel efficiency. After the second oil crisis, the gasoline price of the Organization of Petroleum Exporting Countries (OPEC) has been doubled in the United States. This provided Japanese manufacturers with the opportunity to start manufacturing fuel-efficient cars to meet the customers’ needs in the United States. According to a broad-ranging study by the United States Environmental Protection Agency (EPA) during this period, the fuel efficiency of Japanese cars surpassed that of European cars, making Japanese cars particularly well-suited to the needs of the US market (Japan’s Auto Industry: Internationalization Strategies).

**The Background of Korea’s Automobile Industry**

The Korean automobile industry has a short history which began in the late 1960s. The Korean automobile industry started to make cars late compared to other car companies around the world, but over the last few decades the Korean automobile industry has grown. Back then, Korean automakers had long been protected by the government. This protection caused the Korean automobile industry to not have the ability to compete with competitors from overseas. At the beginning of the development of the Korean automobile industry, they did not have much experience and had a small economic scale. The Korean government tried
to protect the automobile industry by increasing the tariff, taxes, and interfering with the imports.

After a period of time, the Korean big three; Hyundai, Kia, and Daewoo retained most of the market share of the domestic market. The Hyundai group established Hyundai Motor in 1967. The first self-developed model was the 74 Pony, but under the guidance of Mitsubishi, the engines also came from the Japanese design. The second generation of the 1982 Pony benefited by the wage advantage of Korean labors. The Pony stormed the Canadian small car market in 1983. The world started to realize the rise of another Eastern car-making nation. In 1998, Hyundai took over the bankrupted Kia. So Kia became the third largest Korean carmaker, but over-expansion was hit by the Asian economy crisis in 1998 (Visnic, 2002).

Another Korean carmaker, Daewoo, considered it would be hard to compete with the established carmakers. Instead, Daewoo decided to aim at newly emerging markets to gain the market share. Daewoo sold its cars in places with growing demand like China, India, Russia, Africa, the Middle East, and Latin America (Kraar, 1995).

**The Current Situation of Japan and Korea’s Automobile Industry**

Detroit’s Big Three; GM Motors, Ford Motor, and Chrysler, are well-known dominant automakers. However, Japanese vehicles have changed the current situation based on its admired stable quality in the US market. Toyota is becoming the third-biggest carmaker in the world, second to the General Motors Corporation and the Ford Motor Company. Both Nissan and Honda have earned the reputation for making better quality and safe cars. The globalization of the automobile industry continues, and the expansion of international alliances is flourishing. The Japanese automobile industry has forged a wide variety of tie-ups with overseas manufacturers to develop and create better vehicles to satisfy their customers.
Korean automobiles used to be seen as low-quality and inexpensive cars. Although its competitors may be underestimating this new challenge from Korean automobile companies, Korean automobiles are becoming more competitive and increasing in growth rate and market share that can’t be ignored. Besides, Korean automakers offer 10-year warranties and at the same time, the quality keeps improving, so more and more people admire their cars. Moreover, the World Cup was held in both Korea and Japan in 2002. People around the world watched the World Cup. Korean automakers sponsored the World Cup and did great advertising. For example, the power and enthusiasm of succor is on behalf of the impression of Hyundai. People around the world heard that Hyundai will focus on environmental technology and safety. Hyundai is going to create better quality and service for their automobiles in order to maximize their customers’ satisfaction in the future. The advertising at the world cup was a great opportunity for them to successfully open their reputation to the world.

Japan’s Quality Development and Marketing Strategy

Most of the new car buyers consider long-term dependability the most important factor in choosing which vehicle they would like to purchase. Others focus on safety or fancy cars. Although the exterior is the first impression customers get about the vehicle, the interior comes second, but would be the key element in defining a customer’s perception of the quality of the vehicle. Here are some examples about how Japan’s carmakers manage quality improvement and marketing.

(1). Toyota Motor Corp.

In the current report, Toyota Motor is the world’s number three automaker. Toyota combines the size, financial advantage, and manufacturing excellence needed to dominate the global automobile industry. Toyota, with $146 billion in sales, may not be the top in every
category (Bremner, 2003). In North America, General Motors is still dominant and Nissan Motors makes more profit per vehicle. Both Nissan and Honda have flexible assembly lines (Bremner, 2003). But no car company is as strong as Toyota in many areas. Here is how Toyota manages its operation, keeps improving the quality, and its marketing strategies.

**Cost Reduction and Quality Improvement**

Toyota is trying to lower the cost while still keeping the higher quality vehicle. The cost reductions alone need not translate to a lower-quality product (Bartholomew, 2001). If companies only focus on the cost reduction but ignore the quality of the product, the costs of the quality would be huge; such as rework, scrap, and warranty expenses.

The warranty costs are huge in the automobile industry because those defective vehicles need a lot of fixing. When there are too many recalls, the company needs to pay more, even double the warranty protection to cover the repair costs. The biggest cost of quality is the inestimable damage to the company’s reputation and image of the product that would cause customers to doubt the company’s quality.

When figuring out the cost reduction, Toyota recognized that its suppliers could help them to manage the cost and monitor the quality of parts. Toyota believes that its quality is only as good as its supplier’s quality. Toyota expects a 3% reduction in costs each year from its supplier firms (Bartholomew, 2001). Toyota works with its suppliers to help them achieve these reductions while also improving quality. Moreover, each worker at Toyota is expected to come up with three ideas of quality improvement and cost-cutting per month (Bartholomew, 2001).

**Six Sigma and Lean Manufacturing**
Toyota follows the Six Sigma and Lean manufacturing standards viewed as the continuous improvement tools. Both of these standards help Toyota to refine its quality efforts to achieve its improvement. The Six Sigma is focused on reducing variation and improving the process yield by following a problem-solving approach using statistical tools. Lean manufacturing is primarily concerned with eliminating waste and improving flow by following the Lean principles and a defined approach to implement each of these principles (Connor, 2003). These two methods are complementing each other.

Lean manufacturing is the term associated with the Toyota Production System (TPS). TPS operates on two principles: the just-in-time (JIT) system and jidoka; which means the automation with a human touch (Toyota Takes Learning Overseas Kaizen Style, 2001). The TPS has matured into a systematic approach to identifying and eliminating waste of every kind. Many techniques in the Lean manufacturing toolbox can be found in the Six Sigma tool.

**Kaizen**

*Kaizen*, originally from TPS, is the quality-improvement principle practice in Japan. *Kaizen* workers follow the “look-and-learn” approach by passing on technical know-how to other workers in Toyota’s overseas plants; (Toyota Takes Learning Overseas Kaizen Style, 2001) Workers can understand technical knowledge and skills to apply techniques regardless of location problem. However, there is a challenge that many workers felt that more attention needed to be paid to the cross-cultural communication to overseas plants. The cultural and language differences could affect the effectiveness of the communication.

*Kaizen* also supports TPS to emphasize teamwork, internal suggestions, zero-defects and awareness of quality assurance. *Kaizen* workers are divided into three types: the white-collar *Kaizen* managers who focus on transferring the cultural *Kaizen* philosophy into overseas
transplants. The grey-collar, who works between the managers and supervisors, focuses on specialized technical affairs. The blue-collar workers focus on the front-line production (Toyota Takes Learning Overseas Kaizen Style, 2001). Kaizen workers are empowered to take responsibility for the outcome, reflecting the workers pride in their work and quality assurance.

**Total Quality Management**

In order to make a quick and correct decision, four steps needed to be followed in the development cycle. These steps are plan, do, check and action (PDCA). This PDCA approach helps Toyota work efficiently. Furthermore, Toyota gives every employee responsibility for his or her own process. If an error occurs, he or she has the power to stop the production or assembly line even though some workers would be affected by the efficiency. Teamwork is also an important part of the total quality management. Teams have been put in place to continually develop improvement.

Besides Kaizen mentioned above, here are some vernaculars that are often used within Toyota as well. First, “obeya” means face-to-face brainstorming sessions among designers, engineers, marketers, and suppliers. Second, “pokayoke” means mistake-proofing. Toyota uses sensors to detect missing parts or improper assembly. Robots alert workers about any mistake by flashing lights. Third, “CCC21” stands for Construction of Cost Competitiveness for the 21st century. This helps to build cars more efficiently and slash unnecessary costs. With CCC21, managers set a target of slashing prices on all key components for new models by 30% (Bremner, 2003). Fourth, Global Body Line (GBL), a manufacturing process that holds auto frames together for welding with one brace instead of the fifty braces previously required. It lets Toyota save 75% of the cost of refitting a production line to build a different car and improve the quality (Bremner, 2003).
**Marketing Strategies**

The brand image of Toyota is of good quality and high price. In general, young people still have the image that only parents drive Toyota. The Toyota Vice-President James Farley said, “Three out of four buyers of the brand had no intention of buying a Toyota when they started looking” (Bremner, 2003). Traditionally, customers in Toyota’s typical market are looking for a conservative, reliable and economical vehicle. According to the trend of the market, more and more young people are willing to pay higher prices for fancy products. The youthful trend is getting bigger in the automotive field. The new generation is becoming the main consumers in the market and most of the parents are willing to support their decision.

Therefore, in order to get this untraditional new market, Toyota has been a planned youth-targeted vehicle brand since 2001 that offered the Corolla in the mid-sized car market for 30-something consumers and the Celica for young female consumers. Toyota’s youth-oriented Scion will be launched in February 2004. This new vehicle, a cross between an SUV and a hatchback, priced from $16,000 that is affordable for young people. Dealers in California created a discovery zone in dealer’s showrooms that include a 50-inch plasma screen and Internet kiosks that will enable buyers to customize their vehicle as part of a personalized experience (Stewart, 2003). They also created a research tool called Taxi, which uses street teams to feed information about the latest trends and styles back to a main database (Bashford, 2002). Dealers are trying to connect the latest trends in style and innovation to customers, which is totally different from the traditional Toyota marketing.

Toyota also sent the image to customers that Toyota vehicles are equal in quality to European’s luxury models but stays at a reasonable price. Lexus selected Zenith Interactive Solutions, the digital communications arm of Zenith Media, to popularize the Lexus brand as a high-quality, trendy purchase for younger consumers (Sweney, 2002).
Furthermore, Toyota launched the 48-miles-per-gallon Prius gasoline/electric hybrid sedan in 2000 (Welch, 2003). The second-generation Prius, gets 55-miles-per-gallon, is more roomy, has sleek lines, and a high-tech feel. The price starts from $20,000. Prius ads will hit TV networks in November 2003. The first commercials will remind consumers that the Prius doesn’t need to be plugged in, since it recharges its battery by using the brake and also saves more fuel (Welch, 2003).

Investments in improving the quality have been more than recovered by lower production costs, less scrap, fewer defects and reduced warranty expense. Toyota and its Lexus luxury brand dominated the JD Power quality ranking for 2001 (Bartholomew, 2001). The Toyota Corolla ranked as the compact with the fewest complaints in the first three months of ownership. Similarly, the Toyota Avalon took first among premium cars and the Lexus LS430 won the gold honors among premium luxury cars (Bartholomew, 2001). Toyota’s reputation for quality differentiates its products from its competitors. That’s the reason why Toyota can be so successful.

(2). Honda Motor’s Marketing Strategy

Unlike Toyota aiming at the youth market, Honda targets families for its Accord model. Honda wants to take the Accord more up-scale with its campaign and appeal to 30-something families, so Honda was going to advertise 30 and 60-second commercials for a warm engineering position for Accord. “We wanted to be emotional rather than cold,” said Wieden and Kennedy, the Honda group director (White, 2003).

Moreover, Honda’s “safety for everyone” strategy offers middle-class customers of modest income the same basic protection from harm as wealthy customers. Thus, Honda is going to launch its mainstream US models with standard head-protecting side-curtain airbags and anti-lock brakes by year 2006 (White, 2003). However, Honda takes some risks as well.
The side-curtain airbags cost money that cannot offer the lower-priced Accord the price they want and decrease the competition. Its big competitor, Toyota, has pursued a similar strategy in price-sensitive segment cars to compete with Honda.

Considering the environmental protection, Honda’s breakthrough in the US market was its brilliant CVCC engine, which met US clean-air rules in the 1970s when Detroit executives were complaining that the standards were impossible to follow. Honda is adding the Accord to its two-car hybrid lineup (Welch, 2003). However, Honda had faced several rivals. Toyota’s hybrid/electric Prius has become the favorite “green product”. Nissan Motor Corporation and German carmakers are getting more buzz in the luxury auto-market. European competitors, including Volkswagen, Ford Motor Company’s Volvo, and General Motor’s Saab have been faster in making advanced safety technology, such as head-protecting side-airbags and some standard equipment (White, 2003).

Korea’s Quality Development and Marketing Strategy

(1). Kia Motors

Right now, the operation of Kia is focusing on new core values: substance, quality and customer satisfaction. The ultimate goal for Kia Motors is customer’s satisfaction. The target is going to become one of the world’s top five automobile manufacturers by 2010.

Quality management

Company-wide quality-raising measures such as the Six Sigma and quality enhancement are being practiced step-by-step to achieve quality improvement. The Six Sigma campaign continues with tireless efforts to enhance profitability, quality competitiveness, and productivity (Kia Motors America). Kia maintains the customer-oriented quality control
system. Customers’ needs and feedbacks are directly back to the production process in order to achieve the zero-defect benchmark. Through the cost-cutting measures and aggressive marketing based on the high-profit models, Kia is achieving its goal steadily.

In Kia’s research and development (R&D) centers, aggressive investment helps Kia have a better perspective in the long run. Current projects focus on digital and environmental protection technology including the fuel-efficiency and intelligent vehicle systems such as Advanced Safety Vehicle (ASV) and Intelligent Transportation System (ITS) (Kia Motors America). The three-dimensional design systems and virtual reality simulators help Kia predict the performance, quality of the actual car, and even the customers’ feedback. The safety test, crash test and quality control all proved that Kia really takes customers’ satisfaction seriously.

**Globalization Strategy**

Kia has grown faster in its first eight years in the US than did Honda and Toyota (Visnic, 2002). Kia builds a global production and management structure in the major cities and economic centers of the world, with an aggressive marketing program to expand the overseas market and enhance the brand power as the strategy (Kia Motors America). Kia signed a joint venture contract with the Dinfeng Motor Group, one of China’s Big Three automakers. Kia also sends its engineers abroad and has absorbed much know-how from the Ford Motor Company and Mazda. This has made it possible for Kia to produce and market its full range of models in China and take an important step in globalizing its business territory.

**Marketing strategy**

In the early stage in the US, Kia has taken some steps to make a good first impression on Americans. Kia supplied 2000 vehicles to Budget Rent-A-Car, which used them for 12
months for an average 20000 miles. Feedback from rental customers prompted small improvements before mass production of the Sephia.

Kia keeps broadening the image as the lowest-price and best-warranty of small cars. Recently, consumers in the US can frequently watch Kia’s commercials on TV and consumers get a good impression because Kia offers 10-year warranties. Like Toyota’s target-market, Kia also aimed at Generation Y. Kia spent $204.6 million in 2001 on measured media, about $79 million in network TV, $65 million in spot buys, and $40.8 million on cable (Greenberg, 2002). Kia launched the Sedona, which is the minivan that has five-star crash rating, and the first SUV-Sorento. These gave consumers a positive brand image of safety.

(2). Hyundai Motor America

Hyundai Motor Company will begin selling a small SUV in the fall of 2004 to compete with popular models from of Toyota and Honda. Hyundai has been improved due to its methodical approach to the business. They continue to refine and rethink their car offering before jumping into the SUV market.

Hyundai hoped to improve the quality of its cars and the weak brand image. Therefore, Hyundai sent the leaders of its labor unions to the US to learn the intense competition and hear dealers’ complaints. Hyundai’s aim is to meet Japanese quality but at a more competitive price (Kraar, 1995). In addition, Hyundai right now offers the 10-year/100,000-mile limited warranty and 5-year/60,000-mile warranty.

However, Hyundai is starting to face some challenges. First, Hyundai is entering its second year with no new or redesigned models. Second, Hyundai continues to face rivals in a brutal war of no-interest financing and cash back. One of the big competitors comes from the Hyundai family, Kia Motors. Although Hyundai owns 36% of Kia Motors, Kia functions as a
separate entity and has enjoyed its own growth. They will be built in the same factories and hit the same segments of the market at the same places, but these two brands are getting different publicity (Fahey, 2003).

**Compare the similarities and differences between Japan and Korea carmakers**

**The brand image**

Japanese vehicles have been seen as reliable, low maintenance, and high quality cars. The brand image is strong in consumers’ minds. Here are two examples of how Toyota and Honda built their own Lexus and Infiniti luxury car image.

Toyota’s trusty sedans have been known as reliable, safe and low-maintenance cars. But a decade ago, consumers could purchase a Cadillac, Jaguar, or Mercedes-Benz as their luxury cars. Anymore, Lexus has vaulted to the top of a very competitive position. The brand image attracts new buyers. At the beginning of building the Lexus brand, Toyota distinguished the Lexus plant from the other Toyota sedan plants in order to define the new luxury segment. Lexus even has different management and operation groups.

Although the Lexus, the Japanese automaker’s luxury brand, has been scored with enormous success abroad, especially in the US, the name has never been used on Toyota cars in Japan. Take the advantage of a brand that has grown in the last 14 years, Toyota stands with the same quality image as BMW and Mercedes-Benz. Because the Japanese tend to like import goods such as Louis Vuitton, Porsche, and so on, Lexus will be an import car based on the brand image though most of the Lexus are still made in Japan. Of course, Toyota knows building the brand in Japan will take time.
Just a few years ago, it wasn’t clear Infiniti would continue as a brand at all. In 1999, Nissan seriously considered killing the Infiniti line because Infiniti hadn’t made a profit (Zaun, 2003). Nissan poured a lot of money into new designs to more clearly distinguish Infiniti models from Nissan’s other models. Currently, the Infiniti brand is offered only in the US. Considering Infiniti’s future status, Nissan plans to make Infiniti a global brand by selling its luxury cars under the Infiniti name in Japan and Europe. Nissan is hoping to establish itself as the brand among Japanese carmakers. Infiniti’s successful makeover made its Japanese rivals move more aggressively concerning their luxury lines.

Compared to Korea’s vehicles, the most important step Korean automakers should make is to build the brand image. The brand image and brand loyalty of the Korean automobile got stuck on the cheap, high maintenance, and low-level cars. Furthermore, Hyundai sold 264,000 Excel compact cars, which were later, recalled for quality problems (Kraar, 1995). The quality reputation was hard to recover. However, the situation is being gotten rid of. Although Korea’s automakers are still behind the high-class Japanese and US manufacturers, the quality gap is narrowed. Korean automakers such as Kia and Hyundai offer 10-year warranties and keep improving quality, so more and more people admire their advances. Moreover, Kia launched its first SUV. The Sorento, has been successful at being at the entry point in the market without being considered a cheap brand (Greenberg, 2002). The Sorento keeps the image that Kia is not a cheap and low-quality car although it’s priced that way.

**Building a New Network**

Japanese automobile part suppliers installed networks in the later 1980s while Korean’s established the network system in the mid 1990s (Yozi, 1997). Most network systems connect one automobile assembler with the parts suppliers. Comparing the data in the design and
technology field, Japan’s inter-firm network is more up-grade than that of Korea. The assemblers in Japan have a closer relationship with suppliers than those in Korea.

Both Japan and Korea’s firms use the on-line network services for ordering parts (Yozi, 1997). Shipping assignment tasks and confirmation of delivery parts tasks are done through on-line services as well. Both Japanese and Korean automobile computer networks are characterized by a vertical network in which data is exchanged between the assembler and parts suppliers (Yozi, 1997). Japan and Korea’s automakers have successful results using inter-firm networks. The inter-firm networks help auto assemblers reduce stock of products and materials, to make closer inter-firm relationships, and to strengthen their competitiveness. The part suppliers are positively assured that networks can shorten lead-time and improve accuracy in data communication (Yozi, 1997). For those firms that have not established inter-firm networks in both Japan and Korea are not because of the installation costs, but considered not necessary.

However, there are three differences between Japanese and Korean carmakers. First, although both Japan and Korea highly use inter-firm networks, the rate of design and technological data in Korea is interchanged using the inter-firm network is lower than that of Japan, compared to the ordering process. That is the qualitative difference in Japan and Korea.

Second, the flow of data and sharing the data on the inter-firm network in Korea is lower than that of Japan (Yozi, 1997). The primary medium for the design information is still papers in Korea while Japan interchanges data through the information network. For instance, the design and technological information are interchanged through the information network with the assemblers. When Japanese parts suppliers join the project team in a new car development, the assemblers send the new design and required inspection to parts suppliers throughout
network. This new network closes the relationship between two parties and shortens the connection time. Take Toyota as an example. It has created an integrated, flexible and global manufacturing system. In this new network, plants from Indonesia to Argentina will be designed both to customize cars for local markets and to quickly shift production to satisfy demands from markets worldwide (Bremner, 2003).

The third difference is the impact on the inter-firm relationship. After increasing the installation of the inter-firm network, 29.5% of the firms in Korea could increase sales. On the contrary, only 3.8% of the firms in Japan could increase sales (Yozi, 1997). One of the reasons is that many parts suppliers in Japan only deal with one or two automobile assemblers. The mutual relationship is reliable between parts suppliers and assemblers, so there is not much of an impact to increase the installation of inter-firm networks (Yozi, 1997). Obviously, the inter-firm network did help Korea to increase inner communication and sales.

Worker involvement

Worker involvement is one of the successes of Japanese manufacturing. The Japanese work culture is group oriented (Otis, 1993). No one wants to stand apart from the team, but they love to pop ideas and make decisions with teams. Workers feel pride and achievement when the decisions are right. In addition, workers need to take the responsibility when the decisions are wrong and get the compensation when the decisions are right. This kind of compensation system helps every worker to work hard with his or her team. Similarly, Korea likes team work as well. For example, Kia’s workers are working together for a quantum leap in all of the standards and systems to keep Kia’s quality.

Problems that Japan and Korea automakers face and the future development

Japanese automakers:
First of all, Toyota is still facing the strong rivals who are hard to beat. Japanese automakers are late to the pickup market. Toyota found that Americans like their pickups big, and loaded with creature comforts (Kathleen, 2003). Besides, the foreign-brand trucks still have image problems among the United States Big Three’s loyal customers. “To be a carpenter and buy a Japanese truck takes some cojones,” said Larry Dominique, the Nissan manager who developed the Titan trucks (Kathleen, 2003).

In order to change the situation of the pickup market, Nissan Titan rolled off the line at a new factory in Canton on October 17, 2003. Nissan Titan is a powerful 300-horsepower V-8, serious towing capacity, and a spacious cab. To prevent a me-too truck, Nissan is offering nifty innovations, including sliding dividers for the truck bed and a built-in toolbox (Kathleen, 2003). Besides, the Toyota Tundra, introduced in 1999, was bigger and added a V-8 engine. Although the Tundra is smaller than American pickups, Toyota executives are making secret plans to make the next-generation truck, which will arrive in 2006, as big and powerful as Chevy or Ford. The price of a Tundra is between $16,500 and $31,705 which is smaller than the domestic rivals (Kathleen, 2003). Toyota brings prices down to gain more competition. Furthermore, Toyota Motor Manufacturing North America Incorporated will be established outside San Antonio for its second US truck plant that will allow Toyota to more than double its Tundra output. Toyota is already intent on boosting its 4.5% market share in pickups, the last profit refuge of the Big Three (Bremner, 2003).

Not only in the pickup market, have Japanese automakers also faced strong rivals in the luxury cars market. For example, Toyota’s Lexus luxury sedans are losing ground to BMW, though Lexus’ strong SUV sales are keeping the division in the game (Bremner, 2003). Right now Toyota owns 12% of high margin segment with the SUV market and its SUV is steadily robbing Ford, Chrysler, and GM. In the future, Toyota is targeting the full-size trucks, luxury, environmental, and youth cars.
The second problem that Japanese manufacturers faced was with a strong yen and a sluggish home market. The strong yen could make Japanese automakers shrink profits. In order to avoid this currency exchange problem, Toyota has invested nearly $14 billion in the US and many of its costs have been set in dollars in order to lower the impact of strong yen.

The vehicles with fascinating new technologies are powered by different energies are called sustainable mobility which will be steadily met during the next 20 years. Sustainable mobility is the Japanese future plan. The challenges toward true sustainable mobility are extraordinary, but the Japanese are already beginning to see the first light of this new day. Of the vehicles on display in Tokyo, some vehicles were powered by electricity, the combination of gas and electricity, hydrogen, or clean natural gas. Although some of these cars are concept cars, a number of them are already on the streets of Tokyo and other cities.

All countries face environmental challenges, but Japan particularly needed to solve these challenges because of the high population concentration. As a result, the Japanese government and auto industry are pushing aggressively to develop and introduce clean energy vehicles into the Japanese market. Last year, the number reached 130,329. The government target is to bring this total to 3.48 million vehicles within the next 7 years including low-emission and gasoline-powered vehicles (Driving Towards a Better Future). The number is targeted to exceed 10 million by 2010. Fuel cell vehicles, running on a combination of hydrogen and oxygen, emit only water but no pollution. Accordingly, fuel cells hold particular promise for sustainable mobility once the technology is refined, costs lowered and infrastructural challenges met (Driving Towards a Better Future). Toyota and Honda have already leased several fuel cell vehicles to the Japanese government.

*Korean automakers:*
The biggest challenge Korean automakers face is the weak brand image which was already mentioned above. Kia, Hyundai, and Daewoo all tried to change the brand image of cheap and low quality. Instead, the growth rates of these Korean manufacturers have obviously been seen. Because Japanese manufacturers faced strong yen, so they can no longer make a great volume of cars. It would be a good opportunity for Korean automakers to extend their overseas markets.

Moreover, Korean automakers will still encounter brutal rivals such as the Detroit Big Three, Japanese automakers, and even themselves. For example, Hyundai not only faces strong established competitors, but also faces its family, Kia Motors. What makes it worse is that Hyundai plans to build a line of full-size trucks and SUVs, but didn’t consider its ability to make luxury car with the technology they have. The luxury vehicle market has been full of many competitors who have good reputations among consumers. Hyundai should strengthen its small-size cars, improve the quality, and change the image of the brand first.

Conclusion

Never give up pursuing the higher and higher quality is both the Japanese and Korean automakers’ goal. Both Japanese and Korean automakers concentrate on the cause of quality problems in product design. In addition, Korean automakers make a great effort to change the weak brand image by improving the quality to lower the defect rate. Besides the quality improvement, perhaps Korean automakers can learn from Japanese automakers that create new brands such as Lexus and Infiniti to differentiate the market segments. Both Japanese and Korean automakers have established the inter-firm network to help close the relationships between assemblers and part suppliers and increase the efficiency. Although both of them face brutal rivals, only with strength quality and the self-renewal to maximize customers’ satisfaction can they earn market share and become the dominant automakers in the world.
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