

# **Competition and Conflict in the Flat Panel Display Industry: The U.S. Responds to the Japanese Challenge**

## **Case B (1988-1994)**

### **Introduction**

While the Japanese producers commercialized their LCD technology and started to gain a competitive edge in FPD industry, most of the large US companies had lost their initiatives and left the FPD industry by 1990. IBM was the only large company interested in the LCD technology. It sold its plasma display operation and targeted LCD technology believing that the liquid crystal technology was the most promising one. Since no US companies were interested in establishing LCD manufacturing plant, IBM chose Toshiba as a partner for a joint venture, called Displays Technology Inc (DTI). The reason for the large US companies' withdrawal varied, however, the common factors were found in the insufficiency of investment capital, the declining of experience in high-volume manufacturing, and the belief that advanced displays and components were not the central strategy for a finished product company.

What remained was a group of small producers, and out of which, only Optical Imaging Systems (OIS) produced AM-LCDs. All of them were engaged in low volume, specialized production, targeting industrial and military applications. By the time demand for FPDs had increased with the advent of laptop and note book computers, US computer companies had allied with the dominant Japanese producers who were providing cheap, high quality displays in quantity. In order to survive in the competitive FPD market against well-invested, mass-producing Japanese firms, the US producers had to ask for help from US computer companies individually and through two industry groups, the American Electronics Association and the Computer Systems Policy Project. Initially, the US producers looked for joint research and development programs, partially funded by the government and the computer companies. However, US computer companies were focused on short-term profits, and were depending on the Japanese producers, who had no reason to support a long run domestic manufacturing effort. Motivated by short term economic interests, US computer companies did not show their interests to establish domestic FPD industry in the long-run. The response by the US computer companies illustrated that Japanese pricing strategies were suggested the US flat panel producers from being able to expand their productive capacity, because investors feared small US firms could never hope to survive in the market. At the same time, the Department of Defense, notably the Defense Advanced Research Projects Agency (DAPRA), was concerned the situation that no domestic producers supplied high-resolution displays (HD-FPD) for military systems, and decided to fund research on the HD-FPD. In mid 1990, seven display firms were awarded contracts, including Planar Systems, OIS, Photonics Technology, and Magnascreen. Planar System, who was then the world market leader in monochrome EL displays, was awarded a research contract on colour EL displays. OIS was for further research on AM-LCDs, Photonics was for colour PDPs, and Magnascreen was for the tiling of small AM-LCDs into large-area displays. These

contractors had a several opportunities to share concerns and information regarding the US FPD industry at the meeting convened by DAPRA. In these meetings, the US producers discussed the threats of the Japanese dominance with predatory pricing. This discussion led to the petition against Japan employing a dumping practice. In addition, seven producers decided to form industry association named the Advanced Display Manufactures Association (ADMA). The ADMA consisted of following companies; Planar System, Plasmaco, Cherry Corporation, OIS, Electro-Plasma, Photonics Technology and Magnascreen.

## **II. Antidumping and the ADMA Petition**

The severe situation strengthened the ties between small US producers, and they felt the only way to respond to the Japanese challenge was to bring this case as an unfair trade practice to the US trade court. With support from DAPRA and some government agencies, the ADMA filed an anti-dumping case with International Trade Court (ITC) and the Department of Commerce (DOC).

On July 17, the ADMA filed a petition before the ITC and the DOC and asked for an investigation into allegations that twelve Japanese producers were engaging in dumping practices. Dumping is to sell products at 'less-than-fair value' in exporting country, and fair value is defined as a price at which the same product is sold in the exporting country or to third country, based on a price at factory shipping. Under the Tariff Act of 1930, the filing of a petition for anti-dumping required the DOC to conduct an investigation on the dumping sales, and the ITC to investigate the existence of injury to the US producers by the dumping. These investigations are carried out simultaneously, and all investigations are usually completed within 280 days. If Department of Commerce and the ITC found that dumping has occurred and the US firms has been materially injured, the law allows them to levy anti-dumping duties equal to the calculated dumping margin. These measures are authorized under GATT Article IV. Antidumping duties are often brought by industries, whose competitiveness is jeopardize by the foreign competitors. It is also true in the most cases that the consumers bear the costs of the duties, so as the downstream industry. Their argument represented the conflict interests in the upstream industry, the US FPD producers, and downstream industry, the US computer industry.

In the petition, the ADMA claimed that the Japanese producers intentionally sold flat panel displays below cost, at prices 10 per cent to 66 per cent, and gained 90% of the US market share. They also argued that between 1987 to 1990 they lost \$164 million in sales to Japanese producers because of the Japanese dumping practices, and denounced this practice as 'predatory pricing'. Predatory pricing is pricing so far below the average cost of production as to eliminate competitors, and thus to secure monopoly or oligopoly rents. (or "systematically pricing below cost with a view to intimidating and/or eliminating rivals in an efforts to bring about a market price higher than would otherwise prevail.)The petitioners cited the interview in the Japan Economic Journal with Toshiba's vice president, in which he said "We are prepared to accept red ink for the first five to six years. From the experience of our semiconductor business, we have learned that one has

to take a long-term perspective.” The petition also focused on the material injury that Japanese pricing strategies caused many US firms, including AT&T and IBM, out of the display market.

As the penalty on this unfair trade practices, the ADMA requested duties from 71 to 318 per cent to be imposed on the Japanese FPDs, which was estimated on the basis of ‘constructed value’. Constructed value is used to calculate the dumping margin when there is not enough domestic sales to compare. It is the theoretical value to sum up domestic production costs, general managerial costs and profits. The figure of the dumping margin based on constructed value usually turns out to be high, since the dumping margin is drawn by the comparison between the constructed value and the selling price by foreign firms. This calculation was applied for Hoshiden, since it exclusively supplied their AM-LCDs to Apple.

In the petition, the ADMA requested that all types of FPDs, which were Active-Matrix LCDs, Passive-Matrix LCDs, Electroluminescent (EL) displays and Gas plasma Displays, should be viewed as one product for antidumping assessment. The petition did not ask for the imposition of duties on assembled final products, only on displays and subassemblies.

### **III. Preliminary Determinations**

In the preliminary determination on February 14, 1991, the Department of Commerce concluded Japanese producers were selling FPDs at below fair market value, and recommended the imposition of 'bonds' much lower than the petitioners asked. The initial margins for Sharp, the leading FPD manufacture, were 4.6 percent below fair market value. Hoshiden, the sole FPD supplier for Apple, was charged zero margin. Bonds are employed as a provisional measure until the final determination is made, and if the final determination finds the case negative, then the amounts of bonds the exporters have paid will be returned. The DOC and the ITC usually recommend modest estimates of dumping margins in the preliminary determination, so that the bonds does not affect the exports as much as the final duties do. The preliminary determination also found that all types of flat panel displays should be treated as a single class or kind.

The argument over the petition splitted the three interests groups, the US FPD producers, the Japanese producers, and the US computer companies. The US computer companies, IBM, Compaq, Apple and Tandy, whose supply bases were under attack, joined with the Japanese producers and rebutted the petition. They argued that the petition did not hold any legitimacy because there was simply no FPDs producers who were able to supply mass production. The representative for Compaq said that “One company made a few LCDs’ of special kind, known as active matrix LCD, on a customized basis for military applications at an extremely high cost per display, but this firm lacked the capability of making any displays on the basis of mass production methods.” They concluded that there was no injury caused by commercial imports of Japanese products, since AM-LCDs were not available in the US, and they would continue to be dependent on the Japanese companies. They also mentioned that as a result

of the imposition of duties, they would be forced to move production plants of laptop and note book computers to abroad in order to avoid the tariff. They claimed that in the highly competitive computer industry, they would lose their competitive edge against Asian computer companies, including Japanese, simply because of the increase in costs and prices of FPDs. They also warned that the imposition of duties could harm the US welfare by losing the US jobs, as a result of the transfer of assembly.

The Japanese producers also expressed their surprise with the petition that there could be no injury without the FPD industry in the US. The representative of Hitachi said that, "These petitioners may have dreams and ambitions, but the best of my knowledge, nothing more." Then, they rebutted the calculation of fair value by ADMA saying that Japanese industrial structure allowed the lower costs and their prices and this should not be regarded as a dumping practices.

In the argument over the petition by the ADMA, two dispute points were focused on, which were resulted in the differences of interpretation.

First, the determination of the anti-dumping and the calculation of the less-than fair value. ADMA claimed that the material injury on the American FPD industry had existed due to the Japanese pricing strategies in the early 1980s, when both countries started to commercialize the LCD technology. Representatives of the ADMA charged that the Japanese dumping prices resulted in US FPD industry to bear deep losses, and that "[N]ot only these losses deny firms operating funds and equity needed for research and development efforts, they discouraged potential investors and had a chilling effect on the ability of US producers to finance research and development and operations through debt financing. The drying up of investment capital could be traced, ADMA said, directly to Japanese less-than fair value pricing." The president of Plasmaco presented his experience in how his firm had attempted to raise funds on the private capital markets for operating expenses and plant expansions, but was unsuccessful because investors were concerned about the possibility that his products would be underpriced by Japanese competitors. The ADMA emphasized the Japanese competitive price in the early stage of the industry won away the contracts from American firms to be able to realize mass production, and denounced this action as predatory pricing.

On the other hand, the Japanese producers submitted the figures different from the one by the petitioners. They claimed that their different organizational structure and long-term profit driven operation allowed for lower price. Toshiba representative commented on the US FPD industry severely that "They [the US producers] had never made the financial, technical, production and marketing commitment necessary to become established". Therefore, he concluded that the figures the ADMA arrived were the results of their inefficient and different business practices, and should not be regarded as the fair value.

The same argument was made in the case of the mid-1980s anti-dumping case of computer memory chips or DRAMs. In the introduction period of the high-tech products, such as DRAMs and FPDs, where learning-curve and scales of economies are significant,

companies widely employ the 'forward pricing strategy'. Forward pricing is the strategy to set the price lower than the costs it takes at introduction stage, as radical cost down is anticipated in the future. The Japanese companies, who tend to be long-term oriented and had sufficient capital, are able to bear the loss at the beginning for the long-term profits. On the contrary, the US companies are tend to be short-term oriented, and their business structure is difficult to allow the loss, which in turn, they are forced to set the price higher than the Japanese.

Second point was the categorization of the FPD. In the petition, ADMA charged all four kinds of FPDs should be treated as single class or kind. The ADMA defended their argument based on the criteria, which were the general physical characteristics, the ultimate use, the expectations of the ultimate purchaser, the channels of trade and the manner of advertising and display. They concluded that all FPDs were applied in the same manner for each criteria. In the preliminary decision, the ITC accepted the petitioner's position.

In response to this decision, the US computer companies and the Japanese producers argued that each type of FPD should be considered separately. They debated in the series of testimony that there were substantial differences in physical characteristics, end-uses, and expectations of the ultimate purchasers, and similarities in the channels of distribution. As an example of the physical differences, Toshiba explained that each FPD technology had unique electrical requirements that determined power consumption and battery life, which determined size and weight, with gas plasma and EL FPDs typically being thicker and heavier than the other two. The varying physical characteristics of the FPD technologies offer ultimate users distinctly different products depending on application. LCD is most appropriate in applications where ambient light conditions are not constant, while gas plasma is used when picture quality is important. EL FPDs were used when security needs dictate suppression of radio frequency emissions. In terms of the ultimate use, LCD is used in laptop computers, while gas plasma and EL FPDs are used in portable computers, specialized military and medical instruments and for other uses. All the US computer companies and Japanese producers in the testimony presented almost the same analysis on the categorization on the FPDs, and claimed that the petitioner's argument did lack the logic, since there was no ADMA members who produced PM-LCDs.

The US computer industry chose to debate focusing on the technical aspect, because as a legal case, their costs, including the lay off of the US worker which could be led by the antidumping duties on the Japanese producers, would not affect the ITC's final decision. The ITC would consider only the costs and injury on the petitioners, not the costs of the consumer industry in the US.

#### **IV Final Determinations and the Industry Response**

On 16 July, 1991, the Department of Commerce issued its final determination that dumping duty should be imposed on AM-LCDs and EL displays. It concluded that in the case of PDP pricing below fair value was not founded. It found negative determination on

PM-LCD, since there was no PM-LCD industry in the US. In the final investigation on August 15, 1991, the ITC voted 3 to 1 to impose dumping duties. Dumping duties ranged from 7.02 percent on imports of EL displays and to 62.67 per cent on imports of AM-LCD from Japan. Despite the Department of Commerce's final determination, the ITC accepted the petitioners' argument to categorize all kinds of FPDs as one kind of products. The members of the ITC review commissions acknowledged the negative after-effects of imposition of tariff on the US computer companies and the market, however, they mentioned that to consider the effects on the other industry was out of their authority. Commissioner Mr. David Rohr, who supported the duties, said "I have heard flat-panel displays characterized as the invention that got away, meaning that US firms failed to turn the technology into a marketable product. There are a few of these firms still struggling to do just that. And as they are unable to meet Japanese prices, we have seen evidence of lost sales." On the other hand, in her dissenting opinion, Acting Chairman Anne Brunsdale argued that there was no evidence that US industry has been hurt and said that "the commission should not be swayed by public perception about the case. US duping laws should not be used to shelter US companies from tough foreign competition."

While conducting the counter measures in an effort to avoid the penalty, IBM, Apple, Compaq and Tandy filed appeals with the Court of International Trade (CIT) for a reversal of the decision by the Department of Commerce. They opposed to the dumping duties claiming that there were no viable US suppliers of AM-LCDs and, therefore, they were dependent on Japanese suppliers. They argued that with the limited capacity available for producing AM-LCDs displays in the US, they would still be forced to buy from Japanese companies, which would raise their unit costs by about 30 percent. Spokesman for the Tandy Corp. expressed the feelings of the computer industry noting that, "By trying to protect a couple of small companies in the US that manufacture these displays, it's almost certain that the next generation of these notebook PCs are going to be built offshore." Bill Fasig at international government affairs for Apple argued emphasizing on the Japanese producers' competitiveness that, "Considering that Japanese engineers can get an undergraduate degree in flat-panel displays at five universities while American students have no such options and that American investors won't wait two or three years for their profits, waiting and hoping seem pointless. But so does the anti-dumping duty. Instead, what will really benefit consumers, manufactures and workers alike are educational and industrial policies that will let the United States compete before the market is lost."

The debate was given a surprising twist when the ADMA member firm OIS, which was the sole producer of AM-LCD's in the petition, filed a request with the Department of Commerce to lift the penalties. The company had concluded that that the penalties had become counterproductive and would hurt US computer companies.

Seven Japanese manufactures, including Sharp, Toshiba, and Hitachi, also joined the US computer companies to reverse the penalty. They noted that while it was true that no Japanese manufactures were making profits on AM-LCDs, this was due to the enormous capital expenditure required to start production. They argue that production

costs would decline and profits would follow once the production process was perfected, output builds, and scale economies were realized.

On March 2, 1993, although CIT ordered the ITC to re-examine the case saying the ITC's decision was based on misreading of the law, the ITC again ruled that Japanese' AM-LCD products still threatened injury to the US industry. They decided to retain punitive duties on AM-LCD, but withdrew antidumping tariffs on EL displays. An official at Ministry of International Trade and Industry stated, "The decision is extremely unfair. There could be no case of dumping damaging the US industry, since there are no manufactures in the US that make such high-definition screens for computers." He even expressed Japan's intention to ask the General Agreement on Tariff and Trade (GATT) to set up a panel on the US's violation of the International agreement.

In the international trade arena, the restriction on the use of anti-dumping measures have been actively debated. Due to the overuse of anti-dumping measures by several countries, including the US, the voice to require the regulation on this measures had significantly increased in 1980s. In an effort to reduce the use of anti-dumping duty, the 1994 GATT Antidumping Code advanced the previous agreement and contained more regulative sentences. However, in the US, there is consensus among the government and industries that the US still needs to maintain its position to allow anti-dumping code, and this trend will likely to continue

#### Questions for Discussion

Assess the ADMA's argument that Japanese less-than-fair-value pricing prevented American producers from entering the market. What other factors could be identified?

In the context of the case presented, is anti-dumping an effective means to promote and/or protect domestic manufacturers? What are the overall implications for the economy? What other means might be available?

3. Discuss the long term impact of the Japanese dominance of the FPD industry, and the failure of US trade policy to remedy the situation. Is there a remedy? Should the US government be concerned about the situation?