

## Promoting Efforts to Make Sharp an Environmentally Advanced Company

### Restructuring Business by Shifting to Areas Where Sharp Excels

**Sharp constructed a “manufacturing complex for the 21st century” in Sakai City, Osaka.**

In addition to producing large-size LCDs there based on  
10th-generation glass substrates,

Sharp made the Sakai plant a major base dealing also with  
solar cells—a product category with technology related to that used in LCD panels.

In tune with the environmental era, Sharp also worked aggressively to  
expand business in environmental and health products.

In the midst of these efforts, widespread turmoil in financial and  
capital markets led to a major deterioration in the global economy.

At the same time, a shift to digital media was leading to  
comprehensive structural changes in the electronics industry.

Sharp swiftly and boldly confronted the challenge of business restructuring.



Schematic structure of the DL-L601N LED lamp

## 1 Strong Financial Results and Radical Changes in the Business Environment

### President Katayama Appointed

On April 1, 2007, President Katsuhiko Machida was appointed chairman, and Corporate Senior Executive Director Mikio Katayama was appointed president. This transition marked the beginning of a two-person executive system comprising a chairman and a president. This change was undertaken in light of the fact that Sharp's growth in size—it now posted consolidated sales in excess of 3 trillion yen annually—had made it difficult for the president working alone to grasp the full scope of operations. Moreover, as business operations had expanded and Sharp's presence had grown stronger, the president faced increasing demands to perform public relations duties.



Start of a new management system with Chairman Machida (left) and President Katayama

President Katayama joined Sharp in 1981, beginning his career as an engineer working primarily in the LCD division. In addition to managing the expansion of the LCD business at the Tenri, Mie, and Kameyama Plants, he also oversaw the TV business and achieved impressive results in

both device and product fields. When he became president, he was a young 49 years of age. His motto would be: “There are no limits to technology.”

In January 2008, looking ahead to 2012, the 100th anniversary of the company's founding, he defined two visions: “Realize a truly ubiquitous society\* with the world's No. 1 LCDs” and “Contribute to the world through environment- and health-conscious business, focusing on energy-saving and energy-creating products.”

In June 2008, the executive officer system was introduced to accelerate decision-making and strengthen the system for conducting the company's operational activities.

### Record Sales and Business Restructuring

#### ■ Net Sales Surpass 3.4 Trillion Yen

With strong sales of both one-of-a-kind products such as LCD TVs and mobile phones, as well as high-value-added devices, Sharp's consolidated net sales for fiscal 2006 were 3.1277 trillion yen, surpassing the 3 trillion yen mark for the first time. Further, consolidated net sales for fiscal 2007 were 3.4177 trillion yen, with net income of 101.9 billion yen, marking record highs for five consecutive years.

However, in the second half of 2007, global financial and capital markets were plunged into turmoil in the wake of the subprime loan problem in the US, and the global economy rapidly slipped into a steep recession. In 2008, the

collapse of Lehman Brothers triggered a global financial crisis, and the yen's ensuing rise on foreign exchange markets—coupled with sluggish consumption and intensifying price competition—caused Sharp to experience a decline in profits. Consolidated net sales for fiscal 2008 were 2.8472 trillion yen (down 16.7% compared to the previous year), with an operating loss of 55.4 billion yen and a net loss for the year of 125.8 billion yen. It was the first time the company posted a loss for its bottom line since it was listed on the Tokyo Stock Exchange in 1956.

#### ■ Embarking on Restructuring the LCD Business

As market conditions weakened further, Sharp launched a reorganization of its LCD plants in January 2009, suspending operations at Kameyama Plant No. 1 and consolidating production at Plant No. 2. Additional emergency measures were implemented, such as shifting personnel to priority areas and reducing overall costs. Meanwhile, in the electronic device field, the company formed partnerships with leading overseas companies as part of a system of local production for local consumption. In addition to this, Sharp's LED and solar cell business grew, and in fiscal 2009, the company returned to profitability, with operating income of 51.9 billion yen and net income of 4.3 billion yen. In fiscal 2010, despite a drop in sales as a result of the Great East Japan Earthquake—and also taking into account restructuring costs for the LCD business—sales and profits increased over the previous fiscal year.

However, slower growth in the LCD TV market led to a significant deterioration in the balance of supply and demand, and prices for LCD panels fell. At the beginning of fiscal 2011, the company was forced to suspend production at its large-size LCD plant, owing to lower demand, increased inventory levels, and a disruption in the supply of materials and components resulting from the Great East Japan Earthquake. Sharp took further steps to restructure its LCD business, focusing on strengthening its mobile LCD business and its large-size LCD business for panels 60 inches and larger—areas where Sharp's technological superiority could be demonstrated (see page 11-04).

In the US, sales of large-screen TVs in the 60-inch-and-larger class remained strong; but in Japan, unit sales volume and unit prices fell drastically, and sales for Sharp plummeted. Demand stagnated for large-size LCDs

used in TVs, and the company became unable to maintain a sufficient level of operations at its production facilities. Sales of mobile phones in Japan and global sales of solar cells also fell significantly. Consolidated net sales for fiscal 2011 were 2.4558 trillion yen (down 18.7% compared to the previous year), and the net loss for the year of 376 billion yen was the company's largest ever.

### Aiming to Become an Eco-Positive Company

#### ■ Setting a New Vision

Having accomplished ahead of schedule its environmental vision of having its energy-creating and energy-saving products more than balance out its greenhouse gas emissions by 2010, Sharp declared a new environmental vision in fiscal 2009 of becoming an Eco-Positive Company. Under this vision, Sharp set a goal for fiscal 2012 of having the amount contributed to reducing greenhouse gas emissions by the company's shipped energy-creating and energy-saving products be more than double the amount of greenhouse gas emissions from the company's business activities. In 2010, this Eco-Positive Company vision was laid down as Sharp's corporate vision, defining the ideal corporate image that the company would work to achieve.

#### ■ Strengthening Compliance

In December 2006, Sharp was the subject of an investigation by antitrust authorities in Japan, the US, and Europe on suspicion of involvement in a price-fixing cartel for TFT LCDs. This prompted the company to restructure its compliance system across the entire group and place more emphasis on education. First, a manual was prepared to ensure compliance with antitrust laws around the world, and training was conducted at sites nationwide. In addition, e-learning sessions on compliance with antitrust laws have since been implemented for all employees every year since 2009, in an effort to ensure compliance to the greatest extent possible.

\* A “ubiquitous” society is one in which everyone—and everything—is connected; a society in which information can be freely exchanged without barriers anywhere, by anyone.

### Reconstruction Support for the Great East Japan Earthquake

On March 11, 2011, a massive earthquake struck eastern Japan, with its epicenter off the coast of Sanriku in the Tohoku area. The tsunami that followed the earthquake caused catastrophic damage along the Pacific coast from the Tohoku area to the Kanto region. To make matters even worse, a serious accident involving the release of radioactive material occurred at the Fukushima No. 1 nuclear power plant operated by Tokyo Electric Power Co.

To aid the recovery of affected areas, Sharp made a corporate donation of 100 million yen, which was supplemented by donations of around 42 million yen from Sharp Group employees. Sharp also donated products and Sharp employees volunteered for reconstruction activities. In addition, service personnel from all over the country rushed to Sharp service centers in the Tohoku region to provide support repairing victims' household appliances.



One form of aid was a solar power system for disaster relief that combined solar cells and storage batteries. Produced in collaboration with Shin-Kobe Electric Machinery Co., Ltd., these systems were donated to emergency shelters. The stored power generated from sunlight was used for purposes such as charging mobile phones and watching television.

## 2 Developing the LCD TV and Large-Size LCD Business

### Construction of Green Front Sakai

In July 2007, Sharp announced that it would develop a cluster of state-of-the-art plants—hailed as a “manufacturing complex for the 21st century”—that would accommodate companies from a variety of industries based in Sakai City, Osaka Prefecture. It was conceived as a production facility that would adopt the vertically integrated production system used at the Kameyama Plant—where LCD TVs were produced start-to-finish—and move it further upstream. The complex would incorporate associated infrastructure facilities, along with the manufacturing plants of materials and equipment providers. The designated site for the complex was approximately 1.27 million m<sup>2</sup> in area, almost four times the size of the Kameyama Plant.

Here, Sharp built the Sakai Plant, a production facility for both energy-saving LCD panels and energy-creating solar cells. The fact that TFT LCD panels and thin-film solar cells were both based on the same thin-film technology meant that there was potential for the horizontal deployment of production technologies. It also meant that infrastructure facilities could be shared, thereby delivering improvements in both production efficiency and investment efficiency. The LCD panel plant was the first in the world to adopt 10th-generation glass substrates (2,880 mm × 3,130 mm in size), and it began mass production of large-size panels sized 40 inches and larger.

On April 1, 2009, Sharp Display Products Corporation (SDP) was established as a production company for LCDs. SDP took over the LCD panel plant from Sharp via a corporate divestiture, and on December 29, 2009, SDP accepted an investment from Sony Corporation and became a joint venture of the two companies.

On October 1, 2009, the LCD panel plant became operational with an investment of approximately 380 billion yen. The plant served to energize the local economy in Sakai



Ceremony to mark the first shipment of LCD panels from the plant (October 16, 2009)



Aerial view of Green Front Sakai (as of 2011). The area within the dashed lines and the rooftop solar panels are conceptual renderings showing the appearance when finally completed.

City and Osaka Prefecture: it prompted employment growth and development of infrastructure such as roads, and it had a ripple effect on local industry.

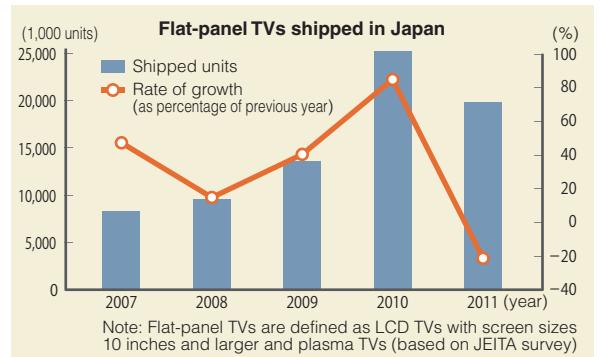
Sharp named the new manufacturing complex “Green Front Sakai.” The name was intended to convey Sharp’s intention to foster a more eco-conscious society by producing LCD panels and solar cells—products with outstanding environmental performance—in an environmentally friendly facility. Steps were taken to put energy conservation into practice to the greatest extent possible. For example, all on-site lighting (approximately 100,000 units) would be in the form of LED lamps.

The solar cell plant at Green Front Sakai became operational on March 29, 2010.

### Unceasing Business Innovation

#### ■ Boom and Bust in the Japanese Flat-Panel TV Market

Replacement purchases driven by the home appliance Eco-Point system (see page 11-08) and migration to digital terrestrial broadcasting produced a boom in domestic sales of flat-panel TVs: in 2010, industry-wide shipments in Japan increased by 84.9% compared to the previous year. Sharp met market demand by expanding and upgrading its production systems and broadening its product lineup. However, a rebound effect occurred in 2011 when the boom came to an end, and demand quickly cooled.



#### ■ LCD TVs That Are Portable and Can Be Placed Anywhere

The Freestyle AQUOS made its debut in June 2011 as a product intended to generate new demand in anticipation of



LC-40F5 40-inch wall-mounted installation (2011)

changes in the market environment. The lineup included 20- to 60-inch models introduced sequentially, featuring a compact design and a separate display section and tuner unit. These models could be placed wherever the user wanted to view them—even mounted on a wall.

#### ■ Order Received for LCD Panel Production Project in China

In the midst of intensifying competition in the LCD TV market, structural reforms in the LCD business moved forward.

On August 31, 2009, Sharp contributed to a new sixth-generation LCD panel production project in Nanjing, China. Sharp provided production technology to Nanjing CEC-PANDA LCD Technology Co., Ltd.—an LCD business company established by the City of Nanjing and the Nanjing China Electronics Panda Group Corporation—and sold sixth-generation production equipment incorporating state-of-the-art production technology from Kameyama Plant No. 1. Sharp also agreed to cooperate with production, which began in May 2011.

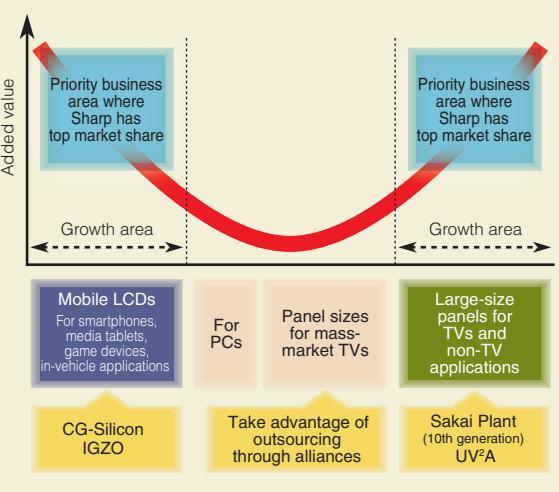
#### ■ Strengthening Mobile LCDs and 60-Inch-Plus Large LCDs

In 2011, the supply of LCD panels of the sizes used in mass-market TVs far exceeded demand. In response, Sharp launched a strategy of concentrating on high-resolution mobile LCDs and 60-inch-plus large-size LCDs, both of which were growth areas for business.

First, Sharp took steps to shift its production systems from LCDs of the size used in mass-market TVs to small and mid-size LCDs for use in mobile devices. At the Kameyama Plant, production equipment for CG-Silicon LCDs was introduced at Plant No. 1, while Plant No. 2 shifted to producing mobile LCD panels by upgrading its production lines to manufacture IGZO LCDs.

At the same time, Sharp also moved to prioritize production of 60-inch-plus large-size panels. The market for these panels was growing, and the strengths of the Sakai Plant could be used to full advantage in their production. They were also supplied for use in digital signage and other commercial applications. In 2011, Sharp introduced 70- and 80-inch LCD TVs in the US market, accelerating the company’s large-size LCD panel strategy.

#### LCD business areas that Sharp is targeting



### Sharp’s Unique LCD Technologies (2007–2011)

LCD panels for use in TVs required larger sizes and higher resolutions, as well as technologies for better contrast, to enable viewers to enjoy impressive images. Small and mid-size LCDs for mobile phones and other devices demanded thinner profiles, lighter weight, lower power consumption, and higher display performance. Sharp responded by developing new technologies to meet these needs.

#### ■ 108-Inch LCD

In 2007, Sharp developed an LCD TV with a screen size of 1,344 mm vertically × 2,386 mm horizontally. In June 2008, this TV was introduced as an LCD monitor for business and commercial applications.

#### ■ New Mobile Advanced Super-V LCD

In 2007, Sharp developed a display for small- and medium-size LCDs that offered image quality approaching that of AQUOS TVs. The new display featured a contrast ratio of 2000:1 and a viewing angle of 176°.

#### ■ Double-Speed Advanced Super-V LCD

Incorporated into the AQUOS R Series in 2007, this LCD panel supported 120 frames-per-second playback (i.e., 120 Hz) by generating an intermediate image between adjacent frames in TV broadcast content (frame interpolation). Viewers could enjoy smooth action, even for fast-moving scenes.

#### ■ Mega-Contrast Advanced Super-V LCD

Incorporated into the AQUOS X Series in 2008, this technology achieved a contrast ratio of more than 1,000,000:1. LED backlights were driven independently for each RGB color to deliver deep, rich blacks.

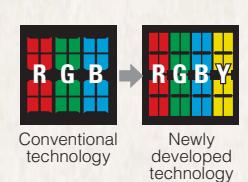
#### ■ UV²A Technology

This photo-alignment technology enabled precise control of the alignment of liquid crystal molecules, delivering high contrast, fast response speeds, energy savings, and greater production efficiency. Sharp introduced this technology to LCD production in 2009.

#### ■ Four-Primary-Color Technology

Sharp added yellow (Y) to the traditional red (R), green (G), and blue (B) primary colors of the pixels in the LCD. Images benefit from the vivid rendering of colors such as brilliant gold.

Note: Four-primary-color technology is Sharp’s own color reproduction system for LCDs and differs from the three-primary-color concept of light and color.



LC-60LV3 AQUOS using four-primary-color technology (2010)

#### ■ Ultra-High Resolution LCD

In 2006, Sharp developed an ultra-high resolution LCD with approximately 8.84 million pixels—over four times the number of pixels in the full HD format. In 2011, Sharp developed an 85-inch Super Hi-Vision (ultra-high definition) LCD with 33 million pixels—16 times higher resolution than full HD.

#### ■ Small and Mid-Size LCDs Using IGZO (practical application)

In 2011, Sharp achieved high resolution, high image quality, and low power consumption using oxides of indium (In), gallium (Ga), and zinc (Zn) as the material of the TFT in the LCD panel.

### 3 Developing the Solar Cell Business Encompassing the Entire Value Chain

#### Renewable Energy Attracts Attention

Global interest in renewable energy was increasing. In Europe, adoption of feed-in tariffs (FIT) was widespread, particularly in Germany; and in the US, a Green New Deal policy was announced that would create jobs by increasing the energy-saving efficiency of government facilities and by increasing the use of alternative energy. As a result, the market for solar cells expanded in a single stroke.

In Japan, an accident occurred at the Fukushima No. 1 nuclear power plant as a result of the Great East Japan Earthquake, and in August 2011, the Law Concerning Special Measures for Renewable Energy was passed. Under the law, power companies were mandated to buy electricity derived from renewable energy sources such as wind or solar for a certain period of time at a fixed price. The widespread adoption of solar photovoltaic power generation subsequently attracted significant attention.

As solar cells had become a topic of intense interest, Sharp was recognized with an IEEE Milestone in 2010 for the company's achievements in the commercialization and industrialization of solar cells from 1959 to 1983. This recognition represented high praise for Sharp's contribution to the solar cell industry, with products for applications ranging from lighthouses and space satellites to residential power generation systems.



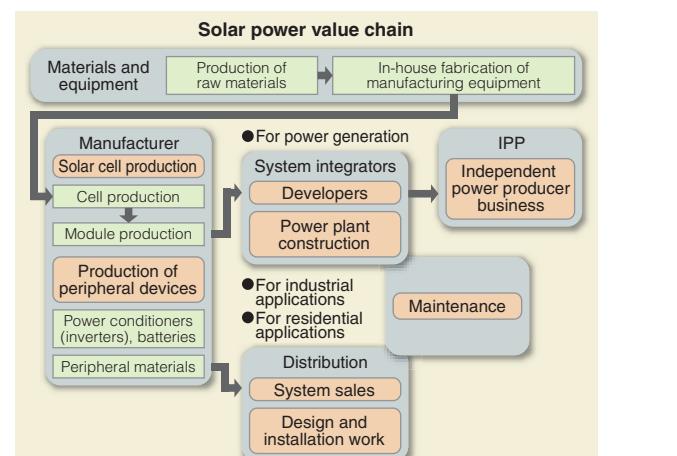
Solar power plant constructed in southern Italy

#### Aiming to Become a Total Solution Company

The expansion of the solar cell market prompted the entry into the market of European, American, and Chinese manufacturers. Global competition immediately intensified.

In 2008, Sharp announced a new policy direction for its solar cell business. The goal was to achieve solar power generating costs on a par with conventional power generation—that is, “grid parity”—and to generate new revenue by becoming a total solar power solution company.

Becoming a “total solution company” entailed a departure from being a simple solar cell manufacturer and an expansion of business along the entire value chain of solar power generation. It encompasses building production equipment in-house for solar cells and modules; constructing power plants; providing maintenance for solar facilities; and running an IPP\* business. By acquiring leading partners in Europe, the US, and Asia, Sharp actively worked to expand its business along these lines (see table below).



State-of-the-art thin-film solar cell plant at 3Sun (Catania, Sicily, Italy)

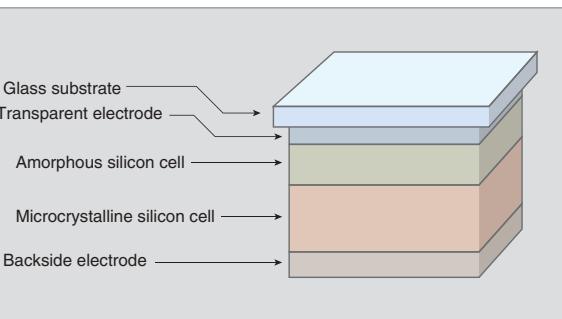
| Business expansion aiming to make Sharp a total solar power solution company |          |                                     |   |   |
|--|----------|-------------------------------------|---|---|
| Business Area  | Country  | Date Established                    | Major Collaboration Partner                       | Specific Business Details   |
| IPP business   | Italy    | July 2010                           | EGP (Enel Green Power S.p.A.)                     | Established Enel Green Power & Sharp Solar Energy S.r.l. (ESSE), a joint venture company<br>Constructed solar power plant in Altomonte, Italy       |
| Production of solar cells and modules  | Italy    | July 2010                           | EGP, STMicroelectronics (STMicroelectronics N.V.) | Established 3Sun S.r.l., a joint venture company<br>Constructed thin-film solar cell plant in Catania, Sicily, Italy                                |
| Power plant construction   | Thailand | July 2010                           | NED (Natural Energy Development Co., Ltd.)        | Constructed solar power plant and supplied thin-film solar modules and peripheral systems   |
| Maintenance  | Thailand | March 2011                          | —   | Established Sharp Solar Maintenance Asia Co., Ltd. (SSMA) for inspection and maintenance services   |
| Developer  | US       | November 2010 (date of acquisition) | —   | Acquired Recurrent Energy, LLC as a wholly owned subsidiary<br>Developed and sold solar power plants in collaboration with electric power utilities |

#### Technologies and Production of Thin-Film and Crystalline Solar Cells

Looking toward achieving grid parity, Sharp strengthened its initiatives for technological development and production of both thin-film and crystalline silicon solar cells.

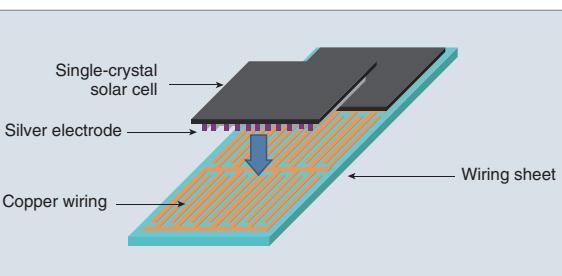
For thin-film solar cells, Sharp introduced the NA-8501P crystalline thin-film solar module in 2005. This module utilized crystalline thin-film tandem solar cells based on a proprietary structure that combined amorphous silicon and crystalline thin-film silicon technologies. It achieved a conversion efficiency 1.5 times greater than conventional amorphous silicon modules.

To expand production, Sharp added a new production line at the Katsuragi Plant in 2008. This line produced second-generation thin-film solar cells that used large glass substrates (1,000 mm × 1,400 mm) that were equivalent to 2.7 times the previous size. In 2010, the company also built a new factory at Green Front Sakai.



Crystalline thin-film tandem solar cells use a dual-layer cell structure to generate electricity from sunlight over a wide range of wavelengths (schematic diagram)

In 2010, in the field of crystalline solar cells, Sharp succeeded in developing BlackSolar—a new high-efficiency single-crystal solar cell. Mass production began at Green Front Sakai the following year. The new cell offered unprecedented performance capabilities. It increased the amount of light gathered by using a back contact structure that eliminated electrodes on the light-exposed surface. Further advances were also made in improving power generation on residential roof surfaces. Sharp's Roofit design system made efficient use of available rooftop installation space regardless of the shape or size of the roof.



In a BlackSolar PV cell, the silver electrode and copper wiring are directly connected, and the line width is thicker, reducing the loss of generated power (schematic diagram)

#### Developing an Energy Solutions Business

Expectations for alternative energy were running high among the general public. There was intense interest not only in how to capture solar power, but also in how to store it and utilize it efficiently.

As a core technology for managing energy in residential solar power systems, Sharp developed the home energy management system (HEMS). This system controls appliances and equipment in the home and, by making use of information technology and sensors, enables even greater power savings without compromising comfort. To serve as a proof-of-concept laboratory for this idea, Sharp constructed the Sharp Eco House at Green Front Sakai. This experimental house uses a solar power system large enough to meet the electricity needs of a typical household.

In June 2011, Sharp began using the Eco House to test technologies that minimize power consumption and ensure the comfort of living spaces. Tremendous interest was generated in using the HEMS to connect Sharp's latest energy-saving appliances via a network, making it possible to use media tablets and AQUOS LCD TVs to graphically represent the power consumption of each device. This visual depiction was anticipated to change residents' awareness of energy conservation and result in greater energy savings. Here, in the future, Sharp also plans to test technologies for optimally controlling the power consumption of home appliances and equipment; technologies for linking solar cells and storage batteries; and energy-saving technologies that harness the ability of certain home appliances and devices to use solar-generated DC power directly, without the need to convert it to AC power.



Sharp Eco House at Green Front Sakai



Using a media tablet to operate home appliances

\* An IPP (independent power producer) builds power generation facilities and sells the generated electric power.

## 4 Consistent Efforts Focused on the Environment and Solutions

### Products Contributing to Health and the Environment

#### ■ Establishing the Health and Environment Systems Group

In April 2008, Sharp took the constructive step of eliminating the Appliance Systems Group and establishing the Health and Environment Systems Group. Responding to consumers' growing awareness of health and environmental issues—and taking advantage of Sharp's proprietary technologies, such as Plasmacluster Ion (PCI) technology, LED lighting technology, and superheated steam technology—the company worked to develop health- and environment-conscious products that were different from the simple home appliances of the past.

#### ■ Expanding the Plasmacluster Ion Business

Sharp instigated an "academic marketing" approach in order to generate measurable data to promote its PCI products. In August 2008, Sharp announced that the effect of decomposing and eliminating viruses increased with higher concentrations of PCI<sup>\*1</sup>. Moreover, it was confirmed in February 2010 that high PCI concentrations provided the attractive added benefit of moisturizing the skin<sup>\*2</sup>.

The first products to incorporate PCI-generating functions were air purifiers and air conditioners, but Sharp expanded its product lineup to include standalone PCI generators in October 2008.



PCI generator lineup for home use, ranging from portable personal devices to models for spaces up to 23 m<sup>2</sup> in area (February 2012)

At the end of December 2010, cumulative sales of PCI generators and products equipped with PCI functions (including products from Sharp and other manufacturers) reached 30 million units.

#### ■ Entering the LED Lighting Market

In September 2008, Sharp introduced LED lighting for offices, factories, and commercial spaces, and in August 2009, LED lamps for the home. By bringing down costs and offering products at an attractive price, Sharp succeeded in generating new demand for LED lamps for home use and contributed to meeting demand for energy-saving products.

Subsequently, in September 2010, Sharp introduced the industry's first LED ceiling lights for use as primary in-home lighting. These ceiling lights boasted a thin, beautiful design that emitted surface light uniformly. They also offered automatic dimming and color-adjustment functions that enabled users to save energy effortlessly and enjoy enhanced lifestyle rhythms.

### Pursuing an Aggressive Mobile Phone Strategy

#### ■ Top Mobile Phone Market Share in Japan for Six Straight Years

With changes in the marketing techniques of telecom carriers leading to longer replacement cycles, sales of mobile phones in Japan took a downward turn beginning in fiscal 2008. Even in this environment, Sharp maintained its hold on the No. 1 market share for units shipped in Japan—a position it held from fiscal 2005 until fiscal 2010<sup>\*3</sup>.

Smartphone models from overseas manufacturers debuted in Japan in late 2008, following which smartphones spread rapidly. In this category, Sharp introduced models equipped with features popular in conventional handsets, including the Osaifu-Keitai mobile payment system, One-Seg mobile terrestrial digital TV function, and data transfer via infrared communications. In the first half of fiscal 2011, Sharp's 22.7% of the domestic smartphone market gave it the No. 1 ranking in terms of shipped units; the company would go on to finish No. 2 for the year<sup>\*3</sup>.

In addition to mobile phone models developed for overseas markets such as Taiwan and Hong Kong, Sharp also began developing models for China in June 2008. The company expanded its lineup to include mid-range to high-end models.

#### ■ Entering the e-Book Business

Sharp launched an e-book service in December 2010 and introduced two models of the GALAPAGOS, a dedicated e-reader tablet. The company also started a unique service that included automatic scheduled delivery of newspapers and magazines. In August 2011, Sharp released a special version of the tablet with high-speed Wi-Fi connectivity. At the same time, the responsibility for sales was shifted from Sharp to selected telecom carriers. In December, Sharp worked to further enhance the service by providing content such as videos and music.



Initial models of the GALAPAGOS tablets, dedicated readers for Sharp's e-bookstore service. EB-W51GJ 5.5-inch model (left) and EB-WX1GJ 10.8-inch model

### Full-Scale Deployment of the Corporate Sales Business

#### ■ Initiatives in the Japanese Corporate Market

In fiscal 2007, Sharp captured a dominant 43.9% share of the LCD TV market in Japan (based on Sharp research). Sales of AQUOS LCD TVs in particular received a further fillip in 2009, when the Japanese government enacted its Eco-Point program. This economic stimulus package used a system of incentives to encourage citizens to purchase energy-saving and eco-friendly home appliances such as air conditioners, refrigerators, and TVs compatible with digital broadcasting. However, when the home appliance portion of the Eco-Point program came to an end in March 2011, and when analog TV broadcasting ended in the summer of that year, sales and prices of flat-panel TVs plummeted. Sharp's domestic sales departments suffered a heavy blow.

With government subsidies for residential solar power systems being cut in October 2005, Sharp Amenity Systems Corporation (SAS)—a seller and installer of solar power systems—was forced to scale back its operations. Beginning in November 2009, the feed-in tariff (power buyback) program was expanded and upgraded, and the residential market in Japan picked up again. However, expanding sales encouraged domestic and foreign manufacturers to enter the market, and Sharp found itself caught in a swirling vortex of intense competition.

#### ■ Establishment of the Corporate Sales Group

Amid expectations that Japanese domestic demand for consumer electronics would shrink, Sharp worked to shift from traditional sales to consumers (B2C) to sales to corporations and government (B2B). In October 2008, Sharp renamed the OEM Sales Group—which comprised a corporate sales department and an OEM sales department—the Corporate Sales Group. It pushed forward to build a structure to sell business solutions, centered on information displays, LED lighting, PCI products, and solar power systems.

#### ■ Further Expansion of the B2B Business

In April 2011, Sharp moved to centralize the points of contact for major corporations by bringing Sharp Amenity Systems (SAS), Sharp Document Systems (SDS), and Sharp

System Products (SSP)—subsidiaries formerly under the control of the Domestic Sales and Marketing Group—under the umbrella of the Corporate Sales Group. In a related move in September 2010, Sharp had established iDeep Solutions Corporation, a company that specialized in providing TeleOffice video- and web-conference systems.

In 2008, Fuyo General Lease Co., Ltd. acquired a 65% interest in Sharp Finance Corporation. The synergy of know-how between the two companies strengthened the foundations of Sharp's leasing business and enhanced its ability to respond to customer needs.

#### ■ Development of Products Aimed at Corporate Customers

Professional information displays continued to grow larger in size. In July 2008, Sharp introduced a 108-inch LCD monitor aimed at businesses. It was at the time the world's largest commercial display. In June 2010, Sharp announced a new product: a multi-display system that combined ultra-narrow-bezel 60-inch LCDs to achieve a single giant screen. Installation examples included a video wall inside the ticket gate of the Yaesu Central Exit of JR Tokyo Station, which comprised eighteen 60-inch units creating a 330-inch-equivalent screen; and an immersive video space attraction at the Huis Ten Bosch theme park in Nagasaki, which used 156 60-inch units. In September 2011, Sharp introduced a 70-inch touchscreen display that could also be used as an electronic whiteboard. The lineup was subsequently expanded to include 60- and 80-inch models.



Sharp aimed to generate new demand with the 80-inch PN-L802B touchscreen LCD monitor. It gave this large display the nickname BIG PAD in Japan. (January 2012)

Sharp also put energy into placing MFPs in convenience stores. As of March 31, 2011, its installed base of approximately 18,000 units accounted for approximately 40% of convenience stores in Japan. In June 2011, Sharp moved to create new added value by allowing users to upload text, image, and photo data via the Internet and print it out at affiliated stores.

<sup>\*1</sup> Comparing the effects, after 10 minutes, of ion concentrations of approximately 7,000 ions/cm<sup>3</sup> versus 50,000 ions/cm<sup>3</sup> in an enclosed space with a volume of one cubic meter.

<sup>\*2</sup> Based on the rate of change in skin moisture after 60 minutes at an ion concentration of approximately 25,000 ions/cm<sup>3</sup> in a space approximately 10 m<sup>2</sup> in area.

<sup>\*3</sup> Based on a market share survey by MM Research Institute, Ltd.

# 5 Focusing on Asia and Emerging Markets

## Breakthrough in the Chinese Market

### ■ Expanding Sales of AQUOS LCD TVs and Mobile Phones

The Chinese market experienced a boom ahead of major national projects such as the Beijing Olympics in 2008 and the Shanghai World Expo in 2010. Against this background, SESC, Sharp's sales subsidiary in China, concentrated on introducing high-value-added products and strengthening brand equity.

To make inroads in China's intensely competitive LCD TV market, Sharp emphasized the key benefits of AQUOS TVs—in particular, their high-quality, Japan-made LCD panels. Beginning in September 2007, SESC launched an advertising campaign featuring René Liu, a popular actress and singer in China. Thanks to aggressive marketing, shipments of AQUOS in fiscal 2007 increased to about three times the level of the previous year.



An intensive PR campaign presented a unified brand image across a variety of media platforms, including TV commercials, newspaper and magazine ads, outdoor advertising, in-store presentations, and brochures

In the same year, Sharp also launched the AQUOS Experience Tour, in which a large truck-trailer carrying AQUOS TV models toured inland cities identified as fast-growing new markets. Each venue drew a huge turnout and was crowded with visitors. Taking advantage of the heightened visibility that the AQUOS tour brought to the Sharp brand, the company began selling mobile phones in China in June 2008.

### ■ Strengthening the Sharp Presence in China

In January 2011, Sharp established Sharp Laboratories of China Co., Ltd. (SLC), a research and development center in Shanghai.

SLC reinforced R&D, the first link in the manufacturing chain, and promoted local production for local consumption in China by localizing product planning, production, and sales in that country. The establishment of SLC completed a reinforced four-node R&D system that also included centers in Japan, the US, and the UK. In October 2010, Sharp also established Sharp Electronics Research & Development (Nanjing) Co., Ltd. (SERD) in Nanjing to conduct design and development of LCD products.



SLC develops cutting-edge technologies that contribute to the creation of products specifically designed for the Chinese market and conducts R&D on themes that lie at the heart of Sharp's global business activities

Beginning in 2007, Sharp held a series of environmental forums in major cities in China. At these forums, central and local government officials and the media were introduced to Sharp's environmental efforts, including its leading-edge products and technologies. In 2008, the company also began making environmental education presentations in elementary schools.

Sharp has also been active in community service projects. In 2006, it established the Sharp Charity Foundation, which provides funding for scholarships and engages in tree-planting activities. And when the Sichuan Earthquake struck in May 2008, Sharp Corporation and nine affiliated companies in China contributed relief funds totaling some 2 million yuan.

### ■ Establishing a Head Office in the China Region

China's economic development was remarkable over the five years from 2006, with annual GDP growth averaging 11.2%. In 2010, China surpassed Japan in nominal GDP, and became the world's second largest economy.

With the aim of building a locally self-sufficient business model in this market, Sharp established Sharp (China) Investment Co., Ltd. (SCIC), which began operations in Beijing on October 1, 2011. SCIC was positioned as the head office in the China region, overseeing 13 companies: six manufacturing bases, five sales subsidiaries, and two R&D bases. This new regional head office—the first of its kind for Sharp—included strategic planning and asset management among its responsibilities.

## Pursuing New Business

### ■ Business Restructuring by Priority Market

With growth in developed markets slowing to a crawl, Sharp quickly developed a strategy centered on growth markets, and emerging economies in particular. Traditionally, Sharp had pursued a simple two-pronged strategy encompassing domestic and overseas business. But a need had arisen for a structure that could be fine-tuned to more closely match regional characteristics and product attributes.

To that end, on April 1, 2010, Sharp reorganized the International Sales and Marketing Group and a portion of the International Production Planning Group into the North & South America Group (based in New Jersey), the Europe Group (based in Hamburg), and the China Group (based in Shanghai). Sharp also set up the Global Market Development Group—Emerging Markets, Asia, Oceania (based at the Sharp Head Office). In October 2011, the ASEAN Group (based in Kuala Lumpur) and the Middle East and Africa Group (based in Dubai) were added. Each group would conduct business activities tailored to the characteristics of their region and would work to strengthen management efficiency.

Sharp then developed a sales network that emphasized emerging markets where high growth was expected. For example, Russia's national income more than doubled in real terms in the eight years from 2001 to 2008, and the width of the top- and middle-income brackets increased. Vietnam, meanwhile, has maintained an economic growth rate in excess of 5% per year since gaining full membership in the World Trade Organization (WTO) in 2007. To expand its own closely tailored business activities in such promising emerging markets, Sharp established the four new sales bases listed below, beginning in 2007. At the same time, it opened a series of sales and representative offices in the Middle East, Africa, and Central and South America, thereby establishing a solid foothold in emerging markets in those regions.

#### Four newly established sales bases (2007–2011)

| Year Established | Company Name   | Country |
|------------------|--|---------|
| 2007             | Sharp Electronics Russia LLC (SER)                                       | Russia  |
| 2009             | Sharp Electronics (Vietnam) Company Limited (SVN)                        | Vietnam |
| 2009             | Sharp Corporation Mexico, S.A. de C.V. (SCMEX)                           | Mexico  |
| 2011             | Sharp Brasil Comércio e Distribuição de Artigos Eletrônicos Ltda. (SBCD) | Brazil  |

In its business activities in emerging economies, including areas where it already had a sales network, Sharp embraced the concept of creating products designed specifically to meet the needs of the consuming area and promoted local production for local consumption in those countries. Countries often placed high tariffs on imported finished goods to protect their own industries. Sharp therefore pushed forward to develop country-specific business strategies; for example, promoting the “kit” business model whereby Sharp would supply the parts and a local subcontractor would assemble the finished products.



An example of a locally tailored product is the Alexander series of slim-design color CRT TVs that were a hit in the Indonesian market. These models enjoyed high ratings for their feature-rich design and impressive sound.

In the developed markets of Europe and the US, revenue from solar-related products and LCD TVs grew sluggishly due to intensifying price competition. For this reason, Sharp strengthened its sales activities targeted at corporate customers. It expanded its direct sales business, based on mainstays such as document systems and information displays. And to further expand its markets, Sharp also moved to acquire more dealers. The goal was to build a highly profitable business model based on a series of products and services positioned from upstream to downstream in the value chain. In other words, in addition to product sales and service, Sharp would provide support through product leasing and sales of accessories, and it would also offer total product solutions.

### ■ Global Human Resource Development

Sharp also focused on nurturing talented professionals capable of supporting the globalization of its business.

In 2004, Sharp founded the SHINE (Sharp International New Experience) program, a training system to allow young employees to gain work experience and learn a language abroad. In addition, since 2008, Sharp has instituted training for employees who expect to be assigned overseas. It has also deployed company-wide programs to strengthen foreign language skills.

In 2011, Sharp introduced the GRID (Global-mind Regional Market Innovators' Development) program to further accelerate the development of human resources. This system involved training staff and sending them overseas—in particular, to emerging markets.