President
Katsuhiko Machida

February 18, 2004
Integrated LCD TV Plant Goes On Line

Jan. 2004  
Kameyama Plant

TV technology  
LCD technology

1953: Japan’s first TV  
1973: World’s first calculator with an LCD display
I. Business Strategy
Product Business

1. LCD TVs
### Worldwide LCD TV Demand

<table>
<thead>
<tr>
<th>Year</th>
<th>Thousands of Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2002</td>
<td>domestic 1,340</td>
</tr>
<tr>
<td></td>
<td>overseas 710</td>
</tr>
<tr>
<td>FY2003</td>
<td>domestic 1,500</td>
</tr>
<tr>
<td></td>
<td>overseas 1,500</td>
</tr>
<tr>
<td>FY2004</td>
<td>domestic 3,000</td>
</tr>
<tr>
<td></td>
<td>overseas 4,500</td>
</tr>
</tbody>
</table>

*Forecasted figures*
LCD TV Sales as % of Sharp’s Total Overseas TV Sales

(Production value)
LCD TV Sales as % of Sharp’s Total Domestic TV Sales


CRT TVs

LCD TVs

(Production value)
Sharp’s LCD TV Unit Sales

Thousands of units

<table>
<thead>
<tr>
<th>FY2002</th>
<th>FY2003 (Forecast)</th>
<th>FY2004 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>890</td>
<td>1,500</td>
<td>3,000</td>
</tr>
</tbody>
</table>

(Projection) (Target)
Wide-screen LCD TV over 22 inches as % of Sharp’s Total LCD TV Sales

Thousands of units

FY2002: 9%
FY2003 (Forecast): 25%
FY2004 (Target): 45%
Sharp’s LCD TV Cost Competitiveness

- 6th generation mother glass (1,500 x 1,800mm)
- Simplify manufacturing process at the unified production site (from LCD panels to TV sets)
- Reduce panel transportation costs at the unified production site
- Develop image processing LSI for LCD TVs
Sharp’s Overseas LCD TV Production

Spain (Barcelona) from Jun. 2002

China (Nanjing) from Feb. 2001

Mexico (Rosarito) from May. 2003
2. Mobile Phones
(Industry) Worldwide Mobile Phone Demand

Millions of units

FY2002 | FY2003 (Forecast) | FY2004 (Forecast)
--- | --- | ---
430 | 490 | 520

 Xinzheng Mobile Phone Company
(Industry) Mobile Phone Subscribers* by System In Japan

*Accumulating total

Source: Sharp estimate
Sharp’s Mobile Phone Unit Sales

Thousands of units

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2002</td>
<td>6,330</td>
<td></td>
</tr>
<tr>
<td>FY2003</td>
<td>8,000</td>
<td></td>
</tr>
<tr>
<td>FY2004</td>
<td>10,000</td>
<td></td>
</tr>
</tbody>
</table>
Sharp’s New 3G Mobile Phones

NTT DoCoMo

SH900i

Compatible with FOMA, which offers users a variety of contents
2.02 Megapixel CCD camera

Vodafone

V801SH

Customers can easily send off Megapixel pictures
W-CDMA/GSM-compatible
Sharp’s ‘Spiral Strategy’ to Create Unique Mobile Phones

- Flash memory
- CCD camera modules
- LCDs
- Image processing LSI
- Next-generation Mobile Phones
- PDA-style mobile phones
- PDAs
- LCD TVs
Evolution of Mobile Phones

- Enhanced AV function
- Improved camera function
- E-Cash function
Expanding Overseas Business

Europe

Asia

North America
3. Home Appliances
(Industry) Domestic Home Appliance Demand

Trillions of yen

FY2002: 2.3
FY2003 (Forecast): 2.2
FY2004 (Forecast): 2.2
Sharp’s Products incorporating Plasmacluster Ion Technology

Core Device
(Plasmacluster Ion generating unit)

Air conditioners
Air purifiers
Humidifiers
Dehumidifiers
Kerosene heaters
Ceramic fan heaters
Plasmacluster Ion Technology at Work in Numerous Industries

INAX
Lavatory

DENSO
In-vehicle ion generator

DENSO ACE
24-hour ventilation system

NISSAN
In-vehicle air conditioner

FUJITEC
Elevator

MAX
Bathroom dryer

Rinnai
Gas heater

Plasmacluster Ion generating unit
Device Business

4. LCDs
(Industry) Worldwide LCD Demand

<table>
<thead>
<tr>
<th>Trillions of yen</th>
<th>FY2002</th>
<th>FY2003 (Forecast)</th>
<th>FY2004 (Forecast)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.7</td>
<td>3.3</td>
<td>4.5</td>
</tr>
</tbody>
</table>

26
Sharp’s LCD Sales

Billions of yen

FY2002

Large-size

Small- and medium-size

FY2003 (Forecast)

FY2004 (Target)

Target

Forecast

425.2

525.0

730.0
Sales of LCD Panels for TVs as % of Sharp’s Total Large-size LCD Sales

FY2003 (Forecast)
- 37% for LCD TVs

FY2004 (Target)
- 70% for LCD TVs

(Production value)
Large-size LCDs
Kameyama Plant Production Capacity

Thousands of units/month

Mother Glass Input

- Jan. 2004: 15
- Aug. 2004: 27 (3 times the Jan. 2004 value)
- 2005: 45

SHARP
## Kameyama Plant

<table>
<thead>
<tr>
<th></th>
<th>1st phase</th>
<th>2nd phase</th>
<th>3rd phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Start of operations</strong></td>
<td>Jan. 2004</td>
<td>Aug. 2004</td>
<td>2005</td>
</tr>
<tr>
<td><strong>Mother glass input (accumulated)</strong></td>
<td>15K sheets/month</td>
<td>27K sheets/month</td>
<td>45K sheets/month</td>
</tr>
<tr>
<td><strong>Amount of investment</strong></td>
<td>100 Billion yen</td>
<td></td>
<td>50 billion yen</td>
</tr>
<tr>
<td><strong>Mother glass size</strong></td>
<td>1,500 x 1,800 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Amount of investment:** 100 Billion yen
- **Mother glass size:** 1,500 x 1,800 mm
- **Start of operations:**
  - 1st phase: Jan. 2004
  - 2nd phase: Aug. 2004
  - 3rd phase: 2005
- **Mother glass input (accumulated):**
  - 1st phase: 15K sheets/month
  - 2nd phase: 27K sheets/month
  - 3rd phase: 45K sheets/month
Small- and medium-size LCDs
(Industry) Worldwide Demand for Color Screen Mobile Phones as % of Total Demand of Mobile Phones

Millions of units

FY2002 | FY2003 (Forecast) | FY2004 (Forecast)

- 25%  | 50%  | 75%

Increase of 140 million units
### High Electron Mobility of Sharp’s System LCDs

<table>
<thead>
<tr>
<th>Material</th>
<th>Structure</th>
<th>Electron Mobility (cm²/Vs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a-Si (Amorphous-Silicon)</td>
<td>No crystal-grain</td>
<td>~0.7</td>
</tr>
<tr>
<td>p-Si (Poly-Silicon)</td>
<td>Crystal-grain with wall</td>
<td>120~140</td>
</tr>
<tr>
<td>CG-Si (Continuous Grain-Silicon)</td>
<td>Big crystal-grain with continuous wall</td>
<td>250~350</td>
</tr>
</tbody>
</table>

- **Approx. 3 times**
- **Approx. 500 times**
Integration of peripheral ICs

“Amorphous Silicon”

Driver ICs
Peripheral circuits on glass substrate
Integration
Peripheral circuits
Driver IC
Controller circuit
Power supply circuit
RAM

“System LCDs”

- Thin, light weight
- One side input, narrow flame
- Reduction of components
- High reliability

CPU

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Integration
Peripheral circuits
Driver IC
Controller circuit
Power supply circuit
RAM

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- High reliability

CPU
<table>
<thead>
<tr>
<th></th>
<th>Tenri Plant</th>
<th>Mie No.3 Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>Production capacity</em> (accumulated)</em>*</td>
<td>2.5 million units/month</td>
<td>6.5 million units/month</td>
</tr>
<tr>
<td><strong>Amount of investment</strong></td>
<td>46 billion yen</td>
<td>50 billion yen</td>
</tr>
<tr>
<td><strong>Mother glass size</strong></td>
<td>620 x 750 mm</td>
<td>730 x 920 mm</td>
</tr>
</tbody>
</table>

*2-inch equivalent panels
Sharp’s System LCD Production Capacity

- Millions of units/month

- Oct.2002: Tenri Plant, 2.5
- Jun.2003: Mie No.3 Plant 1st phase, 6.5
- Mar.2004: Mie No.3 Plant 2nd phase, 12.2

- Approx. 2 times increase from 2.5 to 6.5

(2-inch equivalent panels)
5. Photovoltaic Power System
(Industry) Worldwide Solar Cell Demand

Source: Sharp estimate based on PV NEWS (May 2003)
Sharp’s Solar Cell Sales

Billions of yen

<table>
<thead>
<tr>
<th>Year</th>
<th>FY2002</th>
<th>FY2003 (Forecast)</th>
<th>FY2004 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>45.1</td>
<td>70.0</td>
<td>90.0</td>
</tr>
<tr>
<td>(Forecast)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sharp’s Advantage

**World Largest Production Capacity**

<table>
<thead>
<tr>
<th>MW/year</th>
<th>Shinjo Plant Production Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul. 2002</td>
<td>148</td>
</tr>
<tr>
<td>Feb. 2003</td>
<td>200</td>
</tr>
<tr>
<td>Nov. 2003</td>
<td>248</td>
</tr>
<tr>
<td>Mid-2004</td>
<td>300</td>
</tr>
</tbody>
</table>

**Most Advanced Technology**

Module Conversion Efficiency

**World Highest*** 17.4%

*As of November 1, 2003
6. ICs
(Industry) Worldwide Demand for Camera-equipped Mobile Phones as % of Total Demand of Mobile Phones

Millions of units

FY2002
FY2003 (Forecast)
FY2004 (Forecast)

5%
20%
40%

% of Camera-equipped mobile phones

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Sharp’s CCD/CMOS Imager Production Capacity

Thousands of units/month

- **Sep. 2002**: 2,000
- **Jun. 2003**: 4,000
- **Oct. 2003**: 6,000
- **2nd Half of 2004**: 7,000

The production capacity shows a steady increase from 2,000 units per month in Sep. 2002 to 7,000 units in the 2nd Half of 2004.
Sharp’s CCD/CMOS Imager Sales

Billions of yen

<table>
<thead>
<tr>
<th>Year</th>
<th>FY2002</th>
<th>FY2003 (Forecast)</th>
<th>FY2004 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>30.4</td>
<td>80.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
II. Capital Investment (Forecast)

Billions of yen

FY2002: 146.2 billion yen
FY2003 (Forecast): 220.0 billion yen
FY2004 (Forecast): 220.0 billion yen

- Large-size LCDs: 100 billion yen
- Small- and medium-size LCDs: 30 billion yen
Notes Regarding Future Plans and Estimates:
This report contains statements describing future plans, strategies, and estimated performance. These descriptions are not based on past facts, but on the management’s assumptions and beliefs in light of the information currently available. These plans, strategies, and performance estimates are subject to a certain amount of risk and uncertainty due to such factors as economic changes, supply-demand fluctuations, increased competition, currency exchange rates, and changes in tax laws. Please understand that actual business results may vary from our estimates.