Sony IR Day 2016

Semiconductor Business

June 29, 2016

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Sony Corporation
Representative Director and President
Sony Semiconductor Solutions Corporation

Agenda

1. FY2015 Business Overview
2. FY2016 Business Overview
1. FY2016 Business Overview

Semiconductor Business Overview

The image sensor business is our core business

Sales by Products

- Image Sensor
- Camera Module
- LSI, Laser Display Device etc.

Business Direction

- Strengthen as the primary pillar of the business
- Restructure
- Develop differentiated technology

Applications

- Image Sensor
- Camera Module
- LSI, Display Device etc.

FY2015 Sales
740 bln yen
2. FY2016 Business Overview

- Image Sensor
  - In the mobile space, supply constraints occurred in the first half and demand for image sensors for high-end smartphones weakened in the second half
  - Operating income downwardly revised

- Camera Module
  - Revised projected future demand
    → Impairment incurred
FY2016 Financial Performance

1st priority is to improve the profitability of the image sensor business for mobile

Sales 740 740 (bn-yen)

Operating Income
- Impact of FY15 Module impairment
- Foreign Exchange rate
- Increase of OPEX
- Factors related to sales
- Restructuring Module Business
- Earthquake Impact
  ※ Including Insurance Benefit

FY15
Currency Exchange rate 1USD= 120JPY

FY16 (Forecast as of May 2016)
113JPY

Image Sensor
- In the mobile space, re-acquire customers lost in FY15 and recover market share
- Aggressively expand sales to the high-end and middle-end of the smartphone market

Camera Module
- Consider the appropriate size of the business

FY2016 Business Direction

1. Image Sensor business for mobile
   - Focus on increasing market share
   - Enhance high-value added products
   - Prepare for the arrival of multi-camera smartphones

2. Expand in the sensing field
   - Attempt to expand in the areas of security, automotive and factory automation (“FA”)
Image Sensor Business for Mobile

- Aim to expand Sony’s market share through differentiated technology and revitalize the high-value added image sensor market

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
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<tbody>
<tr>
<td>High-value added Image Sensor</td>
<td>75%</td>
<td>65%</td>
<td>75%</td>
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(Source: Sony)

Long-term Business Vision

Continue to be a leading company which is essential to society even after a decade

Personal Field
- Provide Convenience and Fun

Industrial Field
- Provide Convenience, Safety, and Reassurance

Imaging & Sensing Technologies
- Camera World
- Cognitive World
Sensing as well as mobile business is expected to grow

Forecasted Market Trend of Image Sensors

(Source: Sony)

* CAGR: Compound Annual Growth Rate

Expectations in the Industrial Segment

Attempt to expand our business in the sensing market with an eye to social

Security
Security System Network

Automotive
Self-driving System
(combination of automotive cameras and town cameras)

FA
Manufacturing System
Security: Sony’s Technology Drives the Potential of the Market

- The resolution and sensitivity of our sensors, which exceed the limits of the human eye, dramatically expand the possibilities of security cameras
- By enhancing the functionality of image sensors, we can recognize a variety of scenes and make possible social smartification in the future

STARVIS™ is back-illuminated pixel technology used in surveillance cameras to clearly recognize objects in low light situations

Automotive: Deploy the Best Low-Defect Image Sensors in Automotives

By proving their environmental durability which was their weakness, image sensors are playing a role in automated driving

<table>
<thead>
<tr>
<th>Type</th>
<th>Application</th>
<th>Object sensing</th>
<th>Distance sensing</th>
<th>Shape recognition</th>
<th>Install Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single lens camera</td>
<td>Mid-short distance sensing, white lines, traffic signal sensing</td>
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<td>○</td>
<td>◎</td>
<td>○</td>
</tr>
<tr>
<td>Stereo camera</td>
<td>Long-mid distance sensing, white lines, traffic signal sensing</td>
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Characteristics of Other Sensors

- Infrared: Light-time sensing
- 77GHz Radar: Long-mid distance sensing (30m or more)
- 24GHz Radar: Short distance sensing (up to 30m)
- Laser Rader: Angle functionality
- Ultrasonic: Ultra-short distance sensing (up to 2m)
**FA: Significantly Improve Factory Productivity through Image Sensor Evolution**

- Make high performance robot systems with Sony's high performance image sensors

  ![High Speed Robot System](image)

- Recognizes the position of objects faster than before through high speed capturing and image processing technology
- This technology is expected to be used on many production lines

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**Sensing Solution: ToF* Image Sensor & Image Processing LSI**

Starting to approach the potential markets where these technologies can be used

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**ToF based Image Sensor**

- Combination with Softkinetic's and Sony's technology
- Start to develop a small ToF based image sensor

**Image Recognition LSI**

- Face recognition
- Steredepth measurement
- Gesture recognition
- Eye-gaze tracking
- Object recognition
- Iris verification

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* ToF: Time of Flight
Sales: 1,100〜1,250 bln yen
Operating Income Margin: 10%〜12%

Sales and operating income are downwardly revised due to lower projected growth of high-end and multi-camera type smartphones as well as our change in strategy regarding the camera module business.

Aim to quickly improve the profitability of the image sensor business for mobile by expanding sales and increasing the proportion of high-value added image sensors.

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<th>Financial Target for FY2017</th>
<th>Previous Target</th>
<th>Latest Target</th>
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<tr>
<td><strong>Sales</strong>: 1,100〜1,250 bln yen</td>
<td><strong>Sales</strong>: 780〜830 bln yen</td>
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<tr>
<td><strong>Operating Income Margin</strong>: 10%〜12%</td>
<td><strong>Operating Income Margin</strong>: 6%〜8%</td>
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(xiii) shifts in customer demand for financial services such as life insurance and Sony’s ability to conduct successful asset liability management in the Financial Services segment;
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