

SONY

Sony IR Day 2016

Semiconductor Business

June 29, 2016

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Sony Corporation

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Agenda

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- 1. FY2015 Business Overview**
- 2. FY2016 Business Overview**

1. FY2016 Business Overview

Semiconductor Business Overview

The image sensor business is our core business

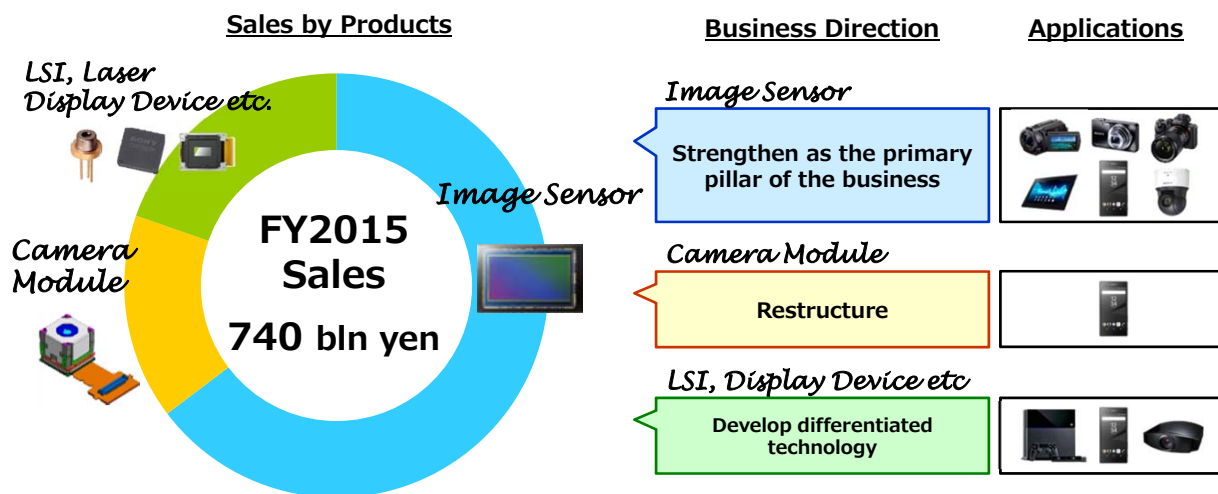
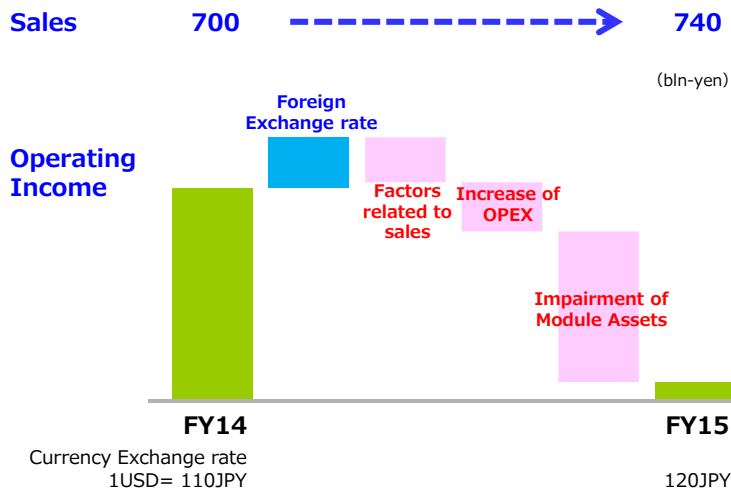


Image sensors, camera modules, LSI, micro-display devices, optical pickups and other products are included in the above sales of the semiconductor business. This is different from the definition of semiconductors sales which have been disclosed at previous earnings announcements because optical pickups and other products were not included in those sales.

Decline in profit of image sensor and camera module businesses



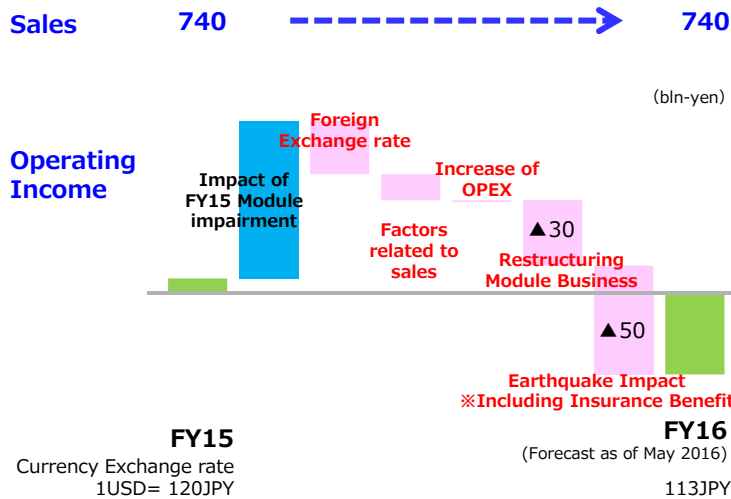
- **Image Sensor**
 - In the mobile space, supply constraints occurred in the first half and demand for image sensors for high-end smartphones weakened in the second half
 - Operating income downwardly revised
- **Camera Module**
 - Revised projected future demand
→ Impairment incurred

2. FY2016 Business Overview

FY2016 Financial Performance

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



■ 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

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FY2016 Business Direction

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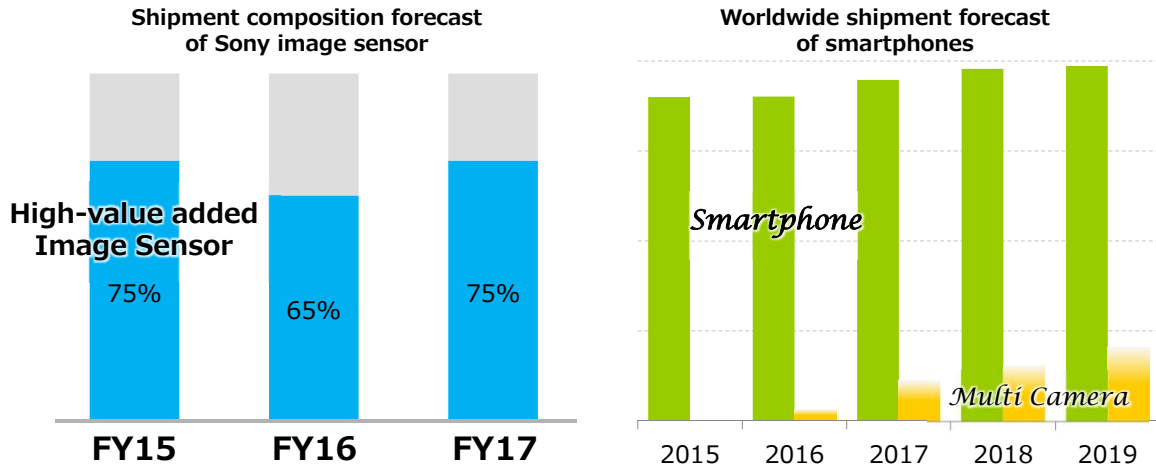
- 1. Image Sensor business for mobile**
 - Focus on increasing market share
 - Enhance high-value added products
 - Prepare for the arrival of multi-camera smartphones
- 2. Expand in the sensing field**
 - Attempt to expand in the areas of security, automotive and factory automation ("FA")

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Image Sensor Business for Mobile

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



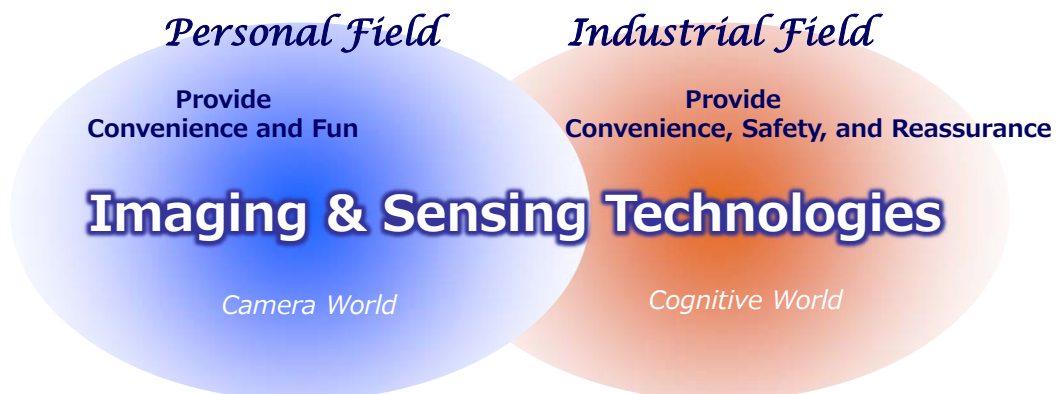
(Source: Sony)

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Long-term Business Vision

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

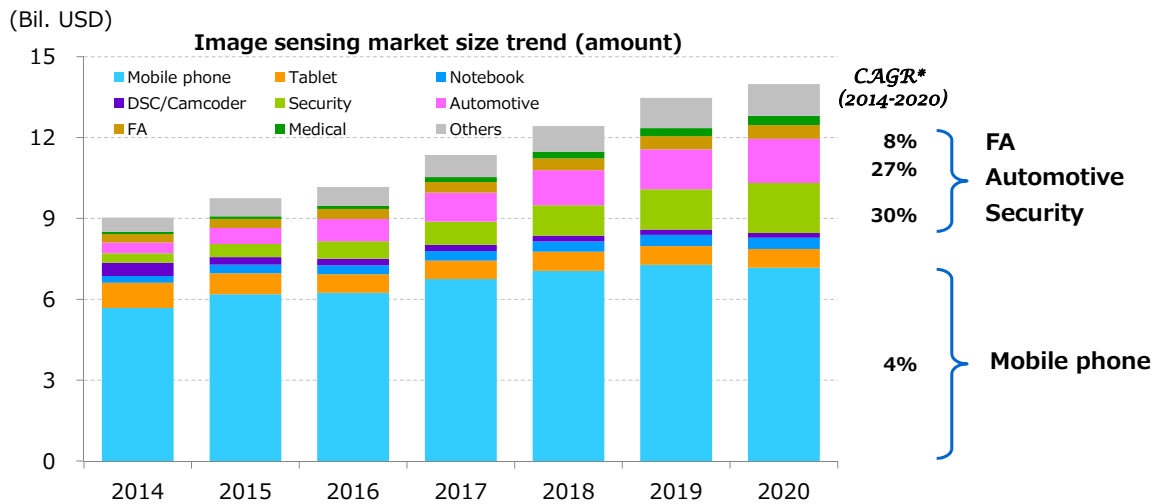


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Forecasted Market Trend of Image Sensors

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Sensing as well as mobile business is expected to grow



(Source: Sony)

* CAGR: Compound Annual Growth Rate

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Expectations in the Industrial Segment

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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

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Security: Sony's Technology Drives the Potential of the Market

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- 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



Conventional product



STARVIS

Comparison using 0.08lx illuminance

Characteristics of STARVIS

Back-illuminated pixel technology

Enhanced sensitivity in the near-infrared range

High sensitivity over 2000mV/1μm²* and high resolution capturing is available from visible light to the near-infrared range

* Condition with F5.6, 1s, 706cd/m² light source, Color version

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

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

Characteristics of Sony's Image Sensor

Type	Application	Object sensing	Distance sensing	Environmental Durability	Install Price
Single lens camera	Mid-short distance sensing, white lines, traffic signal sensing	◎	○	◎	○
Stereo camera	Long-mid distance sensing, white lines, traffic signal sensing	◎	○	◎	△

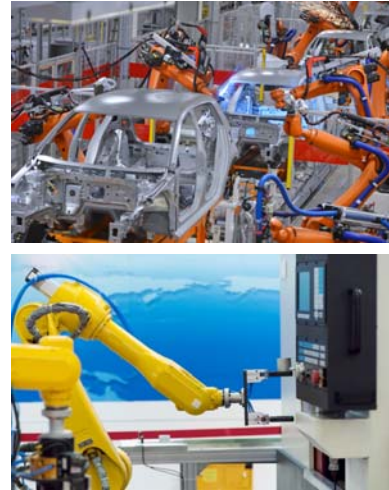
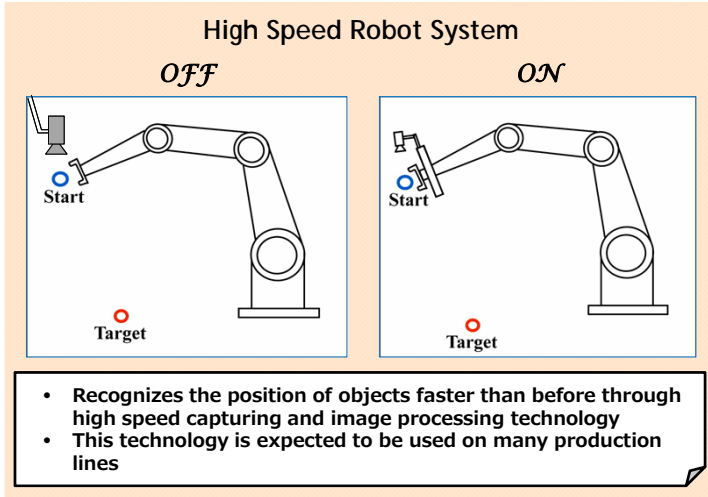
Characteristics of Other Sensors

Infrared	Night-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)	×	△	◎	◎



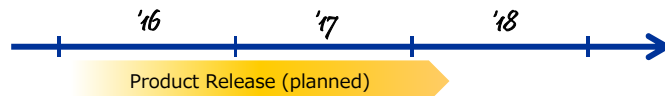
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- **Make high performance robot systems with Sony's high performance image sensors**



Masatoshi Ishikawa, "High-speed Image Sensor Technologies"
ISSCC Forum, February 2010

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



Potential Market



ToF based Image Sensor

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

Image Recognition LSI

Potential use case

Face recognition	Stereo-depth measurement
Gesture recognition	Eye-gaze tracking
Object recognition	Iris verification

* ToF: Time of Flight

Financial Target for FY2017

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Previous Target

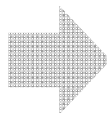
Sales : 1,100~1,250 bln yen

Operating Income Margin :
10%~12%

Latest Target

Sales : **780~830** bln yen

Operating Income Margin :
6%~8%



- 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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 - (xiv) the impact of changes in interest rates and unfavorable conditions or developments (including market fluctuations or volatility) in the Japanese equity markets on the revenue and operating income of the Financial Services segment;
 - (xv) Sony's ability to anticipate and manage cybersecurity risk, including the risk of unauthorized access to Sony's business information, potential business disruptions or financial losses; and
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