Creating a New TEL: Key Initiatives

Tetsuro Higashi
Representative Director, President & CEO
July 10, 2015
Changing Market Environment: The IoT Era is Coming

Paradigm shift to IoT will lead to increased applications and expand the semiconductor market.

World semiconductor market

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Size ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>50</td>
</tr>
<tr>
<td>1990</td>
<td>100</td>
</tr>
<tr>
<td>1995</td>
<td>150</td>
</tr>
<tr>
<td>2000</td>
<td>200</td>
</tr>
<tr>
<td>2005</td>
<td>250</td>
</tr>
<tr>
<td>2010</td>
<td>300</td>
</tr>
<tr>
<td>CY2014</td>
<td>$340B</td>
</tr>
</tbody>
</table>

Number of “things” connected to the internet

- CY2014: 14.5B
- CY2020: 50.0B

Source: Gartner, CISCO
Direction of Technological Innovations

Evolution of semiconductors involves new, extensive technologies
A real global company generating high added-value and profits to Semiconductor and FPD industries through innovative technologies and groundbreaking solutions with integrated diverse technologies
Medium-term Business Direction

1. Best in Class
2. Best Fit in New Market

- Best in Class = “strong business platform”
- Best Fit in New Market = “responding to diversity”

Strengthen platform and response capability to support further major advances
“Best in Class”

**Benchmarks (Most Recent Fiscal Year)**

<table>
<thead>
<tr>
<th>Operating margin</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP competitors avg.</td>
<td>JP competitors avg.</td>
</tr>
<tr>
<td>TEL</td>
<td>14.4%</td>
</tr>
<tr>
<td>U.S. competitor A</td>
<td>17%</td>
</tr>
<tr>
<td>U.S. competitor B</td>
<td>15%</td>
</tr>
<tr>
<td>U.S. competitor C</td>
<td>26%</td>
</tr>
</tbody>
</table>

TEL still positioned behind U.S. peers despite some improvement
"Best in Class"

New Financial Model

<table>
<thead>
<tr>
<th>Wafer Fab Equipment</th>
<th>Market size</th>
<th>Sales</th>
<th>Operating margin</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$30B</td>
<td>¥720B</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>$37B</td>
<td>¥900B</td>
<td>25%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Aiming for global-level results

The semiconductor production process can be divided into two sequential sub-processes referred to as front-end (wafer fabrication) and back-end (assembly and test) production. WFE (wafer fabrication equipment) is used in the front-end production process.
Global Growth Strategy

"Best Fit in New Market"

Changing market environment
IoT era

Changing customer needs
Diversification of differentiated technology

Approaches to diversification

• Grasp customers’ true needs for differentiation and customization

• Provide solutions bringing our technological strengths all together, extensively and swiftly
“Best Fit in New Market”

Global Growth Strategy

Fully utilize TEL’s corporate DNA—our track record of creating strong relationships of mutual trust, and work closely with customers to overcome tough technological challenges.
Transition to a New Structure

Key points of structural reform:

- Created COO post
- CSS that enables swift business execution
- Appointed younger generation directors with broad knowledge
- Utilize global talent

Become a company that identifies customers’ needs and surpasses their expectations

CSS: Corporate Senior Staff
Key Initiatives for Achieving Targets

- Overwhelming differentiation in core businesses
- Shift to creating customer needs
- Reinforce foundation for realizing growth and technological innovation
- Improve efficiency of operations
- Utilize global talent
New Corporate Logo

- The square placed in the center of the logo signifies the high precision of TEL's technology. It also represents core technology, which is essential for the growth of industry and society.
- The new youthful, vibrant green represents a human element as well as environmental conservation, which is a key focus in TEL's business.
- The neat, polished, and universal shape represents TEL's absolute trust and presence, showing our organization's fairness.
- Global design which shows our company achieving global excellence.
Medium-term Management Plan

Toshiki Kawai
Representative Director, Senior Executive Vice President & COO
July 10, 2015
Market Environment

Still only 60 years since the birth of semiconductors

Semiconductor Market
CY2014:$340B

1950 2000 2020 2050

Network society
Industrial
Medical
Automobile
Homes
Environmental

Semiconductors still only in the early stages
Market Environment

World IP traffic

Data sent on networks will continue to increase explosively

Zettabyte: Unit indicating the magnitude of computer storage devices and digital data. \(10^{21}\) bytes
Semiconductor Industry at an Inflection Point

Size range of LSI manufacturing

\(<10\mu m \sim 1nm>\)

\(10^{-9} m \approx <10nm\)

Inflection Point

CMOS Scaling

Functional Diversification

Interatomic distance of Si

\(\approx 0.3nm\)

Blood Cell

\(10^{-3} m = 1mm\)

\(10^{-4}\)

\(10^{-5}\)

\(10^{-6} m = 1\mu m\)

\(10^{-8}\)

\(10^{-10}\)

1970

1990

2010

DNA
Evolution of semiconductors involves new, extensive technologies.
# Technological Trends: High-volume Manufacturing & Next-generation Devices

## Cutting-edge logic

<table>
<thead>
<tr>
<th>High-volume manufacturing (present)</th>
<th>Flash Memory</th>
<th>DRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/14nm (2nd Gen. FinFET)</td>
<td>2D FG-NAND 15nm</td>
<td>~20nm</td>
</tr>
</tbody>
</table>

- C. Auth, et al., VLSI tech. 2012
- R. Coquand et al., VLSI tech. 2013
- Micron 20 nm TechInsights
- Samsung DRAM TechInsights
- Continuous 1x/1y scaling
- STT-MRAM

## Technological inflection points

### Challenges: Speed and low power consumption
- Shift to 3D structure device (FinFET)
- New structures (nanowire)
- New materials

### Challenge: Integration
- Shift to 3D layer stacking
- Etching and deposition technology for high-aspect structure

### Challenge: Capacitor capacity
- High-aspect etching
- Shift to ALD for capacitor materials
- Possibility of partial replacement with MRAM

Identify technological inflection points and provide solutions
Our SPE Competitiveness

TEL product market share (CY2014)

Overwhelming competitiveness

Source: Gartner
SPE Products:
Broad Product Line Up in Patterning

Clean Track
LITHIUS Pro™ Z

ALD Film Deposition
NT333™, Triase+™ EX-II™, TELINDY PLUS™ IRad

Dry Etch
Tactras™

CVD Film Deposition
Triase+™ CVD, TELINDY PLUS™

Wet Cleaning
CELLESTA™ -i

Process Finished
SPE Business Strategy: Strengthen Ability to Provide Technological Solutions in Patterning

“Patterning Solution Project”

Respond to customer needs for leading-edge technology by leveraging broad product line

Multiple patterning technology

DSA* technology
*Directed Self-Assembly
SPE Business Strategy: STT-MRAM Development

- Strengthen development with customers, Tohoku University, and consortia
- Lead development for practical use

STT-MRAM: Spin Transfer Torque-Magnetoresistive Random Access Memory
**SPE Business Strategy: Topics and Key Strategies by Equipment Category**

### Cleaning system
- Highest ever market share in 2014
- Customer penetration in leading-edge HVM lines progressing as planned, with our proprietary technology
- Expand applications of single wafer cleaning and dry cleaning system and further increase market share

### Etching system
- Doubled sales in 2014 YoY and increased market share
- Acquire POR in patterning and memory HARC processes, where growth expected

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POR (Process of Record): Certification of equipment application in customer semiconductor manufacturing process
HARC: High Aspect Ratio Contact

Source: Gartner (market share in 2013 and 2014) and TEL estimate
SPE Business Strategy:
Topics and Key Strategies by Equipment Category

**ALD system**

- Respond to needs for high coverage and productivity required in miniaturization and 3D structure
- Expect to acquire POR and share in logic and memory with semi-batch ALD system NT333, which is differentiated by its high productivity and high-quality film

![ALD system NT333™](image)

**ALD system SAM**

> >10% CAGR (CY2014-2019)

*SAM: Served Available Market

Source: TEL estimate

¥80B

![Graph showing ALD system SAM growth from 2014 to 2019](image)
SPE Business Strategy: Strengthen Field Solutions Business

Expanding business opportunities

The IoT era will bring demand for diverse semiconductor technologies

Explosive growth of IP traffic = semiconductor growth

TEL’s installed base 54,000 units

Support customer needs in existing production lines

Field solutions business sales are included in SPE and FPD segment sales.

Expand field solutions business opportunities in IoT era
New framework and executive structure to “Enhance our strengths”

- Enhance our core strength—the full trust of our customers
- Implemented account and region management structures
- Create value-added products leveraging the integration of the core technology and expertise of each BU
- Launched patterning solution project
- Maximize the strengths in value creation and efficiency of each plant and development site
FPD Business Strategy

Shift to large-size panels, increased demand for high-resolution for smart phones. Introduced our differentiated ICP* etch systems in growing LTPS/metal oxide market.

Markets where we can differentiate our technology will expand.

Increase market share and profitability, aim for 20% OPM.

* ICP : Inductively Coupled Plasma
Summary

Toward profitability and ROE improvement

- Focus on SPE business
- Leverage product line up and respond to diversifying needs
- New framework and executive structure to enhance our strengths
Financial Model, Shareholder Returns Policy

Tetsuro Hori
Corporate Director, Senior Vice President & General Manager
July 10, 2015
Financial Performance

(Billion Yen)

Sales
Operating income
Operating margin


723.8 16.7% -4.4%
906.0 18.6% -0.5%
668.7 14.6%
613.1 14.4% 2.5%

TOKYO ELECTRON
Corp IR/July 10, 2015
Financial Model (toward FY2020)

- Build an earnings structure capable of attaining an OPM of 25% at WFE market size $37B

<table>
<thead>
<tr>
<th></th>
<th>FY2016 (Estimate)</th>
<th>FY2020 (Medium-term plan)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WFE $33.5B</td>
<td>WFE $30B</td>
</tr>
<tr>
<td>Net sales</td>
<td>675</td>
<td>720</td>
</tr>
<tr>
<td>SPE</td>
<td>625</td>
<td>660</td>
</tr>
<tr>
<td>FPD</td>
<td>47</td>
<td>60</td>
</tr>
<tr>
<td>Gross profit</td>
<td>265</td>
<td>305</td>
</tr>
<tr>
<td>Gross profit margin</td>
<td>39%</td>
<td>42%</td>
</tr>
<tr>
<td>SG&amp;A expenses</td>
<td>153</td>
<td>160</td>
</tr>
<tr>
<td>SG&amp;A expense ratio</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>Operating income</td>
<td>112</td>
<td>145</td>
</tr>
<tr>
<td>Operating margin</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Net income</td>
<td>79</td>
<td>100</td>
</tr>
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The semiconductor production process can be divided into two sequential sub-processes referred to as front-end (wafer fabrication) and back-end (assembly and test) production. WFE (wafer fabrication equipment) is used in the front-end production process.
SPE Sales (WFE $37B)

Sales growth in excess of market growth

(Billion Yen)

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<tr>
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<th>FY2016 (Estimate)</th>
<th>FY2020 (Medium-term plan)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFE $33.5B</td>
<td></td>
<td>WFE $37B</td>
<td>WFE +10%</td>
</tr>
<tr>
<td>Sales</td>
<td>625</td>
<td>840</td>
<td>+34%</td>
</tr>
<tr>
<td>New equipment</td>
<td>465</td>
<td>650</td>
<td>+40%</td>
</tr>
<tr>
<td>Field solutions</td>
<td>160</td>
<td>190</td>
<td>+19%</td>
</tr>
</tbody>
</table>

- Enhance our ability to identify the technological needs of our customers and to develop products to meet them
- Respond to growing demand for field solutions
# FPD Sales

- Target sales growth in leading-edge areas, where we can differentiate our technology

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<th>FY2016 (Estimate)</th>
<th>FY2020 (Medium-term plan)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>47</td>
<td>60</td>
<td>+28%</td>
</tr>
<tr>
<td>New equipment</td>
<td>38</td>
<td>48</td>
<td>+26%</td>
</tr>
<tr>
<td>Field solutions</td>
<td>9</td>
<td>12</td>
<td>+33%</td>
</tr>
</tbody>
</table>

- Focus on etching systems and OLED deposition systems, areas in which we have technological superiority
Gross Profit (WFE $37B)

- Gross profit margin: up 5%pts

<table>
<thead>
<tr>
<th></th>
<th>FY2016 (Estimate)</th>
<th>FY2020 (Medium-term plan)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross profit</td>
<td>265</td>
<td>395</td>
<td>+49%</td>
</tr>
<tr>
<td>Gross profit margin</td>
<td>39%</td>
<td>44%</td>
<td>+5%pts</td>
</tr>
</tbody>
</table>

- Raise marginal profit ratio through efforts to enhance product competitiveness
- Expand field solutions business
- Reduce costs by sharing technology across our products
- Reduce costs, shorten production lead-times and pursue quality from the design stage onward
SG&A Expenses (WFE $37B)

- SG&A expense ratio: improve by 4%pts

<table>
<thead>
<tr>
<th></th>
<th>FY2016 (Estimate)</th>
<th>FY2020 (Medium-term plan)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG&amp;A expenses</td>
<td>153</td>
<td>170</td>
<td>+11%</td>
</tr>
<tr>
<td>SG&amp;A expense ratio</td>
<td>23%</td>
<td>19%</td>
<td>-4%pts</td>
</tr>
</tbody>
</table>

- Pursue operational efficiencies by reinforcing regional sales & marketing and field engineering capabilities under account management structure
- Select development projects carefully, focusing on SPE
R&D Expense, Capex Plans

- Advance developmental efforts that are necessary for growth while working to improve their efficiency
- Maintain capex at around its current level

![Graph showing R&D expenses and Capex](image)

- FY2012: 81.5 Billion Yen
- FY2013: 73.2 Billion Yen
- FY2013: 78.6 Billion Yen
- FY2013: 71.3 Billion Yen
- FY2016 (Estimate): 74.5 Billion Yen
- 2020 (Medium-term plan): 80.0~90.0 Billion Yen

- FY2012: 39.5 Billion Yen
- FY2013: 24.1 Billion Yen
- FY2014: 21.7 Billion Yen
- FY2015: 26.6 Billion Yen
- FY2015: 24.8 Billion Yen
- FY2016 (Estimate): 13.1 Billion Yen
- 2020 (Medium-term plan): ≒ 15.0 Billion Yen
Managerial Targets

- We target a global level of profitability

<table>
<thead>
<tr>
<th>WFE Market</th>
<th>$30B</th>
<th>$37B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating margin</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>ROE</td>
<td>15%</td>
<td>20%</td>
</tr>
</tbody>
</table>

The semiconductor production process can be divided into two sequential sub-processes referred to as front-end (wafer fabrication) and back-end (assembly and test) production. WFE (wafer fabrication equipment) is used in the front-end production process.
Capital Policy, Shareholder Returns

➢ Approach to capital policy
  • While closely monitoring the business environment and our necessary cash balance, we will strive to raise ROE through earnings maximization and asset turnover improvement to efficiently utilize shareholders equity

➢ Approach to shareholder returns
  • Business trends in our industry can be volatile and our policy is to link dividend payments to business performance
  • However, to assure stable returns to our shareholders, we will utilize our sound financial foundation to establish a minimum DPS payment
New Policy for Shareholder Returns

Dividend payout ratio: 50%

Annual DPS of not less than ¥150

We will review our dividend policy if the company does not generate net income for two consecutive fiscal years.

We will flexibly consider share buybacks.

Our previous dividend policy since FY2011 year-end dividend was performance-linked payout ratio of around 35%.
FY2016 Dividend Forecast (Announced on July 10, 2015)

- Revised dividend forecast based on new shareholder returns policy

<table>
<thead>
<tr>
<th>Dividend per share (Estimate)</th>
<th>Interim</th>
<th>Year-end</th>
<th>Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>93 yen</td>
<td>129 yen</td>
<td>222 yen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Interim</th>
<th>Year-end</th>
<th>Year Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2015</td>
<td>143 yen</td>
<td>90 yen</td>
<td>129 yen</td>
</tr>
<tr>
<td>FY2016</td>
<td>155 yen</td>
<td>65 yen</td>
<td>222 yen</td>
</tr>
</tbody>
</table>

Previous estimate:
- FY2016 (Previous estimate): 143 yen
- FY2016 (Revised estimate): 222 yen

Revised dividend forecast based on new shareholder returns policy.
Summary

We strive to outperform market growth and enhance our corporate value
 Disclaimer regarding forward-looking statement
Forecast of TEL’s performance and future prospects and other sort of information published are made based on information available at the time of publication. Actual performance and results may differ significantly from the forecast described here due to changes in various external and internal factors, including the economic situation, semiconductor/FPD/PV market conditions, intensification of sales competition, safety and product quality management, and intellectual property-related risks.

Processing of numbers
For the amount listed, because fractions are rounded down, there may be the cases where the total for certain account titles does not correspond to the sum of the respective figures for account titles. Percentages are calculated using full amounts, before rounding.

Exchange Risk
In principle, export sales of Tokyo Electron’s mainstay semiconductor and FPD/PV panel production equipment are denominated in yen. While some settlements are denominated in dollars, exchange risk is hedged as forward exchange contracts are made individually at the time of booking. Accordingly, the effect of exchange rates on profits is negligible.

FPD/PV: Flat panel display/Photovoltaic