Business Strategy Meeting
ICT Business

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Masashi Tsuboi
Senior Vice President, Head of ICT Business Group
Oki Electric Industry Co., Ltd.
Business Summary

Based on an installed customer base accumulated over the past 137 years, OKI provides a wide range of solutions, products, and services that support social infrastructures, including an array of distinctive devices, sensing technologies featuring acoustic and optical sensors, network technologies, data processing/operation technologies, and know-how.

Products that support social infrastructures

**Solutions**
- Flight control systems/ETC/VICS/firefighting systems/disaster prevention/self-defense systems, etc.
- Government ministry operating solutions
- Bank branch systems/VTM/bankbook application services, etc.
- Railway ticketing systems/automated airport check-in systems

**Platforms (products and services)**
- Carrier networks/video distribution, etc.
- PBX/business phones/contact centers
- Sub-GHz-band multi-hop wireless
- Cloud services/maintenance services/construction services

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<tr>
<th>Data processing/operations</th>
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Array of distinctive devices

Retain an installed customer base accumulated over the past 137 years
Review of FY2017

- While net sales fell slightly from the previous fiscal year, stable earnings have been sustained (according to plan).
- Base businesses declined more than anticipated due to worsened market conditions and tough competition.
  - Municipal disaster prevention business, network business, etc.
- Due in part to proactive communication efforts, growth businesses proceeded according to plan, with sales growth of 5.0 billion yen vs. FY2016.

**Business Performance Comparison**

<table>
<thead>
<tr>
<th>Net Sales (Billion yen)</th>
<th>Operating Income (Billion yen)</th>
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<tbody>
<tr>
<td>FY16 Results</td>
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</tr>
<tr>
<td>177.4</td>
<td>172.7</td>
</tr>
<tr>
<td></td>
<td>-4.7</td>
</tr>
<tr>
<td>-9.7</td>
<td></td>
</tr>
<tr>
<td>Growth businesses</td>
<td>Operating profit margin 8%</td>
</tr>
<tr>
<td>Base businesses</td>
<td>Average operating profit for FY2014-2016 13.3 B yen</td>
</tr>
<tr>
<td>+5.0</td>
<td></td>
</tr>
<tr>
<td>-10.3</td>
<td>-0.9</td>
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</table>
# Review of FY2017 (Progress on Measures)

## Business Strategies by Segment

<table>
<thead>
<tr>
<th>Business</th>
<th>Positions in Mid-term Business Plan 2019</th>
<th>Keywords</th>
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<tbody>
<tr>
<td>ICT</td>
<td>Secure stable profitability Create new businesses</td>
<td>Next generation infrastructures, IoT</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>Get back on a growth path</td>
<td>Emerging countries, Retail market, Strategic products</td>
</tr>
<tr>
<td>Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printers</td>
<td>Secure stable profitability by strategic transformation</td>
<td>Niche market, LED, Streamlined management</td>
</tr>
<tr>
<td>EMS</td>
<td>The points along the way to turn EMS into 100.0 B yen business</td>
<td>New market domains, M&amp;A</td>
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## Keyword Description of Measures

### Social infrastructure × IoT

Grew to 9.0 billion yen vs. 16.0 billion yen revenue growth target in FY2019 (compared to FY2016)
- Now implementing co-creation with 49 companies
- Accelerating product development to enhance IoT business platforms

About the top priority for the next-generation transport field
- Launched sales of OKI’s LocoMobi2.0 ITS service
- Opened an ITS test course at the Honjo Plant

Accelerate fusion of information, communications, and the public sector; enhance social infrastructure × IoT efforts
Macroeconomic Conditions

No changes in macroeconomic conditions; digital transformations continue to accelerate faster than expected.

Understanding macroeconomic conditions

- Overall Japanese ICT market expected to show steady annual growth of 1.3% up to 2019
- Expand ICT application opportunities and investment to resolve various social issues projected to emerge
- Japanese IoT market predicted to grow to 1 trillion yen by 2020 with CAGR 19.5%

Dramatic increase in connected terminals

- 50 billion devices (2020)
- 2 billion devices (2006)

IoT networks

- Centralization + coordinated distribution
- Cloud
- Virtual network
- WAN
- Edge computing
- IoT-GW
- Communication modules
- ATM

Social issues

- Labor shortage
- Natural disasters/environmental issues
- Problems raised by aging equipment
- Aging population
- Working style reforms
- Rising infrastructure maintenance costs & lack of resources

Rapid acceleration in digital transformations

- Overall Japanese ICT market: 1.3% annual growth*1
- Japanese IoT market: CAGR 19.5%*2

Investment in digital transformations

- Investment to upgrade existing systems
- Understanding macroeconomic conditions
- Social issues

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OKI’s IoT Strategies

- OKI’s strengths lie in the installed customer base accumulated over the past 137 years, technical assets, and its strong *monozukuri*.
  (Particularly in sensing and network businesses and a distinctive array of products)
- OKI is capable of integrally providing products, solutions, and services to meet the needs of digital transformations. It has a strong customer base thanks to its focus on industry-specific businesses.
- Positioning to facilitate alliances with major corporations to gain an increasing share of the IoT market

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Array of distinctive devices

Retain an installed customer base accumulated over the past 137 years
# State of Co-creation Initiatives

- **Now involved in co-creation with 49 companies**

## 1. Transport
- **NEXCO East**
- **SMH**
- **Marubeni**
  - Detecting entry of runaway vehicles
  - ETC 2.0 feasibility studies

## 2. Construction, infrastructure, disaster prevention
- **Engineering & Construction Tobishima Corporation**
- **SUMITOMO FORESTRY CO., LTD.**
  - Motion mapping technologies
  - Residential house soundness monitoring
  - Infrastructure inspection system

## 3. Medical care
- **solasto**
- **DENSO**
- **Beisie**
  - Forecasting congestion based on numbers of visitors, attribute measurement, and traffic line analysis
  - SQRC® Sensing forecasting

## 4. Finance, distribution
- **TOMIWA**
- **Beisie**
  - Preventive maintenance of equipment implemented with vibration sensors/equipment logs

## 5. Manufacturing
- **TOYOTA TSUSHO**
- **FUJI CORPORATION**
- **DAIHO**
  - Improving QCD in manufacturing workplaces (improving quality and production efficiency) (PAS)
Progress on Product Development

Accelerate product development to enhance IoT business platforms

<table>
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<tr>
<td><strong>Data processing/operations</strong></td>
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<tr>
<td>LocoMobi2.0 ITS service</td>
</tr>
<tr>
<td>Ladadie AI interaction engine</td>
</tr>
<tr>
<td>EXaaS managed security service</td>
</tr>
<tr>
<td>Opt-AI integrated operation management solution</td>
</tr>
<tr>
<td>VisoIoT store-operation improvement support solution</td>
</tr>
<tr>
<td><strong>Networks</strong></td>
</tr>
<tr>
<td>Image IoT gateway (AISON)</td>
</tr>
<tr>
<td>SmartHop 920MHz band wireless multi-hop power-saving technology</td>
</tr>
<tr>
<td>Wireless acceleration sensor system</td>
</tr>
<tr>
<td><strong>Sensing/Devices</strong></td>
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<tr>
<td>Fiber-optic sensor</td>
</tr>
<tr>
<td>AI assistant terminal</td>
</tr>
<tr>
<td>Networked ultrasonic water-level gauge</td>
</tr>
<tr>
<td>Coast-monitoring buoy</td>
</tr>
<tr>
<td>CARPHIN V multibeam depth sounder</td>
</tr>
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Mid-term Business Plan 2019 - Business Strategy 1 -

- Maintain and expand stable profits for base businesses thanks to stable investment in social infrastructure
- Target growth through active investment using digital transformations (IoT) as drivers of change

**Focus areas**

- Target growth using digital transformations (IoT) as drivers of change
- Resolve customer issues through co-creation of applications with customers
- Active investment in IoT to resolve emerging social issues

**Growth businesses**

- **Solutions**
  - Flight control systems/ETC/VICS/firefighting systems/disaster prevention/self-defense systems, etc.
  - Government ministry operating solutions
  - Bank branch systems/VTM/bankbook application services, etc.
  - Railway ticketing systems/automated airport check-in systems

- **Platforms (products and services)**
  - Carrier networks/video distribution, etc.
  - PBX/business phones/contact centers
  - Sub-GHz-band multihop wireless
  - Cloud services/maintenance services/construction services

**Base businesses**

- **Overall social infrastructure investment is strong and stable**
  - Operate strong business areas with eye on M&A
  - Active investment in growth business with efficiency improvements

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Figures indicate sales growth (compared to 2016)
FY2018 Plans - Net Sales, Operating Income -

- Put base businesses on a recovery track since the previous year and further expand the scale of some public-sector businesses
- Further growth of 5.0 billion yen is planned in the growth businesses—a step toward growth of 16.0 billion yen (compared to FY2016) by FY2019.
  Internal shift of about 100 staff to growth fields

### Business Performance Comparison

#### Net Sales (Billion yen)

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<th>FY19 Target</th>
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<tr>
<td>Base</td>
<td>177.4</td>
<td>172.7</td>
<td>+12.3</td>
<td>+20.0</td>
</tr>
<tr>
<td>Growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>185.0</td>
<td>205.0</td>
<td></td>
<td></td>
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</tbody>
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#### Operating Income (Billion yen)

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<tbody>
<tr>
<td>Base</td>
<td>14.4</td>
<td>13.5</td>
<td>+0.5</td>
<td>+1.8</td>
</tr>
<tr>
<td>Growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16.0</td>
<td></td>
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**Average operating profit for FY2014-2016:** 13.3 B yen

**Operating profit margin:**
- FY16: 8.1%
- FY17: 7.9%
- FY18 Target: 7.6%
- FY19 Target: 7.8%
FY2018 Plans - Investment -

- Achieve targets for FY2019 and invest proactively toward further growth in FY2020 and beyond
- Focus R&D costs on the transport field and IoT platforms with accelerating investment in further growth fields
- Focus capital investment on new products and large-scale project development and production equipment in existing businesses
- Seek out strategic investments centered on enhancing base businesses

Year on Year Comparison

<table>
<thead>
<tr>
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<th>FY17 Results</th>
<th>FY18 Target</th>
<th>Change</th>
</tr>
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<tr>
<td>R&amp;D costs (Billion yen)</td>
<td>2.4</td>
<td>4.0</td>
<td>+1.6</td>
</tr>
<tr>
<td>Capital investment (Billion yen)</td>
<td>1.9</td>
<td>2.0</td>
<td>+0.1</td>
</tr>
</tbody>
</table>
 Provide solutions to resolve emerging social issues
- Specialize in industry-specific, sensing and network businesses to take advantage of an installed customer base for 137 years, together with technical assets and *mono-zukuri* strengths

### Social issues
- Labor shortage
- Natural disasters/environmental issues
- Problems raised by aging equipment
- Aging population
- Working style reforms

### Focus areas
- **Top priority**
  - Transport
  - Construction, infrastructure, disaster prevention
  - Medical
  - Finance, distribution
  - Manufacturing
- **For the future**
  - Maritime/acoustics

### Technical assets
- **IoT business platforms**
  - Data processing/operations
  - Networks
  - 5G
  - Sensing/Devices
  - For the future

* Mono-zukuri: to have the spirit and mind-set to innovate, create and improve products*
Next-Generation Transport Solutions

- Sales of OKI’s ITS service LocoMobi2.0 began in November 2017.
- Opened an ITS test course at the Honjo Plant
- Cellular V2X feasibility studies by six companies conducted in FY2018; we plan to secure superior market positions through infrastructure cooperative ITS.

ETC 2.0 logistics feasibility studies

Sales of OKI’s ITS service LocoMobi2.0 began in November 2017.
Opened an ITS test course at the Honjo Plant
Cellular V2X feasibility studies by six companies conducted in FY2018; we plan to secure superior market positions through infrastructure cooperative ITS.

Opened an ITS test course

5G × self-driving (5GAA)

Cellular-V2X Trial

Providing vehicles with C-V2X specifications and managing driving of vehicles during feasibility study
Providing C-V2X-compatible onboard devices; V2I/V2V/V2N feasibility studies
Providing C-V2X chips and modules for vehicles, roads, and base stations
ITS infrastructure (providing RSU; V2I feasibility study through communication with onboard devices)

V2X service
Next-generation V2N network
(V2N feasibility study using base stations)
V2X network solutions (servers, base stations)

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Three major features distinguish next-generation 5G networks: ultrahigh speed, ultralow delay, and multiple simultaneous connections.

As key technologies in building the IoT infrastructure, 5G is expected to enable a shift from business centered on 4G smartphones to creation of markets in new fields.

**5G’s Strengths**

- **Ultrahigh speed**
  - Max. 10 Gbps
  - Entertainment based on high speed transmission of high-resolution (4K/8K) images

- **Ultralow delay**
  - Approx. 1 ms
  - Real-time control and risk avoidance, including self-driving and robot remote operation

- **Multiple simultaneous connections**
  - 1 million units/km² connected
  - IoT deployments involving massive arrays of terminals and sensors, including smart meters and infrastructure maintenance management

**Business opportunities for OKI**
- 5G infrastructure (carrier network development)
- Usage cases (edge networks, applications)
Business Development in 5G Networks

- **5G infrastructure**: Focus on business development through global cooperation centered on mobile backhaul.
- **Usage cases**: Grow application businesses applying edge networks and 5G by leveraging the installed customer base accumulated over 137 years (e.g., infrastructure cooperative ITS services).

**OKI's strengths, track record**
- Knowledge of and expertise in telecom carrier networks
- Technological capabilities of manufacturing systems integrators (e.g., WDM)
- Domestic/overseas multivendor SI track record
- Full turnkey support from network construction to maintenance

**Linking together**

**Usage cases**
- Transport
- Construction, infrastructure, disaster prevention
- Medical
- Finance, distribution
- Manufacturing
- Maritime/acoustics

**Edge networks**
- DSRC/X Gateway
- AISION
- SmartHop

**Networks**
- Core network
- Mobile core
- Mobile backhaul (MBH)
- Mobile fronthaul (MFH)
- Operation support system
- Wireless base stations
- Base stations
- WDM/L2/L3/PTP carrier networks

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Leverage OKI’s core maritime/acoustics technologies to create new businesses in the maritime/acoustics field

- Gain new market foothold through deployment of core products (step 1)
- Steadily expand solutions in maritime resource development, coastal monitoring, and facilities monitoring, etc., and collect maritime data (step 2)
- Use maritime data infrastructure to create and supply new solutions with higher levels of value (step 3)

**Step 1 (2018)**
Develop new fields through core products

**Step 2 (2020)**
Enhance solutions for maritime data collection

**Step 3 (2022)**
Develop maritime data infrastructure
Use maritime databases to realize new solutions

**Use existing products and technologies**
Create maritime business opportunities

**Defence businesses**
(Core technologies)
- Underwater acoustic technologies
- Product evaluation facilities
- Mounting technologies (high environmental resistance)
- Construction, installation

**Existing products**
- Acoustic positioning/communication
- Fiber-optic sensors
- Ultrasound sensors
- Acceleration sensors
- Image sensors
- Audio sensors

- Current direction, current speed
- Vessel structural monitoring
- Underwater moving body detection
- Ascertaining oceanographic conditions

**Businesses using core technologies**
- Shipping, shipbuilding
- Marine resources
- Maritime defense, security, crime prevention
- Maritime civil engineering/structures, disaster prevention

**Maritime database businesses**
- MDA* capacity enhancement
- Smart fishing
  - Maritime monitoring
  - Marine safety
  - Environmental protection
  - R&D
  - Fish distribution
  - Fish catch forecast

*MDA: Maritime Domain Awareness"
Maritime/Acoustics 2

- Improve the efficiency of monitoring of intrusions into territorial waters/oceanographic observation leveraging underwater acoustic-sensing technologies
- Complete with SEATEC II, the only maritime testing facility operated by a private-sector firm in Japan, stable underwater environmental testing is possible in an environment providing the same feel as working in a land-based laboratory.

*AUV: Autonomous Underwater Vehicle
Achieve stable profitability and sustainable growth as a central pillar of the OKI Group

- Support the social infrastructure and achieve sustainable growth as “IoT OKI”
- Maintain high competitive strengths and earning power by improving organizational capabilities

Vision

The OKI Group helps create a safe and convenient infrastructure for customers and society as a whole through the key Japanese concepts of “Mono-zukuri” and “Koto-zukuri.”

Operating profit margin: 8%

2016
2017
2018
2019

177.4 B yen / 14.4 B yen
Operating profit margin: 8%

205.0 B yen / 16.0 B yen

* Mono-zukuri: to have the spirit and mind-set to innovate, create and improve products
* Koto-zukuri: to work together, proactively seeking opportunities that deliver value to customers

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Open up your dreams