Sensing Innovations

Company Presentation
Our Profile
OUR PROFILE

We are a german-based expert in sensor technologies

How we operate

- Founded in 1991 and grown through series of acquisitions and organically
- Headquartered in Berlin
- Production and development sites in 4 countries
- Sales in 33 countries in Europe, Americas and Asia
- About 1,000 employees
- €155.1 m sales in 2018

How we differ

- Unique capabilities in photonics, pressure sensors and advanced electronics
- Proven know-how to capture, filter and interpret physical parameters
- Long-term experience in industrializing differentiated technologies
- Solution-oriented and standard products for B2B customers
- Serving three distinct growth markets: Industrial, Medical, Mobility
## OUR PROFILE

### We offer chip & packaging expertise

**SEMICONDUCTOR PRODUCTION**

- **Berlin-Oberschoeneweide**
  - Headquarters with central company departments
  - Specialized in semiconductor production
  - Chips on 4 and 6 inch silicon wafers
  - IATF 16949 certificate (Automotive Industry)

- **Berlin-Weissensee**
  - Focus on packaging technologies
  - Specialized in the packaging of electronic microsystems for pressure, flow and optical sensors

- **Dresden-Alberstadt**
  - Expertise in customer-specific system development
  - Production focus on pressure, flow and optical sensors as well as system solutions
  - Automotive certified (IATF 16949) high volume production

- **Dresden-Klotzsche**
  - Design and connection technology of electronic microsystems
  - Customer-specific miniaturization of optical sensors and pressure sensors
  - Integrated Manufacturing Services (IMS)
  - IATF 16949 certificate (Automotive Industry)

- **Ulm**
  - Focus on packaging technologies for actuators (incl. emitters)
  - Specialist for hybrid circuits, electronic modules and power electronics
  - Products for safety-relevant process steps with a high quality requirements

**MICROELECTRONIC PACKAGING**

- **Munich**
  - Primarily sells FIS standard products
  - Small share of third party product distribution to complement portfolio
  - Engineering and specification competence
OUR PROFILE

We are clearly on a path of profitable growth

Sales in €m

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<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>3.0</td>
<td>5.4</td>
<td>10.7</td>
<td>11.5</td>
<td>12.0</td>
<td>13.8</td>
<td>16.0</td>
<td>32.6</td>
<td>37.0</td>
<td>38.5</td>
<td>30.2</td>
<td>45.2</td>
<td>65.2</td>
<td>108.3</td>
<td>108.5</td>
<td>124.0</td>
<td>137.7</td>
<td>150.1</td>
<td>145.6</td>
<td>155.1</td>
</tr>
</tbody>
</table>

- **Integration**
  - EBIT margin: 0.9% 6.7% 7.2% 7.9%
  - 8.5% Adj. CAGR

- **Leadership and execution**
  - Change in leadership, organization, operational actions and strategic direction

- **Buy and build M&A growth**
  - Acquisitions:
    - First Sensor Technology GmbH
    - Sensortechnics GmbH and MEMSfab GmbH
    - Silicon Micro Sensors GmbH
    - Microelectronic Packaging Dresden GmbH
    - Lewicki Microelectronic GmbH

- **Note:**
  1. Based on sales excl. this Automotive customer sales.
  2. Decrease in 2017 due to expired order of a special Automotive customer (~€12m) which was mostly compensated for by new clients (~€7m).
## OUR COMPETENCIES

We are a sensor expert for photonics, pressure & advanced electronics

<table>
<thead>
<tr>
<th>Core technologies in which First Sensor is particularly strong</th>
<th>Next measures</th>
<th>Strategic objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEMS “Pressure”</td>
<td>Full control of entire value chain including chip know-how</td>
<td>Next generation H series</td>
</tr>
<tr>
<td></td>
<td>Focus on highest-end performance sector to differentiate through accuracy and product quality</td>
<td>Expanding pressure business in Asia with H and K series</td>
</tr>
<tr>
<td>APD “Photonics”</td>
<td>Leading in APD technology that is key for fast growing applications such as LiDAR</td>
<td>New APD generation for autonomous machines</td>
</tr>
<tr>
<td></td>
<td>Lowest noise amongst competitors, significantly improving detection quality</td>
<td>Strengthening photonic business in North America</td>
</tr>
<tr>
<td></td>
<td>Superior design and process technology</td>
<td></td>
</tr>
<tr>
<td>Cameras “Photonics”</td>
<td>Ability to program and control the camera directly</td>
<td>Sensor fusion with Embedded ECU &amp; software competencies</td>
</tr>
<tr>
<td></td>
<td>Specialist for harsh environments and low-light applications</td>
<td>Growth with commercial &amp; special vehicles</td>
</tr>
<tr>
<td></td>
<td>Design suited for easily connecting other sensors – basis for sensor fusion</td>
<td></td>
</tr>
</tbody>
</table>

**Technologically leading pressure and optical components along the sensor value chain**
## OUR COMPETENCIES

We provide customer-specific sensor solutions and standard products

<table>
<thead>
<tr>
<th>Photonics</th>
<th>35% Sales share</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Optical sensors</td>
<td></td>
</tr>
<tr>
<td>- Cameras</td>
<td></td>
</tr>
<tr>
<td>- Radiation sensors</td>
<td></td>
</tr>
<tr>
<td>- Laser diodes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure</th>
<th>50% Sales share</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pressure sensors</td>
<td></td>
</tr>
<tr>
<td>- Thermal sensors</td>
<td></td>
</tr>
<tr>
<td>- Level sensors</td>
<td></td>
</tr>
<tr>
<td>- Flow sensors</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced Electronics</th>
<th>15% Sales share</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Inertial sensors</td>
<td></td>
</tr>
<tr>
<td>- Power semiconductors</td>
<td></td>
</tr>
<tr>
<td>- Magnet valves</td>
<td></td>
</tr>
<tr>
<td>- Embedded systems for sensor fusion</td>
<td></td>
</tr>
</tbody>
</table>

Know-how across multiple sensor products provides the basis for addressing specific customer needs across our three B2B markets.

### System expertise

- In-house capabilities along the sensor value chain

1. **Sensor Solutions**
   - Tailor-made sensor solutions addressing specific customer requirements
   - 70% Sales share

2. **Standard Products**
   - Production, packaging and sale of standardized high-end sensor products
   - 30% Sales share

OUR MARKET POSITION
We are internationally positioned
OUR MARKET POSITION

We focus on three growing B2B markets

<table>
<thead>
<tr>
<th>Industry</th>
<th>Market development</th>
<th>Megatrends</th>
<th>FIS applications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018</td>
<td>2021</td>
<td>Industry4.0</td>
</tr>
<tr>
<td>Industrial</td>
<td>$2.9bn</td>
<td>$3.6bn</td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td>2018</td>
<td>2021</td>
<td>E-Health &amp; telemedicine</td>
</tr>
<tr>
<td>Medical</td>
<td>$1.4bn</td>
<td>$1.7bn</td>
<td></td>
</tr>
<tr>
<td>Mobility</td>
<td>2018</td>
<td>2021</td>
<td>Autonomous driving</td>
</tr>
<tr>
<td>Mobility</td>
<td>$0.7bn</td>
<td>$2.3bn</td>
<td></td>
</tr>
</tbody>
</table>

1 Based on Yole estimates for the global MEMS and sensor market. 2 Includes LiDAR estimates for the automotive segment only.

- Length measurement
- Radiation & security
- Smart building
- Industrial process control
- Aerospace

- Breathing and respiration
- Dialysis
- Endoscopy
- Diagnostics

- Advanced driver assistance systems
- Autonomous driving (LiDAR)
- OEM pressure sensors

52% Sales share
22% Sales share
26% Sales share
Our Strategy
## STRATEGY FOR PROFITABLE GROWTH

We generate and utilize economies of scale in 4 dimensions

<table>
<thead>
<tr>
<th>Target Markets</th>
<th>Key Customers &amp; Products</th>
<th>Forward Integration</th>
<th>Internationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>Key customers &gt; €1m p.a.</td>
<td>Sensor Fusion</td>
<td>DACH</td>
</tr>
<tr>
<td>Medical</td>
<td>Key products &gt; €1m p.a.</td>
<td>Sensor System</td>
<td>Europe</td>
</tr>
<tr>
<td>Mobility</td>
<td></td>
<td>Module/Transmitter</td>
<td>North America</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sensor/Actuator</td>
<td>Asia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chip</td>
<td></td>
</tr>
</tbody>
</table>

Operative Excellence

First Sensor

www.first-sensor.com | 11
STRATEGY FOR PROFITABLE GROWTH

Dimension 1: Clear focus on our target markets

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key customers: >€1m p.a.
   - Key products: >€1m p.a.

3. Forward Integration
   - Sensor Fusion
   - Sensor System
   - Module/Transmitter
   - Sensor/Actuator
   - Chip

4. Internationalization
   - DACH
   - Europe
   - North America
   - Asia

Operative Excellence
DIMENSION 1: CLEAR FOCUS ON OUR TARGET MARKETS
We grow in megatrend driven target markets

INDUSTRIAL
- INDUSTRY 4.0
- SMART CITIES
- INTERNET OF THINGS

MEDICAL
- E-HEALTH & TELEMEDICINE
- MINIATURIZATION
- AMBIENT ASSISTED LIVING

MOBILITY
- AUTONOMOUS DRIVING
- GREEN MOBILITY

DIGITIZATION & CONNECTIVITY
- AMBIENT ASSISTED LIVING
- GREEN MOBILITY
DIMENSION 1: CLEAR FOCUS ON OUR TARGET MARKETS
and focus on applications with most relevant contributions to growth

Focus Applications
80% revenue contribution in 2018 &
leading growth drivers midterm &
beyond 2021

INDUSTRIAL
- Smart Building
- Industrial LiDAR
- Process Control

MEDICAL
- Optical Diagnostics
- Respiration

MOBILITY
- Automotive Pressure

Growth & Emerging Applications
Relevant growth drivers midterm;
significant growth potential beyond 2021

Aerospace & Defence
Industrial Imaging
Gas Property Sensing
Condition Monitoring

Endoscopy
Dental Imaging

Automotive LiDAR
Sensor Fusion
Cameras
Green Mobility
OUR STRATEGY FOR PROFITABLE GROWTH

Our next measures: Novelties, targeted sales & expanded capacities

Grow with pressure in Asia

New APD generation for autonomous machines

Expand imaging in North America

Next generation H series

Increase production capacities

Grow with optical packaging

Sensor fusion with Embedded ECU & software competencies

Volume production with new camera family

Conquer the truck market

First Sensor
OUR STRATEGY FOR PROFITABLE GROWTH

Dimension 2: Clear focus on key customers and key products

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key customers > €1m p.a.
   - Key products > €1m p.a.

3. Forward Integration
   - Sensor Fusion
     - Sensor System
     - Module/Transmitter
     - Sensor/Actuator
     - Chip

4. Internationalization
   - DACH
   - Europe
   - North America
   - Asia

Operative Excellence
DIMENSION 2: CLEAR FOCUS ON KEY CUSTOMERS

We have significantly increased sales with our key customers

<table>
<thead>
<tr>
<th>Total number of customers</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,658</td>
<td>3,565</td>
<td>3,288</td>
<td>3,022</td>
<td>2,696</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># of key customers (sales &gt;€1m p.a.)</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23</td>
<td>28</td>
<td>33</td>
<td>36</td>
<td>37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total sales from key customers</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>€64m</td>
<td>€77m</td>
<td>€95m</td>
<td>€93m</td>
<td>€96m</td>
</tr>
</tbody>
</table>
DIMENSION 2: CLEAR FOCUS ON KEY CUSTOMERS

Sales with our key products has grown since rollout of our strategy

<table>
<thead>
<tr>
<th>Year</th>
<th># of key product groups (sales &gt;€1m p.a.)</th>
<th>Total sales from key products (sales &gt;€1m p.a.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>2015</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>2016</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>2017</td>
<td>12</td>
<td>34</td>
</tr>
<tr>
<td>2018</td>
<td>12</td>
<td>39</td>
</tr>
</tbody>
</table>
### OUR STRATEGY FOR PROFITABLE GROWTH

#### Dimension 3: Clear focus on forward integration

<table>
<thead>
<tr>
<th>Target Markets</th>
<th>Key Customers &amp; Products</th>
<th>Forward Integration</th>
<th>Internationalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>Key customers &gt; €1m p.a.</td>
<td>Sensor Fusion</td>
<td>DACH</td>
</tr>
<tr>
<td>Medical</td>
<td>Key products &gt; €1m p.a.</td>
<td>Sensor System</td>
<td>Europe</td>
</tr>
<tr>
<td>Mobility</td>
<td></td>
<td>Module/Transmitter</td>
<td>North America</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sensor/Actuator</td>
<td>Asia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chip</td>
<td></td>
</tr>
</tbody>
</table>

**Operative Excellence**
DIMENSION 3: CLEAR FOCUS ON FORWARD INTEGRATION

System expertise along the value chain is a strong basis for our offering

- **System expertise**
  - In-house capabilities along the sensor value chain
  - Sensor technology along the value chain

- **Broad and high quality product offering**
  - **Photonics**
    - Optical sensors
    - Cameras
    - Radiation sensors
    - Laser diodes
  - **Pressure**
    - Pressure sensors
    - Thermal sensors
    - Level sensors
    - Flow sensors
  - **Advanced Electronics**
    - Inertial sensors
    - Power semiconductors
    - Magnet valves
    - Embedded systems for sensor fusion

- **Key growth drivers**
  - LiDAR
  - Camera
  - Pressure
**DIMENSION 3: CLEAR FOCUS ON FORWARD INTEGRATION**

We use 3 key growths drivers to expand our market position

<table>
<thead>
<tr>
<th>Strategic objectives</th>
<th>MEMS / Pressure</th>
<th>APD / LiDAR</th>
<th>Camera Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive market expansion by strengthening low and high pressure business and flow platforms</td>
<td>Further strengthen leading position, strongly increasing sales</td>
<td>Establish sustainable and defendable position for ADAS and autonomous driving</td>
<td></td>
</tr>
</tbody>
</table>

Our roadmap:

- Focus on sensEdge technology
- Enhance pressure & transmitter products
- New liquid quality mobility sensors
- High dynamic range sensor family
- Gas property sensors
- Oil filled technologies
- Automotive-quality LiDAR receiver
- APD-array-chips for 905nm on 6’’
- Scalable low cost packaging platform
- System-in-package receivers + ASIC
- Laser assemblies with pulse driver
- Reference system designs
- Expand portfolio for cameras
- Further develop camera systems
- Implement modular approach to new product and system development
- Concentrate on special & commercial vehicles, mobile machinery
- Specialize in surround view and emergency breaking applications
STRATEGY FOR PROFITABLE GROWTH

Dimension 4: Clear focus on internationalization

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key customers > €1m p.a.
   - Key products > €1m p.a.

3. Forward Integration
   - Sensor Fusion
     - Sensor System
     - Module/Transmitter
     - Sensor/Actuator
     - Chip

4. Internationalization
   - DACH
   - Europe
   - North America
   - Asia

Operative Excellence
DIMENSION 4: CLEAR FOCUS ON INTERNATIONALIZATION
We expand our vertical and regional sales worldwide

<table>
<thead>
<tr>
<th>Status quo Sales contribution</th>
<th>DACH</th>
<th>Europe</th>
<th>North America</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>€53.9m</td>
<td>€52.9m</td>
<td>€5.9m</td>
<td>€19.4m</td>
</tr>
<tr>
<td>CAGR</td>
<td>9%</td>
<td>-7%</td>
<td>34%</td>
<td>13%</td>
</tr>
<tr>
<td>2014</td>
<td>43.5%</td>
<td>42.7%</td>
<td>3.5%</td>
<td>9.3%</td>
</tr>
<tr>
<td>2018</td>
<td>49.3%</td>
<td>25.0%</td>
<td>12.1%</td>
<td>12.8%</td>
</tr>
</tbody>
</table>

**Strategic roadmap**

- **Cross selling** between solution & distribution sales
- Expand private label agreement
- Leverage strong customer base
- Cross selling between solution & distribution sales
- Accelerate distribution business with local channel partners
- Strengthen sales channel in Israel
- Enrich direct sales with additional product/industry focused experts
- Focus on identified prospective key accounts
- Strengthen distribution partners for standard product sales
- Higher volume of standard products via partner network
- Stay focused on dedicated subset of target markets
- Products & services fitting the market requirements

Cross selling Cross selling Enrich direct sales

Higher volume of standard

products via partner network

Stay focused on dedicated subset of target markets

Products & services fitting the market requirements
STRATEGY FOR PROFITABLE GROWTH
Foundation: Operative Excellence

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key customers > €1m p.a.
   - Key products > €1m p.a.

3. Forward Integration
   - Sensor Fusion
     - Sensor System
     - Module/Transmitter
     - Sensor/Actuator
     - Chip

4. Internationalization
   - DACH
   - Europe
   - North America
   - Asia

Operative Excellence
FOUNDATION: OPERATIVE EXCELLENCE

Introduction of 6 inch wafer will substantially enhance productivity

Strategic rationale

- **Production effectiveness** (improved edge/area ratio)
- **Production efficiency** (elimination of setup for conversion from 4 to 6 inch)
- **Cost reduction** (more chips on one wafer)
- Pilot projects completed: 10% of volume already converted
- 6” investments already completed, further investments only to renew equipment set and new technologies

**Introduction of 6 inch wafer**

4 inch¹ → Size 2.25x → 6 inch¹

**Timeline of conversion**

- Large photodiodes converted
- Pressure 1
- Pressure 2
- EPI (By 2021: FSO output split overall c.50% 6 inch)
- Conversion completed

**Same process steps and process time for main processes will reduce costs dramatically**

¹ Scaled to 40% of original size
We actively utilize outsourcing for a flexible production network.

**Outsourcing process**

1. **Define products for outsourcing**
2. **Identify long list of potential partners**
3. **Short list in evaluation**
4. **Newly qualified partners**

**Driving criteria for further outsourcing**
- Risk mitigation
- Increase margin
- Focus on USPs

**Benefits**
- Higher margin through production in low cost countries
- Reduced capital requirements
- High flexibility

**Target products**
- Commodity technologies with high demand for automation (investment = capital intensive)
- Intensive manual work

**Risks**
- Qualification
- Dependency (influence)
- Continuous improvement vs. price
STRATEGY FOR PROFITABLE GROWTH

We generate and utilize economies of scale in 4 dimensions

1. Target Markets
   - Industrial
   - Medical
   - Mobility

2. Key Customers & Products
   - Key customers
     - €1m p.a.
   - Key products
     - €1m p.a.

3. Forward Integration
   - Sensor Fusion
   - Sensor System
   - Module/Transmitter
   - Sensor/Actuator
   - Chip

4. Internationalization
   - DACH
   - Europe
   - North America
   - Asia

Operative Excellence
Our Key Figures 2018
FINANCIAL RESULT 2018: AT A GLANCE

We further succeed in implementing our strategy for profitable growth

Sales in € million

EBIT margin:

Note: 1 Based on sales excl. this automotive customer sales. 2 Decrease in 2017 due to expired order of a special automotive customer (~€12m) which was mostly compensated for by new clients (~€7m).
FINANCIAL RESULT 2018: AT A GLANCE
Top-line growth & margin improvement based on dedicated measures

Sales growth (in € million)

- 2014: 112
- 2018: 155.1

Profitability improvement (EBIT margin)

- 2014: 3.2%
- 2018: 7.9%

Strong top-line growth despite portfolio restructuring efforts and focus on operational excellence

- Set-up of one group-wide sales team, regionally focused teams for Asia and Americas, KAM for large customers
- Streamlining of product and customer portfolio: Significantly less variances, volume bundling, “last time buy offers”
- Standard products successfully offered to the markets
- Value-based pricing and volume incentives esp. in solutions business

Significantly expanded margin levels through operational measures and phase-in of higher margin products

- ONE process map for all facilities/functions with ONE SAP 4/HANA
- Transparent controlling tools and KPIs
- Major improvements in terms of batch size, lead time, value chain efficiency, yield and sourcing
- Increased production efficiency through harmonization
  ➔ 40% gross margin target for all standard products and solutions

1 Based on sales excl. sales of a special automotive customer
Significant improvement of all relevant key figures has been achieved

<table>
<thead>
<tr>
<th>In € million</th>
<th>2017</th>
<th>2018</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Revenues</td>
<td>147.5</td>
<td>155.1</td>
<td>7.6</td>
</tr>
<tr>
<td>Other operating income</td>
<td>3.3</td>
<td>2.6</td>
<td>-0.7</td>
</tr>
<tr>
<td>Change in inventory</td>
<td>-1.5</td>
<td>4.5</td>
<td>6.0</td>
</tr>
<tr>
<td>Other own work capitalized</td>
<td>2.5</td>
<td>2.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Cost of material</td>
<td>-69.3</td>
<td>-76.1</td>
<td>-6.8</td>
</tr>
<tr>
<td>2. Gross profit</td>
<td>82.5</td>
<td>88.1</td>
<td>5.6</td>
</tr>
<tr>
<td>3. Personnel expenses</td>
<td>-46.6</td>
<td>-49.0</td>
<td>-2.5</td>
</tr>
<tr>
<td>4. Other operating expenses</td>
<td>-16.3</td>
<td>-17.8</td>
<td>-1.5</td>
</tr>
<tr>
<td>Operating result (EBITDA)</td>
<td>19.6</td>
<td>21.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>-6.8</td>
<td>-6.8</td>
<td></td>
</tr>
<tr>
<td>Operating result before goodwill amortization (EBITA)</td>
<td>12.8</td>
<td>14.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Goodwill amortization</td>
<td>-2.3</td>
<td>-2.2</td>
<td></td>
</tr>
<tr>
<td>5. Earnings before interest and tax (EBIT)</td>
<td>10.6</td>
<td>12.2</td>
<td>1.7</td>
</tr>
<tr>
<td>6. Financial result</td>
<td>-3.4</td>
<td>-1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Income before tax (EBT)</td>
<td>7.1</td>
<td>10.4</td>
<td>3.3</td>
</tr>
<tr>
<td>Taxes</td>
<td>-2.8</td>
<td>-2.9</td>
<td>-0.1</td>
</tr>
<tr>
<td>Net income</td>
<td>4.4</td>
<td>7.5</td>
<td>3.1</td>
</tr>
</tbody>
</table>

2.96%  4.85%
We continue in implementing our strategy for profitable growth

Sales by target market in € million

<table>
<thead>
<tr>
<th>Target Market</th>
<th>Sales 2017</th>
<th>Sales 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>147.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Medical</td>
<td>6.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Mobility</td>
<td>155.1</td>
<td></td>
</tr>
</tbody>
</table>

**Industrial**
- Sales growth 7.0%
- New business in the area of photonic and pressure sensors
- Raising demand in Asia

**Medical**
- Sales growth 23.7%
- Raising demand for H series
- Expanded business with imaging solutions in North America

**Mobility**
- Sales decline -9.6%
- Volatile geopolitical developments in automotive industry
- Launch of Camera & ECU products
P+L STATEMENT: REVENUES

We further strengthen our international presence

Sales in € million

<table>
<thead>
<tr>
<th>Year</th>
<th>DACH region</th>
<th>Rest of Europe</th>
<th>North America</th>
<th>Asia</th>
<th>Rest of World</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>147.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>155.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DACH region
- Growth + 2.8%
- Germany remains the biggest market

Rest of Europe
- Sales decrease in Hungary
- Sales increase in Switzerland

North America
- Growth + 11.3%
- Sales increase in USA and Canada

Asia
- Growth + 30.2%
- Sales increase in China
P+L STATEMENT: REVENUES

Growth drivers: photonic and pressure sensors

Sales share product groups in %

- **Photonics**
  - LiDAR receivers for driver assistance systems, robots and drones
  - Customer-specific camera modules for industrial inspection and aerial surveillance
  - Embedded electronic control unit (ECU) for driver assistance systems

- **Pressure**
  - Customer-specific pressure sensor component for industrial transmitters
  - Gas property sensor system for fast and efficient detection of gas mixtures
# P+L STATEMENT: GROSS PROFIT

Gross profit with 52.9% slightly decreased due to higher inventories

<table>
<thead>
<tr>
<th>In € million</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other Operating Income</strong></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>2.6</td>
</tr>
<tr>
<td>2017</td>
<td>3.3</td>
</tr>
<tr>
<td>Change in Inventory</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>Raw Material: 3.0, WIP: 1.4</td>
</tr>
<tr>
<td>WIP: 0.0, Raw Material: -1.5</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
</tr>
<tr>
<td>Other Own Work Capitalized</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>2.0</td>
</tr>
<tr>
<td>2017</td>
<td>2.5</td>
</tr>
<tr>
<td>Cost of Material</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>76.1</td>
</tr>
<tr>
<td>2017</td>
<td>69.3</td>
</tr>
</tbody>
</table>

- **Other operating income**: investment grants and changes in provisions
- **Inventories**: increase because of significantly improved order situation/ the necessity of safeguarding supply capability
- **Capitalized costs**: development costs pursuant to IAS 38 accounted for €1.6 million of this sum
- **Cost of Material**: rose due to increase in total operating performance
- **Gross Profit**: 52.9% (previous year: 53.3%)
P+L STATEMENT: PERSONNEL EXPENSES

Increased FTE through investing in production and R&D for growth

Employees in FTE

<table>
<thead>
<tr>
<th>Dec. 31, 2017</th>
<th>Production</th>
<th>R&amp;D</th>
<th>Others</th>
<th>Dec. 31, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>798</td>
<td>47</td>
<td>14</td>
<td>4</td>
<td>863</td>
</tr>
</tbody>
</table>

Salary/ Wages in € million

- **2018**: 49.0 (↑ +2.4)
- **2017**: 46.6

Breakdown 2018 in € million

- **wage/salary adj.**: 1.1 (↑ +0.3)
- **indemnity**: 0.1 (↓ -0.5)
- **new hire**: 1.1 (↑ +0.5)
Other operating expenses increase slightly by € 1.5 million

### Other Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (€ million)</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>17.8</td>
<td>+1.5</td>
</tr>
<tr>
<td>2017</td>
<td>16.3</td>
<td></td>
</tr>
</tbody>
</table>

### Breakdown 2018, Top 5

<table>
<thead>
<tr>
<th>Expense</th>
<th>Amount (€ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of premises</td>
<td>2.6</td>
</tr>
<tr>
<td>Maintenance and repairs</td>
<td>2.2</td>
</tr>
<tr>
<td>Sales &amp; marketing expenses</td>
<td>1.6</td>
</tr>
<tr>
<td>IT-costs</td>
<td>1.2</td>
</tr>
<tr>
<td>Travel expenses</td>
<td>1.2</td>
</tr>
</tbody>
</table>

### Commentary

- Increased costs for maintenance of buildings and production equipment
- Increased recruitment costs for hiring qualified staff
- Higher R&D expenses for investing in new product generations
- More travel expenses due to internationalization
- Warranty expenses decrease by 45.6%
- Legal and accountancy fees decrease by 32.8%
EBIT increased by 16%

EBIT in € million:
- EBIT 2017: 10.6 million
- Product Mix: 4.0 million
- Volume Effect: 3.4 million
- Costs: 5.8 million
- EBIT 2018: 12.2 million
P+L STATEMENT: FINANCIAL RESULT

Foreign currency policy leads to improved financial result

**In € million**

**Financial Result**

- **2018**: -1.8
- **2017**: -3.4

**Commentary**

- Contribution to earnings from currency gains and losses improved: €-1.6 million due to early reversal of currency option contracts (TARF)

**BALANCE SHEET: CASHFLOW**

**Breakdown 2018**

- **Currency/Interest / Expenses**: -0.3
- **Swap**: 0
- **Hedging**: 0
- **Other Financial Income**: 0.7

**Breakdown 2017**

- **Currency/Interest / Expenses**: -2.3
- **Swap**: -1.2
- **Hedging**: -0.4
- **Other Financial Income**: 0.5
FINANCIAL RESULT 2018: BALANCE SHEET

Equity ratio rose by 1.4%

<table>
<thead>
<tr>
<th>Assets</th>
<th>Dec. 31, 2017</th>
<th>Dec. 31, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and cash equivalents</td>
<td>25.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Current assets</td>
<td>3.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Trade accounts receivables</td>
<td>20.8</td>
<td>17.9</td>
</tr>
<tr>
<td>Inventories</td>
<td>24.6</td>
<td>32.2</td>
</tr>
<tr>
<td>Non-current assets</td>
<td>85.4</td>
<td>85.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
<th>Dec. 31, 2017</th>
<th>Dec. 31, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current liabilities</td>
<td>13.8</td>
<td>11.8</td>
</tr>
<tr>
<td>Trade account payables</td>
<td>7.9</td>
<td>12.6</td>
</tr>
<tr>
<td>Non-current liabilities</td>
<td>7.7</td>
<td>7.2</td>
</tr>
<tr>
<td>Financial liabilities</td>
<td>48.3</td>
<td>48.0</td>
</tr>
<tr>
<td>Equity</td>
<td>81.9</td>
<td>88.8</td>
</tr>
</tbody>
</table>

Commentary

**Cash**
- 2018: €28.5 million
- 2017: €25.5 million

**Net Working Capital**
- 2018: €37.3 million
- 2017: €37.1 million

**Equity Quota**
- 2018: 52.7%
- 2017: 51.3%

**Net Debt**
- 2018: €19.5 million
- 2017: €22.8 million
BALANCE SHEET

Investments in capacities and new equipment for growth

In € million

<table>
<thead>
<tr>
<th>Equipment</th>
<th>2018</th>
<th>2017</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>38.7</td>
<td>36.4</td>
<td>+6.3%</td>
</tr>
</tbody>
</table>

Commentary

- Renovation of the sites Berlin-Weißensee, Oberdischingen and Dresden Klotzsche
- New equipment for our Fab in Berlin-Oberschöneweide
- 6-Inch-Equipment mainly implemented in 2017
- Selected insourcing of production processes in Berlin
### BALANCE SHEET: NET WORKING CAPITAL

**DSO slightly improved due to reductions of overdues and factoring**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>Change</th>
<th>%</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>11.2</td>
<td>14.1</td>
<td>+3.2</td>
<td>30%</td>
<td>Inventories were increased by €7.6 million in view of the market and order situation</td>
</tr>
<tr>
<td></td>
<td>6.3</td>
<td>12.7</td>
<td>+6.4</td>
<td>102%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7.1</td>
<td>5.2</td>
<td>−1.9</td>
<td>−27%</td>
<td></td>
</tr>
<tr>
<td><strong>Receivables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receivables</td>
<td>20.8</td>
<td>17.9</td>
<td>−2.9</td>
<td>−13.9</td>
<td>Accounts receivable were reduced by €2.9 million to €17.9 million owing to receivables management and the use of factoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Liabilities Supplier</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liabilities Supplier</td>
<td>7.9</td>
<td>12.6</td>
<td>+4.7</td>
<td>62%</td>
<td></td>
</tr>
</tbody>
</table>

---

**Note:**
- DSO: Days Sales Outstanding
- DPO: Days Payment Outstanding
- DIH: Days Inventory Outstanding
- DPO: Days Payment Outstanding
## Group’s liquidity position remains comfortable

In € million

<table>
<thead>
<tr>
<th>Cash Flow</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating CF</td>
<td>16.0</td>
<td>15.9</td>
</tr>
<tr>
<td>Investing CF</td>
<td>-12.5</td>
<td>-9.6</td>
</tr>
<tr>
<td>Free CF</td>
<td>3.5</td>
<td>6.3</td>
</tr>
<tr>
<td>Financing CF</td>
<td>-1.7</td>
<td>-3.4</td>
</tr>
<tr>
<td>Total CF</td>
<td>1.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Cash</td>
<td>25.5</td>
<td>28.5</td>
</tr>
</tbody>
</table>

**Commentary**

- Operating cash flow on same level as previous year
- Cash flow from investing activities still reflects the high level of investment required by First Sensor
- Investments largely related to new machinery and equipment (expanding vertical integration, process improvements and increasing capacity)
- Cash flow from financing activities included the dividend distribution of €1.6 million
Our Key Figures Q1 2019
Q1 RESULT

Solid sales growth

Total sales in € million

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Sales in € million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2018</td>
<td>34.5</td>
</tr>
<tr>
<td>Q2 2018</td>
<td>39.9</td>
</tr>
<tr>
<td>Q3 2018</td>
<td>40.8</td>
</tr>
<tr>
<td>Q4 2018</td>
<td>40.0</td>
</tr>
<tr>
<td>Q1 2019</td>
<td>41.4</td>
</tr>
</tbody>
</table>

Comments

Further strengthening First Sensor’s core business Photonics (+€3.5 million) and Pressure (+€3.5 million)

Growing demand for Imaging solutions and standard products of our H series
Q1 RESULT

Strong demand in Industrial and Medical target markets

Sales by target market in € million

<table>
<thead>
<tr>
<th>Target Market</th>
<th>Q1 2018</th>
<th>Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>16.3</td>
<td>22.2</td>
</tr>
<tr>
<td>Medical</td>
<td>7.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Mobility</td>
<td>10.8</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Comments

- **Industrial**: +25%; Growth in Photonics & Pressure / North America & Asia
- **Medical**: +25%; Growth in Diagnostics (Photonics) & Breathing (Pressure)
- **Mobility**: -14%; volatile political environment cause shifts in order behavior
Increased sales with key customers and key products

Sales in € million

<table>
<thead>
<tr>
<th>Sales Q1 2018</th>
<th>Key Customers</th>
<th>Key Products</th>
<th>Other Customers</th>
<th>Sales Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.5</td>
<td>+3.1</td>
<td>+2.2</td>
<td>+1.6</td>
<td>41.4</td>
</tr>
</tbody>
</table>

**Key Customers**
- Strong demand for Imaging Solution in the target markets Industrial und Medical

**Key Products**
- Strong demand for pressure sensors (H series) by Industrial und Medical customers
- Strong demand for pressure chips for Process Control
Q1 RESULT

Expanded activities in North America & Asia show further results

Sales in € million

<table>
<thead>
<tr>
<th>Region</th>
<th>Sales Q1 2018</th>
<th>DACH region</th>
<th>Rest of Europe</th>
<th>North America</th>
<th>Asia</th>
<th>Rest of World</th>
<th>Sales Q1 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>DACH region</td>
<td>34.5</td>
<td>+1.9</td>
<td></td>
<td></td>
<td>+2.0</td>
<td></td>
<td>41.4</td>
</tr>
<tr>
<td>Rest of Europe</td>
<td></td>
<td></td>
<td>+0.9</td>
<td></td>
<td>+1.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+0.2</td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>41.4</td>
</tr>
</tbody>
</table>

**DACH region**
- Growth 10.5%
- Growth driver Photonics & Pressure

**Rest of Europe**
- Growth 10.5%
- Increases demand in Benelux & France

**North America**
- Growth 60.4%
- Ramp-up Photonics

**Asia**
- Growth 51.9%
- Ramp-up Photonics & Pressure
Q1 RESULT
Order intake Q1 at €42.3 million, backlog at €98.4 million

comments
Order backlog remains at a high level of €98.4 million
70% are scheduled for 2019
Q1 RESULT

Continuous improvements lead to 9.9% EBIT margin

Sales in € million, EBIT margin in %

Q1 2018: 34.5, 3.1%
Q2 2018: 39.9, 7.5%
Q3 2018: 40.8, 11.3%
Q4 2018: 40.0, 9.0%
Q1 2019: 41.4, 9.9%
OUTLOOK

Executive Board confirms the Guidance for 2019

SALES IN € MILLION

160-170

EBIT MARGIN IN %

8.5-9.5
## OUTLOOK

### Chances and risks for sales and profitability

<table>
<thead>
<tr>
<th>Chances</th>
<th>Profitsitability</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Strong sensor technology market:</td>
<td>− Economies of Scale</td>
</tr>
<tr>
<td>− Global market for optical and pressure sensors</td>
<td>− Continuous measures to improve operational excellence:</td>
</tr>
<tr>
<td>with average growth rate approx. 7-8% to 2022</td>
<td>− Rising sales with value-add products</td>
</tr>
<tr>
<td>− High order backlog €97.6m, 80% to ship in 2019</td>
<td></td>
</tr>
<tr>
<td><strong>Risks</strong></td>
<td></td>
</tr>
<tr>
<td>− Slowing economic growth</td>
<td>− Changes in product mix</td>
</tr>
<tr>
<td>− Volatility in key trade-related decisions</td>
<td>− Sales related decrease in economies of scale delays</td>
</tr>
<tr>
<td>− Shortage in materials supply</td>
<td>transition to 6-Inch production</td>
</tr>
<tr>
<td>− Order behavior of large customers</td>
<td>− Increases in purchase prices, wages and salaries</td>
</tr>
</tbody>
</table>
Our Shareholder Structure
SHAREHOLDER STRUCTURE

Consideration of DPE to sell its shares is going on

---

**October 31, 2018**

- Adhoc: DPE considers to sell its shares in First Sensor AG
- As a result, it is possible that a possible acquirer will be obliged to submit a takeover bid
- First Sensor AG intends to play an active role in shaping the possible process

---

**November 12, 2018**

- Goldman Sachs assists First Sensor during the further process
This presentation contains forward-looking statements. This presentation does not represent any solicitation to purchase shares of First Sensor AG. Rather it is intended exclusively for information purposes with regard to possible future developments at the company. All future-oriented information in this presentation was produced on the basis of probability-based planning and represents statements regarding the future which cannot be guaranteed. Rounding differences may occur.