Siltronic – a leading producer of silicon wafers

Kepler Cheuvreux German Corporate Conference
January 18, 2017
The whole electronic value chain is based on semiconductor silicon wafers.

Electronics value chain 2015

- **Electronics**
  - USD 1,423bn

- **Semiconductors**
  - USD 335bn

- **Semiconductor silicon wafers**
  - USD 7.2bn

- **Silicon for electronic applications**
  - USD 1.2bn

Source: Electronics (IC Insights), semiconductors (WSTS), silicon wafers (SEMI SMG), electronic applications (WACKER estimate)
Siltronic is a strong wafer supplier in leading-edge technology

Top 5 wafer producers serve more than 90% of market across all diameters

Sources: Companies' revenue reports 2015, converted to USD mn
International manufacturing network supports market leadership and business focus

High volume facilities for 300 mm in Germany and Singapore

Among world’s newest & largest fabs in Singapore

SSW majority strengthens fab network and market position

(1) crystal pulling
Customer base well diversified across all major semiconductor silicon wafer consumers

Siltronic is a supplier to all top 20 silicon wafer consumers

Siltronic well positioned at all major silicon consumers

Top 10 customers represent ~65% of 2015 revenues

Note: Top 20 consumers defined according to their fab capacities in the Fab Data Base from Gartner
Source: Company Information; Gartner Fab Data Base; Companies' web pages
Continuous improvement of key ingot and wafer properties to meet customers’ requirements

**Improvement of key ingot and wafer properties**

**Ingot**
- doping level
- purity
- oxygen content
- homogeneity
- mechanical stability
- resistivity

**Wafer**
- edge flatness
- uniformity
- surface cleanliness
- shape
- flatness
After a decade of low utilization market finally back to positive momentum

<table>
<thead>
<tr>
<th>Profit drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity utilization 300mm</strong></td>
</tr>
<tr>
<td>~60% capacity utilization in 2008</td>
</tr>
<tr>
<td>Slowly increased over the years</td>
</tr>
<tr>
<td>Fully loaded in Q3 2016</td>
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</tbody>
</table>

| **Capacity expansion** |
| ~1.5% p.a. expansion due to OEE (Overall Equipment Effectiveness) |
| Investment in additional capacity only at substantially higher prices |

| **Depreciation** |
| Declining in 2014, 2015 and 2018 due to lower Capex levels |

| **ASP** |
| Overcapacity drove prices down |
| Stable since Q3 2016 |

| **FX** |
| Most revenue in USD and JPY |
| Strong USD and JPY implies tailwind for Siltronic’s profitability |

| **Hedging** |
| ~46mn EUR losses due to hedging in 2015 |
| ~20mn to 25mn EUR losses anticipated for 2016 |
Silicon area grows proportional to semiconductor units, but revenue has been disconnected in the past years.

Source: WSTS/SIA, SEMI up to Q3 2016
The average size of semiconductors is very stable over time. Silicon ASP declined more than semiconductor since 2008.

Source: WSTS, SEMI
Semiconductor unit sales have been growing continuously, keeping up the main driving force for silicon demand.

Semiconductor revenue
(only silicon based, Jan-Oct in USD bn)

<table>
<thead>
<tr>
<th>Year</th>
<th>Logic</th>
<th>DRAM</th>
<th>NAND</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 Jan - Oct</td>
<td>12</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>270</td>
</tr>
<tr>
<td>2016 Jan - Oct</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>267</td>
</tr>
</tbody>
</table>

Semiconductor ASP is impacted by
- trend from high end to mid-tier phones
- memory price declines in 2015/2016

Semiconductor units grow due to
- high demand for SSDs
- growing semiconductor content

Source: WSTS up to October 2016
Focus on growing 300 mm and attractive 200 mm business

Development of total wafer demand per diameter, in 300mm equivalents per month

Source: SEMI up to Sep 2016, Siltronic estimates
IHS Markit forecasts silicon wafer demand growth of 5.1% in 2017

### Wafer Demand 2000/2015, in bn. cm²

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2016</th>
<th>Growth 2017 in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total market</td>
<td>33.6</td>
<td>65.7</td>
<td>5.1%</td>
</tr>
<tr>
<td>Mobile phones / Smartphones</td>
<td>2.6</td>
<td>16.0</td>
<td>1%</td>
</tr>
<tr>
<td>Desktop, Notebook &amp; Server PC</td>
<td>8.7</td>
<td>9.2</td>
<td>1%</td>
</tr>
<tr>
<td>Industrial</td>
<td>5.6</td>
<td>7.2</td>
<td>7%</td>
</tr>
<tr>
<td>SSD</td>
<td>5.6</td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>Automotive</td>
<td>2.1</td>
<td>5.3</td>
<td>6%</td>
</tr>
<tr>
<td>Household</td>
<td>5.0</td>
<td>4.7</td>
<td>4%</td>
</tr>
<tr>
<td>Switches, Hubs, Modems etc.</td>
<td>3.6</td>
<td>4.1</td>
<td>10%</td>
</tr>
<tr>
<td>Media Tablets &amp; Tablet PCs</td>
<td>2.9</td>
<td></td>
<td>4%</td>
</tr>
<tr>
<td>LCD TVs</td>
<td>2.5</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Mobile Infrastructure etc.</td>
<td>2.5</td>
<td>2.3</td>
<td>5%</td>
</tr>
<tr>
<td>Other (printers, game consoles, cameras, MP3-player...)</td>
<td>3.5</td>
<td>5.9</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: IHS Markit (Semiconductor Silicon Demand Forecast Tool Q4 2016 Update)
Bit growth is expected to exceed bit density growth in the foreseeable future. This will result in growing wafer demand.

2016-2019 NAND market growth

- **bit density growth**: ~33% (technological progress)
- **bit demand growth**: ~40% (enabled by lower cost)
- **wafer demand growth**: ~7%

- New NAND technology helps increase bit density and reduce costs.
- This opens up new applications, and spurs demand growth.
- As a result, bit demand grows faster, and more silicon is consumed.

Source: IHS Markit Q3 2016

### 300mm NAND silicon market, k/m

- **CAGR +7%**

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<tbody>
<tr>
<td>960</td>
<td>930</td>
<td>1.170</td>
<td>1.340</td>
<td>1.510</td>
<td>1.630</td>
<td>1.760</td>
<td>1.870</td>
<td></td>
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</tbody>
</table>
GDP growth around 3% is driving healthy growth in electronics end markets.

Semiconductor unit demand is steadily growing.

ASP pressure in early 2016 – especially for memory - hampered overall revenue trend.

Memory market started to recover in mid-2016. Prices are increasing, driven by solid SSD growth and higher memory content in mid-range smartphones.

Semiconductor device inventories are considered healthy across the industry.

2016 was a strong year for semiconductor equipment sales, driven by 300mm device fab expansions of our customers and the transition to 3D NAND.

Economic fundamentals are a solid base for healthy 2017 semiconductor growth.

Ongoing 300mm new fab and expansion projects of our customers add to silicon wafer demand.

Unlike typical seasonality, there are no signs of high wafer inventory in late 2016.

2017 is expected to become a good year for the whole industry.

Source: IMF, IC Insights, IHS Markit
Based on technology leadership Siltronic is well positioned to improve returns

**Strategic Focus**

- **Benefit** from market growth & favorable FX
- **Ensure** technology & quality leadership
- **Improve** financial performance & cash flow
- **Execute** cost reduction roadmaps

Siltronic – We develop intelligent solutions for sustainable growth.
## Contact and Additional Information

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### Additional Information

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<td>WKN</td>
<td>WAF300</td>
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<tr>
<td>Deutsche Börse:</td>
<td>WAF</td>
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<tr>
<td>Listing:</td>
<td>Frankfurt Stock Exchange Prime Standard</td>
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</table>

### Financial Calendar

- **Annual Report 2016:** March 14, 2017  
- **Q1 2017 Results:** April 27, 2017  
- **Q2 2017 Results:** July 28, 2017  
- **Q3 2017 Results:** October 26, 2017
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