



**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

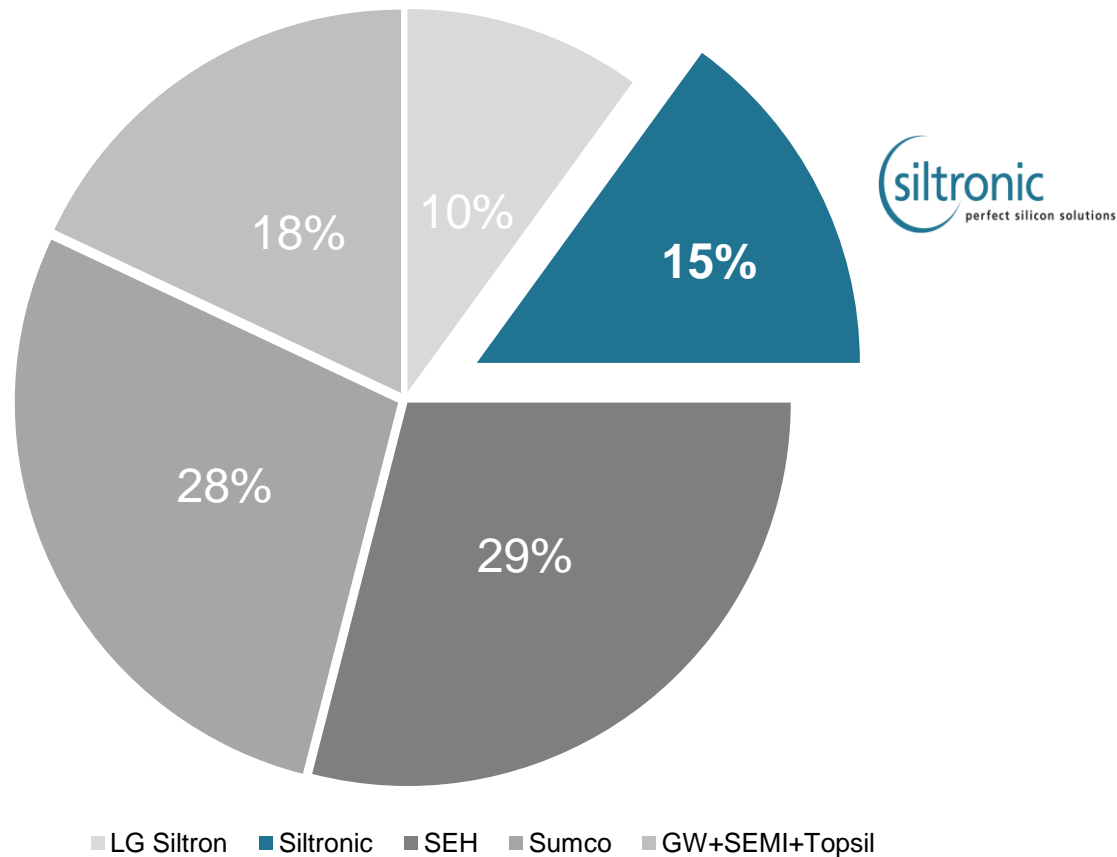
## Electronics value chain 2015



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



US

Portland

200 mm

Wafer



Germany

Freiburg

300 mm

Crystal<sup>(1)</sup> + Wafer



Burghausen

150 200 300 mm

Crystal<sup>(1)</sup> + Wafer



Singapore

SSP

200 mm

Wafer



SSW

300 mm

Crystal<sup>(1)</sup> + Wafer



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

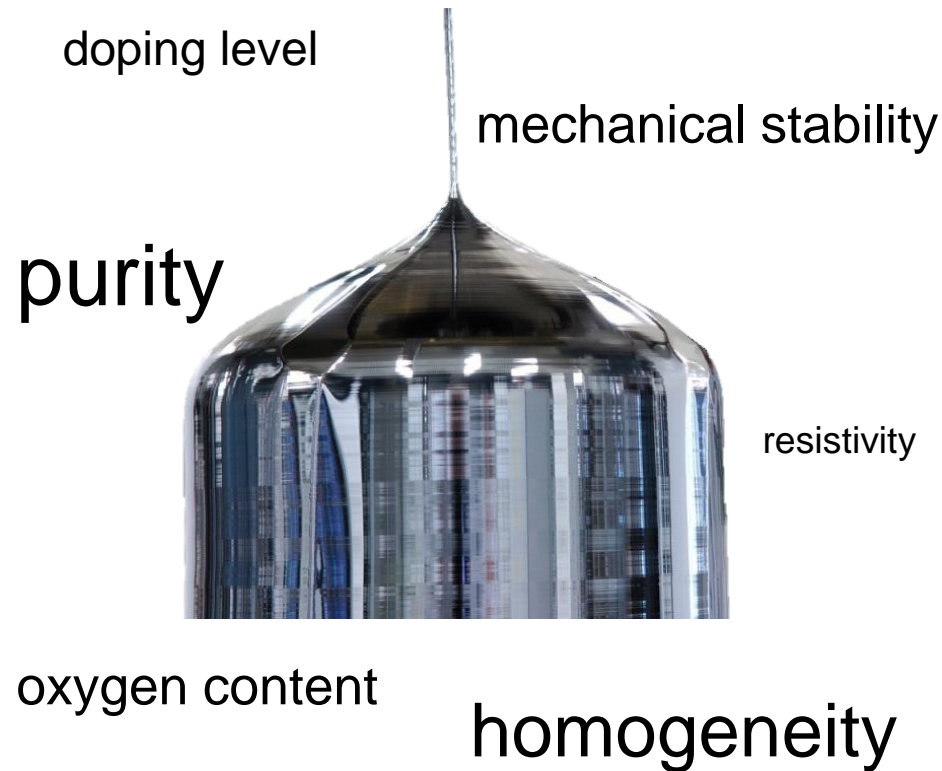
Top 10 customers represent ~65% of 2015 revenues

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

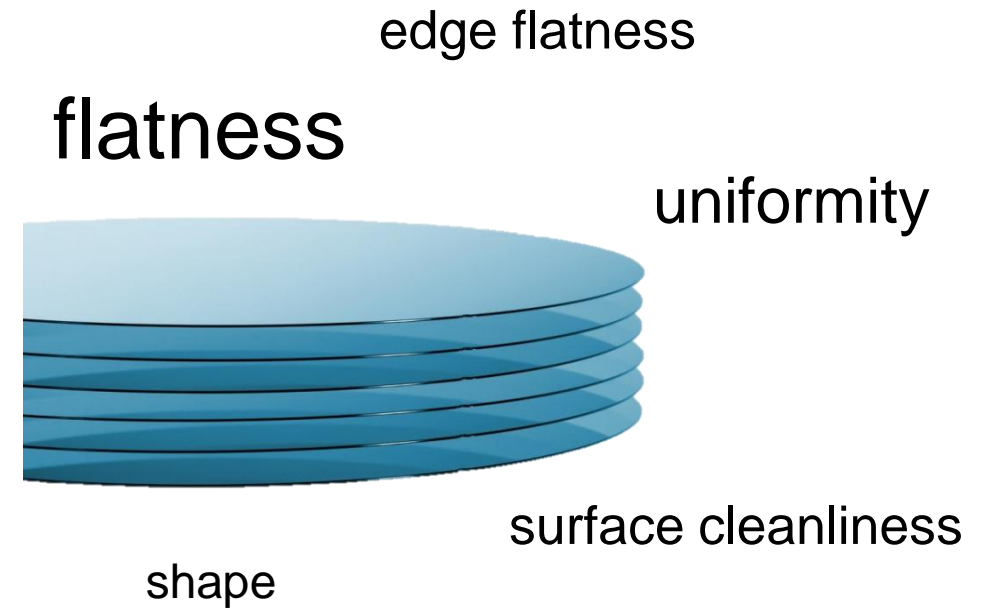
# Continuous improvement of key ingot and wafer properties to meet customers' requirements

## Improvement of key ingot and wafer properties

### Ingot



### Wafer



# After a decade of low utilization market finally back to positive momentum

## Profit drivers

### Capacity utilization 300mm

- ▶ ~60% capacity utilization in 2008
- ▶ Slowly increased over the years
- ▶ Fully loaded in Q3 2016

### 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

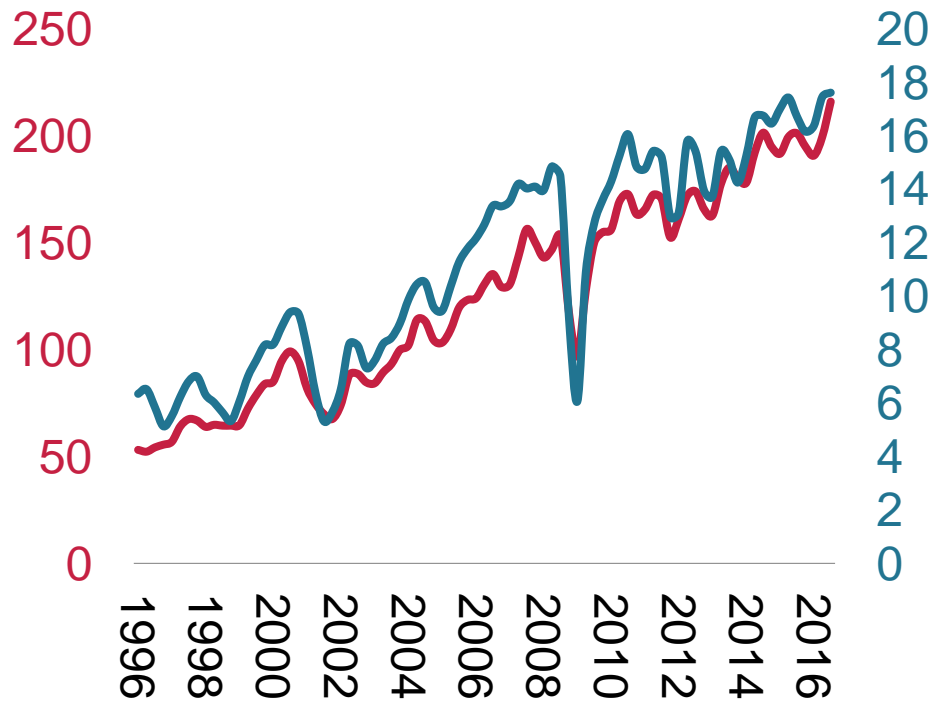
- ▶ Most revenue in USD and JPY
- ▶ Strong USD and JPY implies tailwind for Siltronic's profitability

### Hedging

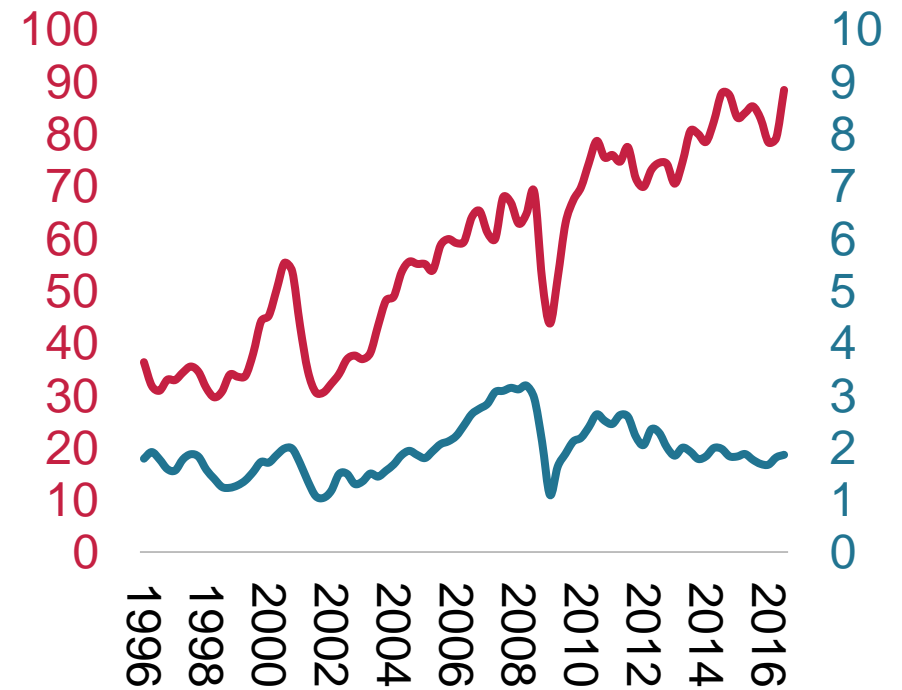
- ▶ ~46mn EUR losses due to hedging in 2015
- ▶ ~20mn to 25mn EUR losses anticipated for 2016

# Silicon area grows proportional to semiconductor units, but revenue has been disconnected in the past years.

### Semiconductor units vs. silicon area (in bn units / bn cm<sup>2</sup> per quarter)



### Semiconductor vs. silicon revenue (in USD bn per quarter)



— semiconductors (left axis)

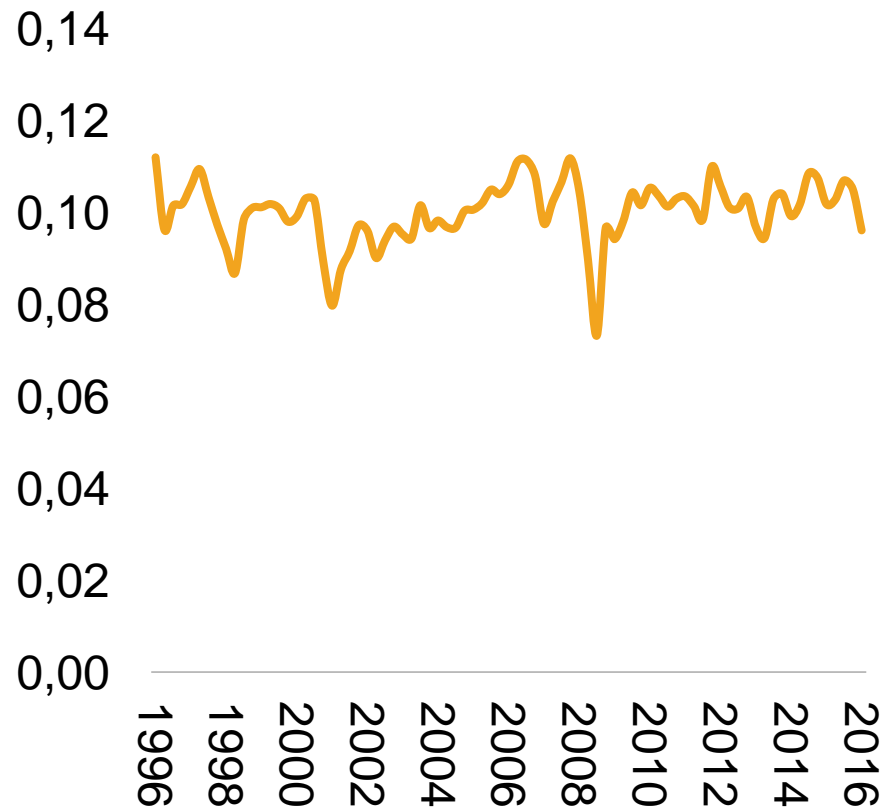
— silicon (right axis)

Source: WSTS/SIA, SEMI up to Q3 2016

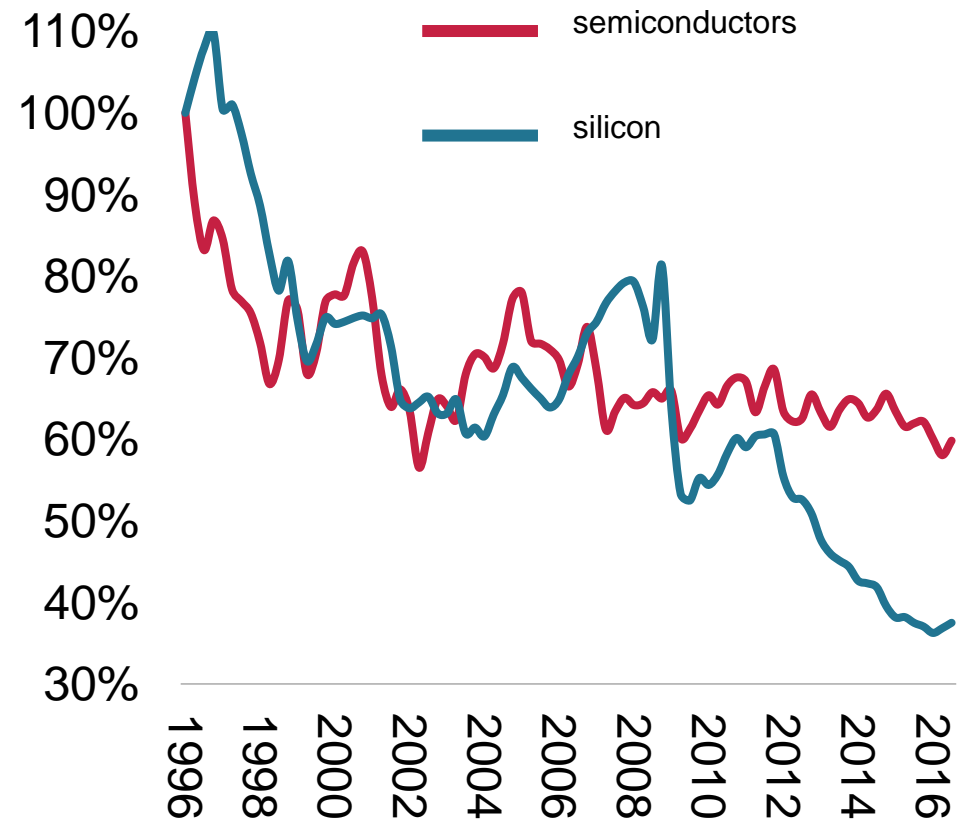


# The average size of semiconductors is very stable over time. Silicon ASP declined more than semiconductor since 2008.

**Silicon area per semiconductor**  
(in cm<sup>2</sup> per unit)



**Semiconductor vs. silicon ASP**  
(100% = Q1 1996)

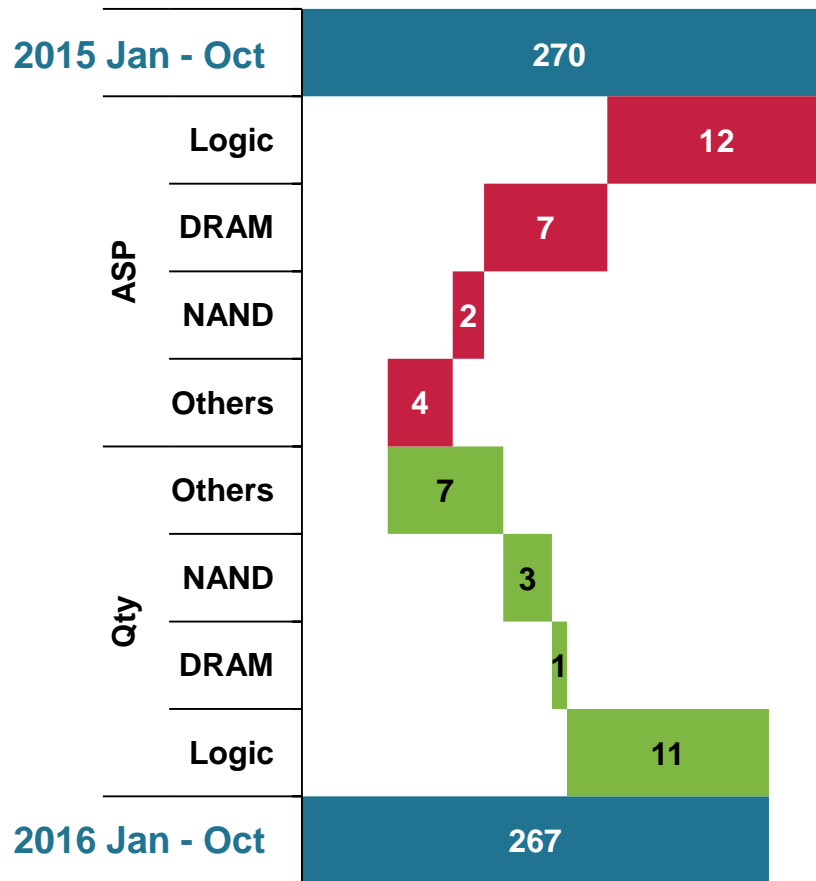


Source: WSTS, SEMI

# 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)



### Semiconductor ASP is impacted by

- ▶ trend from high end to mid-tier phones
- ▶ memory price declines in 2015/2016

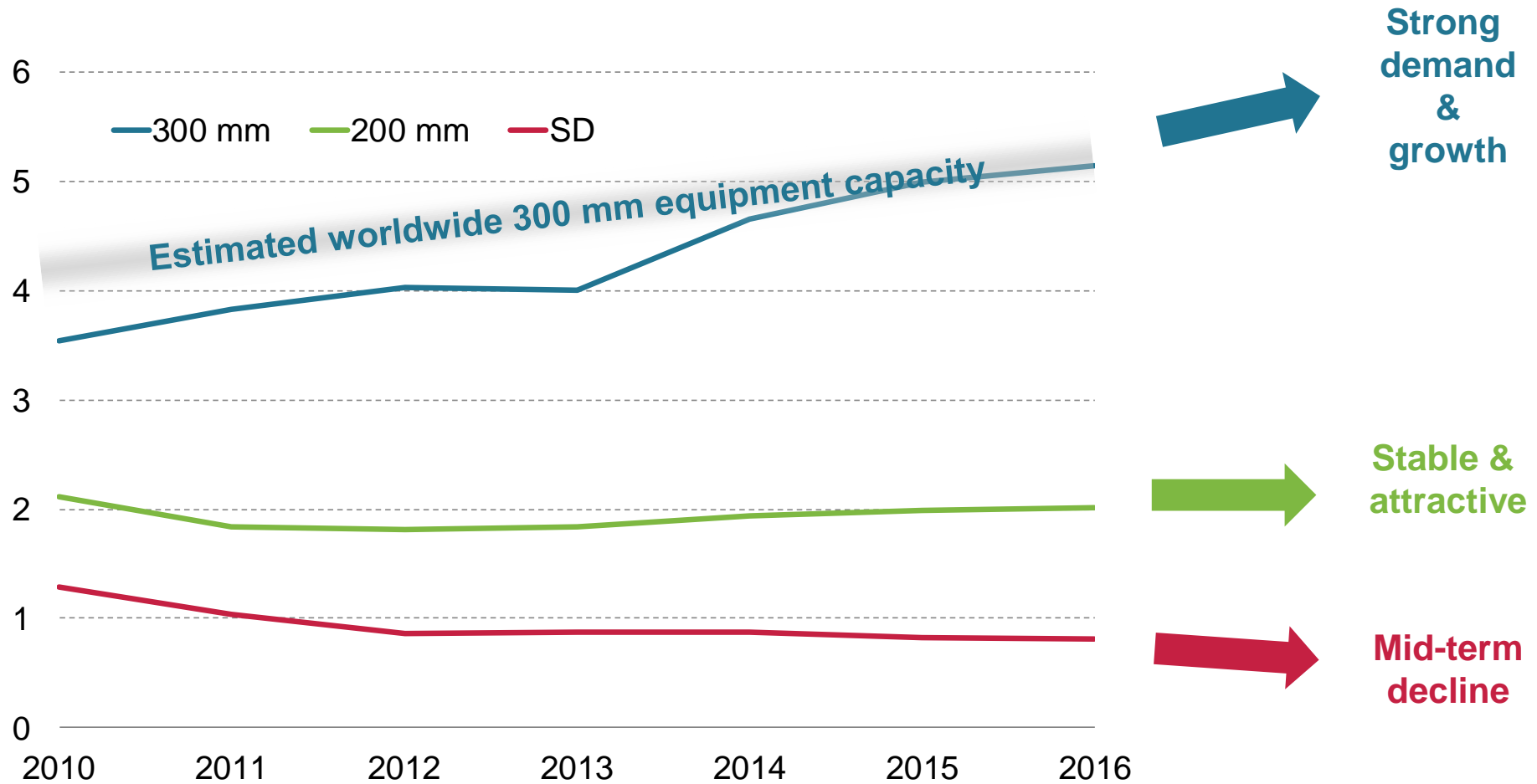
### Semiconductor units grow due to

- ▶ high demand for SSDs
- ▶ growing semiconductor content

Source: WSTS up to October 2016

# Focus on growing 300 mm and attractive 200 mm business

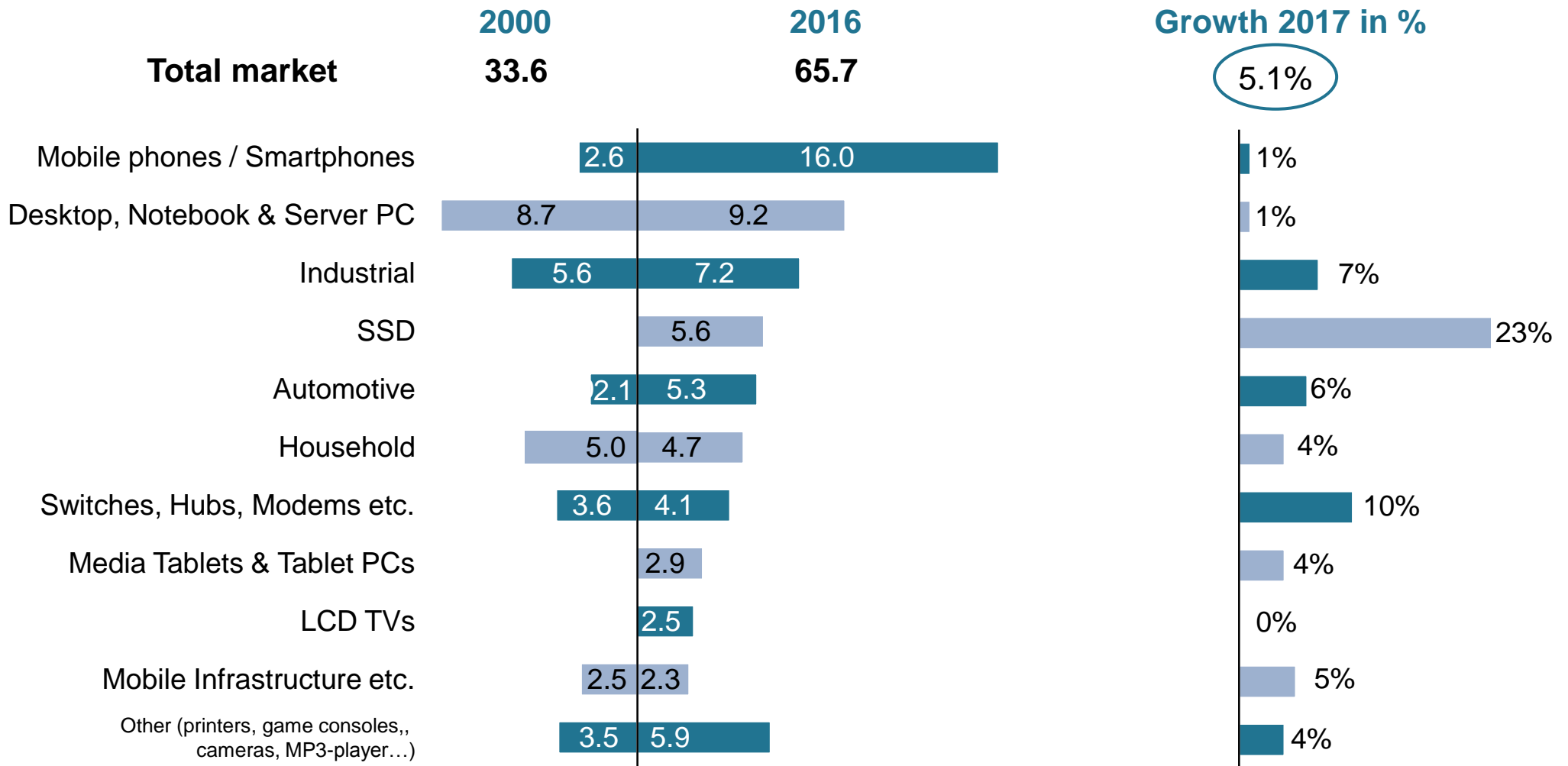
Development of total wafer demand per diameter, in 300mm equivalents per month



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. cm<sup>2</sup>



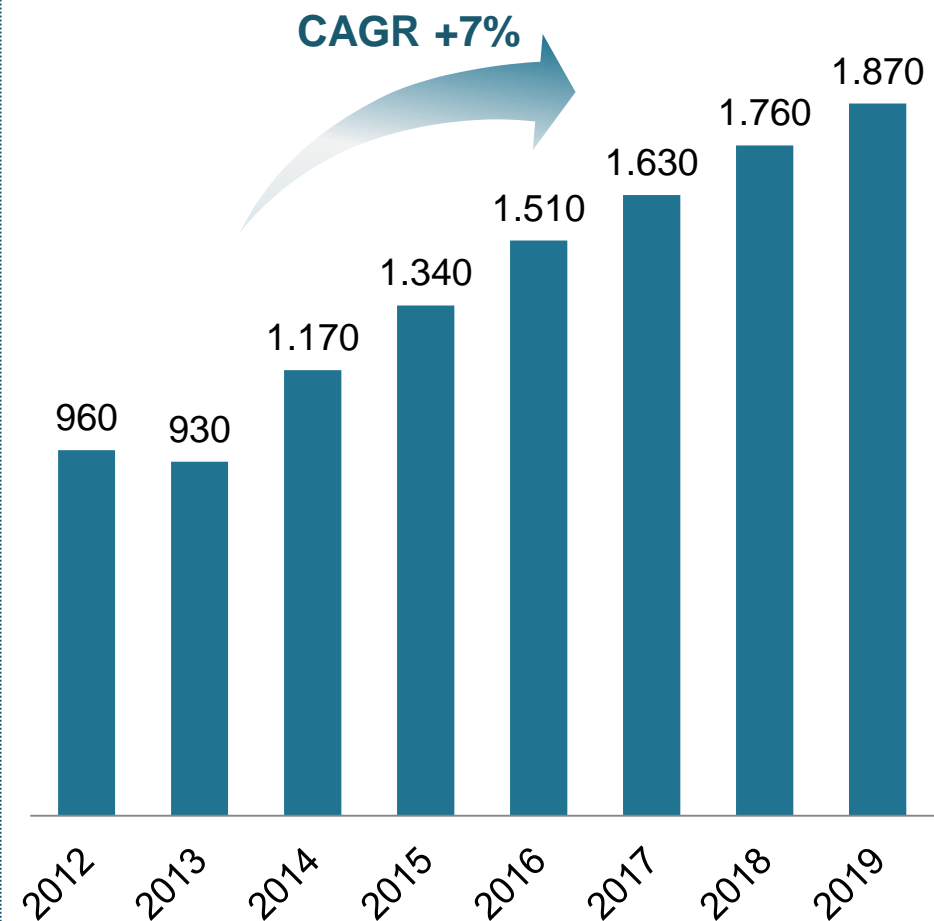
Source: IHS Markit (Semiconductor Silicon Demand Forecast Tool Q4' 2016 Update)

# 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.

## 300mm NAND silicon market, k/m



Source: IHS Markit Q3 2016

# Summary: Industry outlook for 2017 is solid due to healthy GDP growth, new 300 mm fabs / expansions and low inventories.

- ▶ 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

Improve returns and stay ahead in technology

## 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

## Issuer and Contact

Siltronic AG  
Hanns-Seidel-Platz 4  
D-81737 München

**Investor Relations:**  
Petra Mueller  
Tel. +49 89 8564-3133

## Additional Information

ISIN:	DE000WAF3001
WKN:	WAF300
Deutsche Börse:	WAF
Listing:	Frankfurt Stock Exchange Prime Standard

## 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





# Disclaimer

---

The information contained in this presentation is for background purposes only and is subject to amendment, revision and updating. Certain statements contained in this presentation may be statements of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties. In addition to statements which are forward-looking by reason of context, including without limitation, statements referring to risk limitations, operational profitability, financial strength, performance targets, profitable growth opportunities, and risk adequate pricing, as well as the words "may, will, should, expects, plans, intends, anticipates, believes, estimates, predicts, or continue", "potential, future, or further", and similar expressions identify forward-looking statements. By their nature, forward-looking statements involve a number of risks, uncertainties and assumptions which could cause actual results or events to differ materially from those expressed or implied by the forward-looking statements. These include, among other factors, changing business or other market conditions and the prospects for growth anticipated by Siltronic AG's management. These and other factors could adversely affect the outcome and financial effects of the plans and events described herein. Statements contained in this presentation regarding past trends or activities should not be taken as a representation that such trends or activities will continue in the future. Siltronic AG does not undertake any obligation to update or revise any statements contained in this presentation, whether as a result of new information, future events or otherwise. In particular, you should not place undue reliance on forward-looking statements, which speak only as of the date of this presentation.