

# Siltronic Investor Presentation

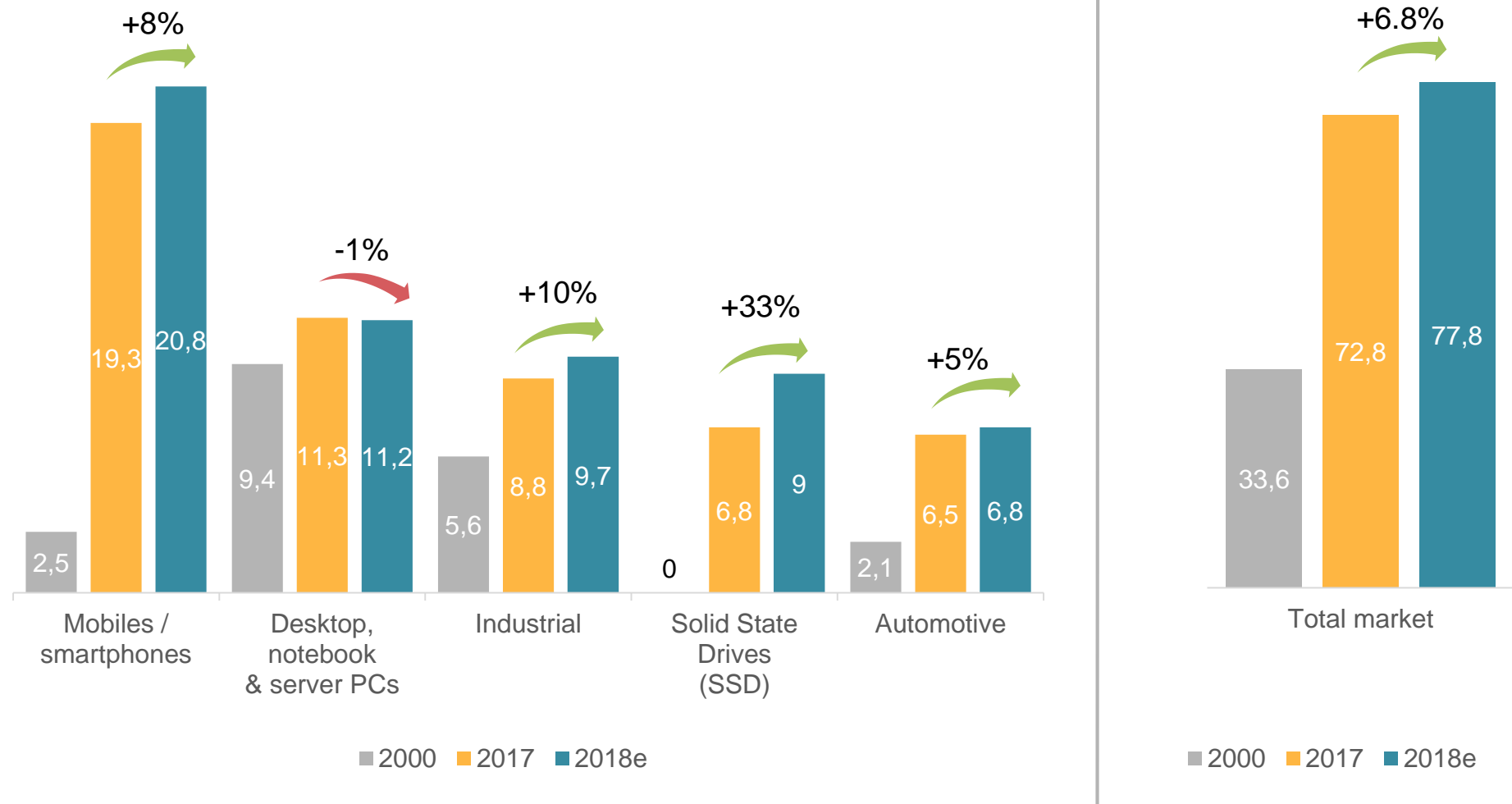
October/November 2018



**MARKET UPDATE**

# Increasing silicon demand supported by 1 stable and 4 growing end applications

Wafer demand, in bn cm<sup>2</sup>, 2017/2018 expected growth, in %



Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q3 2018. Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details.

# Growth in memory driven by SSD, computing and smartphones

## DRAM growth

- ▶ Growth in servers
- ▶ Increase in DRAM density in servers and smartphones
- ▶ Growing Artificial Intelligence functionality



Source: Apple.com

## NAND growth

- ▶ SSD growing with data traffic and HDD substitution
- ▶ NAND growth in smartphones due to higher density per unit (e.g. iPhone XS with up to 512 GB).
- ▶ NAND prices sliding from a high level due to over-supply. Sliding NAND prices not negative for wafer demand as falling prices will increase SSD demand in PCs (price elasticity)
- ▶ Customers' demand still shows ~10% growth (CAGR 18-23)

# Automotive growth in all diameters with 300 nm to grow faster than other diameters

- ▶ Infotainment, connectivity and ADAS become standard, driven by consumer request and government mandates
- ▶ ADAS, infotainment and connectivity require advanced logic as well as large amounts of memory
- ▶ Change in car architecture towards domain and inter-domain control requires fewer, but advanced MCUs instead of large amounts of simple MCUs for each electronic control unit
- ▶ Advanced process nodes for logic are on 300 nm



Source: Yole 2018

# Investor key messages

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- ▶ Fundamental NAND growth intact
- ▶ Smartphone content additionally supported by CIS development
- ▶ Significant investment and ramp in new fabs by NAND players
- ▶ Demand of most automotive semi customers strengthening
- ▶ We don't see any significant change in the market demand, but we might see some volatility triggered by political events and Chinese phone inventories in the short-term

# Financials improved strongly over the last years


Adjusted <sup>1</sup> financial figures (EUR million)	2013	2014	2015	2016	2017	Q1-Q3 / 2018
<b>Sales</b>	875.5	853.4	931.3	933.4	1,177.3	1,068.5
<b>EBIT</b>	(87.3)	(31.6)	2.7	27.0	235.7	358.8
<b>EBIT margin in %</b>	(10.0)	(3.7)	0.3	2.9	20.0	33.6
<b>EBITDA</b>	112.6	117.7	124.0	146.0	353.1	428.6
<b>EBITDA margin in %</b>	12.9	13.8	13.3	15.6	30.0	40.1
<b>CapEx</b>	39.7	40.7	75.0	88.8	123.2	141.3
<b>Free cash flow <sup>2</sup></b>	64.7	86.3	37.4	19.0	169.6	-
<b>Net cash flow <sup>2</sup></b>	-	-	-	39.6	124.8	272.7

<sup>1</sup> Figures 2013-2014 adjusted for consolidation effects resulting from acquisition of SSW and restructuring

<sup>2</sup> Starting 2018, Siltronic will be reporting the key figure „net cash flow“ instead of „free cash flow“. Net cash flow represents free cash flow without the time shifts created by inflow and return of customer prepayments which, due to the size, impairs the meaningfulness of free cash flow.



# Siltronic Outlook for 2018 (as of October 25, 2018)

<b>EBITDA margin</b>	approximately 40%
<b>ROCE</b>	clearly higher than in 2017
<b>Net cash flow</b>	clearly higher than in 2017
<b>Sales</b>	slightly above EUR 1.4bn, depending on FX effects <b>update</b> 
<b>R&amp;D</b>	approx. 5% of sales
<b>Cost position</b>	negative effect on savings potential due to tariff increases and inflation
<b>FX effects</b>	assuming an EUR/USD exchange rate of 1.20 and an EUR/JPY exchange rate of 130 negative FX impact of approx. EUR 60m on sales and approx. EUR 40m on EBITDA
<b>Depreciation</b>	approx. EUR 90m
<b>Tax rate</b>	between 15% and 20%
<b>Financial result</b>	relatively stable
<b>CapEx</b>	approx. between EUR 260m and EUR 280m
<b>Earnings per share</b>	significantly higher than in 2017

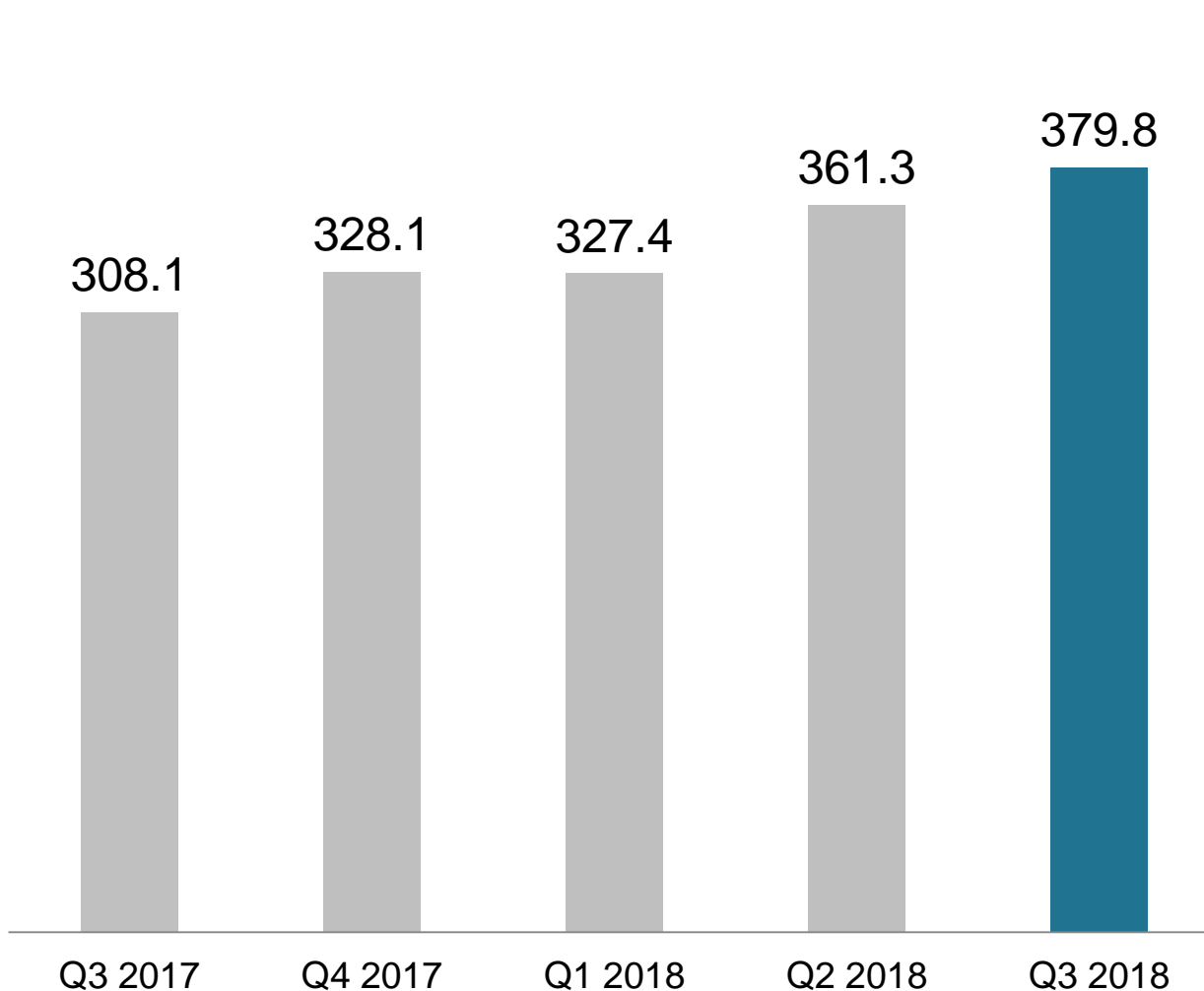


The background features a series of concentric, curved lines in shades of blue and black, creating a sense of depth and motion. A large, semi-transparent teal circle is positioned on the left side of the frame, partially overlapping the curved lines. The text "Q3 2018 Financials" is written in white, sans-serif font within this teal circle.

# Q3 2018 Financials

# Q3 sales 5% higher than in previous quarter

Sales, in EUR million



## Comment

### ▶ Positive

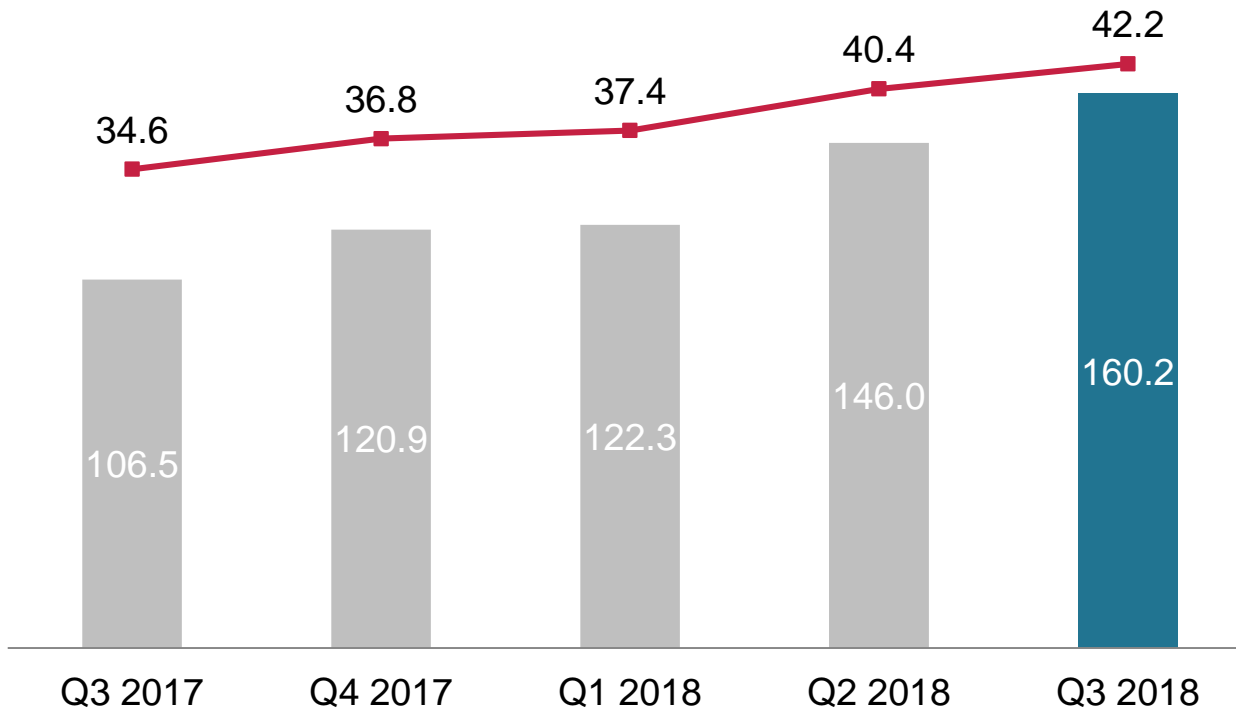
- ▶ ASP increase y-o-y and q-o-q
- ▶ One-off effect of EUR 8m in Q3/2018: conversion of a customer from sea freight to air freight
- ▶ Slight tailwind from USD q-o-q

### ▶ Negative

- ▶ Headwind from USD y-o-y (but not as much as expected at the beginning of the year)

# EBITDA and EBITDA-margin further up

EBITDA margin in %; EBITDA in EUR million



## Comment

### ► Positive

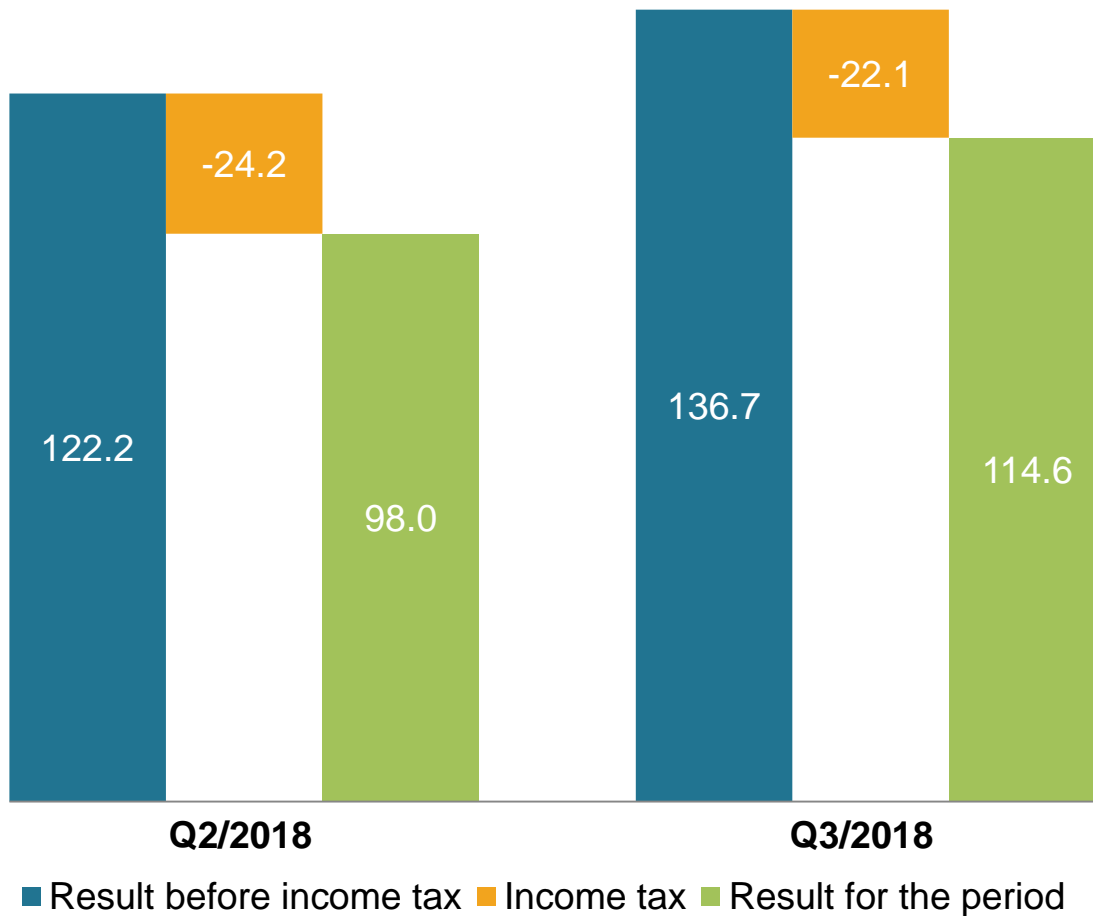
- Higher ASP y-o-y and q-o-q
- Slight tailwind from USD q-o-q
- Slightly lower cost per wafer area q-o-q

### ► Negative

- Headwind from USD y-o-y (but not as much as expected at the beginning of the year)

# Strong growth of net profit

Result and income tax, in EUR million



## Comment

- ▶ Net profit in Q3/2018 about 17% up vs. Q2/2018
- ▶ Higher ASPs and slightly lower cost of sales per wafer area contributed
- ▶ EUR 22.1m expenses for taxes in Q3/2018
- ▶ Tax rate of 16% in Q3/2018

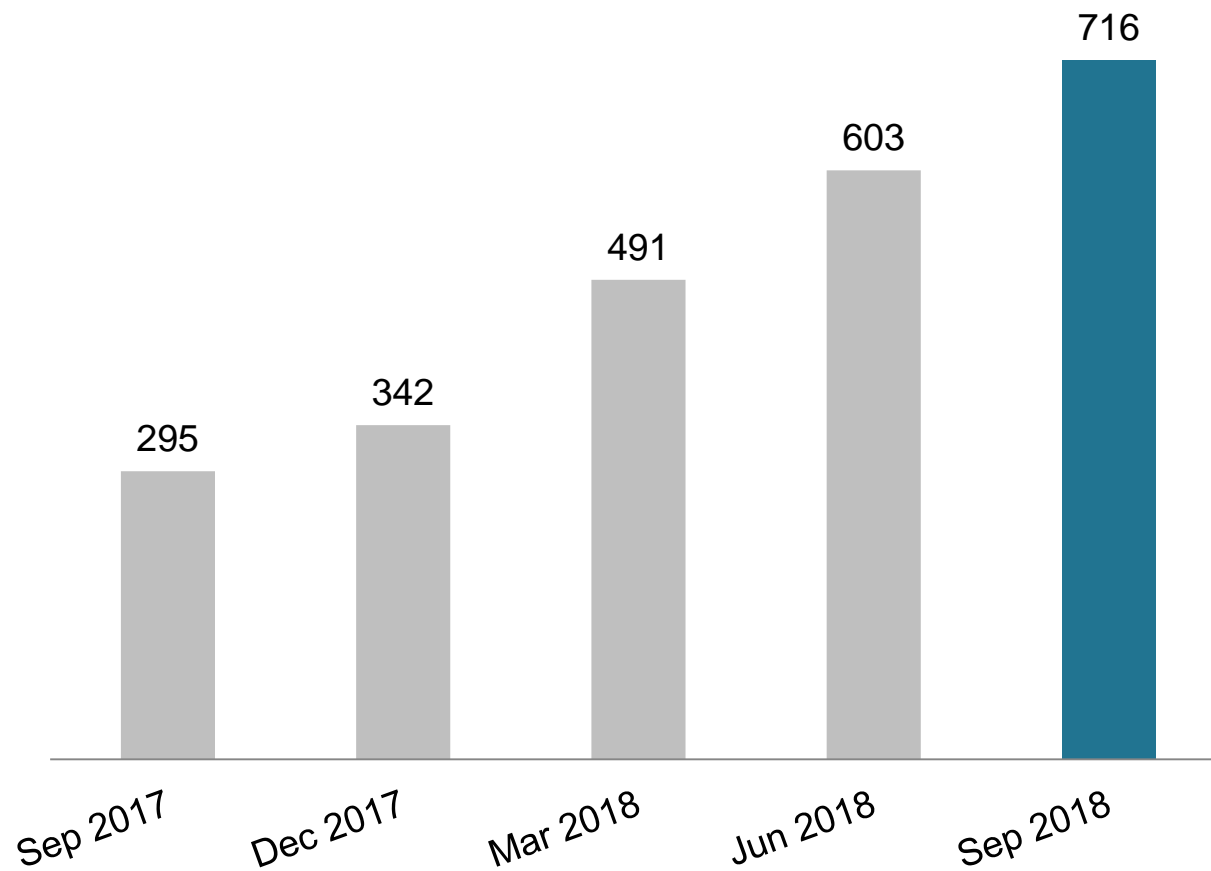
# Equity further increased due to strong profit for the period, solid equity ratio stable at about ~48%

## Balance sheet, in EUR million

Assets	Sep 30, 2018	Dec 31, 2017	Comments Sep 30, 2018	Equity and liabilities	Sep 30, 2018	Dec 31, 2017	Comments Sep 30, 2018
<b>Non-current</b>	<b>652.4</b>	<b>546.6</b>		<b>Equity</b>	<b>841.7</b>	<b>637.9</b>	
PP&E	587.1	513.3		Siltronic	822.1	637.3	
Other fixed	43.8	32.0	21 intangibles (related to SSW) 1 hedging	Other shareholders	19.6	0.6	Samsung's 22% in SSW
Securities and fixed-term deposits	21.5	1.3		<b>Liabilities</b>	<b>898.1</b>	<b>614.5</b>	
<b>Current</b>	<b>1,087.4</b>	<b>705.8</b>		Pension provision	373.6	367.2	Germany and US
Inventories and contract assets	152.0	149.9		Other provisions	124.5	54.6	37 personnel related (e.g. early retirement)
Trade receivables	167.4	159.9		Trade liabilities	91.6	67.1	
Other current	73.7	53.9	4 hedging	Customer prepayments	241.4	69.8	
Cash, fixed term deposits and securities	694.3	342.1		Other	67.0	55.7	50 employee-related 11 hedging
<b>Total</b>	<b>1,739.8</b>	<b>1,252.4</b>		<b>Total</b>	<b>1,739.8</b>	<b>1,252.4</b>	

# Net financial assets exceed EUR 700 million for the first time

Net financial assets, in EUR million



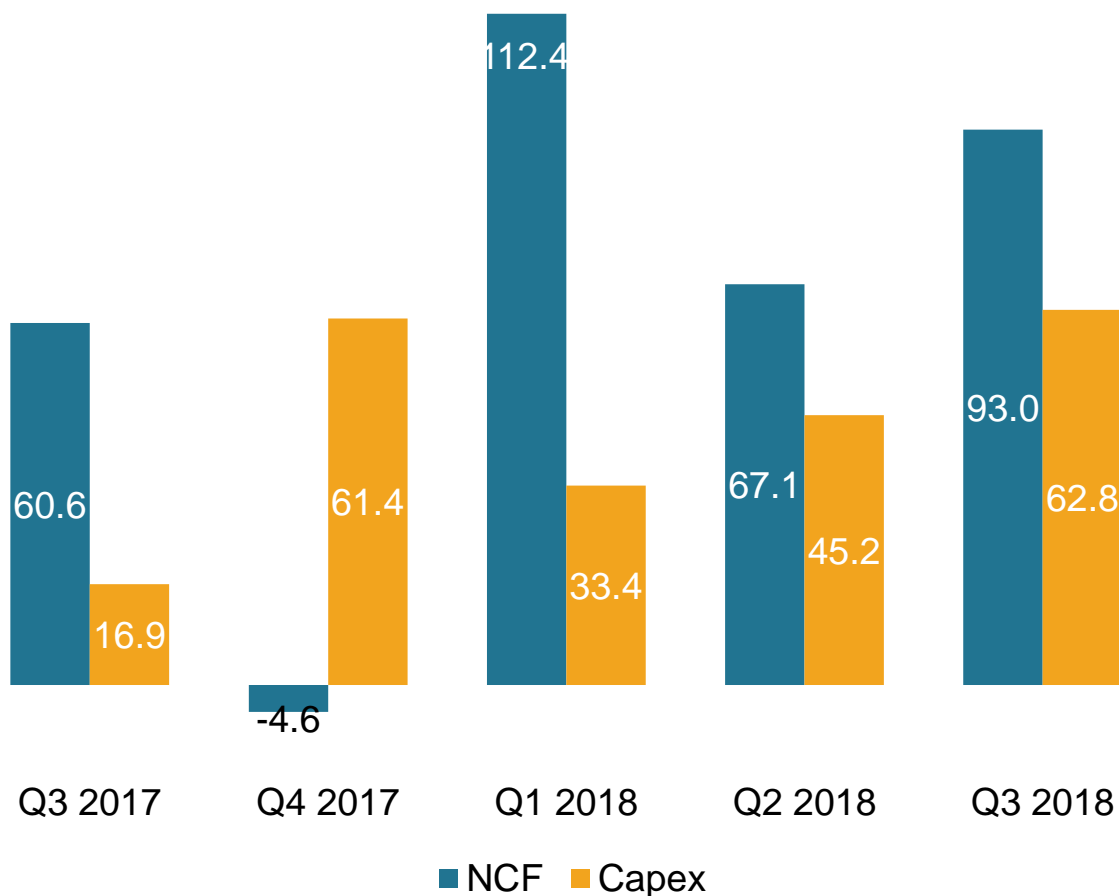
## Comment

- ▶ Prepayments of EUR 171.5m (net) received until September 2018



# Strong net cash flow despite investments in the future

Capex and NCF, in EUR million



## Comments

- ▶ Net cash flow of EUR 93.0m in Q3 2018
- ▶ Capex increase in Q3 related to:
  - ▶ capacity expansion in 2019
  - ▶ new crystal pulling hall in Singapore
  - ▶ ongoing automation projects
- ▶ Capex in 9M 2018: EUR 141.4m
- ▶ Expected capex in Q4 2018: approx. EUR 120-140m
- ▶ Capex guidance for FY 2018 unchanged EUR 260m-280m

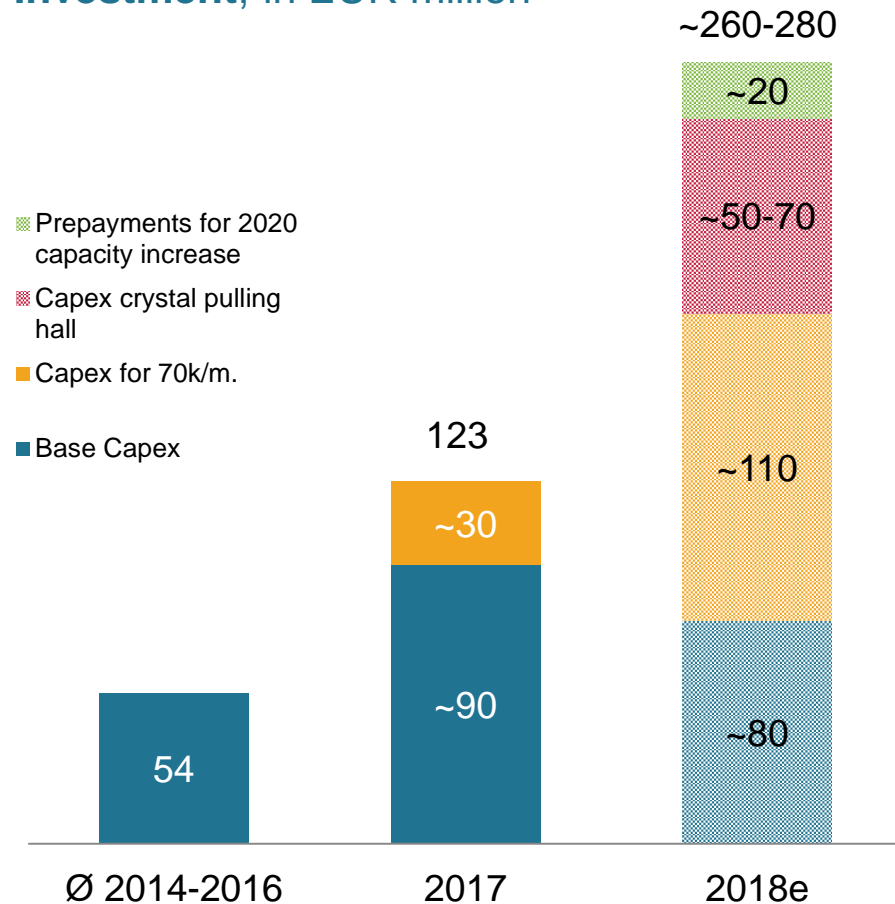




**APPENDIX**

# Capex 2018: Investment in the future

## Investment, in EUR million

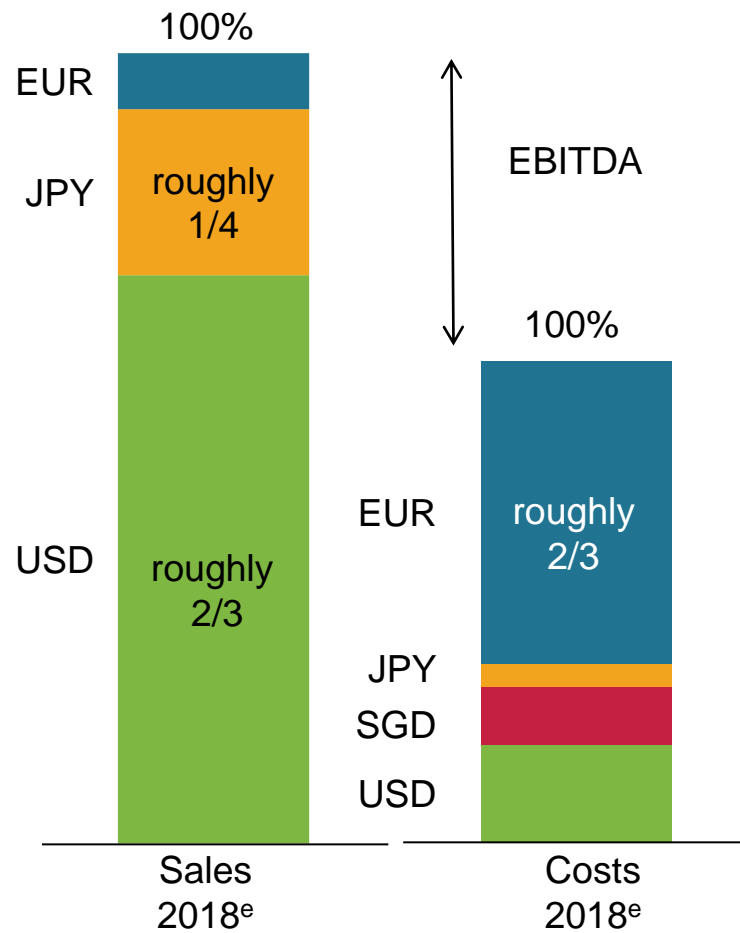


## Comments

- ▶ Capex of EUR ~140m for 70k wafers/month over 2 years
- ▶ Capex in 2018 includes new crystal pulling hall in Singapore to create sufficient crystal pulling capacity to further expand wafer capacity in 2020
- ▶ Due to long lead-times additional crystal pullers already ordered
- ▶ Prepayments for capacity additions in 2020 already in 2018
- ▶ Capex base level to sustain business:
  - ▶ MOB (maintenance of business)
  - ▶ Capabilities
  - ▶ Cost reductions
  - ▶ Automation

# Increasing FX exposure due to higher margins

## FX exposure



## USD exposure 2018

- ▶ hedging ratio approx. 40%

excl. profit

- ▶ hedging ratio approx. 75%

## JPY exposure 2018

- ▶ hedging ratio approx. 30%

excl. profit

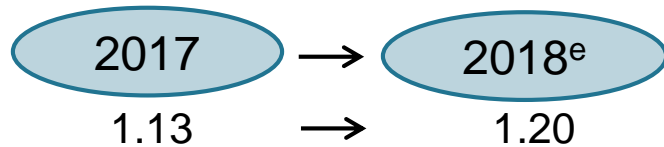
- ▶ hedging ratio approx. 50%



# At FX rates (1.20/130) negative impact on sales by approx. EUR 60m and on EBITDA by approx. EUR 40m

## Change USD, in EUR million

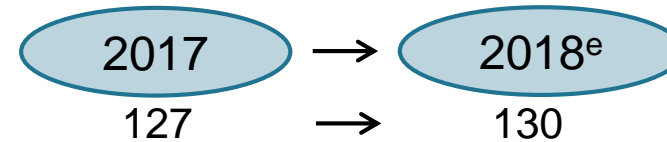
- 1 ct** ~ EUR 8.0m sales
- ~ EUR 6.5m EBITDA unhedged
- ~ EUR 4.5m EBITDA after hedging



- ~ EUR -55m sales
- ~ EUR -35m EBITDA

## Change JPY, in EUR million

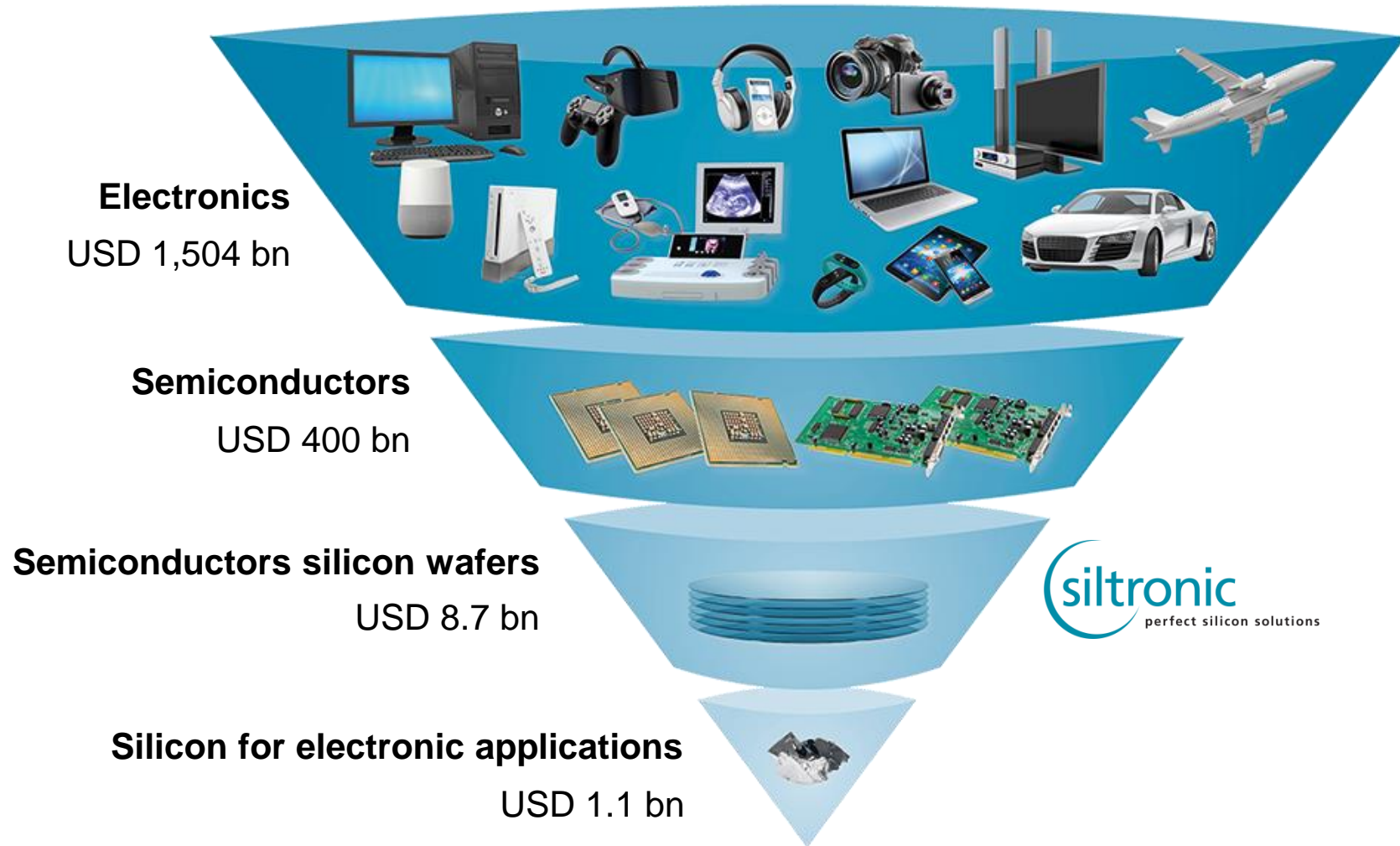
- 1 JPY** ~ EUR 2.5m sales
- ~ EUR 2.0m EBITDA unhedged
- ~ EUR 1.0m EBITDA after hedging



- ~ EUR -8m sales
- ~ EUR -4m EBITDA

# Increasing demand for electronic devices and new applications drive semiconductor growth, which in turn fuels silicon demand

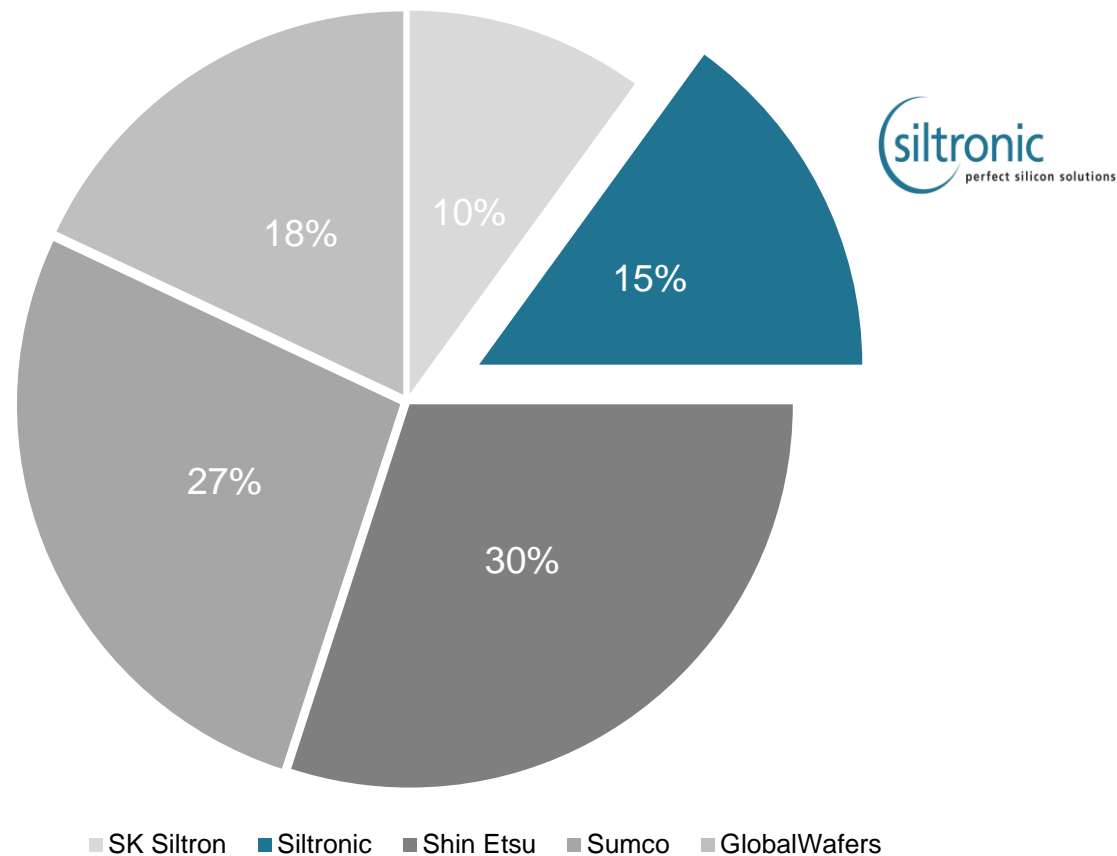
## Electronics value chain 2017



Source: Electronics (IC Insights), Semiconductors (WSTS, only silicon-based), Silicon wafers (SEMI SMG), Electronic applications (estimate)

# Siltronic is a strong wafer supplier with leading-edge technology

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



Sources: reported company revenues FY 2017, converted to USD million

# Customer base well diversified across all major semiconductor silicon wafer consumers

Siltronic is a supplier to all top 20 Silicon wafer consumers



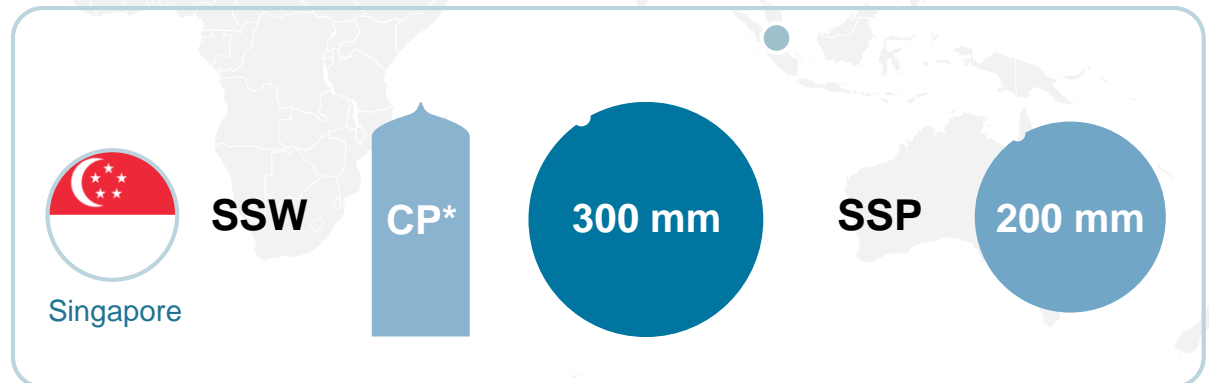
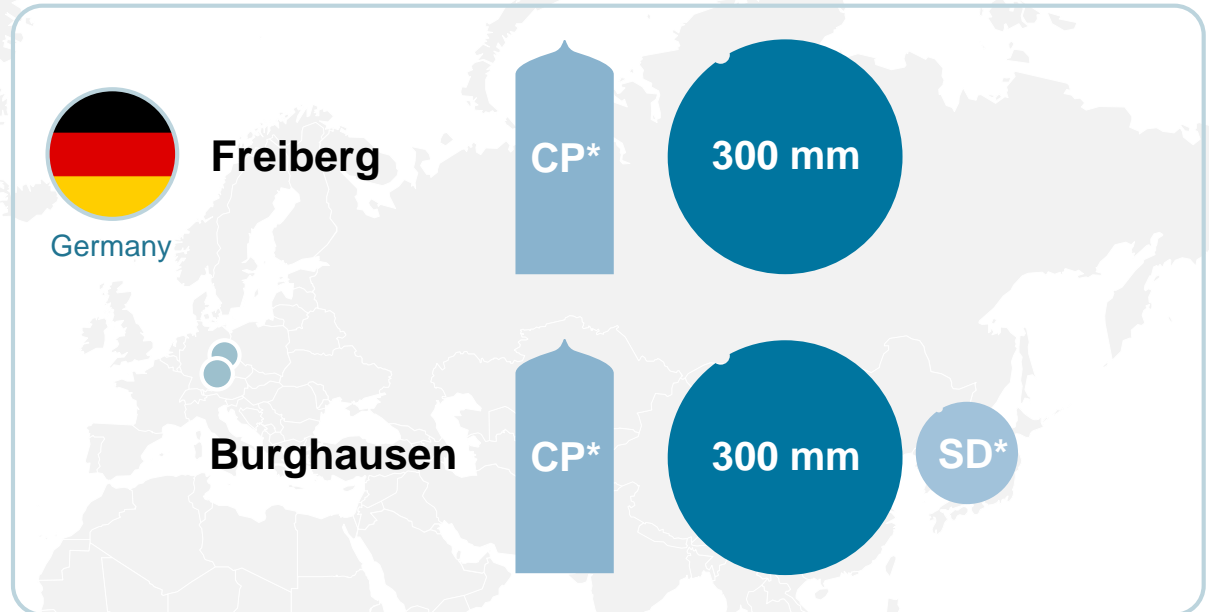
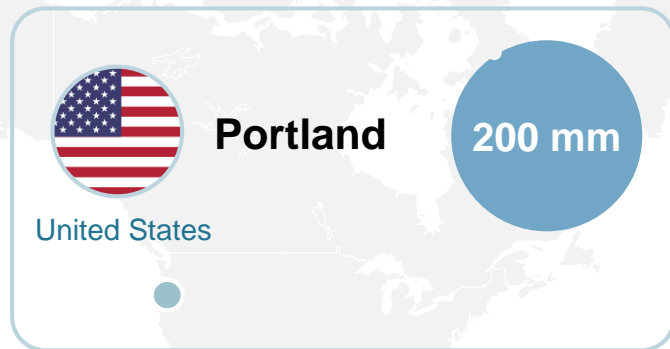
Siltronic well positioned at all major Silicon consumers

Top 10 customers represent ~73% of 2017 revenues

Source: Company Information, Siltronic



# International manufacturing network supports market leadership and business focus



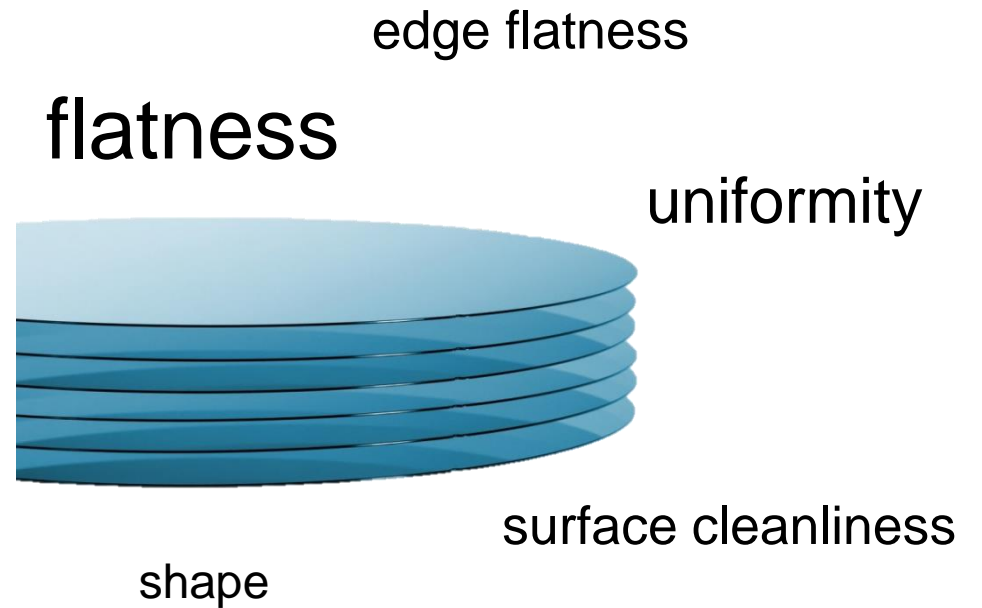
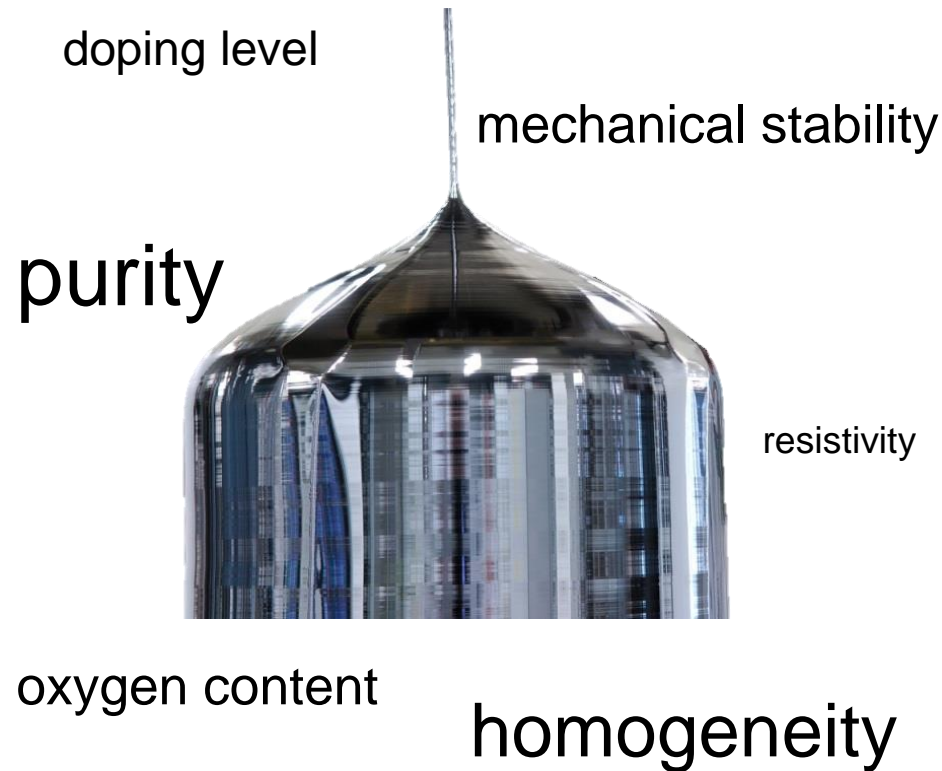
- ▶ **Central R&D hub** in Burghausen
- ▶ **High volume facilities** for 300 mm in Germany and Singapore
- ▶ Among world's **newest & largest fabs** in Singapore

\*CP = Crystal Pulling | \*SD = 150 mm and smaller

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

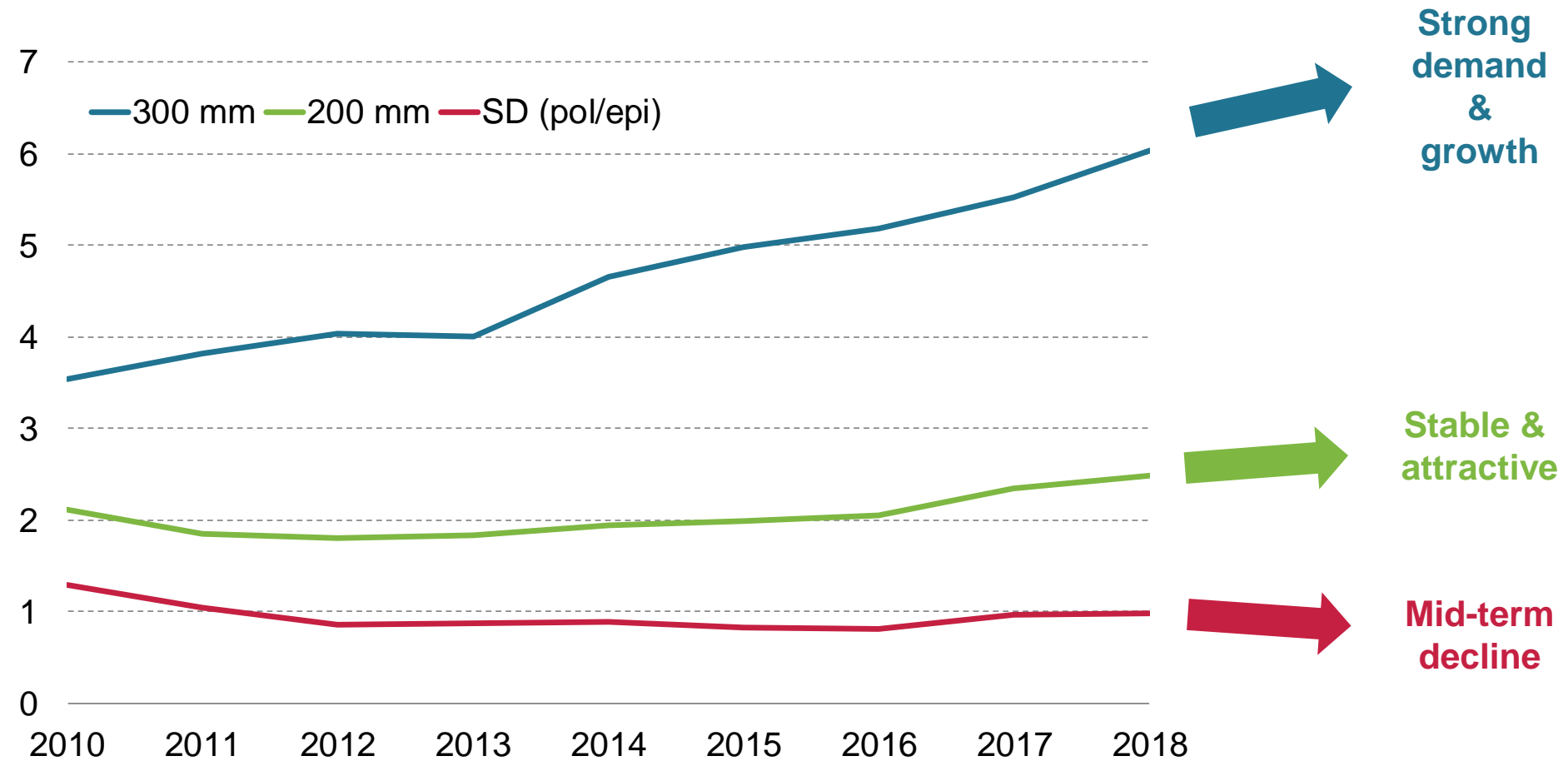
## Ingot

## Wafer



# Siltronic is focused on growing 300 mm and attractive 200 mm business.

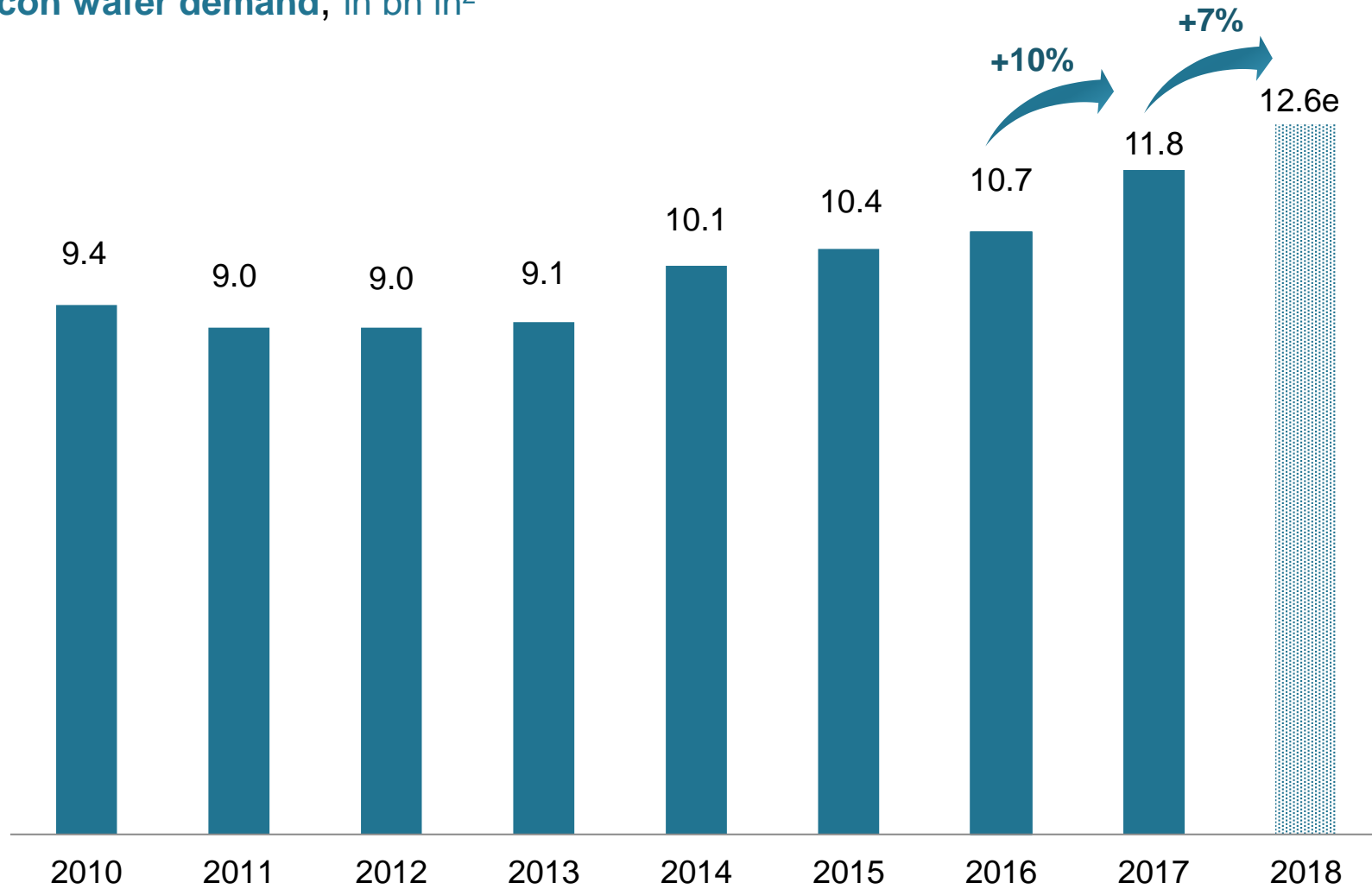
Development of total wafer demand per diameter, in mn 300 mm equivalents per month



Source: SEMI up to Sep 2018

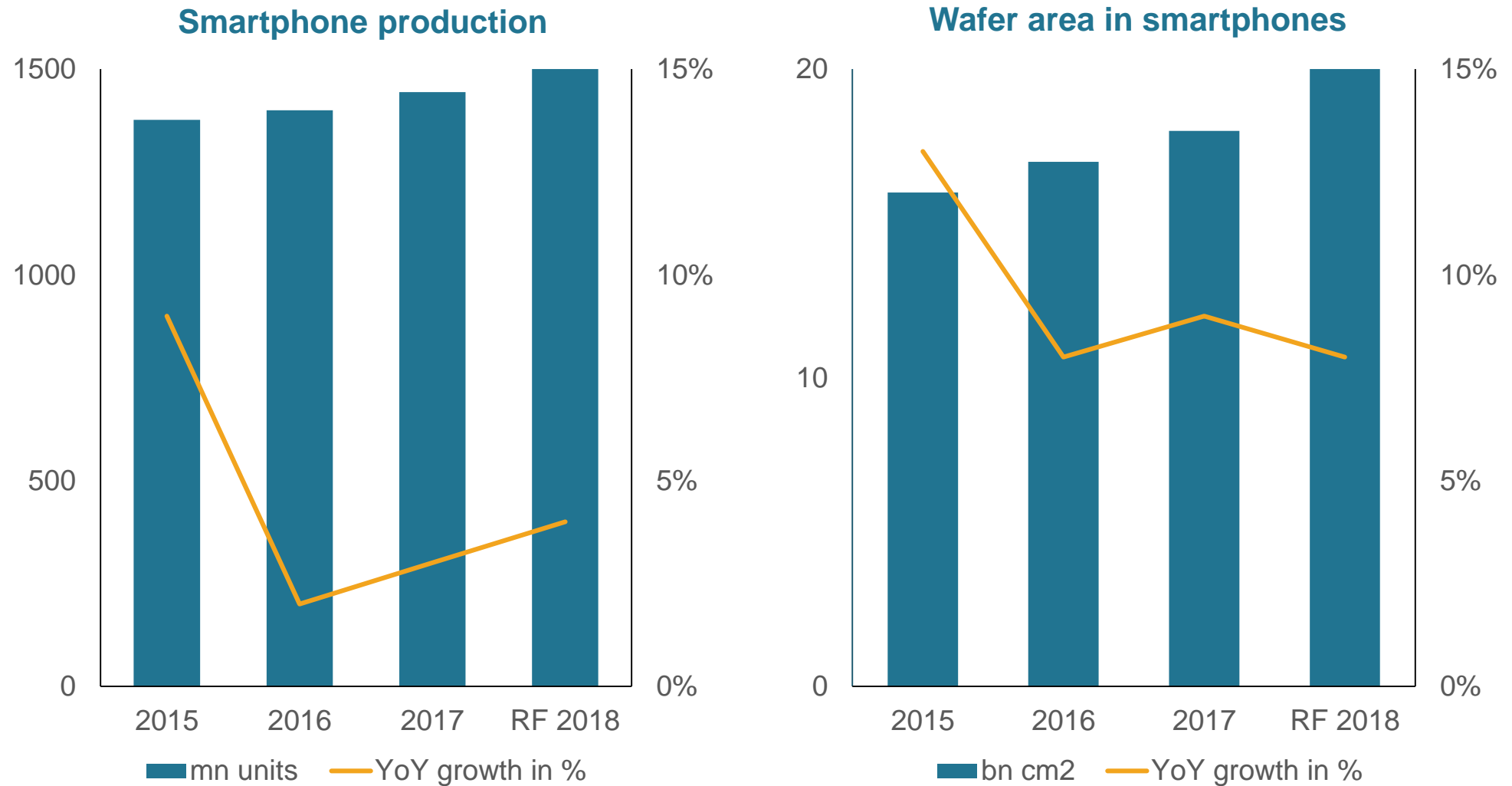
# Silicon area demand continues to grow

Silicon wafer demand, in bn in<sup>2</sup>



Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q3 2018 (Estimate 2018). Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details. Further Source: SEMI (Silicon Area until 2017).

# Smartphone growth slowing, however silicon content increasing with more memory and other features



Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q2 2018. Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details

# Major semiconductor devices in the Apple iPhone 8 Plus (256 GB model)

## 2 main cameras

▶ ~ 2 cm<sup>2</sup> Si

## Front-facing camera

▶ ~ 1 cm<sup>2</sup> Si

## Flash NAND (256 GB)

▶ ~ 9 cm<sup>2</sup> Si

## SoC Package-on-Package

Processor

▶ ~ 1 cm<sup>2</sup> Si

3GB DRAM

▶ ~ 2.5 cm<sup>2</sup> Si

## Broadband processor

▶ ~ 1 cm<sup>2</sup> Si

## Some additional features:

▶ 3 Power management ICs – vs. 2 in iPhone 7

▶ Time-of-Flight chip introduced at iPhone 7

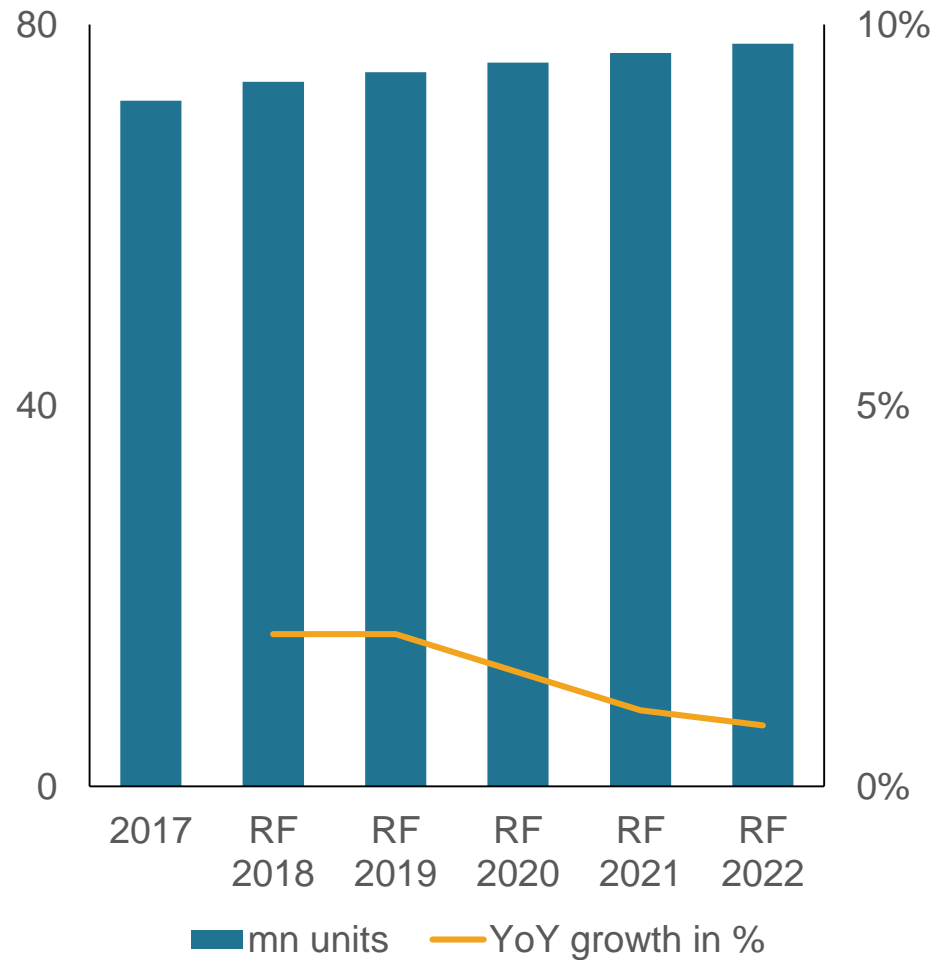
▶ Processor includes Image Signal Processor and Video Encoder

▶ Wireless Charging

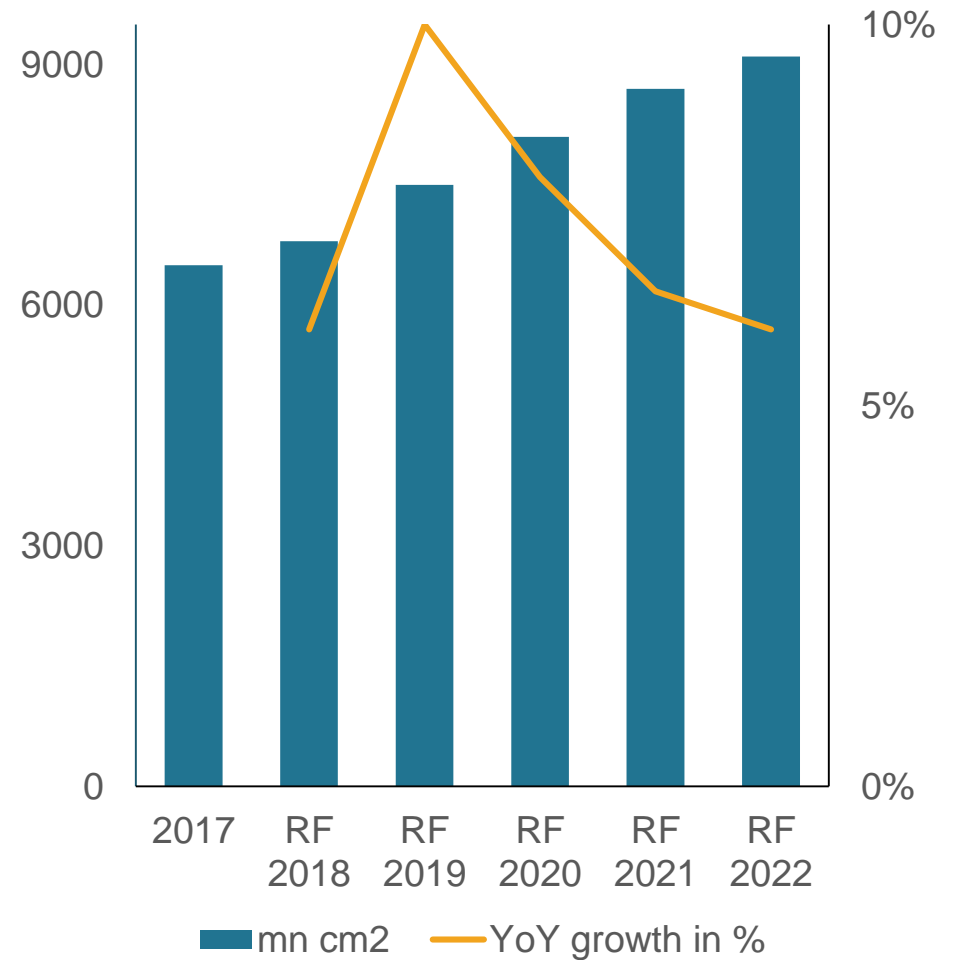
Source: Apple, TechInsights, Siltronic Marketing

# Car shipments growing slowly, silicon content in automotive estimated to grow by 7% (CAGR 2017-2022)

## Worldwide passenger car shipments



## Wafer area in automotive

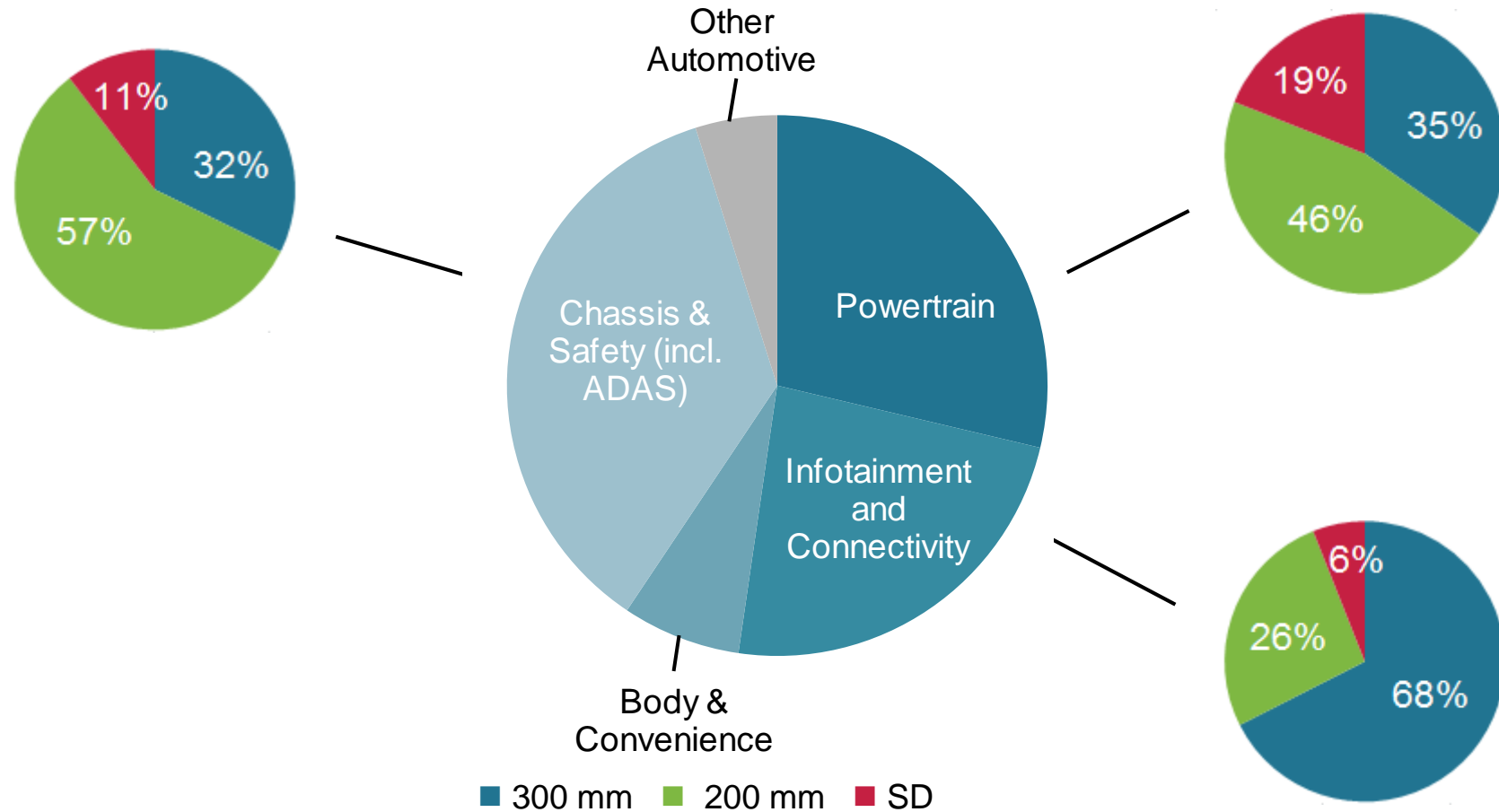


Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q2 2018. Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details. Other Source: Statista



# Within a car, most silicon is used for powertrain, infotainment and safety

2018 silicon demand in automotive, in %

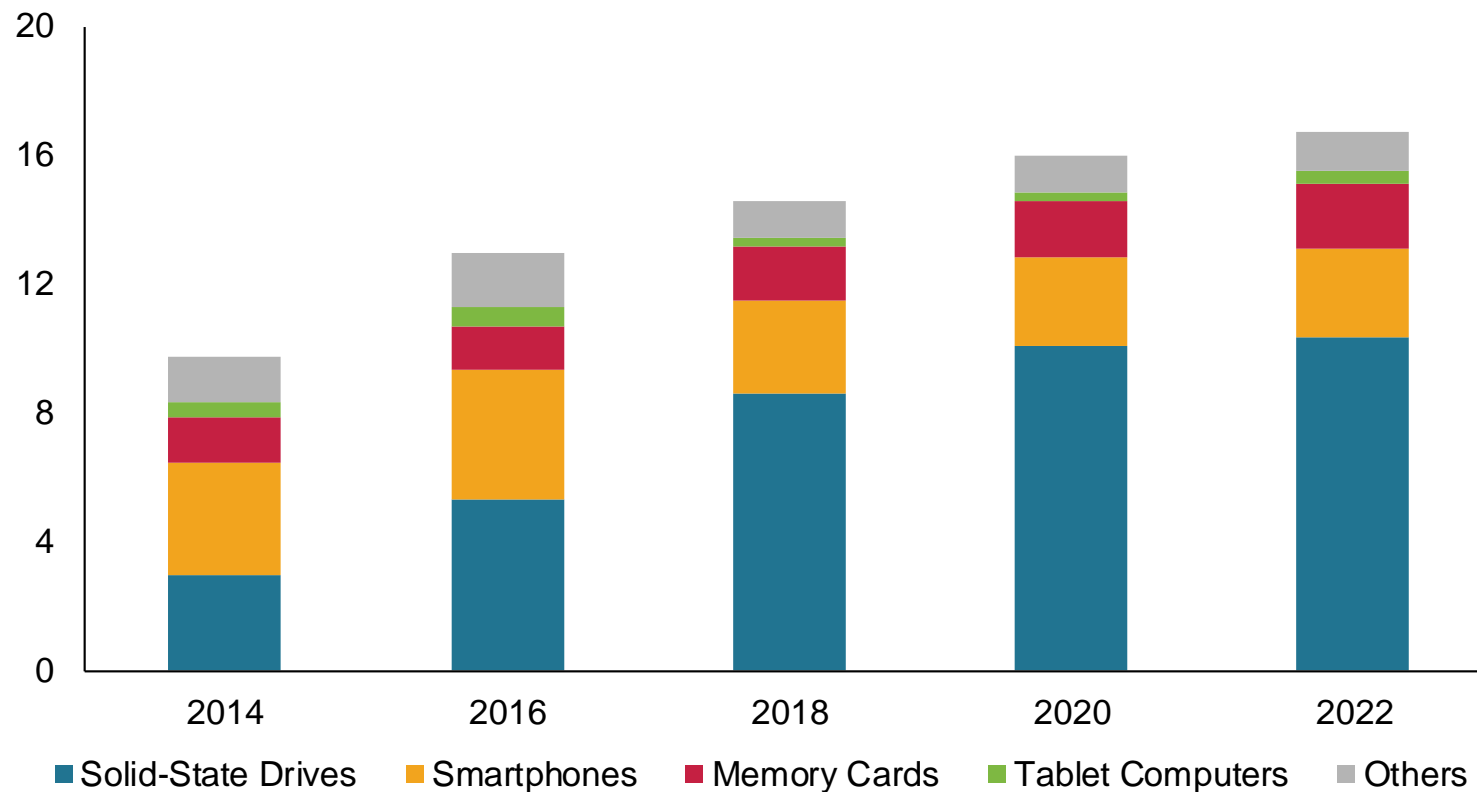


<sup>1</sup> ADAS = advanced driver assistance system

Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q3 2018. Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details.

# Silicon demand for NAND driven by growing demand for solid-state drives and increasing storage in smartphones

NAND silicon area demand by applications, bn cm<sup>2</sup> p.a.

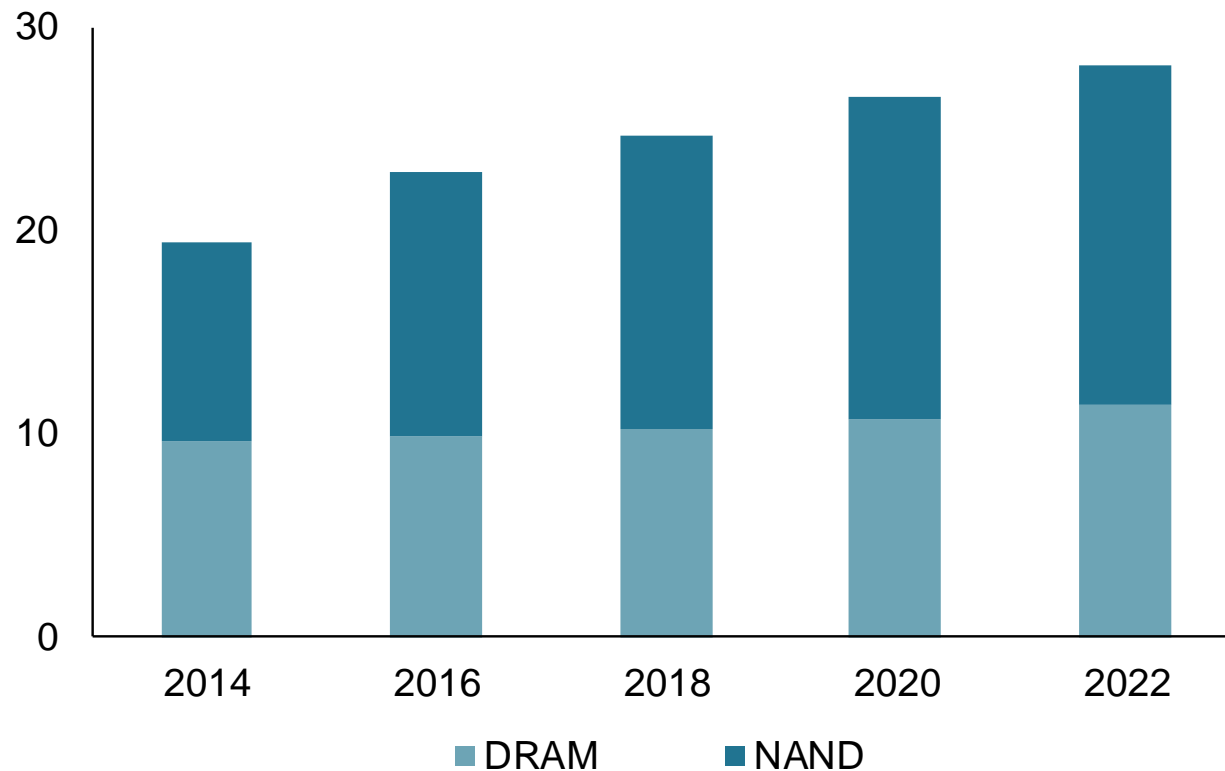


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# NAND is the growth engine in the memory sector

## Silicon area for DRAM only shows moderate growth

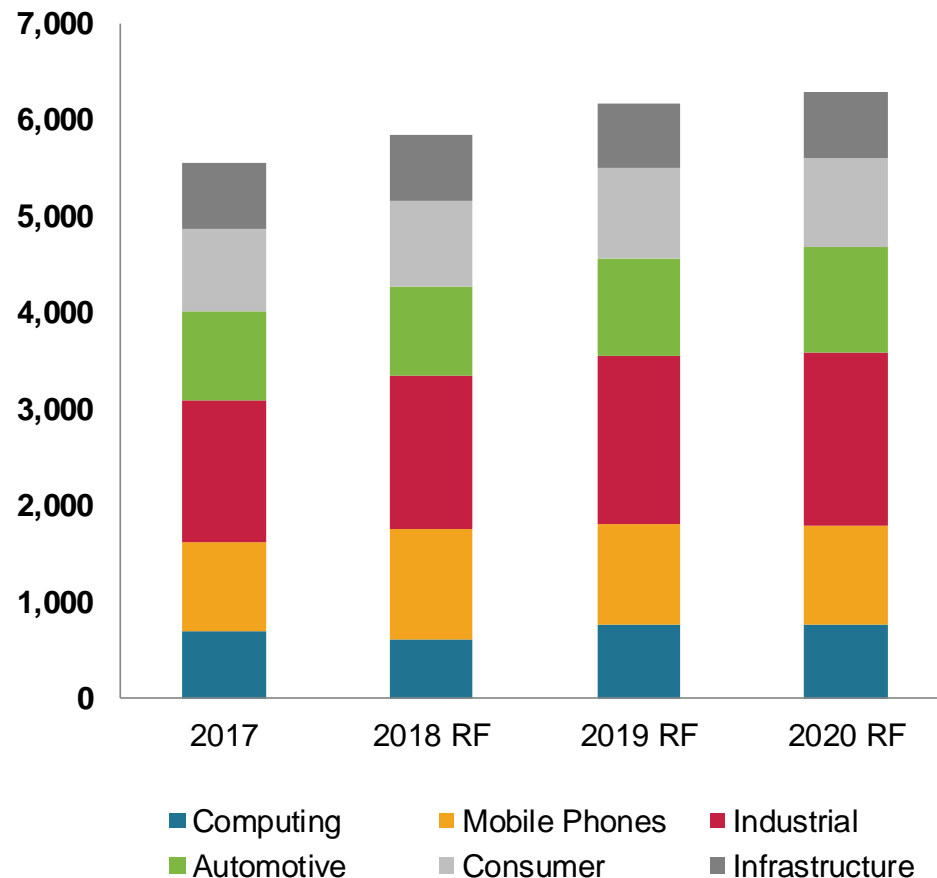
Split of memory silicon area market by DRAM and NAND, bn cm<sup>2</sup> p.a.



Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q3 2018. Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details.

# 200 mm demand growth forecast of +4% CAGR 2017-2020 not attractive enough to consider major investments

200 mm demand by category, in k/w per month



## Comment

- ▶ 200 mm demand expected to increase by +4% CAGR (2017-2020), according to IHS Markit.
- ▶ Less than 1,000k wafer/month capacity expansions until 2020 announced by wafer producers
- ▶ Full utilization of additional capacities depend on equipment lead-times and qualification lead-times of customers

Source: Data based on IHS Markit, Technology Group, Semiconductor Silicon Demand Forecast Tool, Q3 2018. Results are not an endorsement of Siltronic. Any reliance on these results is at the third party's own risk. Visit [technology.ihs.com](http://technology.ihs.com) for more details.  
Other source: Siltronic Marketing (July 2018)

# Contact and Additional Information

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## Additional Information

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

## Financial Calendar

Preliminary financial figures	January 31, 2019
Annual Report 2018	March 5, 2019
Q1 Quarterly Statement	May 3, 2019
Annual General Meeting	May 7, 2019
Half Year Report	July 25, 2019
Q3 Quarterly Statement	October 24, 2019



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