Infineon's Target Markets: Secular Growth vs Cyclicality

BoAML Global Technology Conference

San Francisco, 7 June 2017

Dominik Asam, CFO

Table of Contents

1 Infineon at a Glance

2 Cyclicality

3 Secular growth drivers

Please regard the "Notes" and "Glossary" at the end of the presentation.

Disclaimer: This presentation contains forward-looking statements about the business, financial condition and earnings performance of the Infineon Group.

These statements are based on assumptions and projections resting upon currently available information and present estimates. They are subject to a multitude of uncertainties and risks. Actual business development may therefore differ materially from what has been expected.

Beyond disclosure requirements stipulated by law, Infineon does not undertake any obligation to update forward-looking statements.

Copyright © Infineon Technologies AG 2017. All rights reserved.

Table of Contents

1 Infineon at a Glance

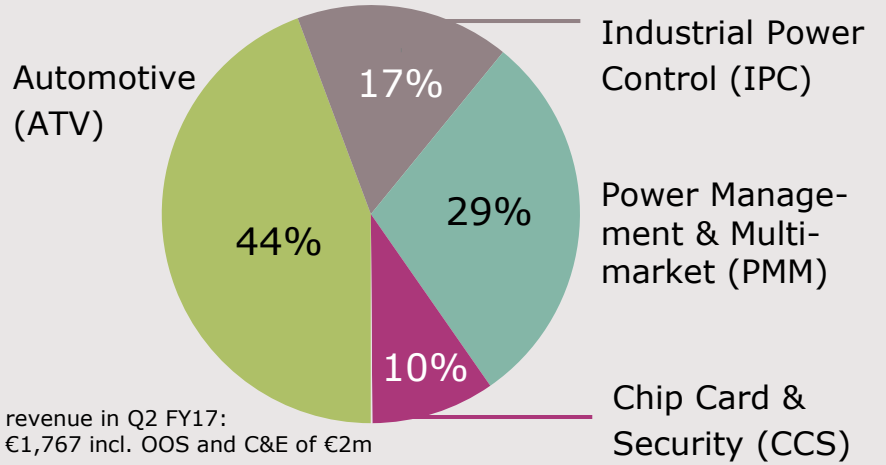
2 Cyclicality

3 Secular growth drivers

Copyright © Infineon Technologies AG 2017. All rights reserved.

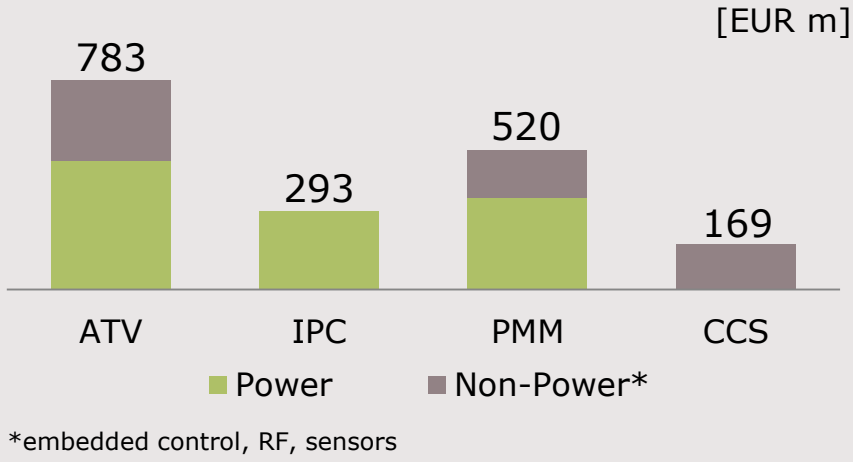
Infineon at a glance

Business Segments



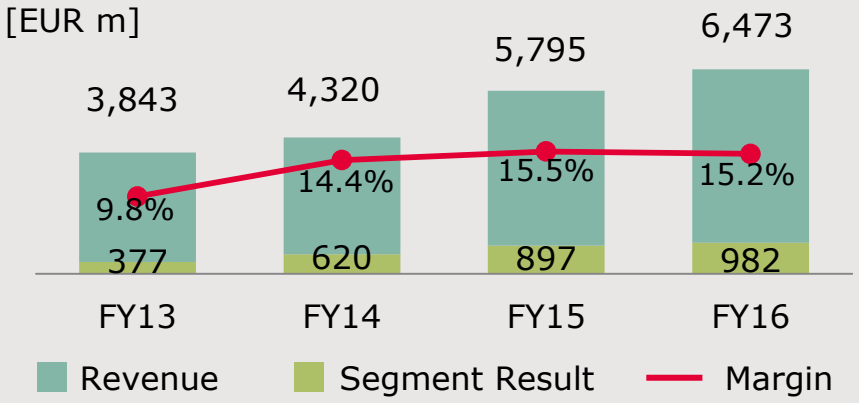
revenue in Q2 FY17:
€1,767 incl. OOS and C&E of €2m

Power represents ~60% of revenue



*embedded control, RF, sensors

Financials



Market Position

Automotive	Power	Smart card ICs
		
# 2	**# 1**	**# 2**
Strategy Analytics, April 2017	IHS Markit, October 2016	IHS Markit, July 2016

Copyright © Infineon Technologies AG 2017. All rights reserved.

Our strategy is targeted at value creation through sustainable organic growth

Focus		Technology leadership		System understanding
Auto	**Power**	**RF and sensors**	**Security**	
System leader in automotive	#1; system and technology leader	Broad RF and sensor technology portfolio	Leader in security solutions	

Average-cycle financial targets

~8% p.a.	~17%	~13%
revenue growth	Segment Result Margin	investment-to-sales (*thereof capex*: ~11%*)

Continued value creation for shareholders

Organic RoCE ~ 2x WACC

- paying out at least a constant dividend even in periods of slower growth
- continuous EPS increase

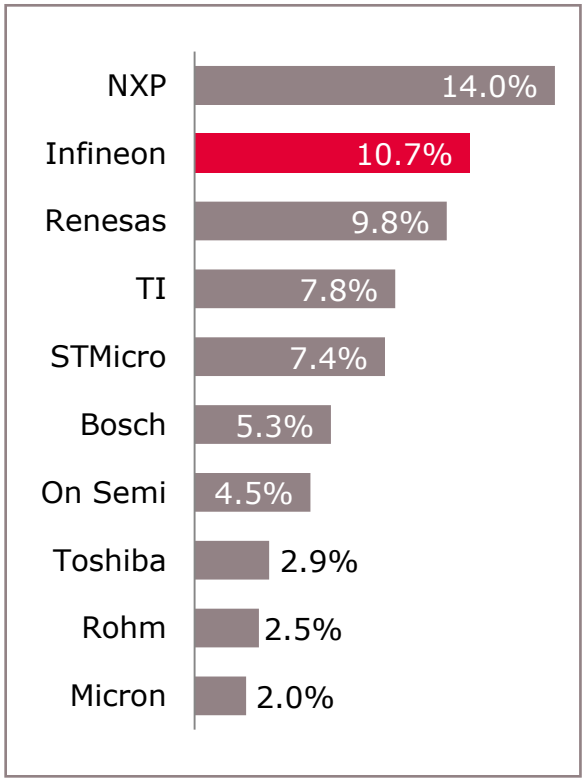
* Infineon reports under IFRS and has therefore to capitalize development assets which represents currently ~2% of sales.

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon increased relative market share in power and outperformed chip card market

Automotive semiconductors

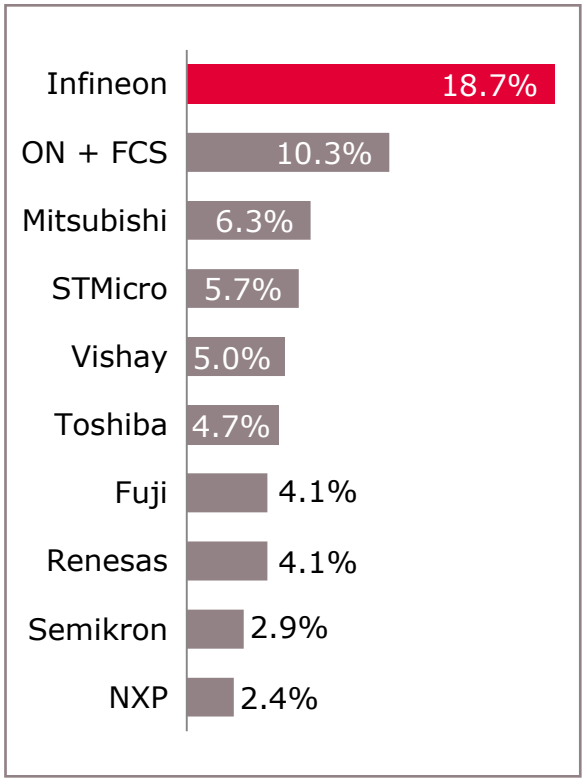
total market in 2016: $30.2bn



Source: Strategy Analytics, April 2017

Power discretes and modules

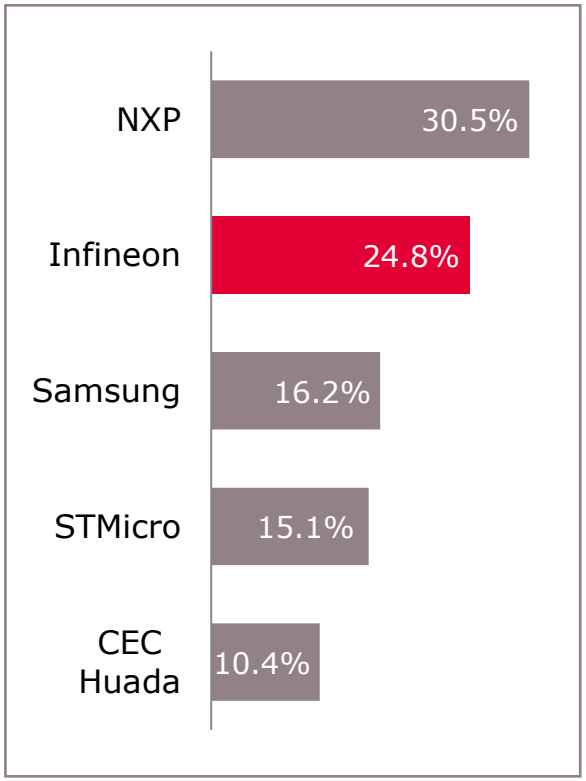
total market in 2015: $14.8bn



Source: IHS Markit, October 2016

Smart Card ICs

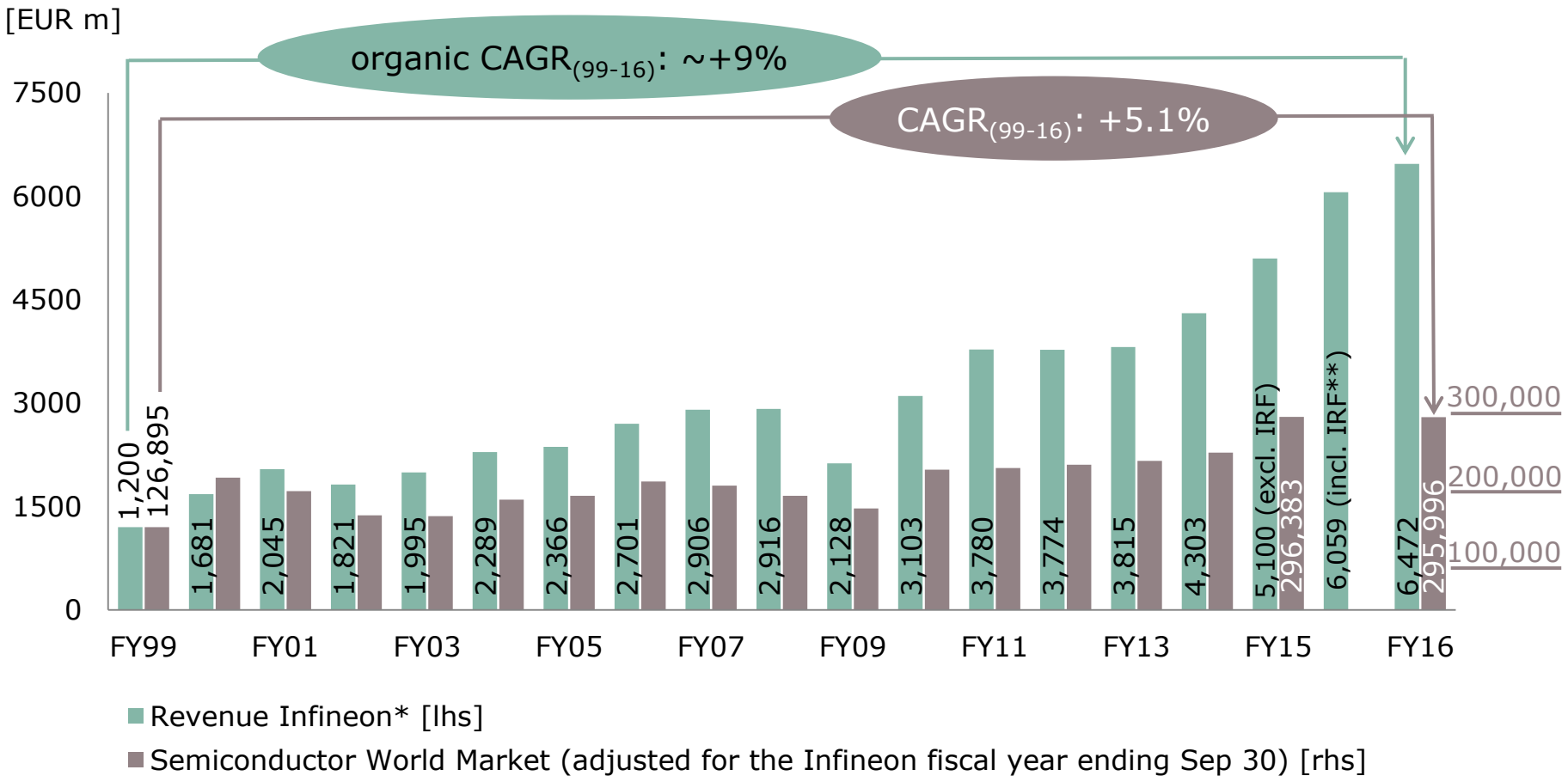
total market in 2015: $2.72bn



Source: IHS Markit, July 2016

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon's organic revenue development clearly outperformed total semi market



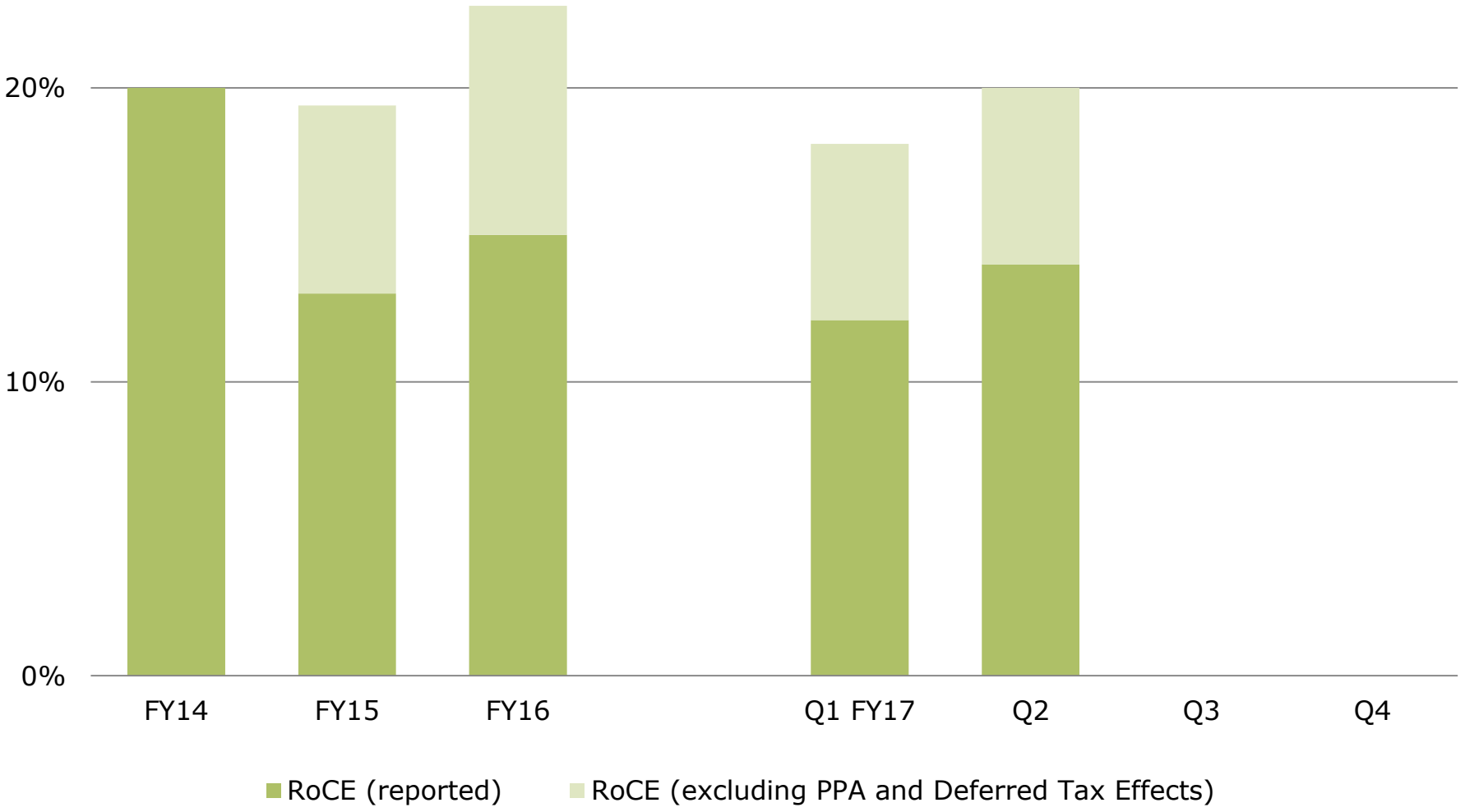
* Based on Infineon's portfolio (excl. Other Operating Segments and Corporate & Eliminations) per end of FY16.

** If International Rectifier had been consolidated since 1 Oct 2014, Infineon would have recorded revenues of €6,059m in FY15.

Source: Infineon; WSTS (World Semiconductor Trade Statistics), November 2016

Copyright © Infineon Technologies AG 2017. All rights reserved.

Organic RoCE as the key value metric typically amounts to ~2x WACC



Copyright © Infineon Technologies AG 2017. All rights reserved.

Table of Contents

1 Infineon at a Glance

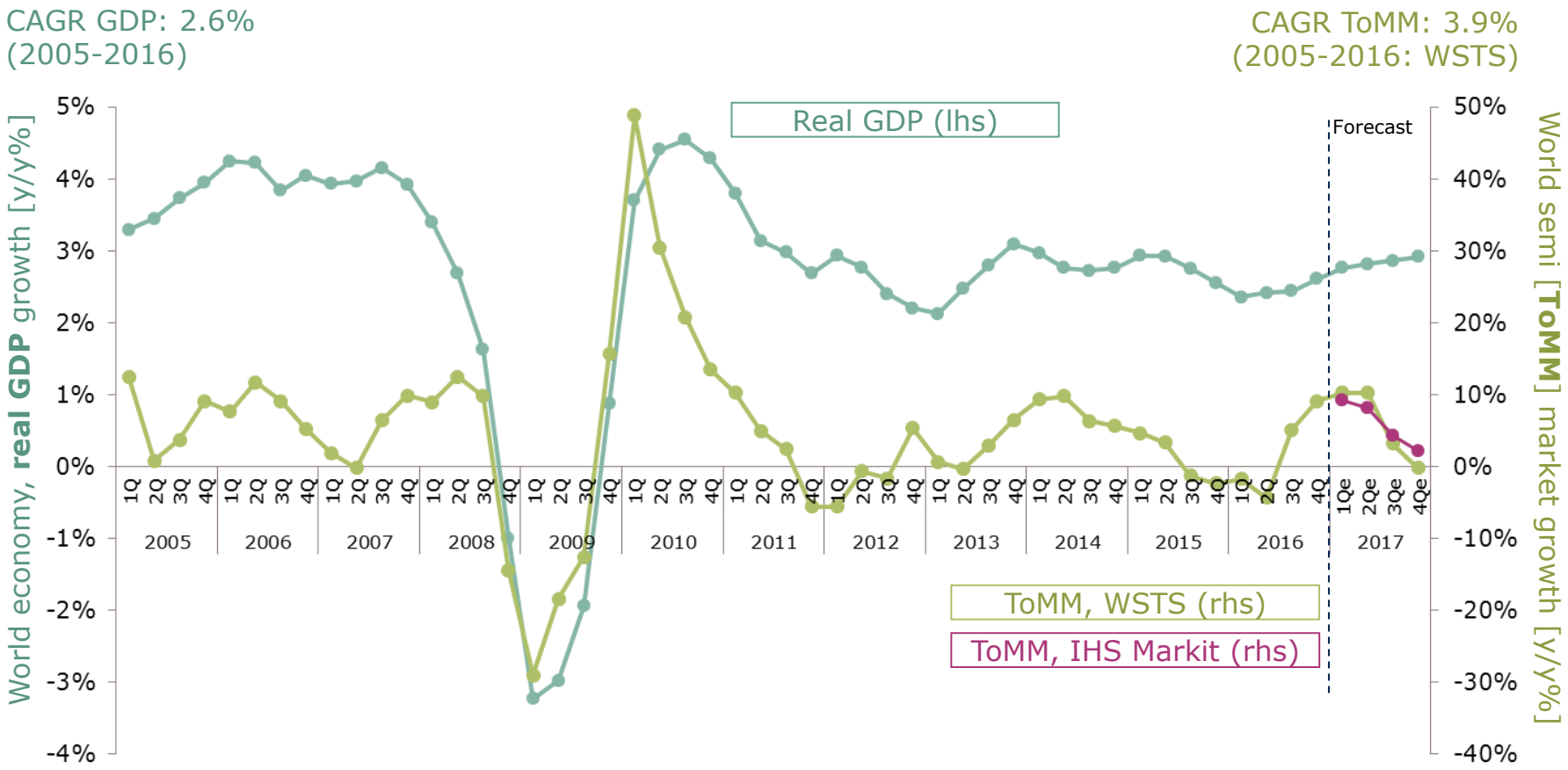
2 Cyclicality

3 Secular growth drivers

Copyright © Infineon Technologies AG 2017. All rights reserved.

Since 2011, only moderate cyclicality in world GDP and semiconductor market growth

Growth rates y-y: Q1 CY05 – Q4 CY17e



ToMM: Total semiconductor US-Dollar based revenues w/o Memory IC, w/o MPU. – **Real GDP** = Inflation adjusted (real) Gross Domestic Product of all countries of the world; total of local values converted with in each case current US-$ exchange rates. World real GDP is from chain-weighted index.

Source: IHS Markit (15 February 2017); WSTS Bluebook for Historical Data (30 January 2017) and Autumn 2016 Forecast – Interim Update (February 2017); IHS Markit, Application Market Forecast Tool (AMFT), Q4 CY17, Regional Shipments (December 2016).

Copyright © Infineon Technologies AG 2017. All rights reserved.

Table of Contents

1 Infineon at a Glance

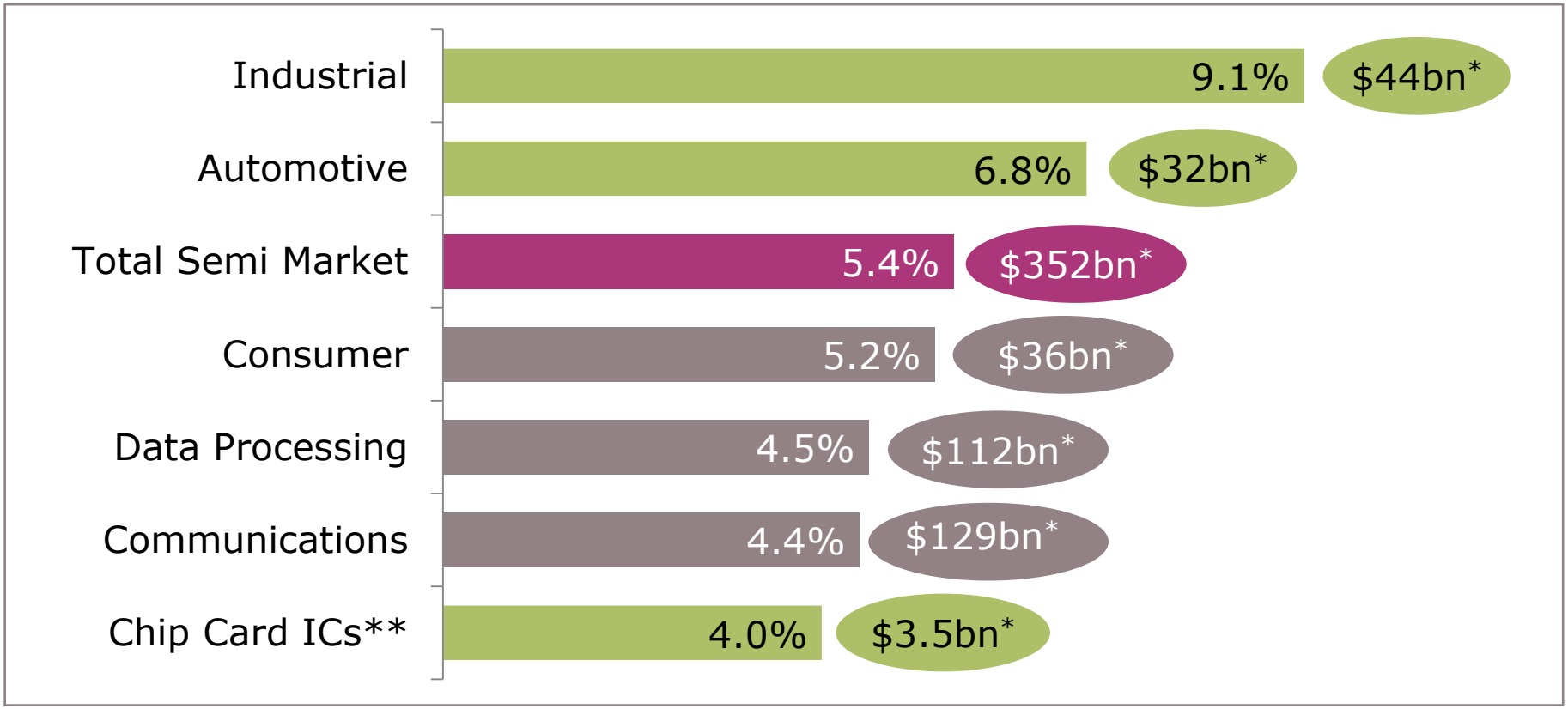
2 Cyclicality

3 Secular growth drivers

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon benefits from industrial and auto, the by far fastest growing segments

CAGR 2016 – 2021 by Semiconductor Industry Segment

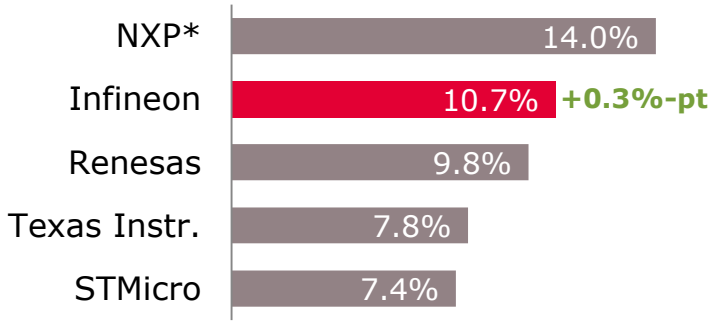


Source: IHS Markit, "Worldwide Semiconductor Shipment Forecast", April 2017
* Market size in calendar year 2016
** Source: ABI Research, "Smart Cards and Secure ICs", February 2017; smart card and embedded secure microcontroller ICs

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon's position in the automotive semiconductor universe

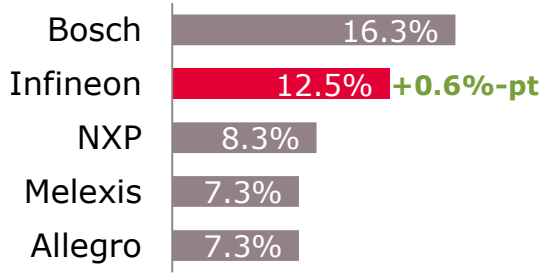
Automotive semiconductors
2016 total market size: $30.2bn



Market share trend

- Infineon benefits disproportionately from the two mega trends
  - clean cars
  - ADAS/AD

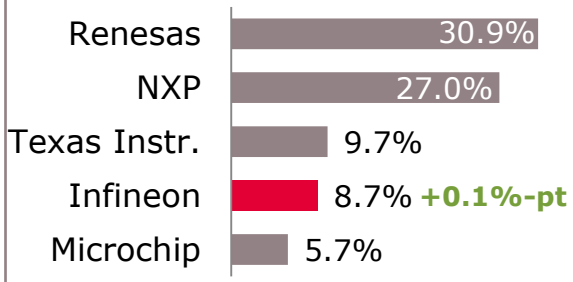
Sensors



m.s. trend

- 24 / 77 GHz radar
- REAL3™ sensor

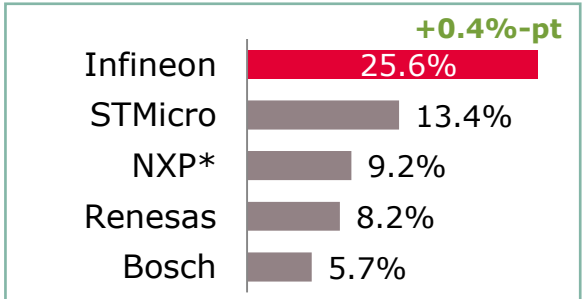
Microcontrollers



m.s. trend

- ADAS/AD
- Powertrain

Power



m.s. trend

- xEV penetration
- EPS
- Lighting

* Divestiture of NXP's Standard Product business ("Nexperia") closed on 16 Feb 2017; hence included in the 2016 ranking.
Source: Strategy Analytics, "Automotive Semiconductor Vendor Market Shares", April 2017

Copyright © Infineon Technologies AG 2017. All rights reserved.

ADAS/AD, clean cars, and adoption of premium features drive growth

Vehicle production



› ~2% - 3% growth p.a.

Drivers for semiconductor content per car

Clean cars



ADAS/AD and clean cars will generate half of the 8% trendline growth of ATV

› Driven by legislation
› Improvements of ICE (e.g. EPS)
› Adoption of xEV
› Higher efficiency of all electric consumers

ADAS/AD



› Today:
  › crash avoidance
  › ADAS
› Tomorrow:
  › Autonomous Driving (AD)

Comfort, premium

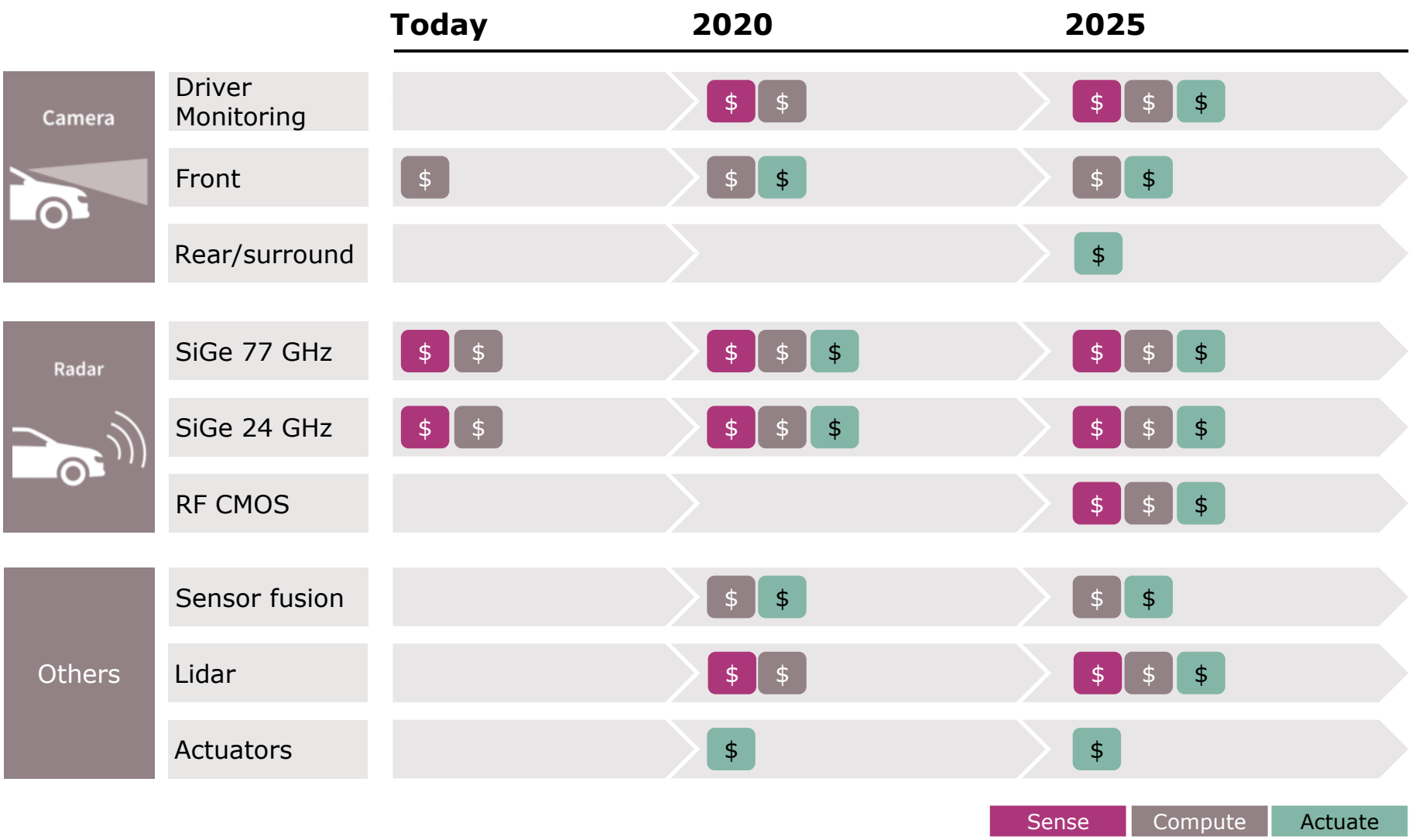


› Premium cars are early adopters of high-end comfort and safety features
› Trickling down to mid-range

~8% p.a. through-cycle growth

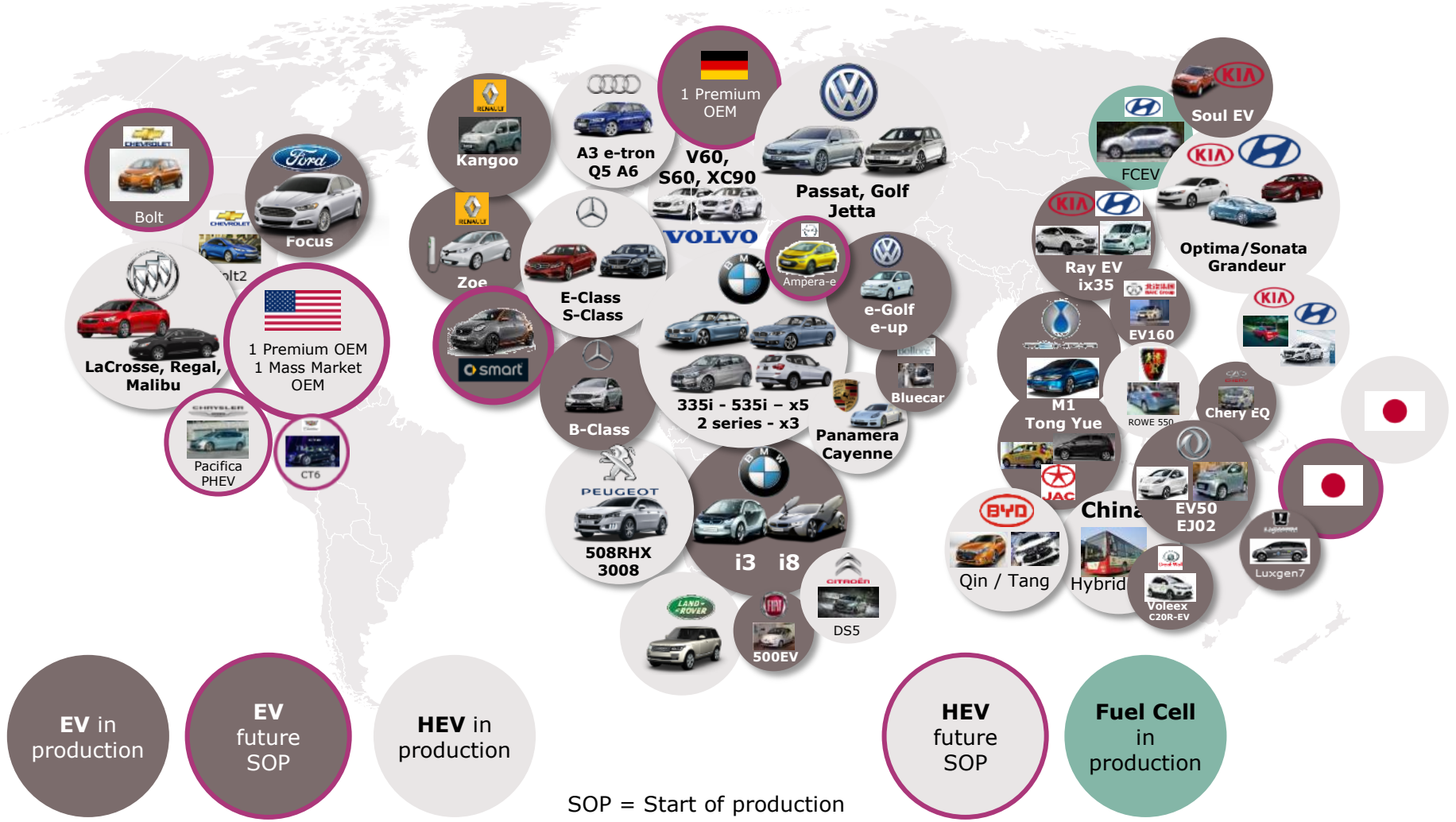
Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon's product portfolio fosters revenue growth in ADAS/AD for the next decade



Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon is well positioned globally to benefit disproportionately from xEV boom



EV in production

EV future SOP

HEV in production

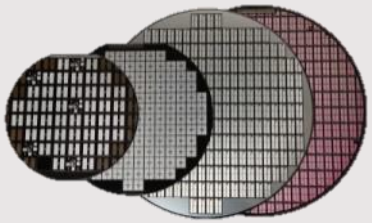
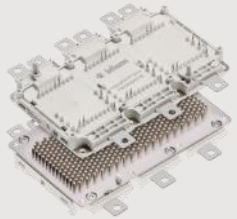
SOP = Start of production

HEV future SOP

Fuel Cell in production

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon has all elements and unparalleled package expertise for all xEV applications

Bare die	Discretes	Scalable products	Plug-n-Play
 Si bare dies	 Si IGBT	  HybridPACK™ Double-Sided Cooling	 HybridPACK™ solutions  Easy modules
 SiC bare dies	 SiC MOSFET	 SiC optimized package solution	

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon is #1 and technology leader in power semiconductors

#1 in the market*
for MOSFETs, discrete IGBTs, and total market

Broad product and technology portfolio

Addressing broadest range of applications

Key areas of innovation

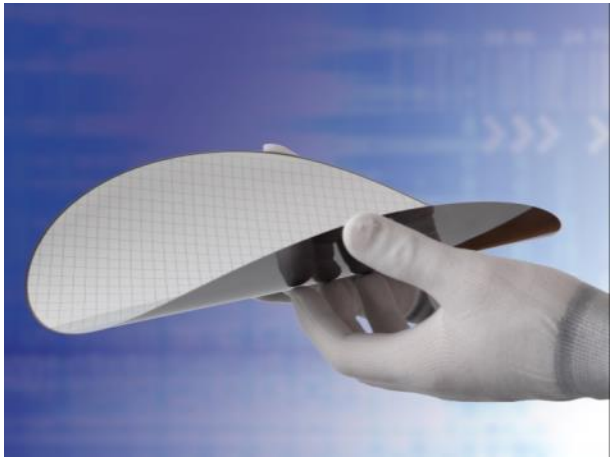
- 300 mm thin-wafer manufacturing for power semiconductors
- System leader with digitalization of the control loop and functional integration
- Leader in next-generation power semiconductor materials SiC and GaN

Infineon is ideally positioned to gain further market share and earn superior margins in power semiconductors

* Source: IHS Markit, "Power Semiconductor Discretes & Modules Report – 2016", October 2016

Copyright © Infineon Technologies AG 2017. All rights reserved.

Ramp of 300 mm thin-wafer manufacturing technology on schedule



Advantages of 300 mm manufacturing of power semiconductors

- When fully loaded, frontend manufacturing cost per unit will be 20 – 30% lower than on 200 mm
- Capital intensity is 30% lower than for 200 mm



Current status of Dresden 300 mm fab

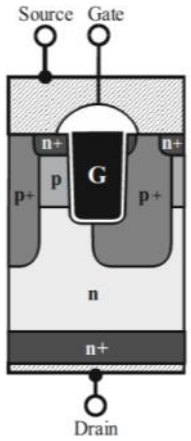
- Headwind from 300 mm-related expenses (process development, product qualification and manufacturing infrastructure) decreasing in FY17
- Cost cross over versus 200 mm expected by end of CY17 when reaching 25 – 30% area utilization

Copyright © Infineon Technologies AG 2017. All rights reserved.

2017 marks the market entry of Infineon with SiC MOSFETs and full SiC modules

- Infineon owns industry's broadest power semiconductor portfolio with regard to products, packages and technology
- Infineon offers "best-fit solutions" based on Si-based and SiC-based components
- Infineon's SiC MOSFET is based on its innovative trench concept with highest reliability





Villach (Austria)



- SiC manufacturing runs on standard 150 mm manufacturing lines, i.e. no capacity constraints

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon SiC MOSFET with revenue potential of triple-digit €m in industrial applications

Bare die	Discr. MOSFET	Full SiC module







vol. production: H2 CY17

vol. production: H2 CY17

volume production: since 16 May 2017

vol. production: H2 CY17

vol. production: H2 CY17

Industrial grade

Photovoltaic	UPS, others	xEV charging	Drives









Automotive grade

xEV (OBC)	xEV (inverter)





More and more applications will gradually reach their tipping point

Copyright © Infineon Technologies AG 2017. All rights reserved.

Efficiency and digitalization are main market drivers for power applications

IPC (industrial power)				PMM (power management)	
Drives	Renewables	Traction	MHA	AC-DC	DC-DC
					
› Energy efficiency › Automation › Productivity increase	› Legislation › Growing share of renewable energies as part of the energy generation mix	› Growing population in metropolitan areas › Fast and efficient mass transport system	› Energy efficiency › Growing VSD penetration	› Energy efficiency › Charging time › Compact-ness (power density) › DPM	› Energy efficiency › Compact-ness (power density) › DPM › Brushless DC motors

Copyright © Infineon Technologies AG 2017. All rights reserved.

IPC is perfectly positioned to outperform traditional markets and leverage emerging ones

Traditional markets with <5% p.a.

- Portfolio for **automation application** to **compensate low demand** in **drives**
- **Strong** position in stable **wind market**
- Broad traction portfolio enables **compensation of low demand in high-speed trains** through urban transportation
- **Weakest level** of growth in o**il & gas** (process automation) **passed** as capex slowly recovers





+

Emerging markets with >5% p.a.

- Comprehensive offering and expertise enable **growth in SiC above average**
- Ongoing **inverterization of home appliances** enables strong growth
- Optimal position to strongly benefit from **high growth rates** in **PV**, t**ransmission & distribution** and **commercial, construction and agricultural vehicles**
- Emerging applications like **energy storage**, **EV charging** and **robotics** offer additional growth potential





Industrial Power Control to grow ~8% p.a.

Copyright © Infineon Technologies AG 2017. All rights reserved.

Tailored growth strategies maintain leadership position in both major segments of PMM

PMM

Power

Current position



- Scale and technology leader in power discretes
- Broadest portfolio: 25V – 900V
- All applications
- #1 holding ~1/3 of the market

Growth levers



- Capitalize on scale and technology leadership in discretes
- Double SAM by pushing into power management ICs

Growth of ~8% p.a.

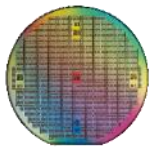
RF and Sensors

Growth based on 3-layer-model

MEMS



SiGe and other RF



SiMic | Environm. Sensors | Radar ICs | RF discretes | RF PA

Mobile phone | Tablet | Consumer | Wearables | Leisure & fitness | Multicopter | Augmented Reality | Receiving sensitivity | Backhaul

Higher added value with system understanding

- Core **technologies** enable broad portfolio of **products** for even more **applications**

Growth of ~8% p.a.

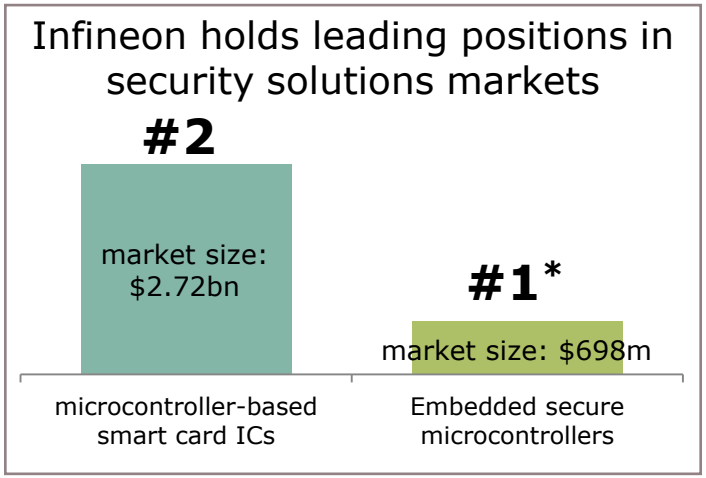
Copyright © Infineon Technologies AG 2017. All rights reserved.

CCS is enabling security for the connected world

Smart card applications



- Smart card payment
- Electronic passports and ID documents
- Mobile communication
- Transport ticketing



Embedded security applications



- Mobile device security and payment
- Information and Communications Technology security
- Industrial and automotive security
- IoT connected device security



Source: IHS Markit, Dec 2015, July 2016; * based on units; USD-ranking not provided

Copyright © Infineon Technologies AG 2017. All rights reserved.

Infineon‘s long-term growth is based on sustainable growth drivers

ATV	IPC	PMM	CCS
 Courtesy: Hyundai			
› CO_2 reduction › Advanced Driver Assistance Systems	› Energy efficiency › Automation › Productivity increase	› Energy efficiency › Power density › BLDC motors › Mobile device and LTE roll-out	› Security as a function › Mobile payments › Authentication › Internet of Things

~8% p.a. through-cycle growth

Copyright © Infineon Technologies AG 2017. All rights reserved.



Part of your life. Part of tomorrow.

Infineon