

# IFX Day 2008

Munich, June 3<sup>rd</sup>, 2008

## Operations

### Dr. Reinhard Ploss

Member of the Management Board  
Head of Operations



Never stop thinking

# Disclaimer

This presentation was prepared as of June 02, 2008 and is current only as of that date.

This presentation includes forward-looking statements about the future of Infineon's business and the industry in which it operates. These include statements relating to future developments in the world semiconductor market, including Infineon's future growth, the benefits of research and development alliances and activities, Infineon's planned levels of future investment in the expansion and modernization of its production capacity, the introduction of new technology at its facilities, the continuing transitioning of its production processes to smaller structure sizes, cost savings related to such transitioning and other initiatives, Infineon's successful development of technology based on industry standards, Infineon's ability to offer commercially viable products based on its technology, Infineon's ability to achieve its cost savings and growth targets, and any potential disposal of Infineon's interest in Qimonda.

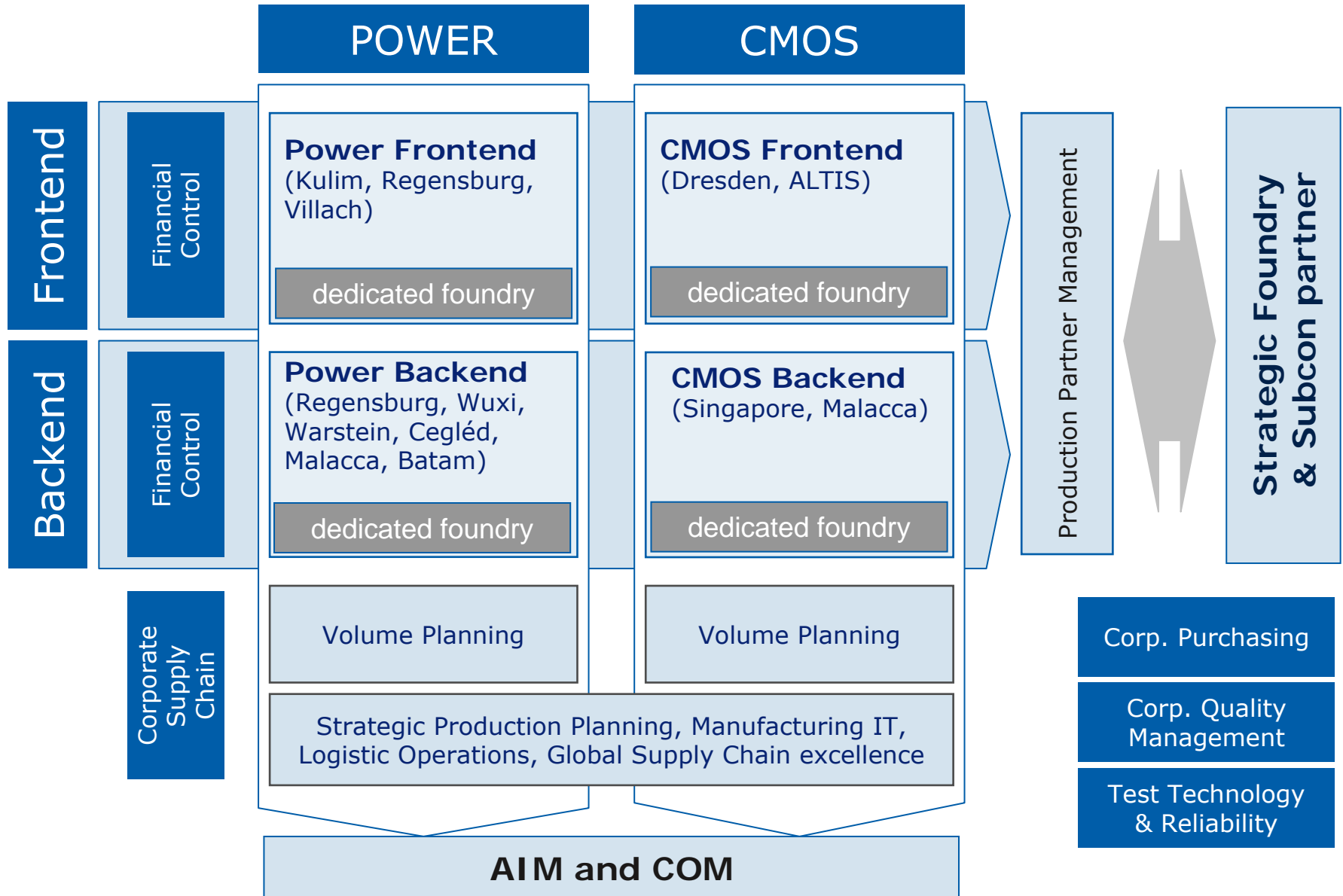
These forward-looking statements are subject to a number of uncertainties, including trends in demand and prices for semiconductors generally and for Infineon's products in particular, the success of Infineon's development efforts, both alone and with partners, the success of Infineon's efforts to introduce new production processes, the actions of competitors, the availability of funds for planned expansion efforts, and the outcome of antitrust investigations and litigation matters, the success of any corporate activities we may undertake with respect to our interest in Qimonda, as well as the other factors mentioned in this presentation and those described in the "Risk Factors" section of the annual report of Infineon on Form 20-F filed with the U.S. Securities and Exchange Commission on December 7th, 2007 or contained in the company's quarterly reports. As a result, Infineon's actual results could differ materially from those contained in these forward-looking statements. You are cautioned not to place undue reliance on these forward-looking statements.

Infineon does not undertake any obligation to publicly update or revise any forward-looking statements because of new information, future events or otherwise.

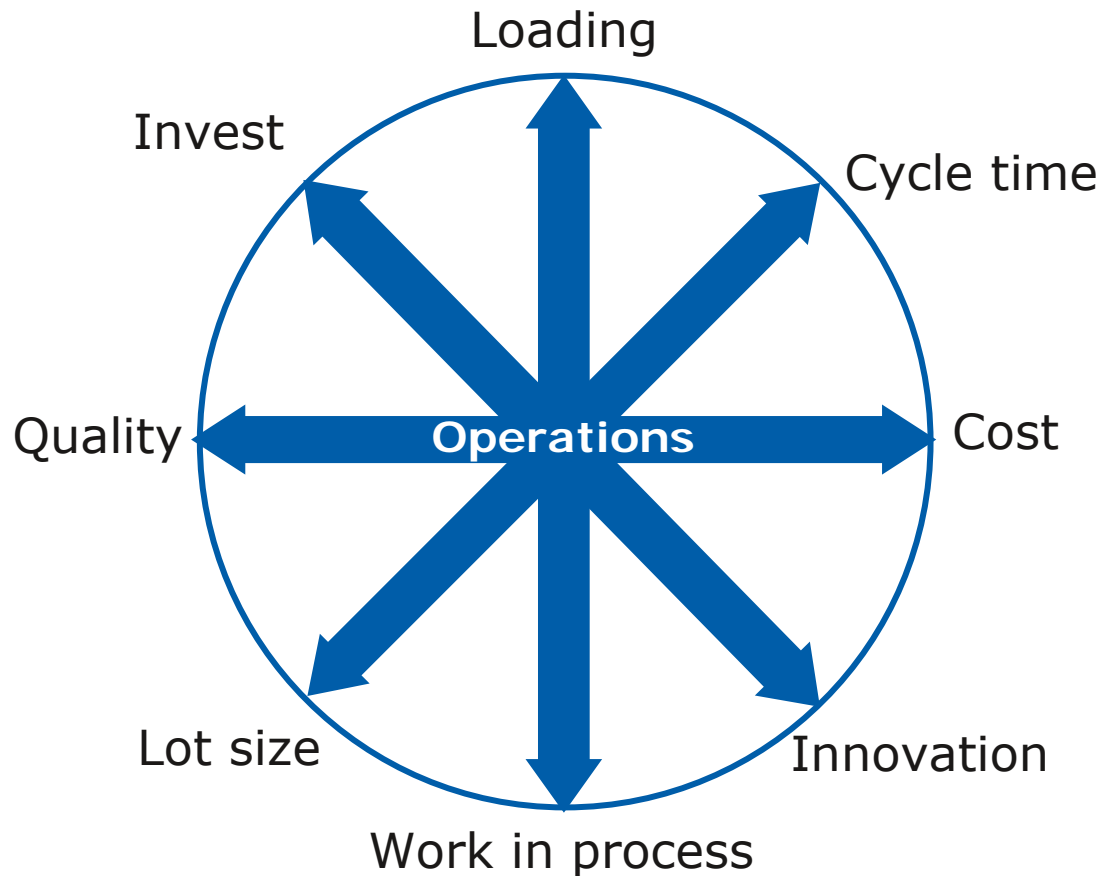
# Agenda

- Infineon's Operations
- Frontend and Backend Locations
- Manufacturing Highlights
- Summary

# Operations: Manufacturing and Supply Chain Optimizing Along the Value Chain

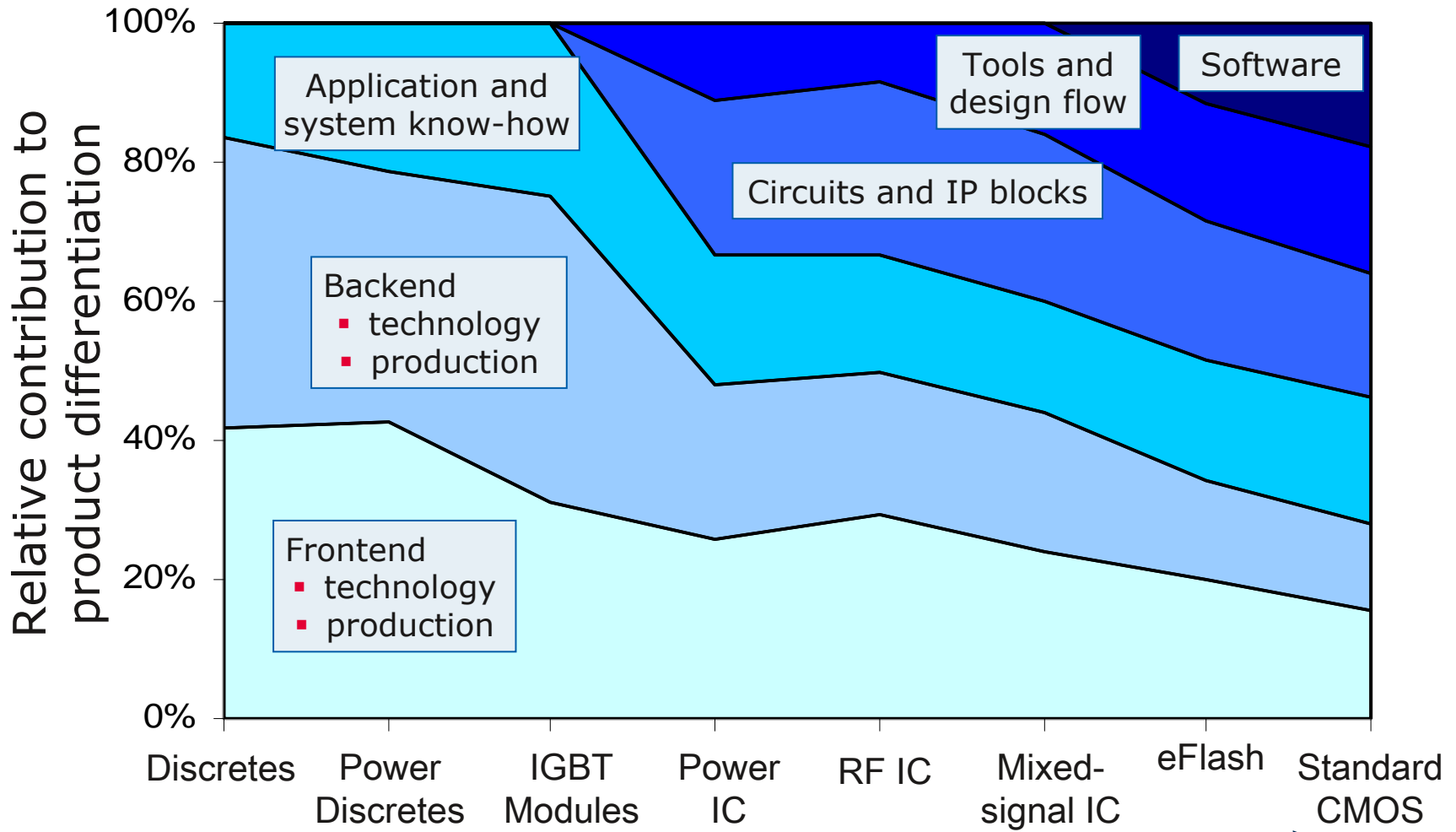


# Infineon Operations: Conflicting Targets to be Handled



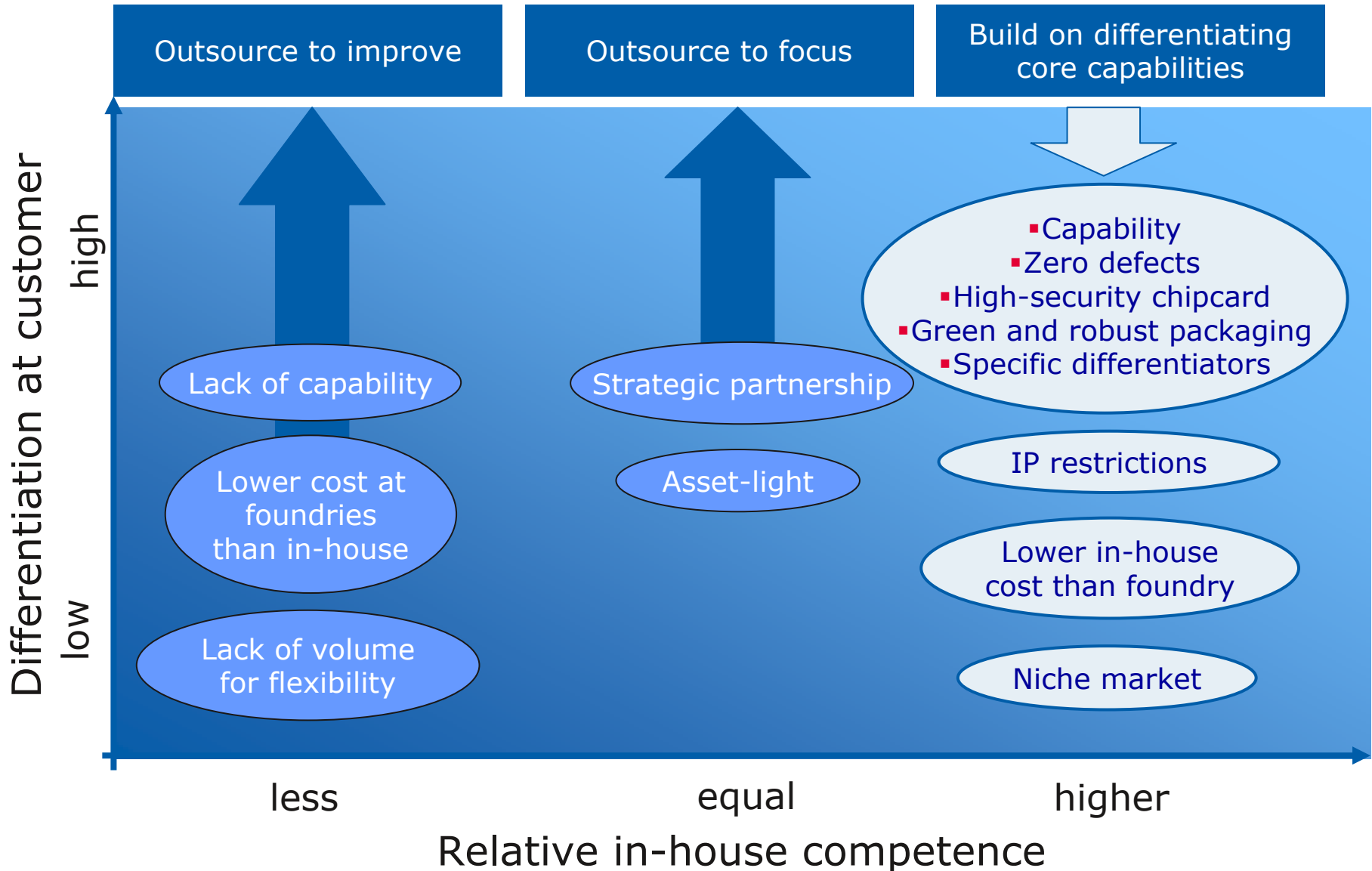
We have to balance requirements and priorities that differ from business to business

# Manufacturing and Technology Differentiating Factors? In-house Production Where it's an Advantage for us!



Average importance of manufacturing is decreasing.  
Different segments require different strategies.

# Make-or-buy Decisions Conform to Business Requirements



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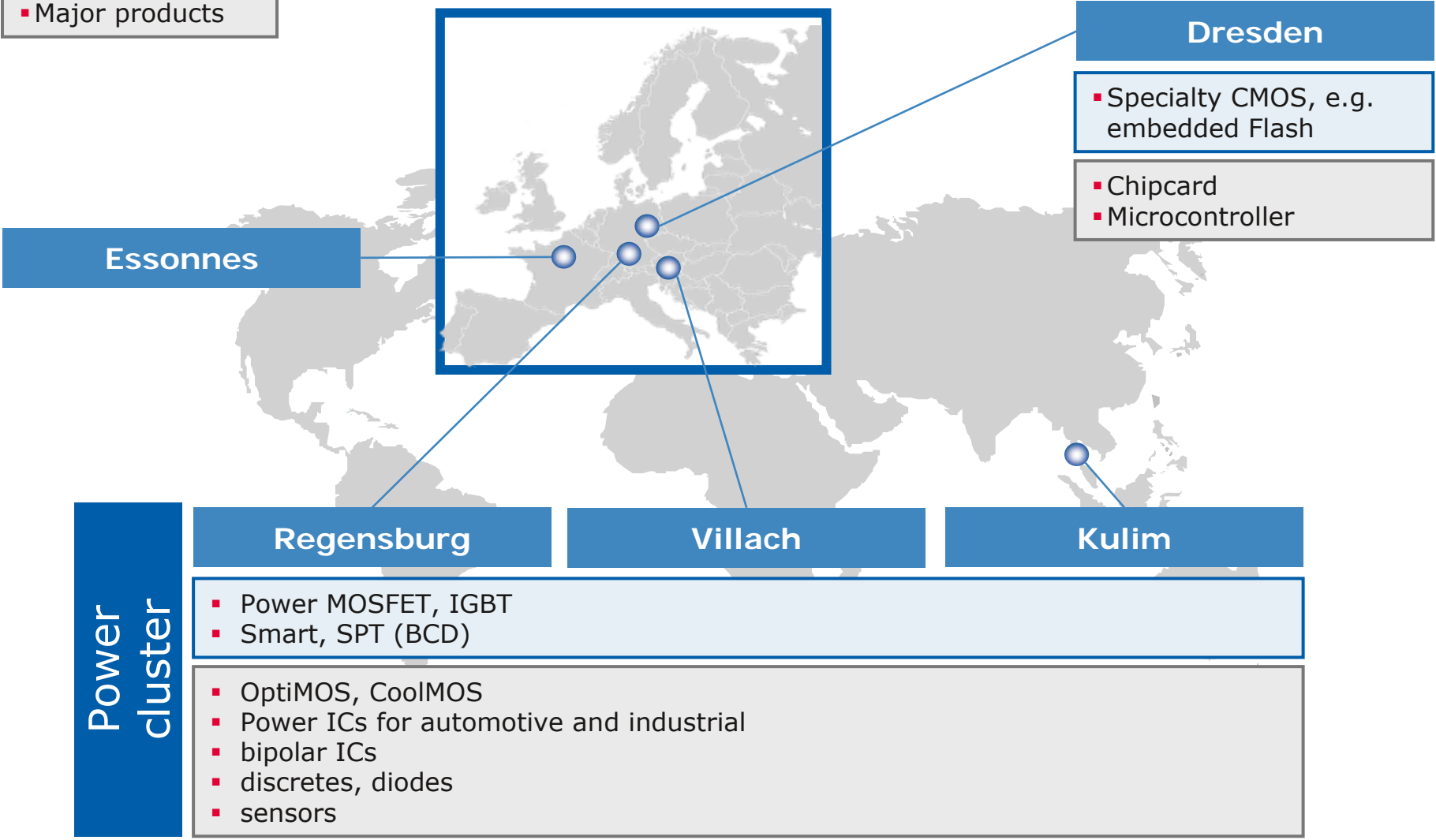


# Infineon's Key Frontend Sites – For High-end CMOS, Infineon Will Go Fabless



▪ Key technologies

▪ Major products



# Successful Ramp of Plant in Kulim, Malaysia



## Ramp-up in just 18 months

Mar 2005



Ground Breaking

28 Feb 2006



Ready for Equipment

21 Apr 2006



Ready for Production

7 May 2006



First Yielding Wafer

8 Sep 2006



First technology qualified: CoolMOS C3

- Nine technologies qualified
- 100% automotive qualified („Zero defects“)
- Cash-out cross-over achieved in Q2 FY08
- In adjustment to market conditions, Kulim fully loaded in CY 2011/2012

# Infineon's Key Backend Sites

▪ Key technologies

▪ Major products

## Cegléd

▪ Power modules

## Warstein

▪ IGBT modules

▪ EconoPACK  
▪ EasyPACK  
▪ IHM, IHV

## Regensburg

▪ Chipcard  
▪ Sensors  
▪ Discretes

▪ WLB

## Wuxi

▪ Chipcard  
▪ Discretes

## Batam

▪ DSO  
▪ Power DSO

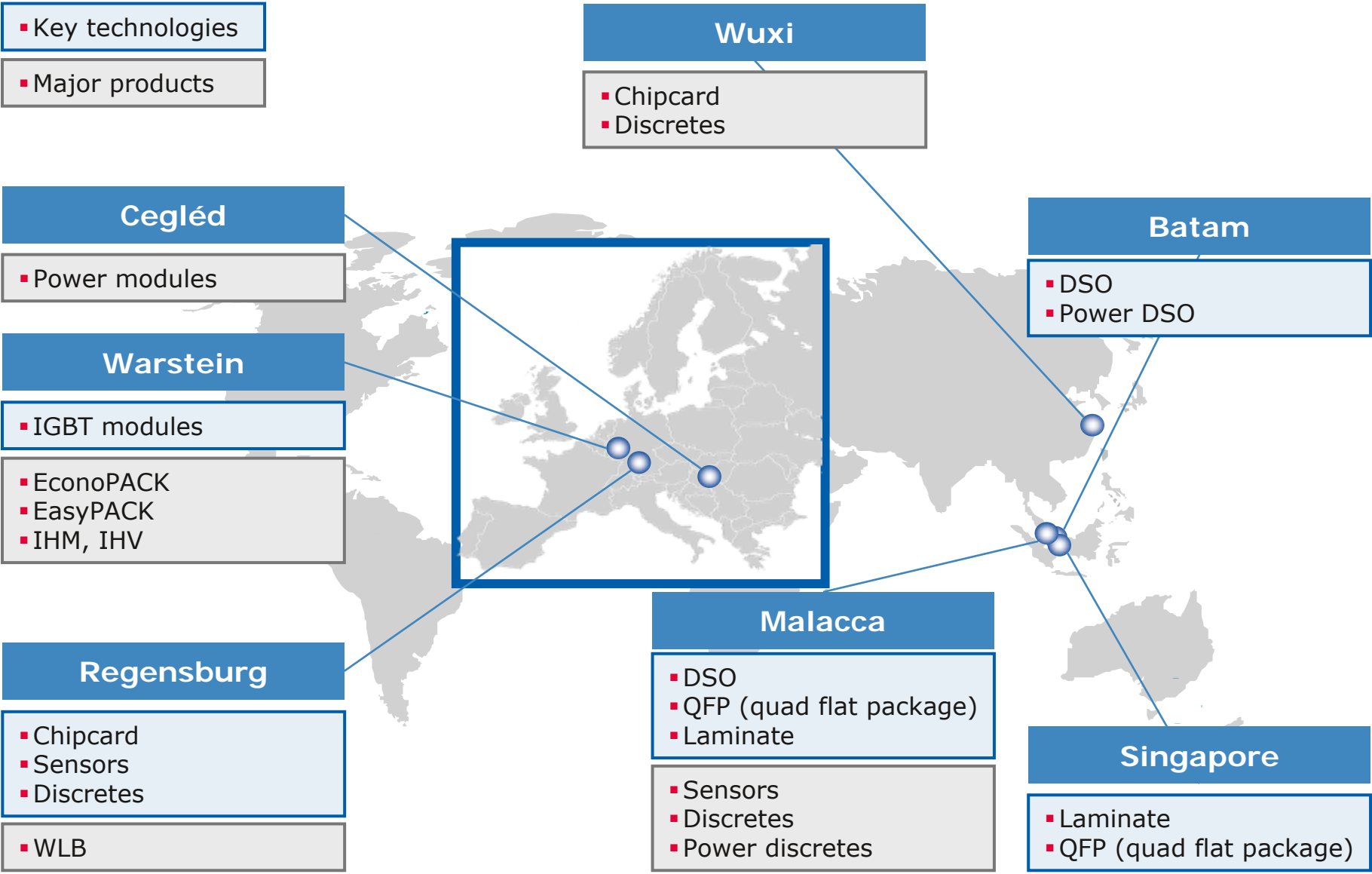
## Malacca

▪ DSO  
▪ QFP (quad flat package)  
▪ Laminate

▪ Sensors  
▪ Discretes  
▪ Power discretes

## Singapore

▪ Laminate  
▪ QFP (quad flat package)



# Backend: Segment-specific Strategies Using „Best Cost Country“ and Subcontractors



## Low pin-count and power



### Batam

- High-volume products



### Wuxi

- High-volume products



### Cegléd

- High-volume products



### Warstein

- Competence center for power modules

## High pin-count, CMOS, eWLB



### Malacca

- Competence center for power
- High-volume leadframes

### Singapore

- Test for power
- Test for CMOS
- Tester pool CMOS



### Regensburg

- Competence center for chipcard
- Innovation hub
- WLB pilot line

### Subcontractor

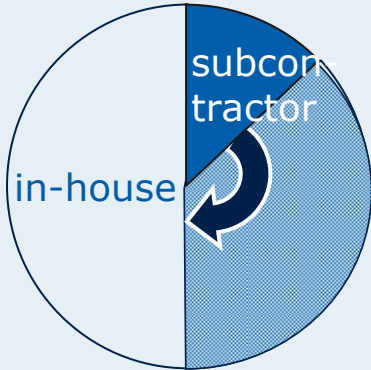


### Subcontractor



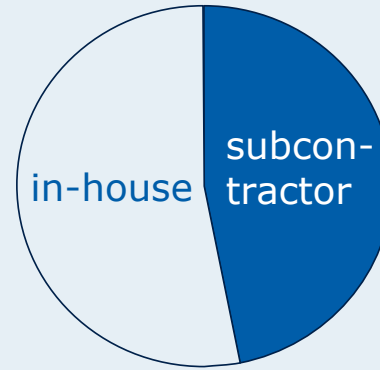
# According to Fab-light Strategy, We Will Continue to Increase Our Foundry Share

## Frontend CMOS



- Due to fab-light strategy, foundry share will increase substantially
- Multi-sourcing concept in execution

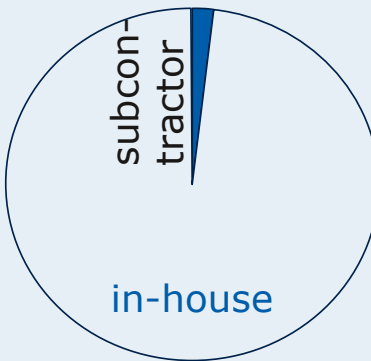
## Backend CMOS



- Keep subcontractor level high
- Develop differentiating packages in-house (e.g. eWLB)

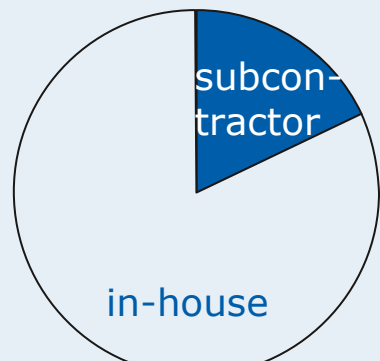
All pie charts indicate in-house/subcontractor split on average over FY07. Sale of ALTIS not considered.

## Frontend Power



- Focus on in house production
- Increase flexibility with higher foundry share

## Backend Power



- Develop differentiating packages in-house
- Make-or-buy decision made case-by-case

## International Semiconductor Development Alliance



### Development objectives:

- Leading-edge „foundry“ technologies
- 65nm, 45nm, 32nm technologies

## Infineon's alliance history

**1989** – Start of DRAM development alliance (DRAM 16M/64M)  
IFX/IBM/Toshiba

**1997** – Start of logic development alliance (180nm ... 90nm)  
IFX/IBM

**2003** – 65/45 nm alliance  
IFX/IBM/Chartered Semic.

**2004** – Samsung joins

**2007** – Freescale, STM and Toshiba join



## IMEC Partners 2008



IMEC is Europe's leading independent research center in the field of micro- and nanoelectronics, nanotechnology, enabling design methods and technologies for ICT systems.

Innovation pipeline: Early insight into technology trends and key innovations for in-time preparation of design and product innovations (pathfinding).

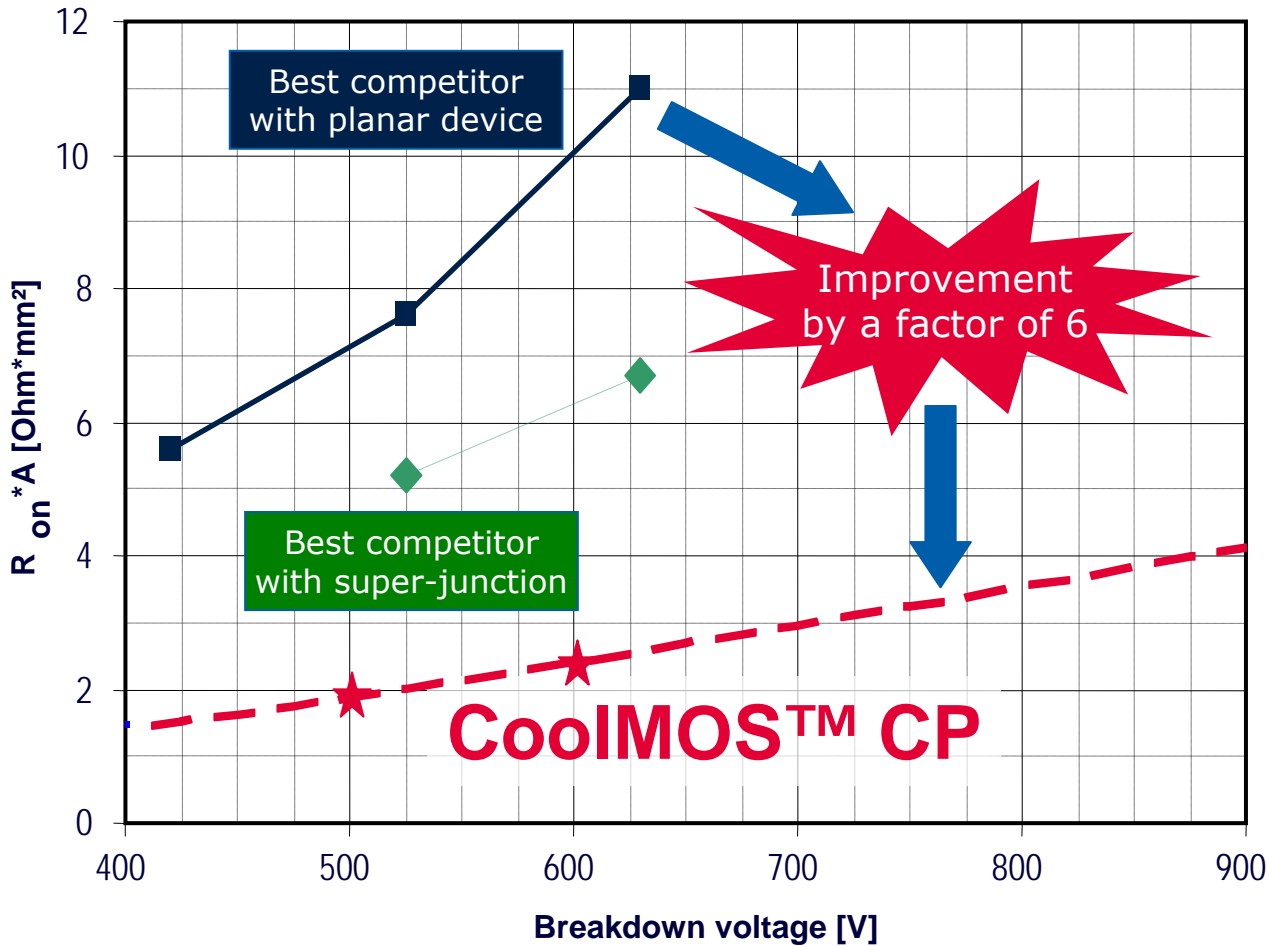
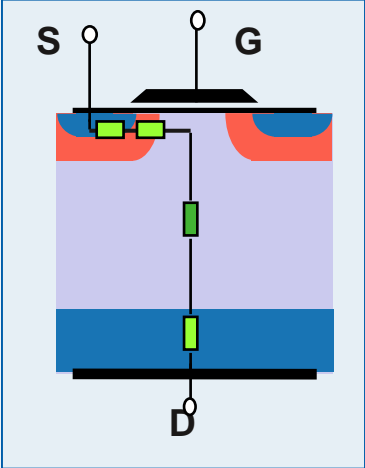
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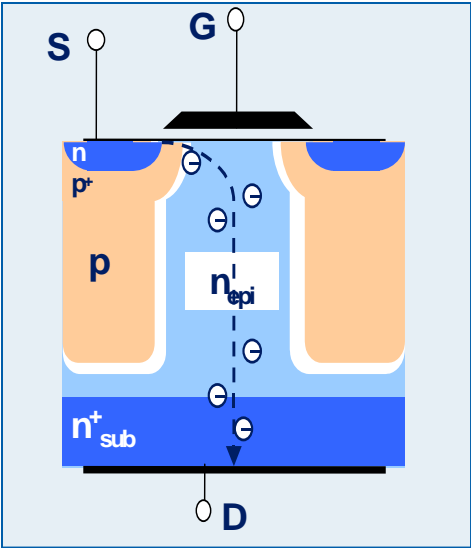


# CoolMOS Success Story: 3D Device Construction a Manufacturing Challenge

Planar device



Infineon's super-junction 3D device

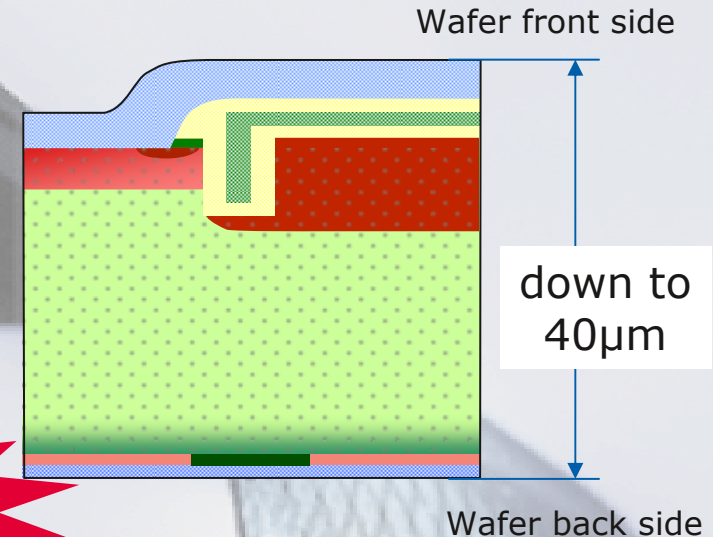


# Infineon's Ultra-thin Wafer Technology: Enabler for Energy Efficiency Systems



## Manufacturing Competencies

- Ultra-thin wafer handling
- frontside processing
- backside processing
- Enables highly innovative product concepts with outstanding cost performance, e.g. IGBTs and diodes



World's  
thinnest wafer

## Manufacturing Technologies

- IGBT
- Diodes
- MOSFET (e.g. CoolMOS)
- SPT (smart power technology)

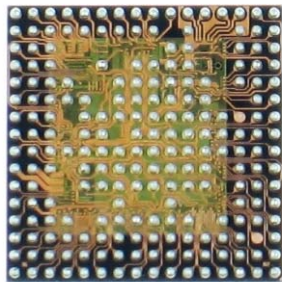
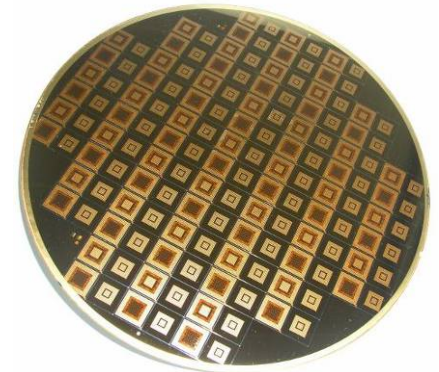
## Applications

- Traction (trains)
- Speed-controlled motors, pumps
- Power supplies for computer and server
- Power supplies for consumer electronics
- Lighting
- Inductive cooking
- Automotive

# Focused Innovations for High Pin-count and High-performance Packaging

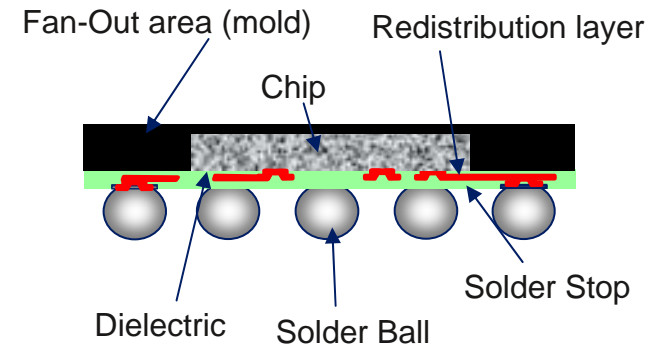
## eWLB (embedded wafer level ball grid array)

- New packaging approach
- Outstanding cost performance
- Improved electrical performance
- Ready to become a standard package in industry
- Great interest from subcontractors and other IDMs
- ASE took a license already



X-GOLD™213  
(bottom view)

X-GOLD™213  
65nm CMOS SoC  
eWLB-216 (8 x 8 x 0.8 mm<sup>3</sup>)

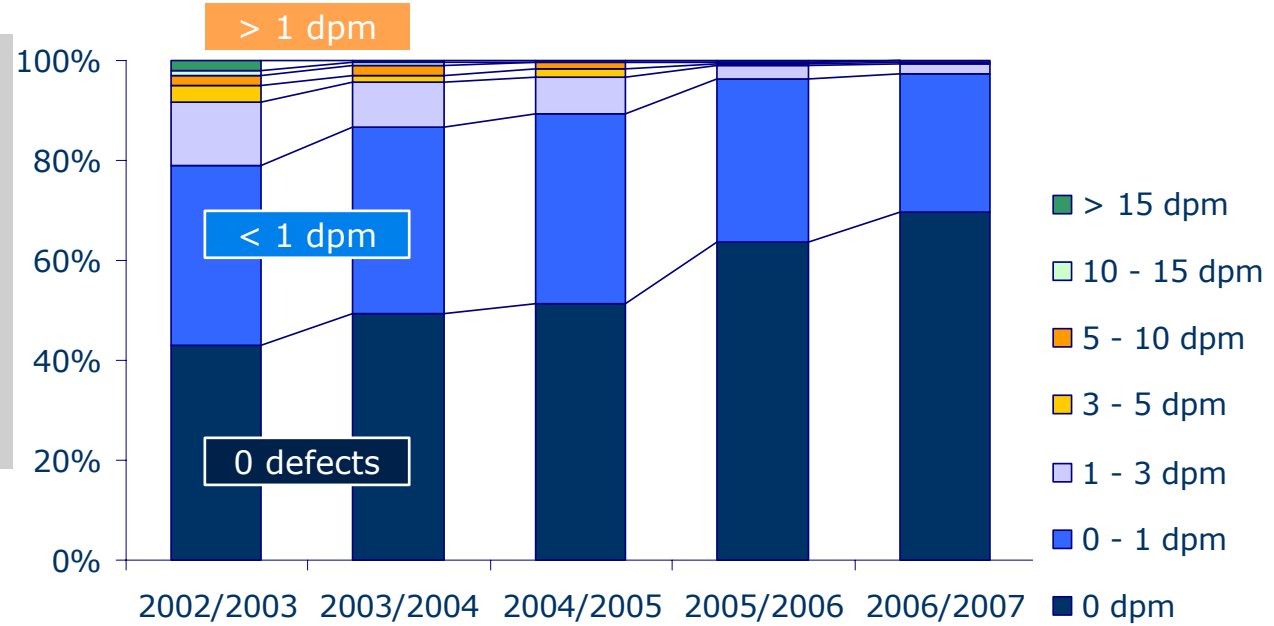


■ : Metal carrier    ■ : Chip with pads  
■ : Adhesive foil    ■ : Mold compound

# Quality is a Key Differentiator, Especially for Automotive Products with < 1 dpm



- 70% of automotive volume is shipped with zero defects
- 97% of automotive volume is shipped with  $\leq 1$  dpm



## Outstanding Feedback during Customer Audits; ISO 9001 Qualification in May 2007:

- ✓ Bosch, Conti, Hella audit: "Excellent lot tracking system including operators access control on tools."
- ✓ SiemensVDO pre-audit: "All measures from the Automotive Excellence Program found a new place."
- ✓ Delphi: "Very effective and efficient, well run fab."

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- Outsourced CMOS share will increase substantially
- Infineon goes fabless for 65nm and below
- Infineon is on track for CapEx/sales target of 10% or below
- Productivity improvements at Kulim on track
- Infineon will keep special manufacturing processes inhouse where competitive differentiation is an advantage



**We commit.**  
**We innovate.**  
**We partner.**  
**We create value.**



Never stop thinking