

# Infineon

## CeBIT 2005

March 10, 2005 – Hannover

### Implementing Profitable Growth

**Peter Bauer**

Member of the Management Board  
Infineon Technologies



Never stop thinking.

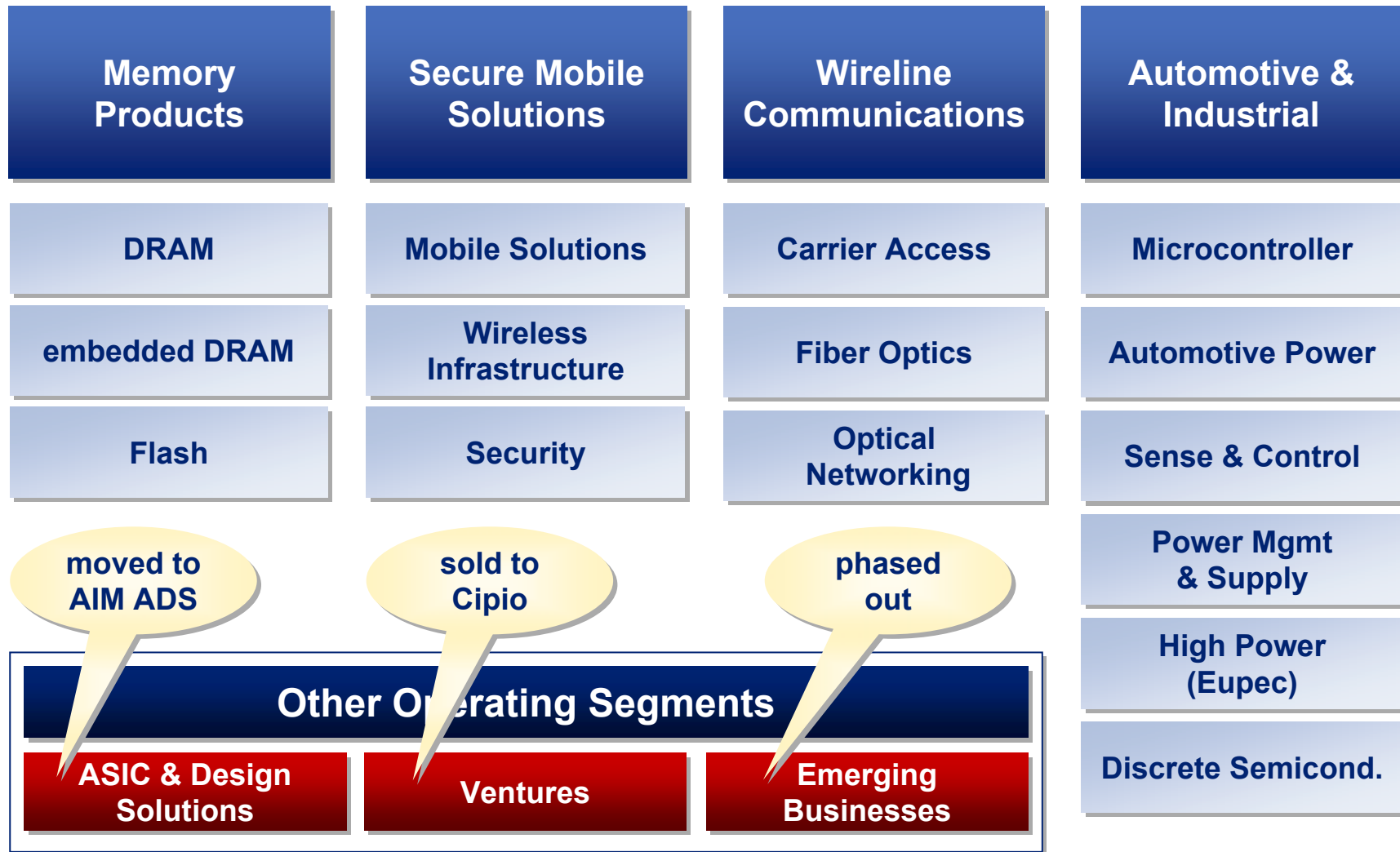
# Disclaimer

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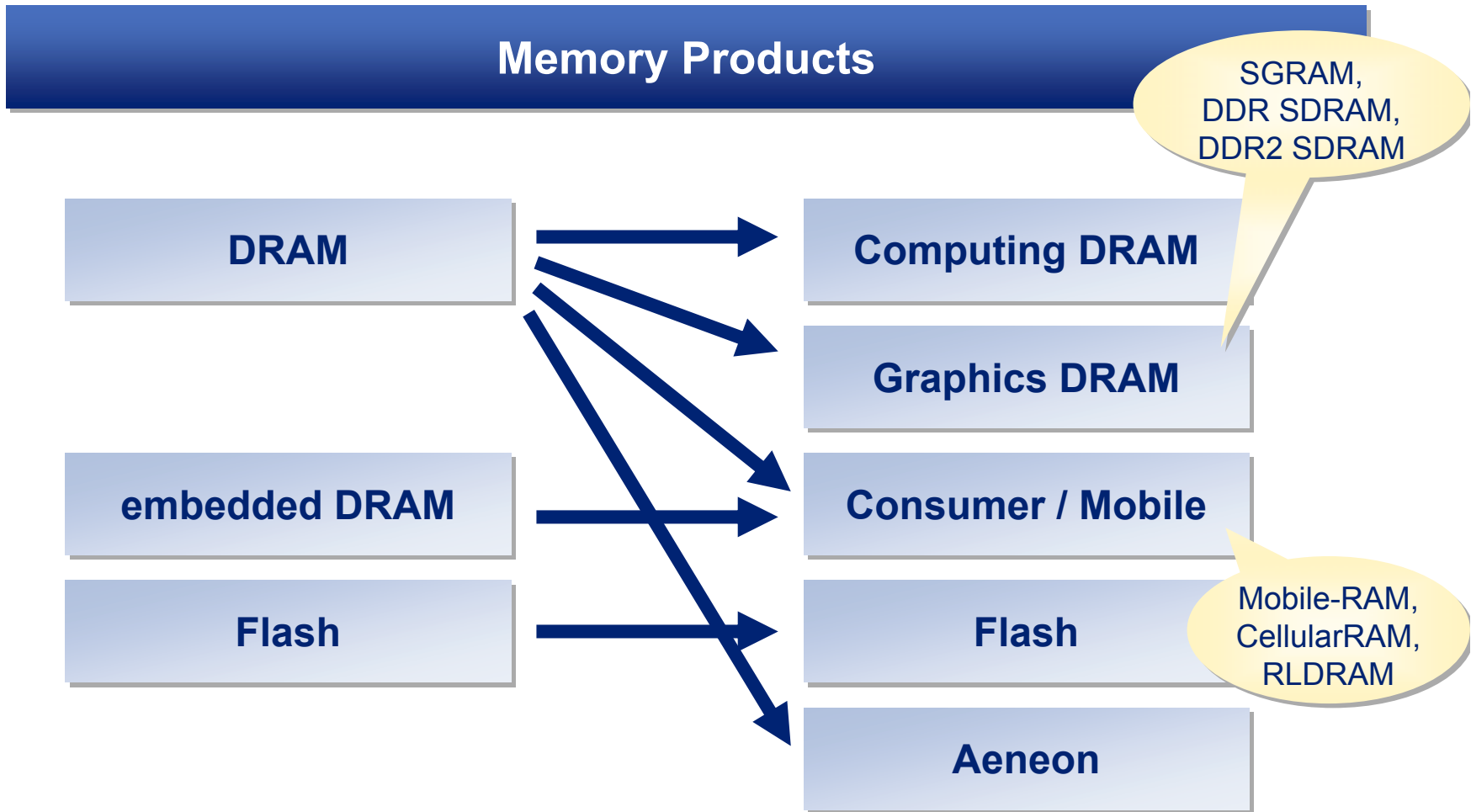
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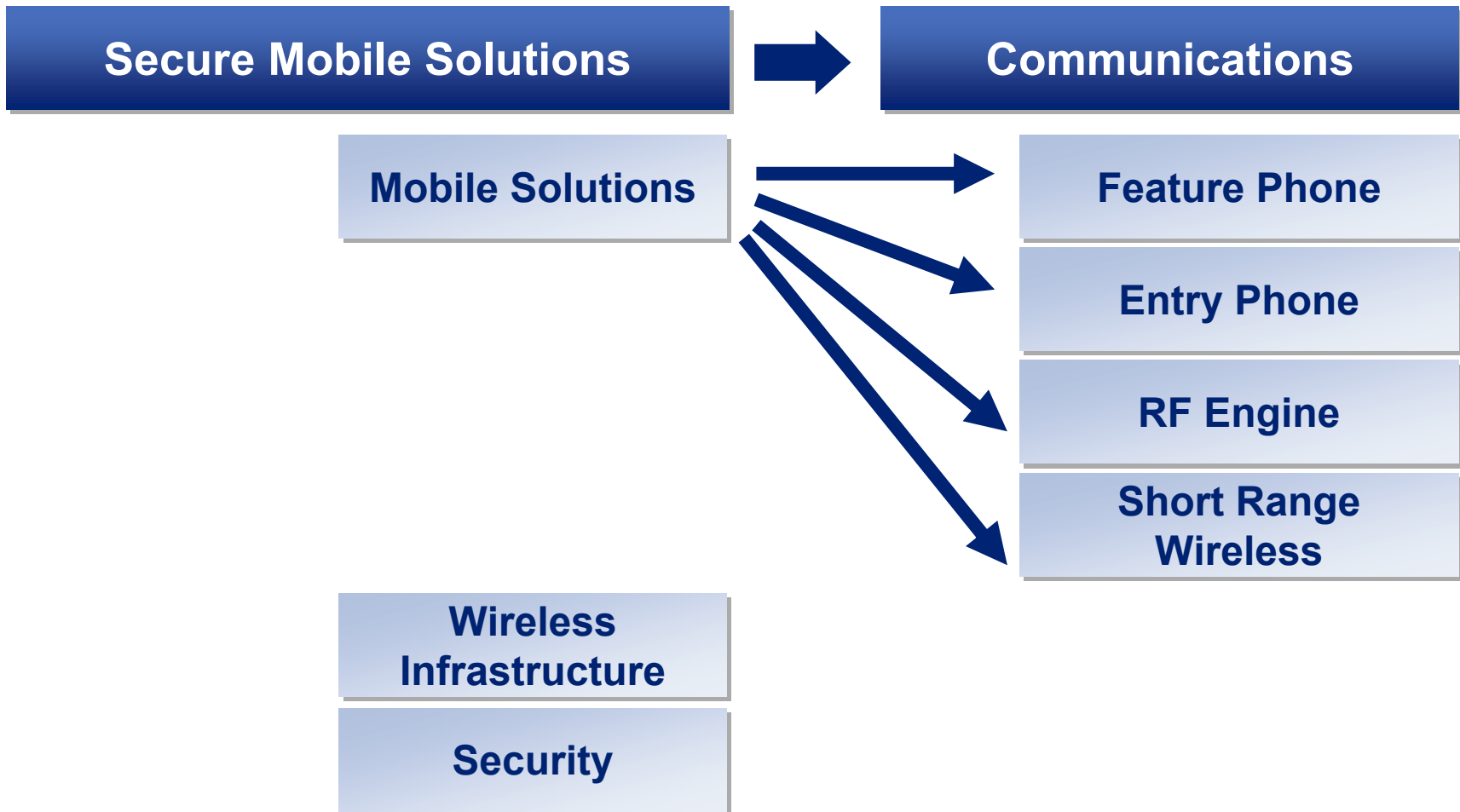
# Infineon Technologies as of December 31, 2004: 4 Business Groups; 14 Business Units



# Changes in Memory Products

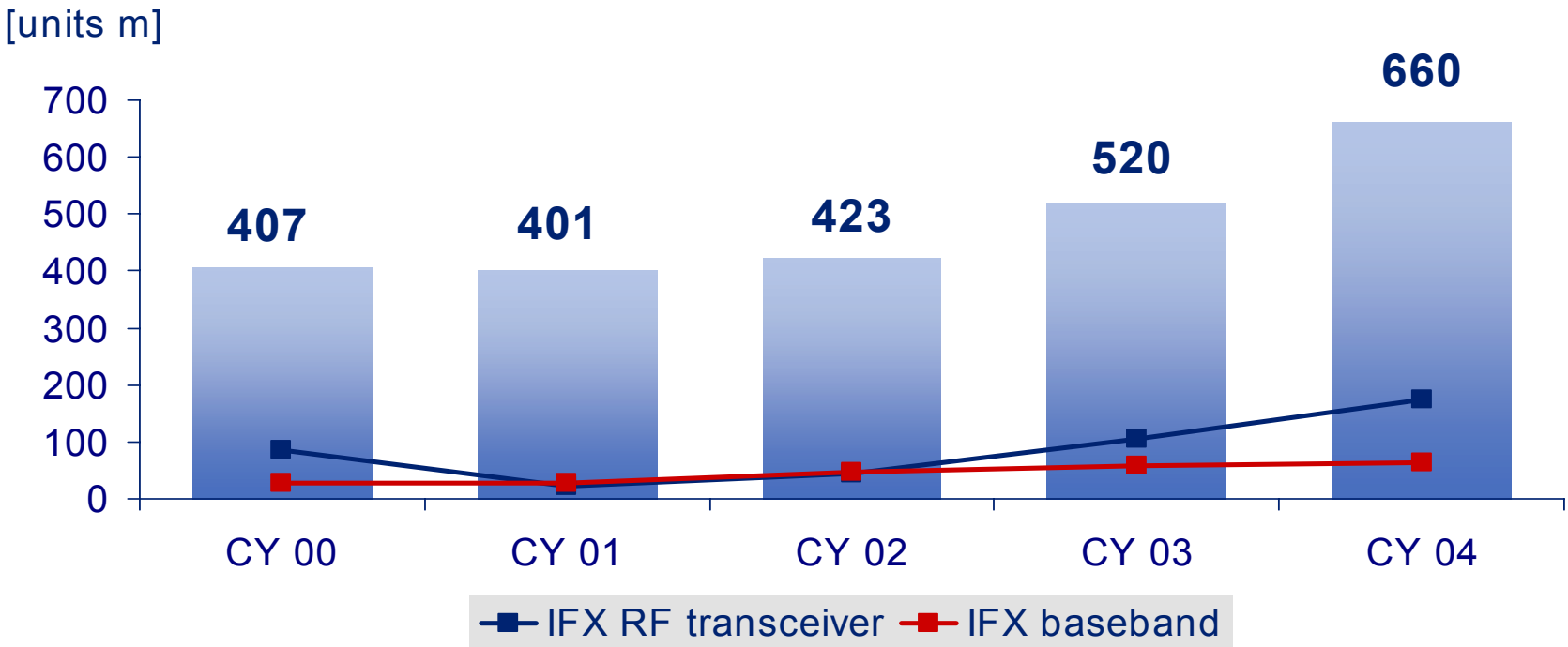


# Changes in Secure Mobile Solutions



# Wireless Communication: Cont'd to gain market share in RF transceiver in 2004

## Worldwide Cell Phone Market 2000 to 2004



### Infineon's market share [in units]:

<b>RF</b>	21%	5%	10%	21%	26%
<b>BB</b>	7%	7%	11%	11%	10%

Sources: Market: Gartner, Jan 2005 / Market Share: Infineon estimate, Jan 2005

# Successful integration of RF CMOS into baseband: sampling RF baseband system-on-chip for GSM/GPRS

## Infineon's single-chip demo-phone at 3GSM 2005



### Integrated:

- RF transceiver: SMARTi SD2
- Baseband: E-GOLDradio

### Advantages over 2-chip solution:

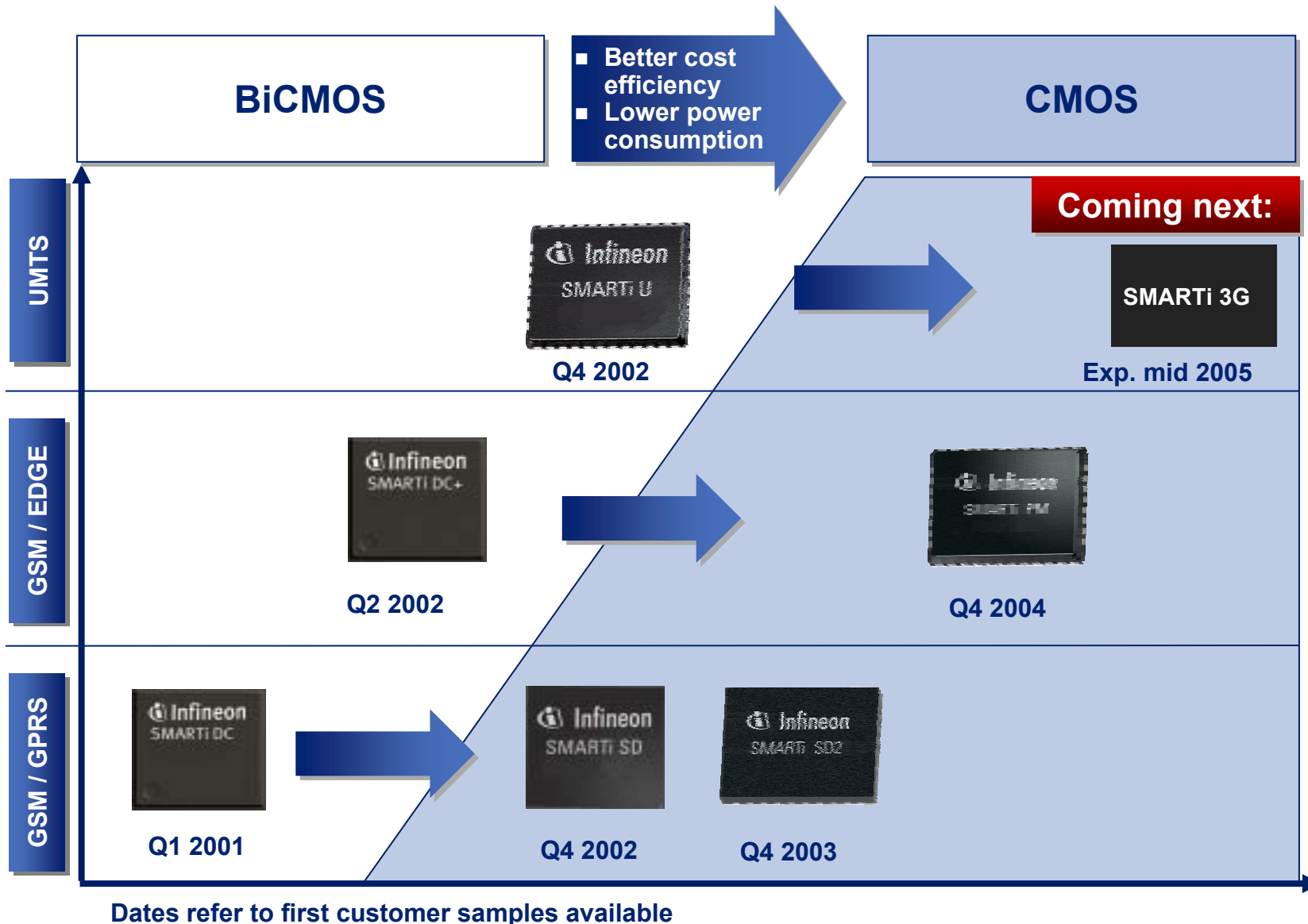
- 30% less board space
- 30% lower bill of material



### Supported:

- Up to GPRS class 12
- 1.3 megapixel camera
- Dual color display
- Polyphonic ringer
- MP3 playback

# Transition of complete RF transceiver portfolio to CMOS: Paving the way for GSM/UMTS single-chip solutions

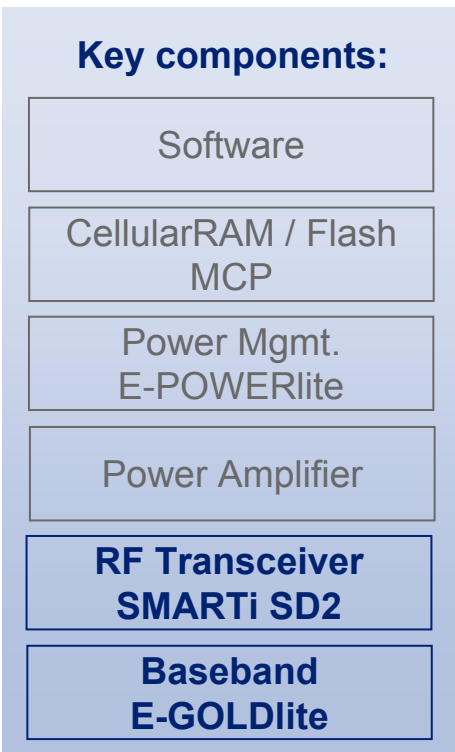




# E-GOLDradio enables the world's most integrated GSM/GPRS entry phone platform

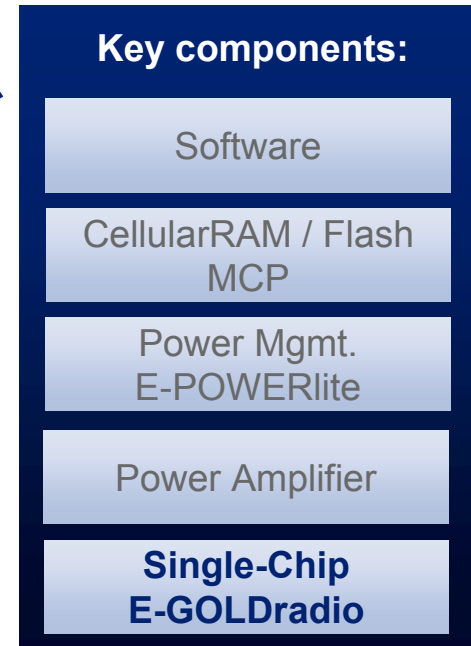
## BP2 Platform

### Key components:



## BP3 Platform

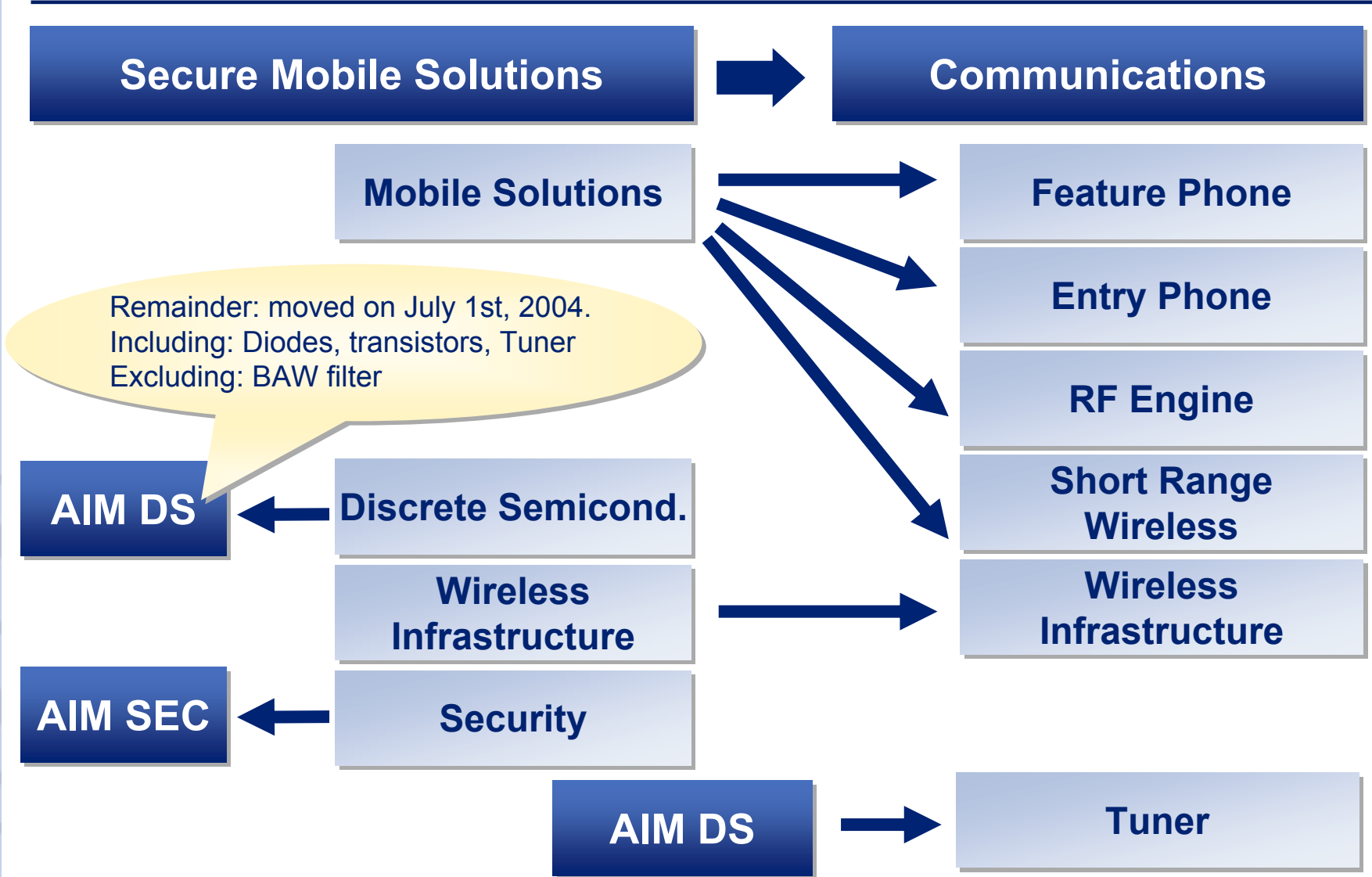
### Key components:



**Today**

**End 2005**

# Changes in Secure Mobile Solutions



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# Leverage leading position in digital terrestrial TV into mobile TV

- Infineon is market leader in the fast growing digital terrestrial tuner market (DVB-T standard)
- Our tuner IC products are used in most digital terrestrial standard TV sets, Set-Top-Boxes and world's first PCMCIA card for TV reception
- We intend to leverage this strong position into a complete DVB-H/T-DMB front-end solution
- Infineon to participate in the world's first roll-out of mobile TV in South Korea in 2005 with a tuner IC in a DMB-receiving mobile phone from LG Electronics

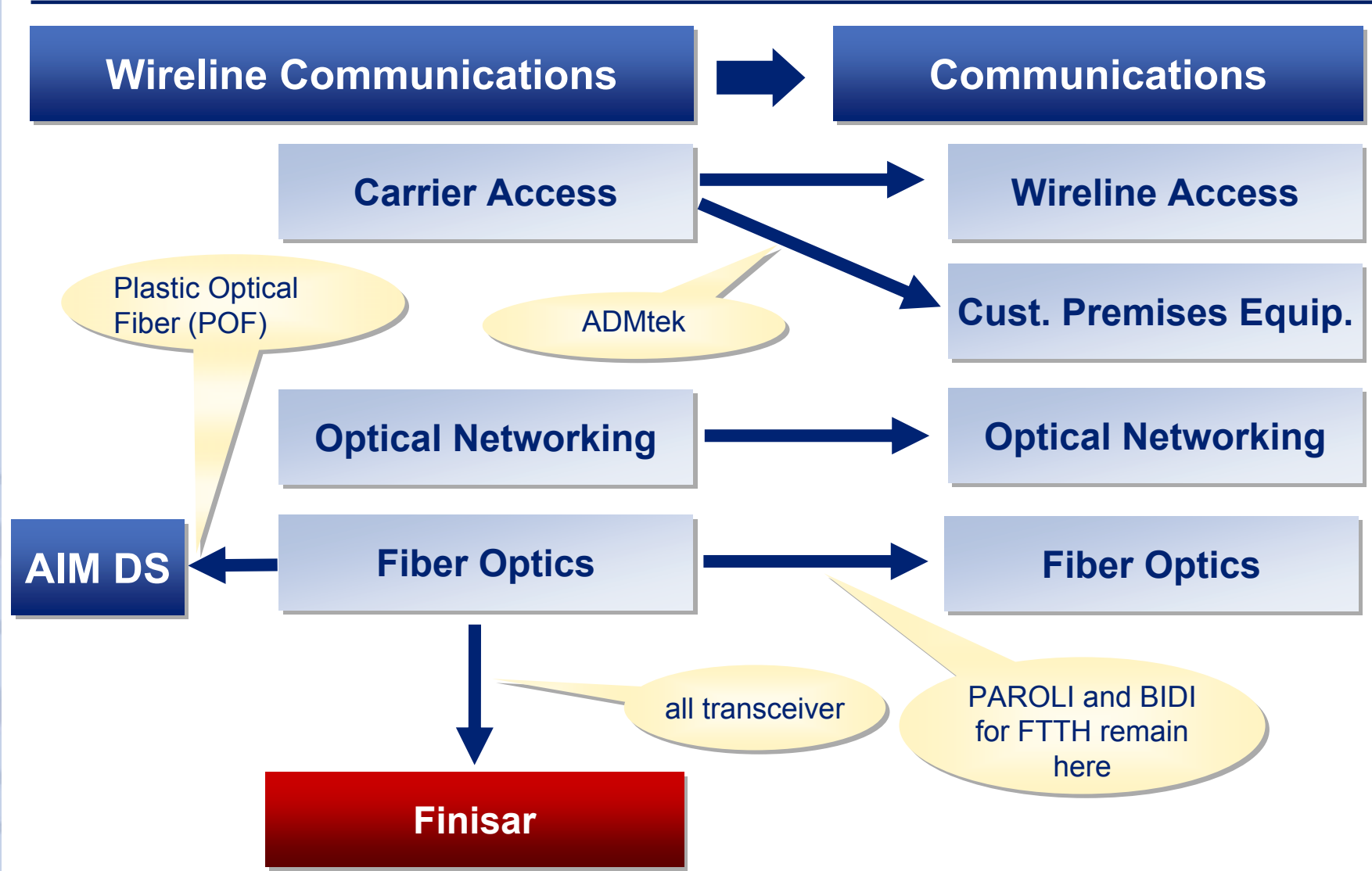


World's first terrestrial DMB-receiving mobile phone from LG Electronics\*

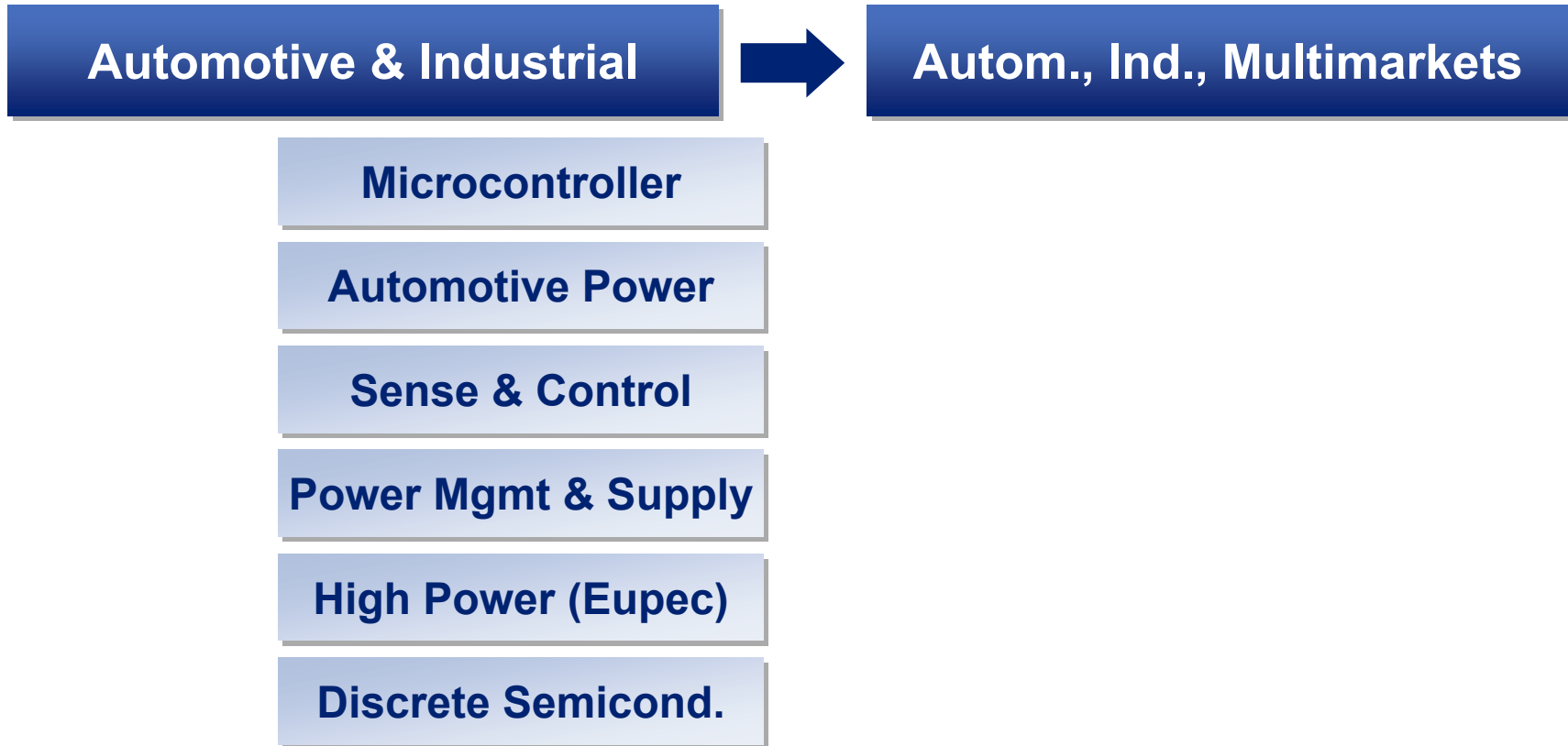
T-DMB (Terrestrial-Digital Mobile Broadcasting; the mobile TV standard in Korea)

\* Source: [www.lge.com](http://www.lge.com), Nov. 15, 2004

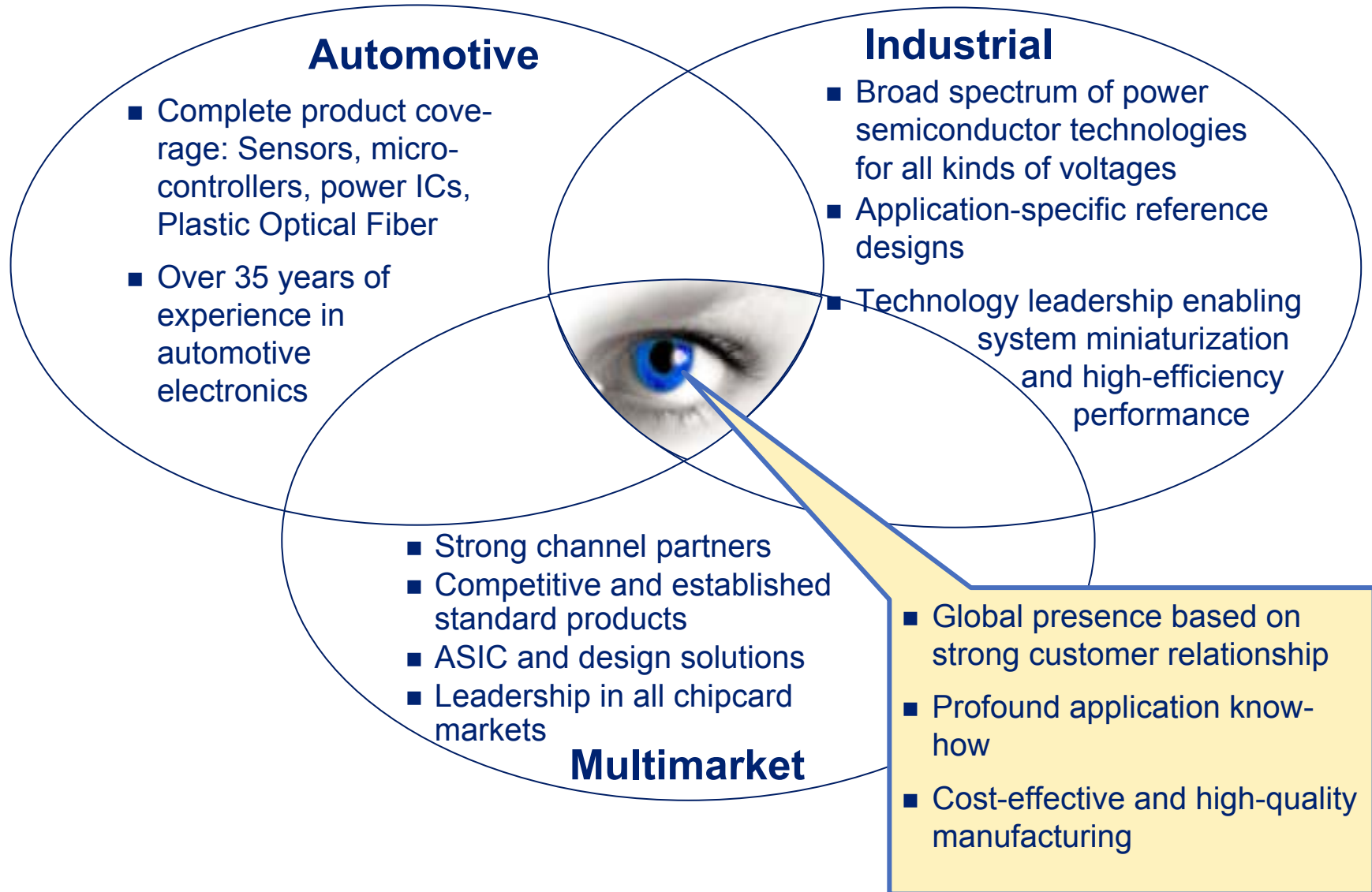
# Changes in Wireline Communications



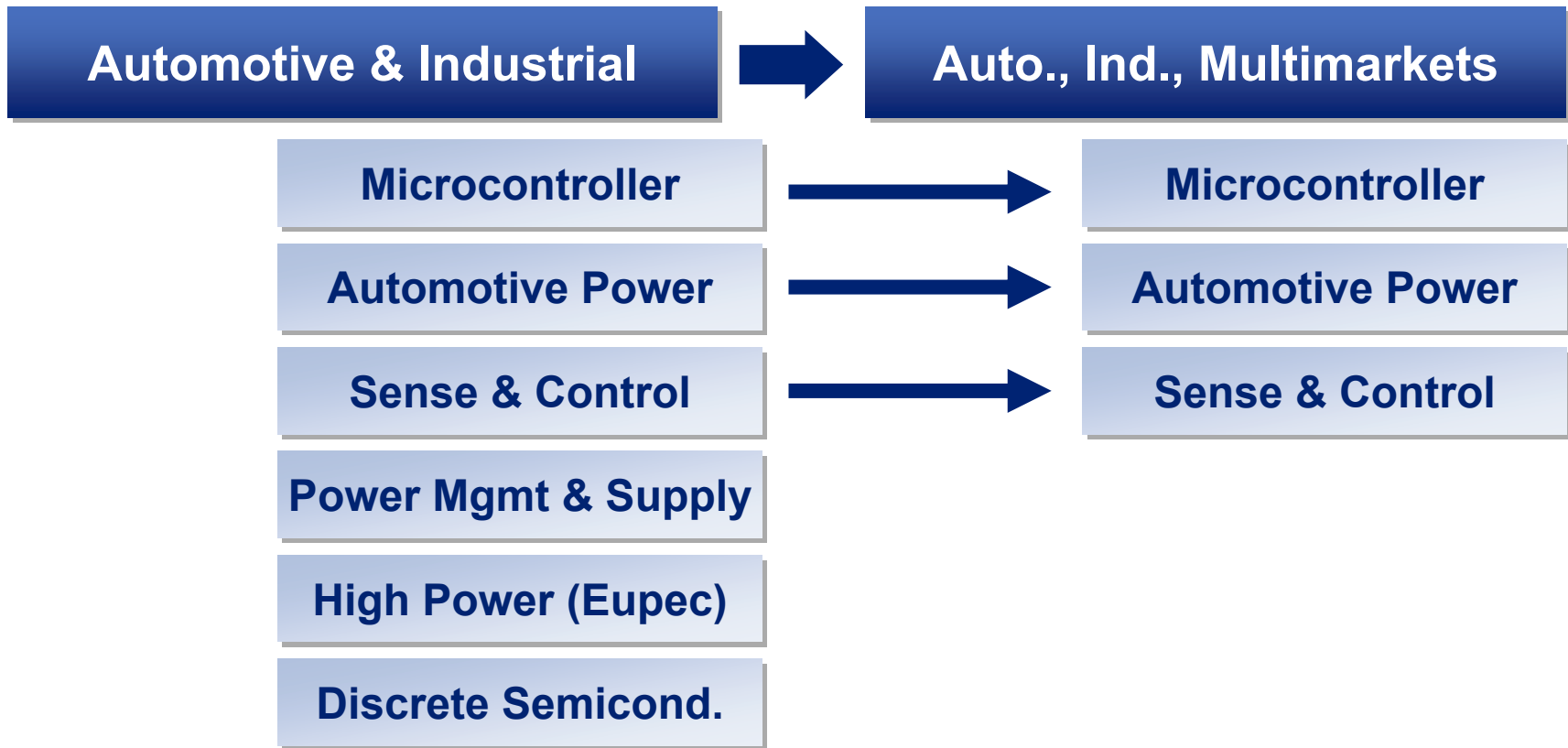
# Changes in Automotive & Industrial



# AIM business focus

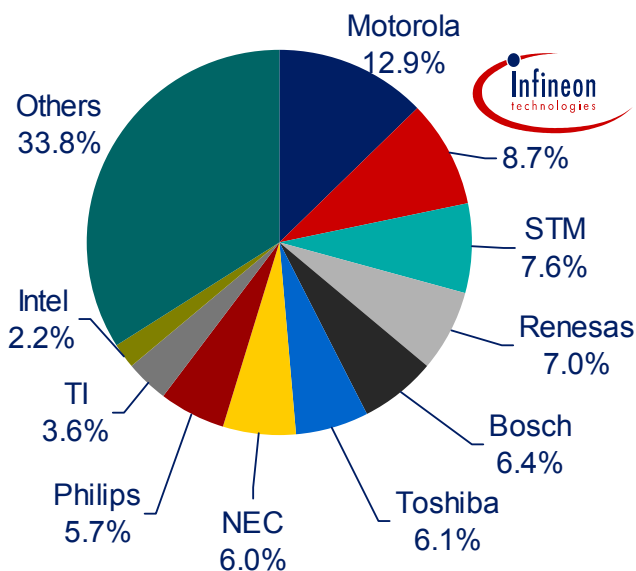


# Changes in Automotive & Industrial



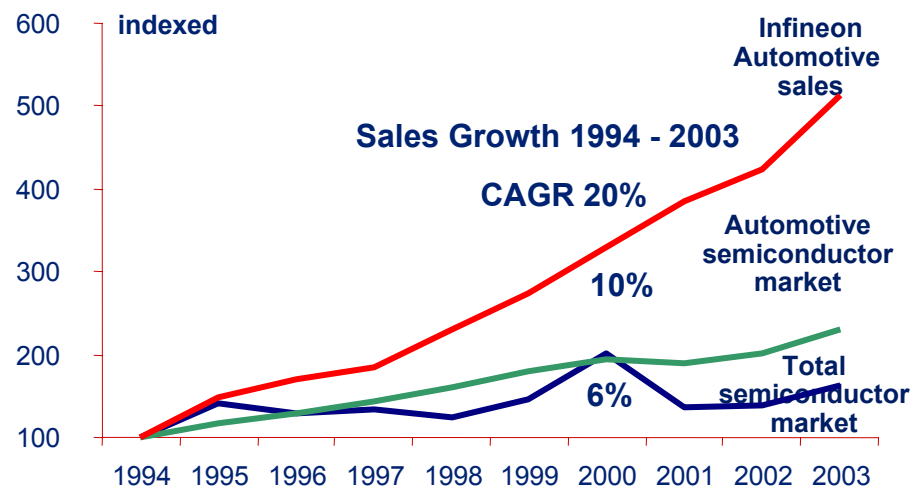
# Infineon Automotive ranks No.2 worldwide by continuously outperforming the market

**Infineon Automotive 2003**  
**No. 2 World No.1 Europe No. 3 US**



- Market: 13.128 mill. US\$
- CAGR: 7-8%

## Continuous Outperformance



- Strong European market development compared to rest of world
- Strengthened regional business in NAFTA/Japan
- Improved relationships to major automotive system vendors

**Strong market position in Europe secures technological leadership**



## The Road to 2010:

90% of all Automotive innovations will be driven by electronics

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Production of **73** million light vehicles from 8 OEMs  
Electronic content: **35%** (22% hardware + 13% software)  
Semiconductor content per car: ~ EUR **300**

**2010**

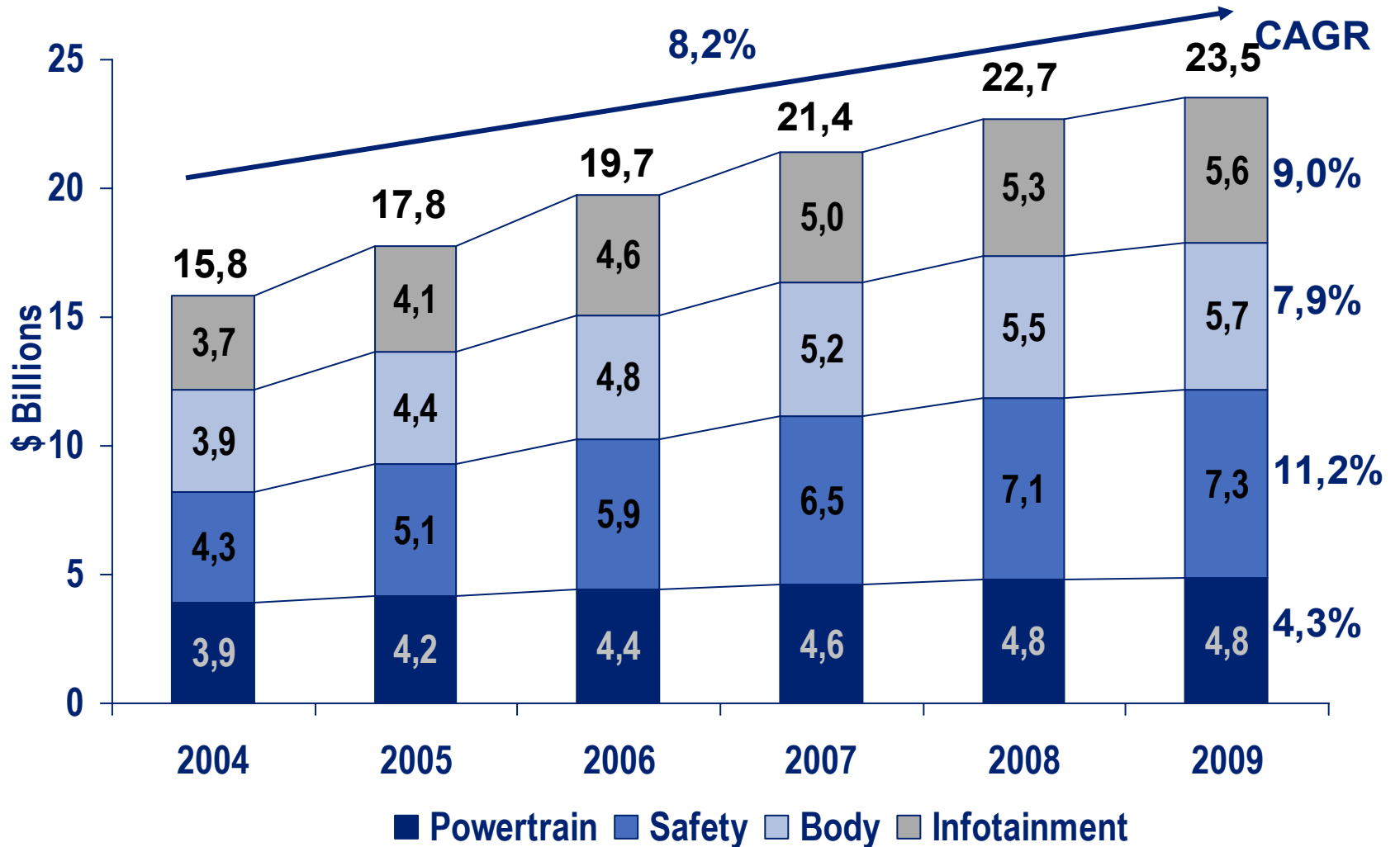


**2002**

Production of **57** million light vehicles from 20 OEMs  
Electronic content: **22%** (18% hardware + 4% software)  
Semiconductor content per car: ~ EUR **200**

Sources: Strategy Analytics, FAZ

# Longterm outlook offers continuous growth of automotive semiconductors

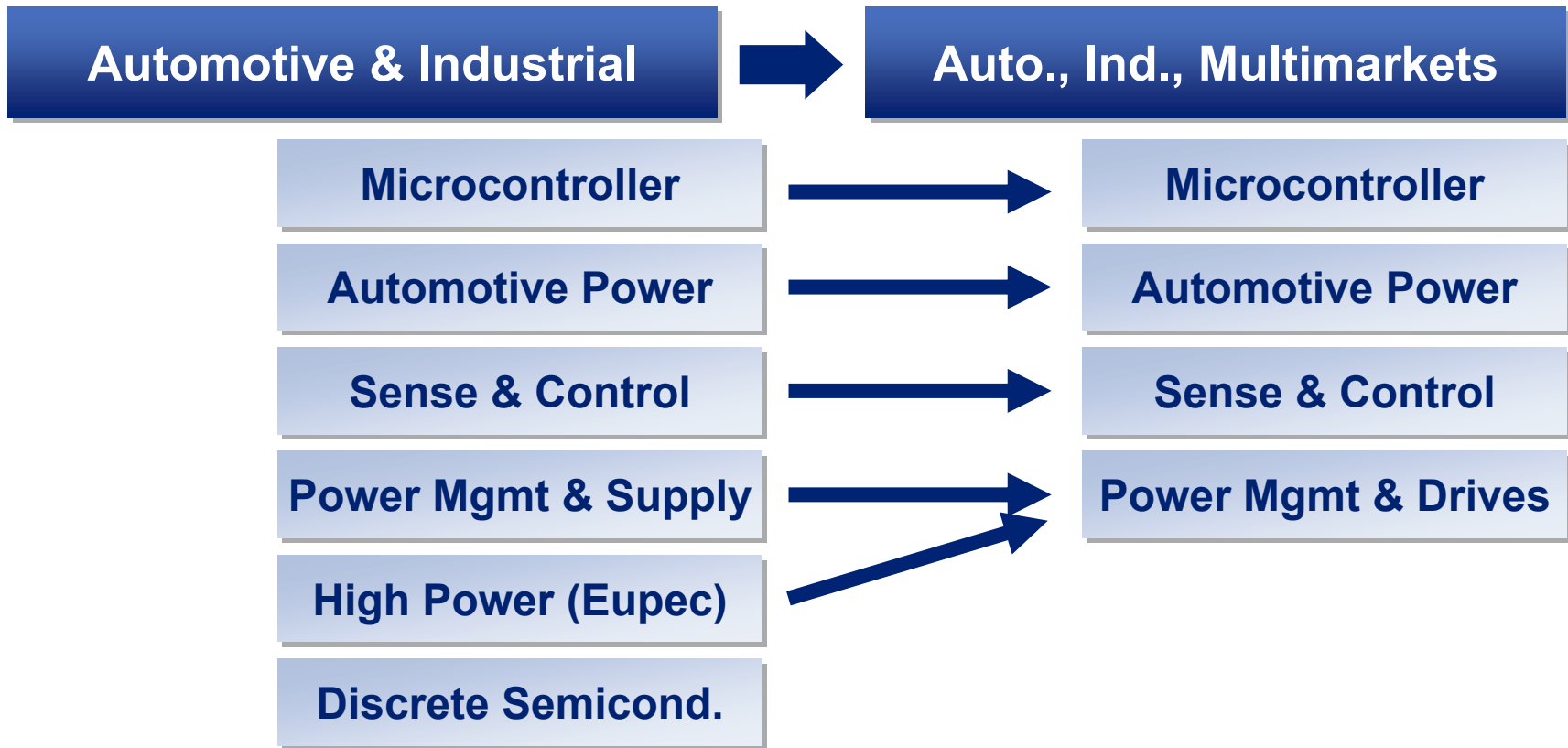


# Longterm industry outlook forecasts moderate global light vehicle growth but dynamic automotive electronics and semi markets

Market Perspective	2004	2009	CAGR	Growth Drivers
Light Vehicle Production (k volumes)	61,893	70,944	2.8%	<ul style="list-style-type: none"> <li>• Replacement of hydraulics and mechanics by electronics Size/weight optimization of systems and components</li> <li>• Migration of electronic features into middle and economy class cars (HVAC, side airbags, etc.)</li> <li>• Electronic innovations in high volume car segments (electric power steering)</li> <li>• Increasing sensor content key to intelligent vehicles</li> <li>• In-car networking requires intelligent Bus Systems ("system on vehicle")</li> </ul>
Electronic System Demand (mill. US\$)	122,460	166,417	6.3%	
ECU Demand (mill. US\$)	35,267	50,466	7.4%	
Semiconductor Demand (mill. US\$)	15,822	23,500	<b>8.2%</b>	

Source: Global Insight, Strategy Analytics, IFX

# Changes in Automotive & Industrial



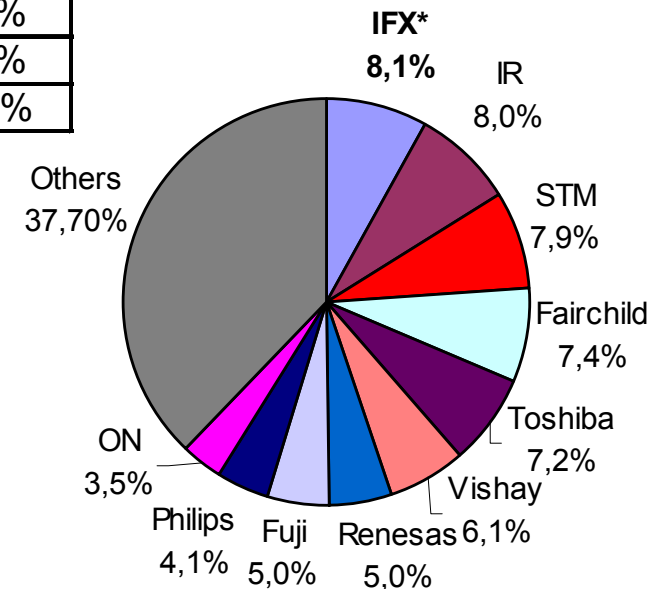
# Infineon achieved worldwide market leadership for power semiconductors in 2003

Rank 2003	Rank 2001	Supplier	2003	2001	Change
1	4	Infineon*	8,1%	6,6%	1,5%
2	2	IR	8,0%	7,6%	0,4%
3	6	STM	7,9%	6,3%	1,6%
4	3	Fairchild	7,4%	6,7%	0,7%
5	1	Toshiba	7,2%	8,6%	-1,4%
6	5	Vishay	6,1%	6,3%	-0,2%
7		Renesas	5,0%		
8	10	Fuji	5,0%	4,0%	1,0%
9		Philips	4,1%	3,2%	0,9%
10	10	ON	3,5%	4,1%	-0,6%



\* incl. EUPEC

- Market Size: 9.358' US\$ (2003)
- CAGR: 10,2% (03-08)



Source: IMS Research, Global Market for Power Semiconductors (June 2004)



# Infineon's power logic fab locations



**Regensburg**  
Production and development of Power, RF, BiCMOS, Sensors, Mixed-Signal



**Villach**  
Production and development of Power, Mixed-Signal and Discretes

**Mch-Perlach \***  
Production and development of Mixed-Signal, Bipolar RF, BiCMOS, Sensors, Discretes



\*) Will be phased out by early 2007.

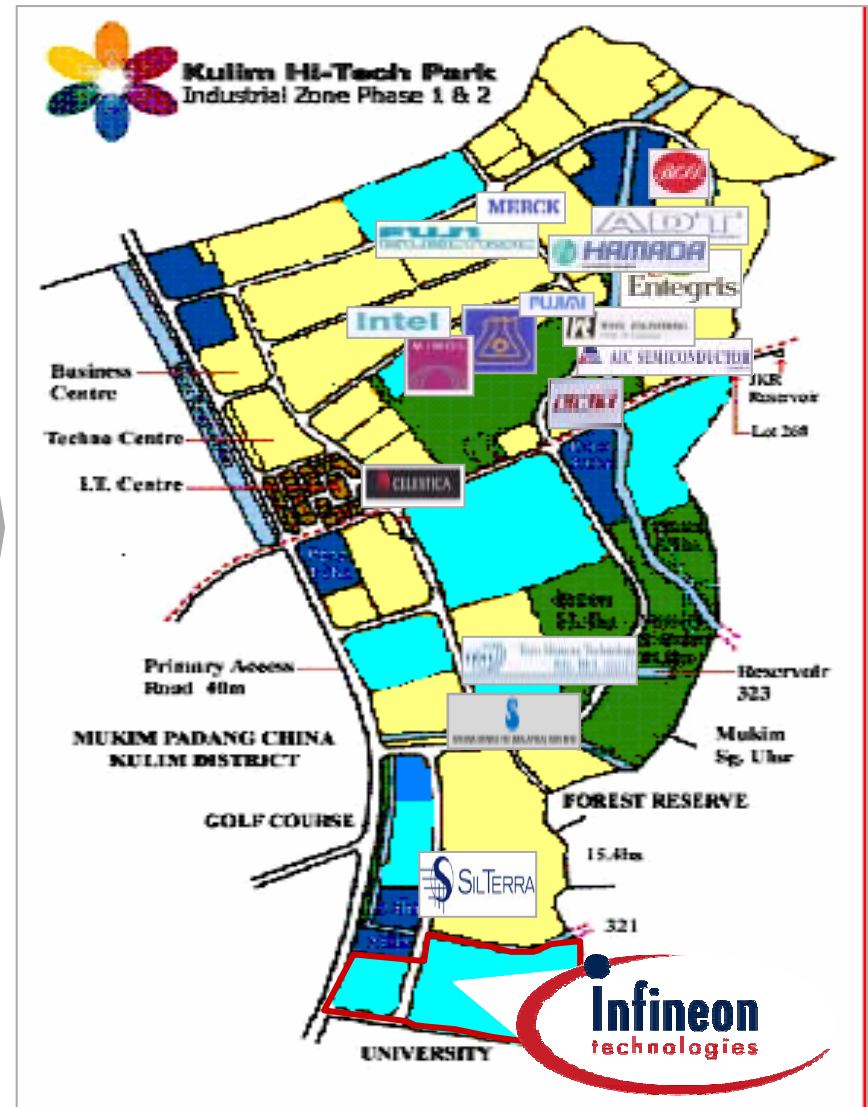
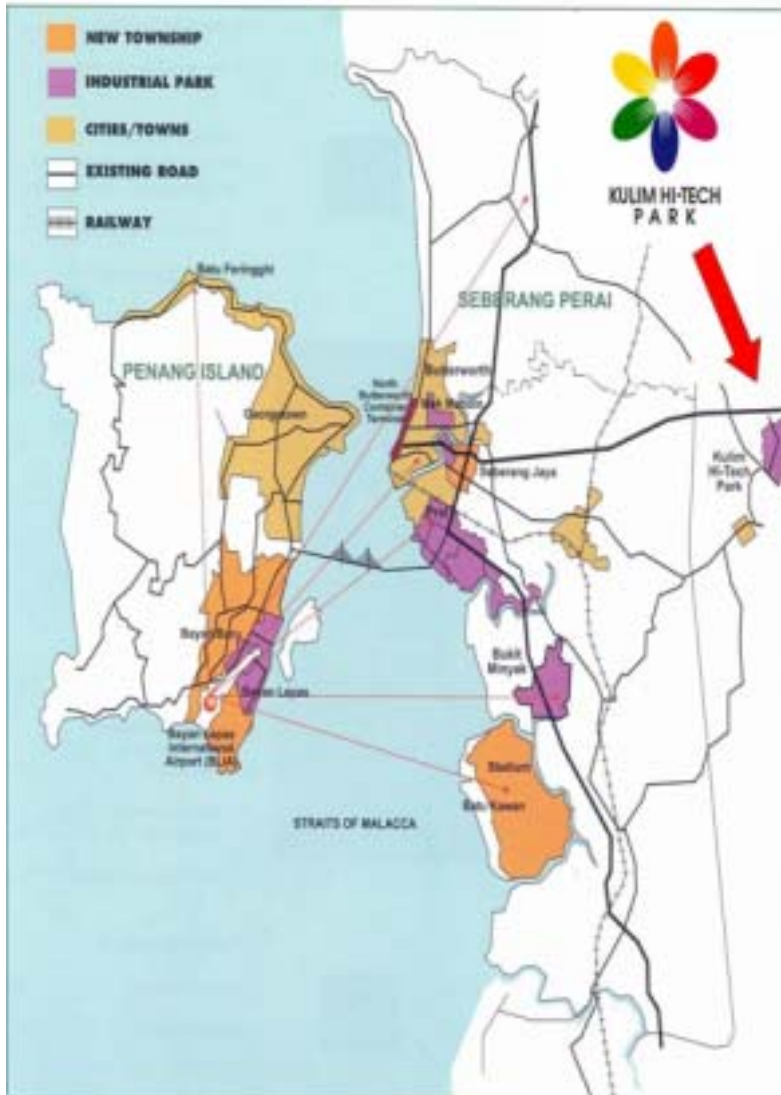


**New Fab - Kulim**  
Production of Power, Power-Bipolar, Mixed-Signal

**Additional capacities at silicon foundries: ASMC, Chartered, TSMC and ZMD**

# Land plot of the new fab in Kulim High Tech Park

stop thinking  
Never



## Why a new logic fab for AIM?

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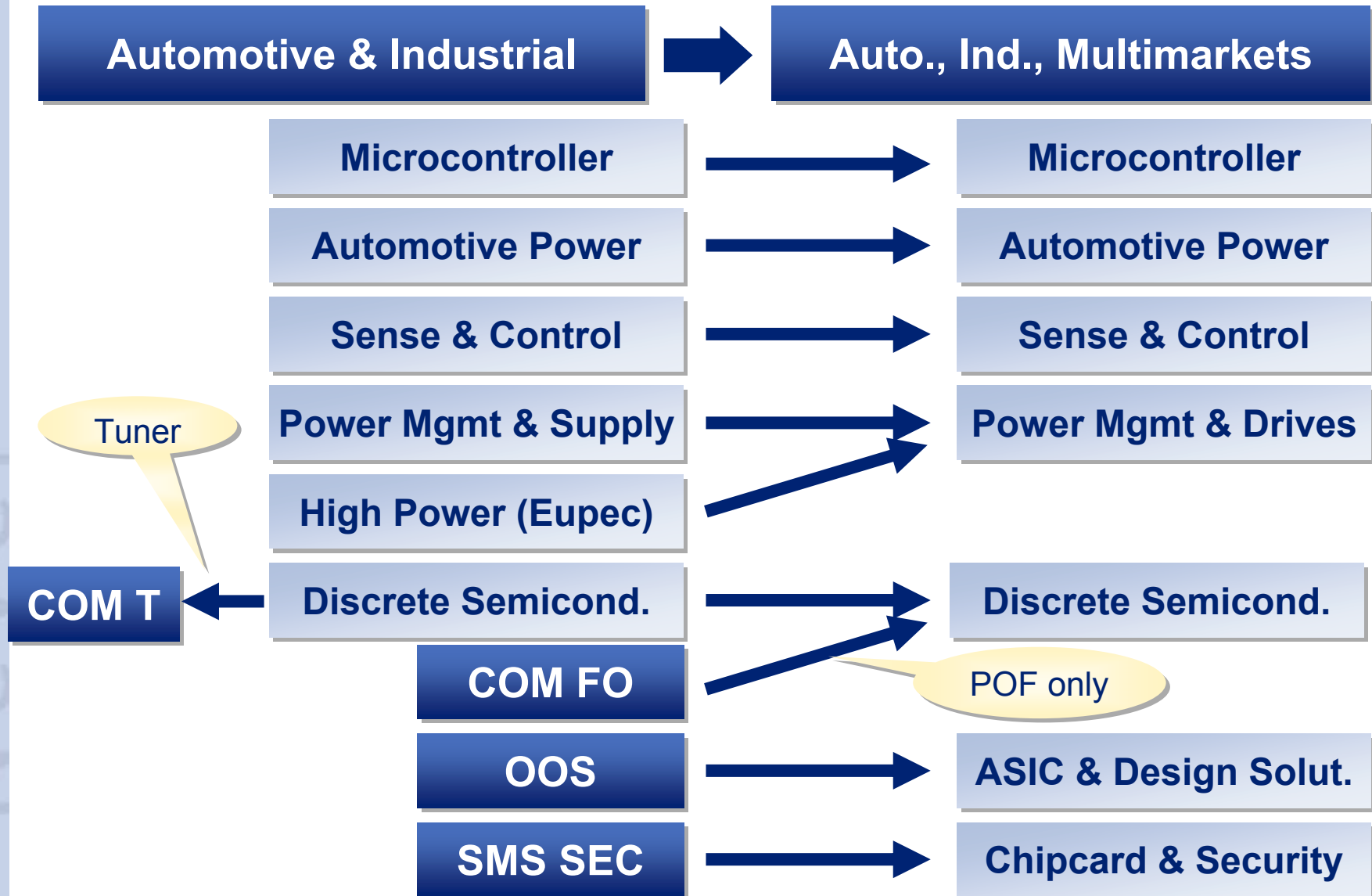
- Power semiconductors face a strong and stable long-term growth.
- In-house capacity increase is required for AIM due to volume growth and lack of vital external partnership model.
- Power semiconductors cannot be shrunk as fast as memory or standard logic technologies. Therefore, the output increase per fab is moderate only.
- Low cost site is favorable over mid-term due to much lower labor costs.
- Kulim High-Tech Park in Malaysia is chosen as the new fab's location resulting out of a thorough site selection process.



# Key Figures of Malaysia fab for power semiconductors

<b>Technology</b>	<ul style="list-style-type: none"> <li>■ feature sizes of 0.35µm, 0.5µm, 0.7µm and 1.0µm</li> </ul>								
<b>Capacity &amp; Facility</b>	<ul style="list-style-type: none"> <li>■ Capacity of about 100k WSPM on 200mm wafers</li> <li>■ 2 modules, each 5000 m<sup>2</sup> clean room (class 10/Litho class 1)</li> <li>■ 1700 employees (1170 direct functions/530 engineers+admin)</li> </ul>								
<b>Site</b>	<ul style="list-style-type: none"> <li>■ Kulim High Tech Park, Kedah, Malaysia</li> <li>■ Size of land plot 200,000 m<sup>2</sup></li> </ul>								
<b>Investment</b>	<ul style="list-style-type: none"> <li>■ Total investment of about EUR1bn</li> </ul>								
<b>Timeline</b>	<table border="0"> <tr> <td>■ Decision made</td> <td>Nov 2004</td> </tr> <tr> <td>■ Ground breaking</td> <td>Feb 2005</td> </tr> <tr> <td>■ Equipment move-in and start of transfer</td> <td>Feb 2006</td> </tr> <tr> <td>■ Full fab capacity reached</td> <td>end 2009</td> </tr> </table>	■ Decision made	Nov 2004	■ Ground breaking	Feb 2005	■ Equipment move-in and start of transfer	Feb 2006	■ Full fab capacity reached	end 2009
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# Changes in Automotive & Industrial



# Significant manufacturing cost reductions in Chipcard ICs

## MicroSlim technology

- Volume roll-out of MicroSlim technology (66PE family) since mid 2004
  - Move from 2 transistor/bit to 1 transistor/bit cell design
  - Significant reduction of chip area
  - Higher performance (30 MHz) and increased memory sizes

## Introduction of FCOS modules

- Ramp-up of “Flip-Chip on Substrate” packaging technology since 01/2005

## 130nm shrink

- Volume roll-out of first chipcard products on 130nm technology in mid 2004
  - First 32-bit controller with flash memory dramatically improves flexibility and manufacturing time for customer
  - 32-bit architecture enables applications with higher memory- and security-requirements
  - Low power consumption (1.8V) and increased performance (66MHz)



# Infineon Technologies as of January 1, 2005: 3 Business Groups; 22 Business Units

**Memory Products**  
Dr. Andreas von Zitzewitz

**Communication**  
Kin Wah Loh

**Automotive, Industrial & Multimarket**  
Peter Bauer

- Computing DRAM
- Graphics DRAM
- Consumer & Mobile
- Flash
- Aeneon

**Wireless**

- Wireless Infrastructure
- RF Engine
- Feature Phone
- Entry Phone
- Short Range Wireless
- Customer Project
- Tuner

**Wireline**

- Wireline Access
- Customer Prem. Equipment
- Optical Networking
- Fiber Optics

**A**

- Microcontroller
- Automotive Power
- Sense & Control

**I**

- Power Mgmt & Drives

**M**

- Discrete Semiconductors
- ASIC & Design Solutions
- Chipcard & Security ICs



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[www.infineon.com](http://www.infineon.com)