IFX Day 2004

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Manufacturing Update

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Chief Operating Officer

Never stop thinking.

Disclaimer

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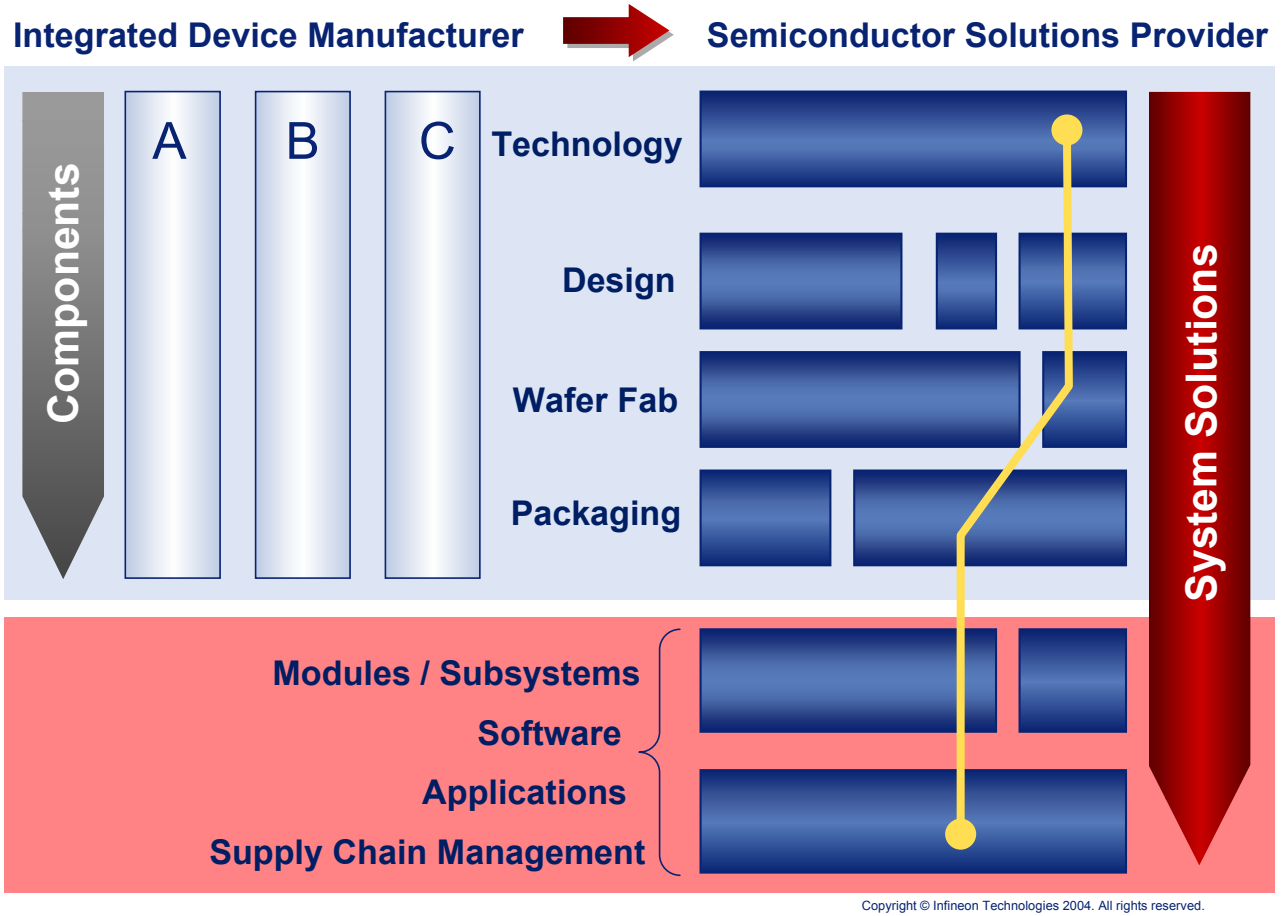
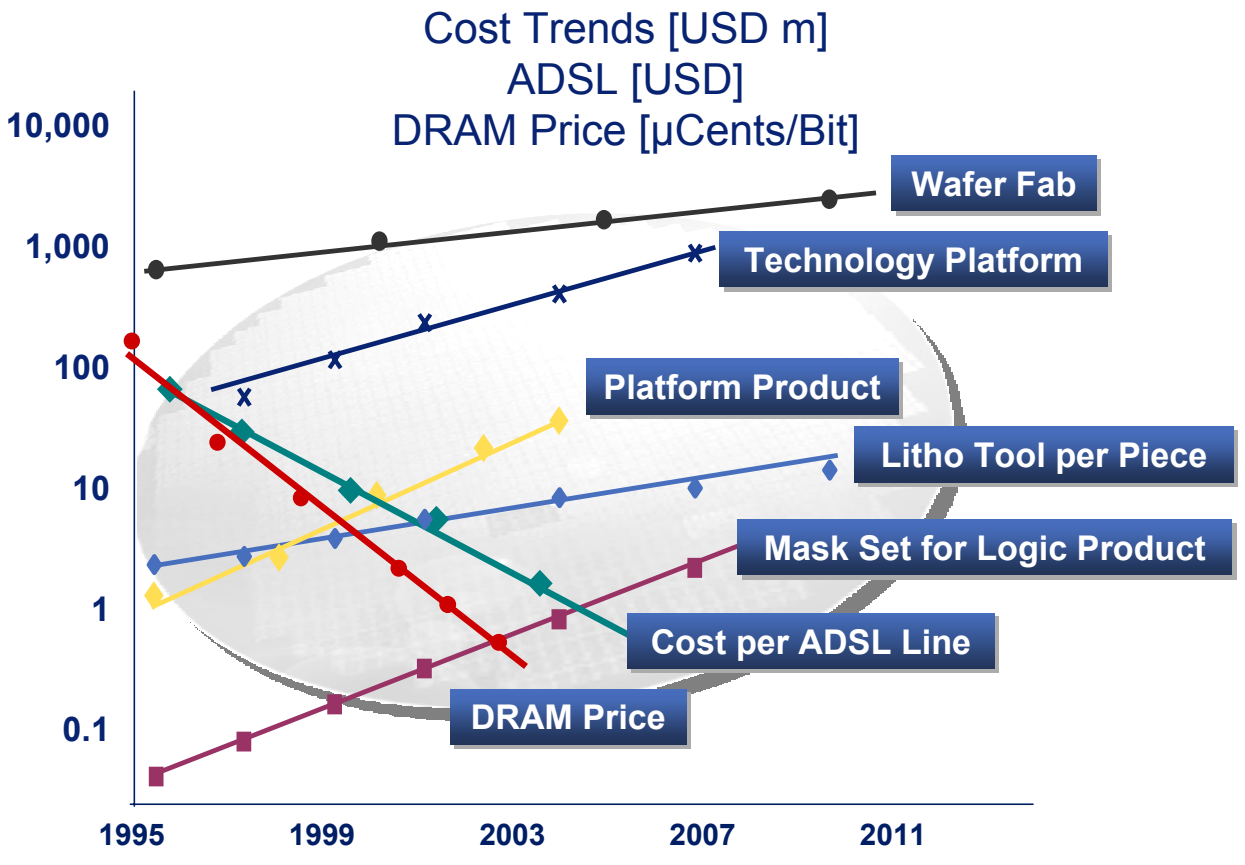
From an Integrated Device Manufacturer (IDM) to a Semiconductor Solutions Provider (SSP)



Increasing cost require collaboration to keep development and investments affordable



Source: IC Insights, McClean Report 2002, Semiconductor Business News 01/07/03

Business benefits of partnerships and outsourcing

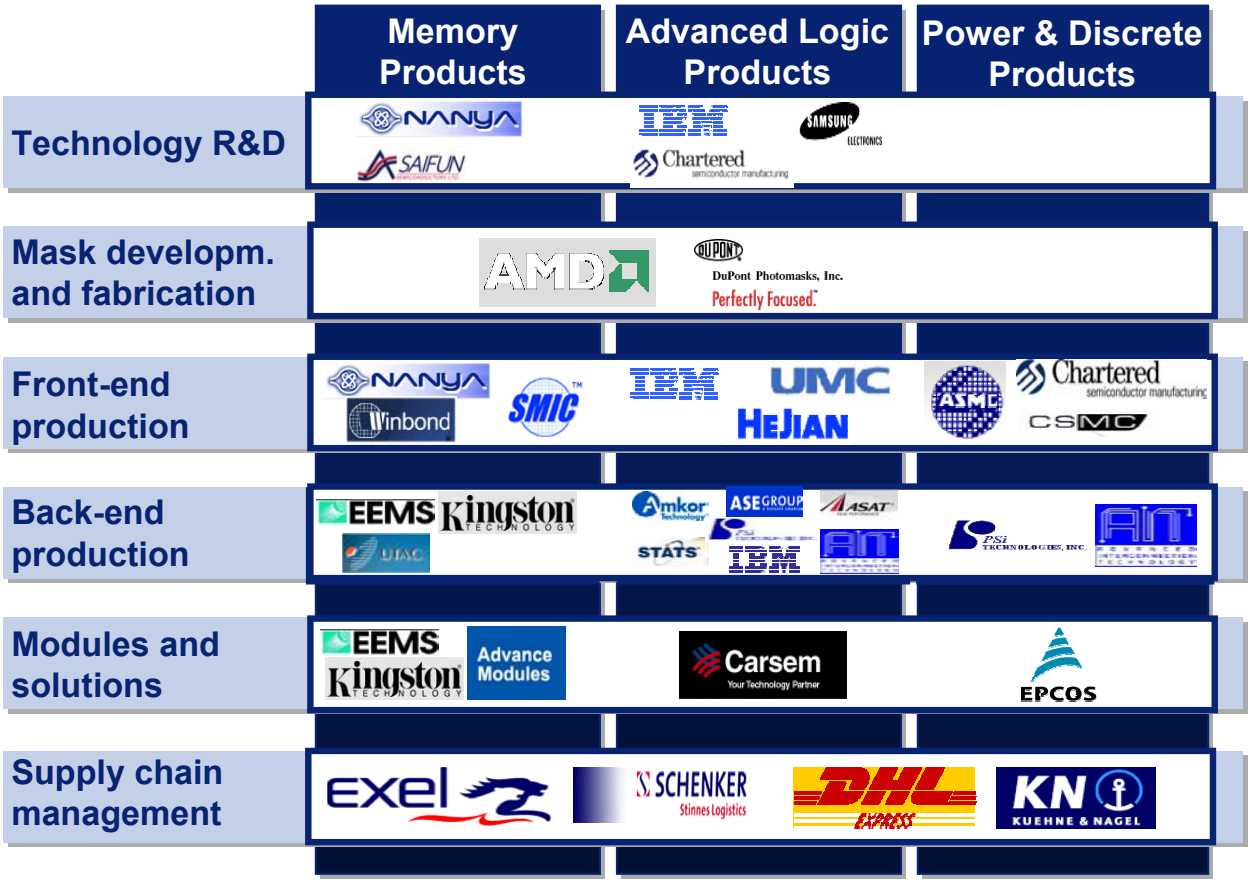
Partnerships

- Access to additional IP, resources, and production capacity
- Cost sharing
- Reduced risks
- Extended portfolio
- Lower capital intensive strategy

Outsourcing

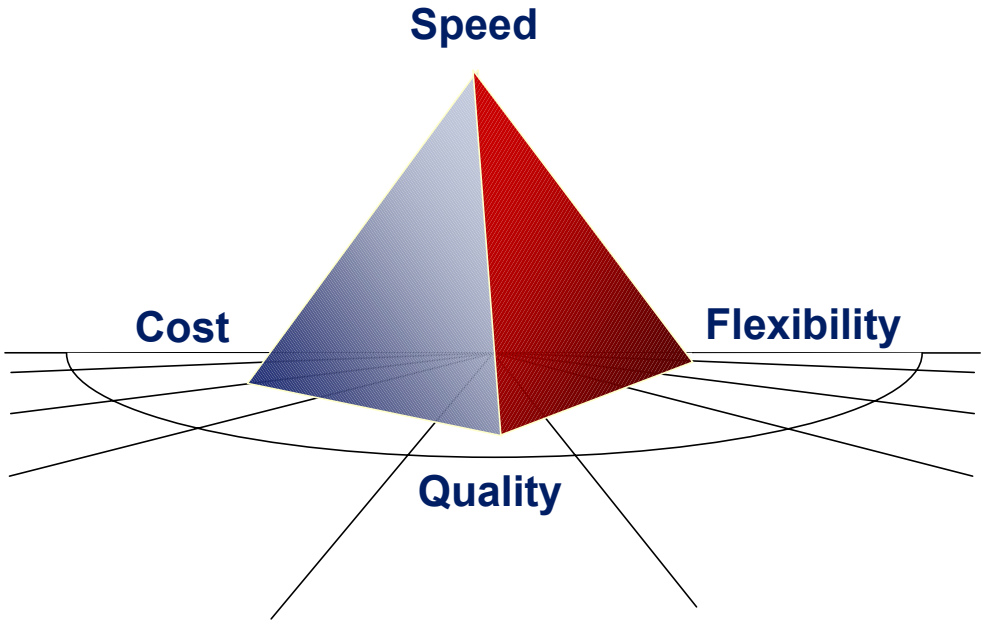
- Flexibility
- Extended portfolio
- No assets

Infineon's network of manufacturing partnerships



Selected examples

Speed, cost, quality, and flexibility are key success factors for manufacturing excellence

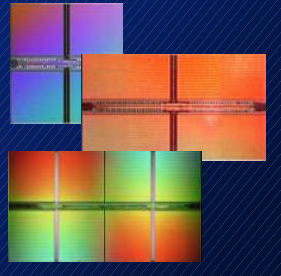
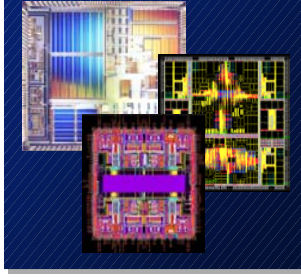


The four key success factors are linked together and can not be optimized independently

Infineon manufacturing clusters:
Memory Products - Advanced Logic - Power Logic

Quality

Infineon Manufacturing Clusters

	Memory Products	Advanced Logic (≤ 0.25µm)	Power Logic (≥ 0.35µm)
Front-end			
Back-end			

One virtual fab to our customers

Memory Products manufacturing cluster

Quality

Memory Cluster

Front-end

SMIC

Winbond

Identical technology roadmaps

Global process synchronization and quality control

Best-practice sharing and fast ramps

Back-end

EEMS

Kingston TECHNOLOGY

Memory's 300mm production roadmap

Dresden, Germany

Inotera, JV Taiwan

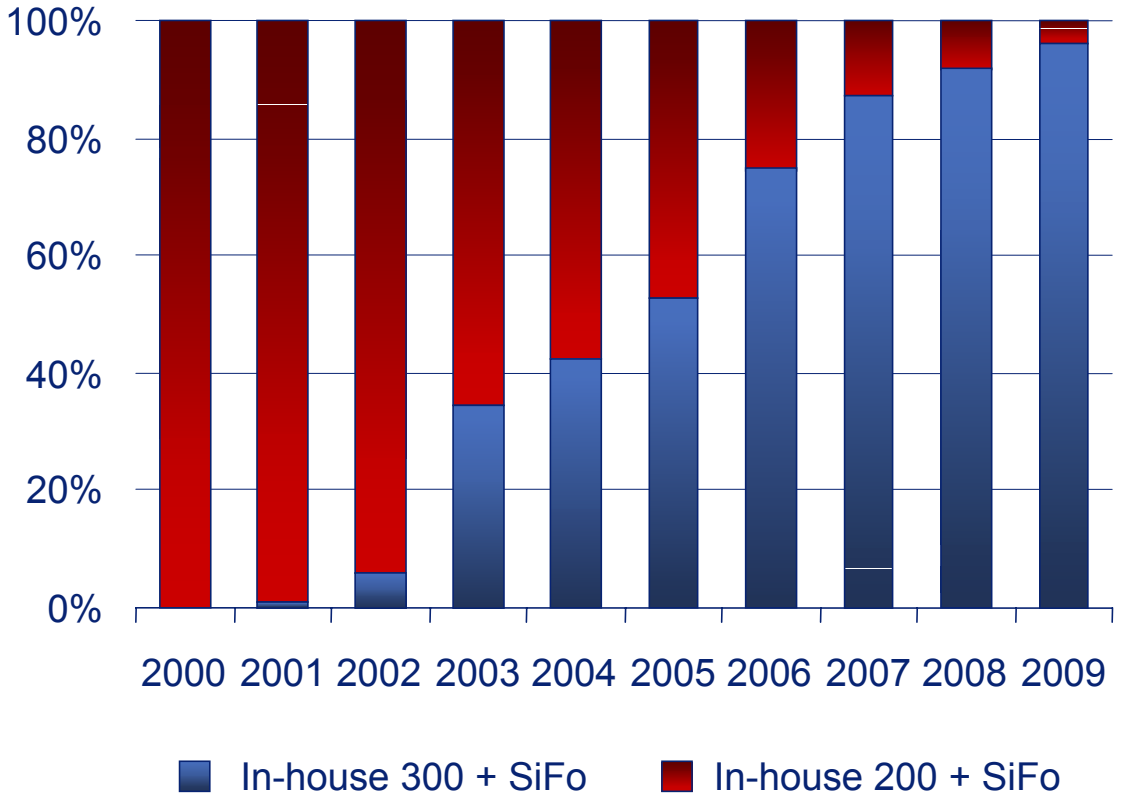
Richmond, Virginia

Winbond

SMIC™

- **Dresden:** Already ramped to > 30k WSPM on 110nm
- **Inotera:** Currently ramping 110nm (act. > 24k WSPM)
- **Richmond:** Currently equipping fab shell (ramp 2nd HY05)
- **Foundries:** SMIC 300 ramping, WIN 300 construction

Memory manufacturing: Evolution of 300mm volumes



Advanced Logic front-end cluster

Quality

Advanced Logic Cluster


Dresden 200mm


Altis JV / Essonnes


UMC


UMCi 300mm

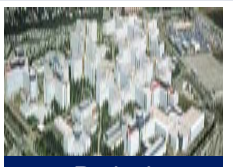
IBM EFK 300

250nm Al	Synergy from cooperation in R&D and manufacturing
180nm Cu	Common technology platforms
130nm Cu	Reduced investment and mutual sharing of capacity
90nm Cu	Mutual compensation for fluctuating logic demand
65nm Cu	Best-practice sharing and fast ramps

Power logic front-end cluster

Quality

Power logic cluster


Perlach


Regensburg


Villach

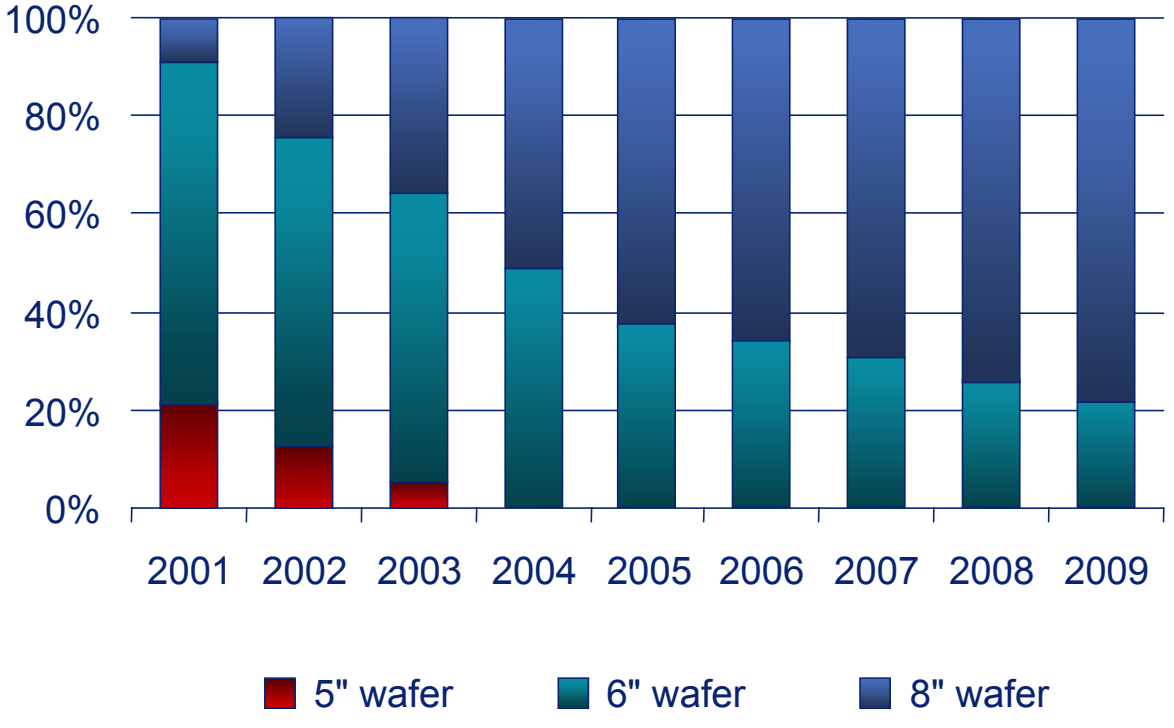
ASMC

CSMC

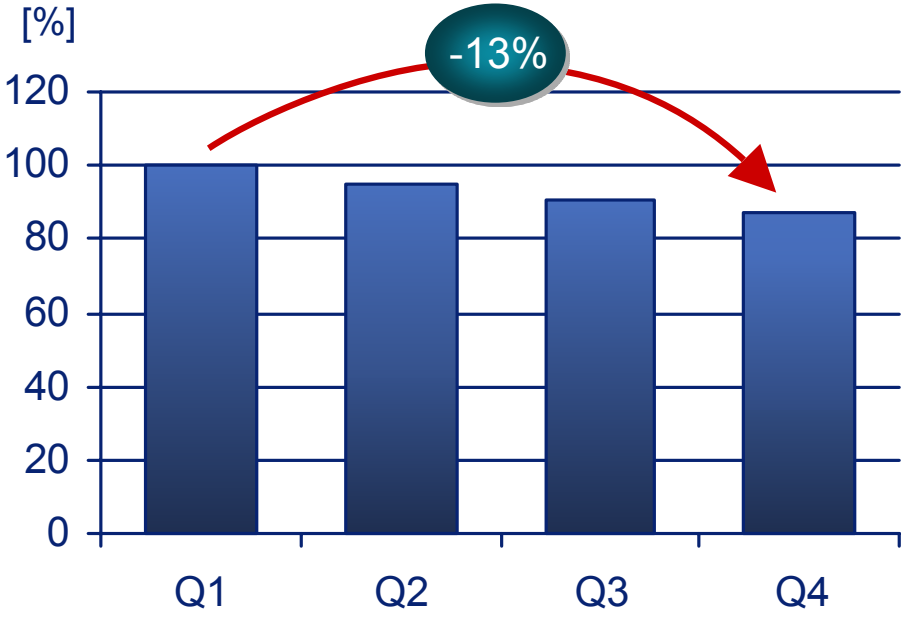
Chartered semiconductor manufacturing

- One organisation for R&D and in-house manufacturing
- Common technology platforms
- Reduced investment and sharing of capacity
- Cost efficient manufacturing
- Best practice sharing and fast ramp-ups

Power Logic:
Evolution of wafer diameters



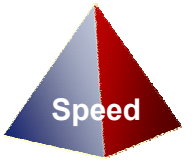
Evolution of 8" cost per mask layer in logic front-end production in FY03/04

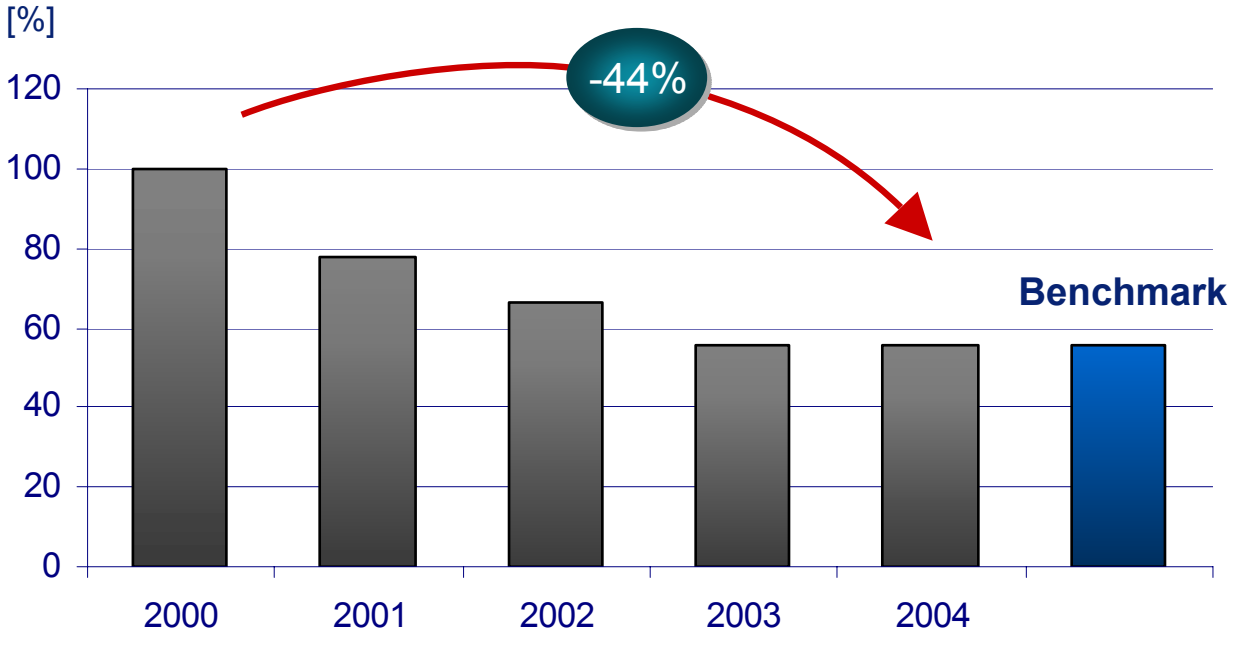


Cost reduction due to

- Increased logic share in Dresden 200mm
- Productivity improvements in power logic fabs and Altis

Speed: Evolution of cycle-times in logic front-end production

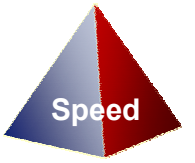


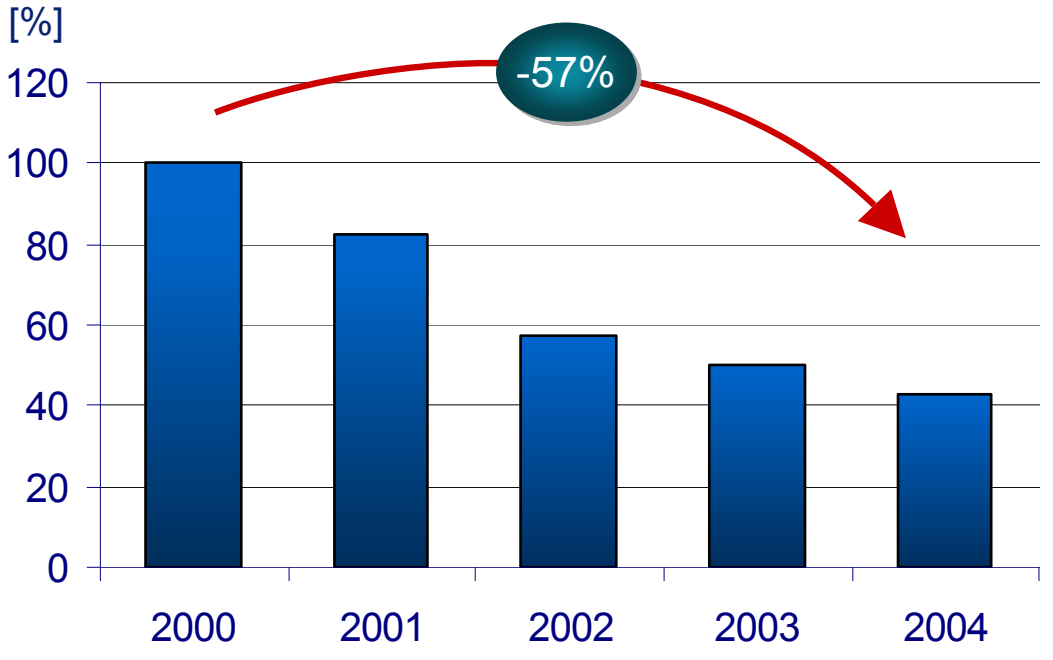


Reduction of cycle times by ~2x compared to 2000

- Faster yield learning
- Increased delivery flexibility: "Serve the Market"

Speed:
Evolution of range in back-end production





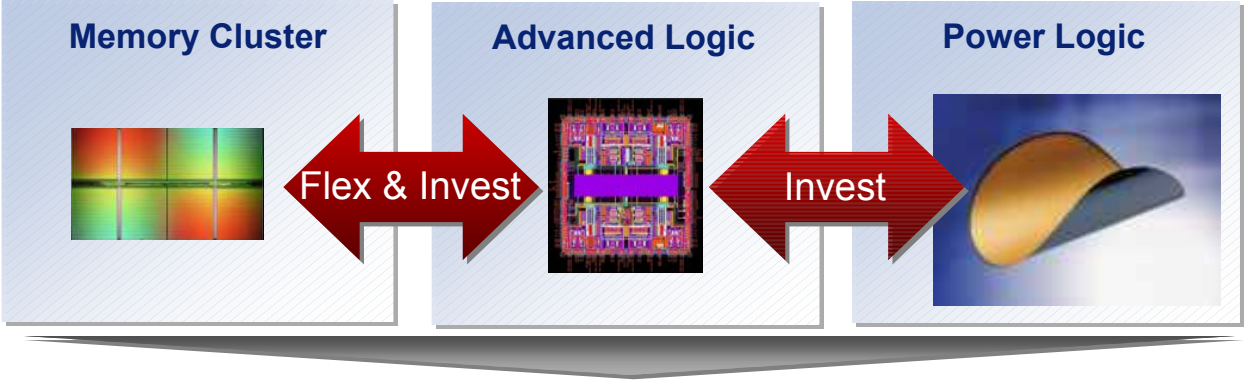
Reduction of BE range by > 2x compared to 2000:

- Reduced stock levels
- Faster cycle time and increased delivery performance

Integrated manufacturing to maximized flexibility and minimized cost

Maximize: Opportunities during market upturns
Minimize: Impact of downturns and investments

- Internal flexibility: Between MP and Advanced Logic Cluster
- External flexibility: Silicon foundries and subcontractors
- Cost optimization: Reuse of depreciated equipment for power technologies



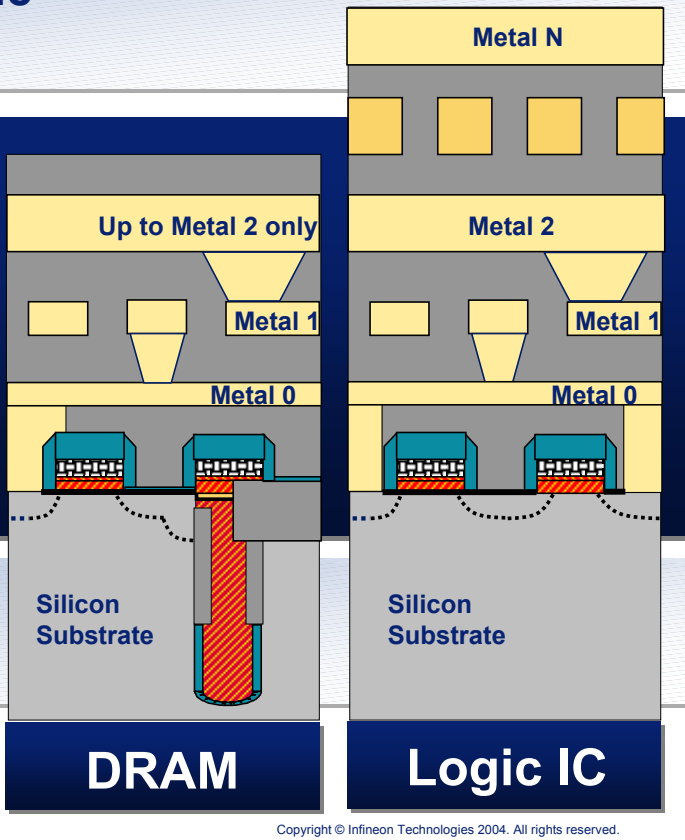
Flexibility: Silicon foundries and subcontractors

Flexibility: Extended equipment sharing between Memory and Logic Manufacturing

Logic IC Process-specific Equipment / Investment

Common Equipment / Investment

DRAM Process-specific Equipment / Investment



Flexibility between memory and logic as an operational and strategic concept

Operational advantages

- Memory as a forerunner in lithography and advanced tool learning
- Memory as ramp-up and volume vehicle with excellent debug capabilities to tune and stabilize processes (logistics, equipment, utilization, technologies)
- Memory production optimizes manufacturing processes: Ramp-up of new manufacturing sites and teams
- Memory volume buffers fluctuations in logic IC demand, and improves capital efficiency of our fabs
- Flexible and gradual cascading of fabs from memory to logic IC fabrication (currently 200mm in Dresden)
- Cascading of depreciated equipment from memory and Advanced Logic to Power Logic Fabs reduces capex required for growth


Infineon
technologies
Never stop thinking.