



IAF Industry Day - Bonn, Germany 2008-03-05

Multi Sector Industry: Semiconductors

Leo Stuehler
Director Standardization and Norms
Infineon Technologies

Agenda

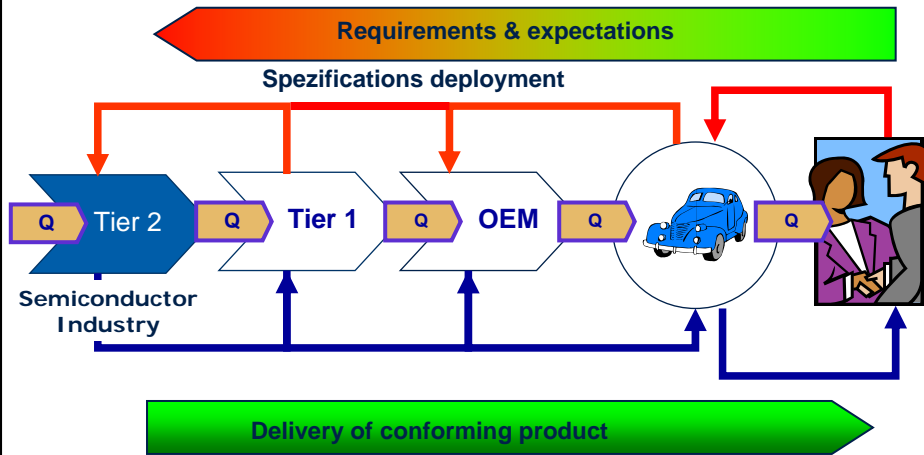


- Semiconductor Industry – Special Characteristics
- Semiconductor Industry – The Challenges
- Areas of concern
- QMS-Standards and Certification - Proposals

Semiconductor Industry – Special Characteristics



Semiconductor Industry position in the value chain



06.03.2008

For internal use only

Copyright © Infineon Technologies 2008. All rights reserved.

Page 3

Semiconductor Industry – Special Characteristics



Semiconductor industry is . . .

- an enabler for innovation in all industry sectors (e.g. automotive, communication, computing, entertainment)
- a global multi-partner network of alliances and JVs (pre-competitive technology research and standardization) and JVs (R&D, manufacturing)
- fast growing
- highly competitive



Andy S. Grove, Intel co-founder (1968)

“Only the Paranoid Survive” (1999)

06.03.2008

For internal use only

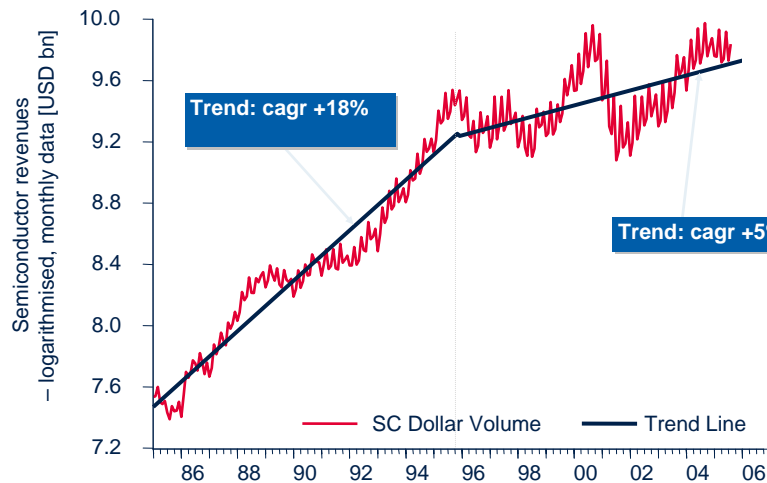
Copyright © Infineon Technologies 2008. All rights reserved.

Page 4

Semiconductor Industry – Special Characteristics



Semiconductor Market Development

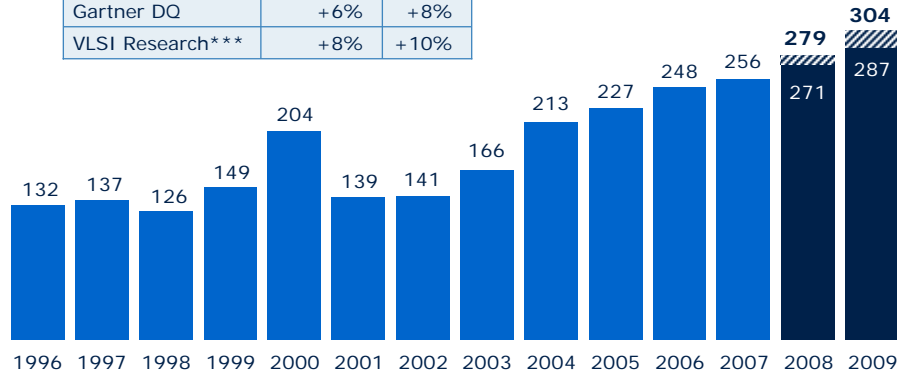


Semiconductor Industry – Special Characteristics



Semiconductor Market Development and Forecasts [USD bn]

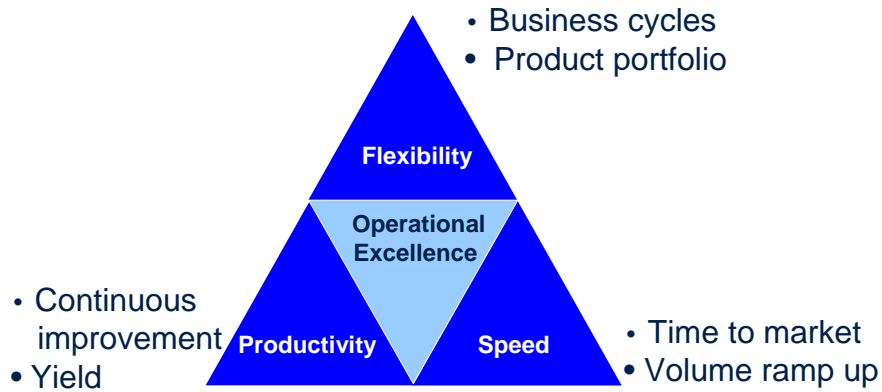
Forecasts*	2008	2009
IC Insights	+9%	+9%
iSuppli	+8%	+4%
WSTS**	+7%	+6%
Gartner DQ	+6%	+8%
VLSI Research***	+8%	+10%



Semiconductor Industry – The Challenges (1): Intrinsic requirements



Manage the “Magic Triangle” of Operational Excellence



Semiconductor Industry – The Challenges (2): External requirements



■ Regulatory requirements

- EU-Directive “RoHS” (Restriction of certain Hazardous Substances)
(e.g. lead free “Green products”)

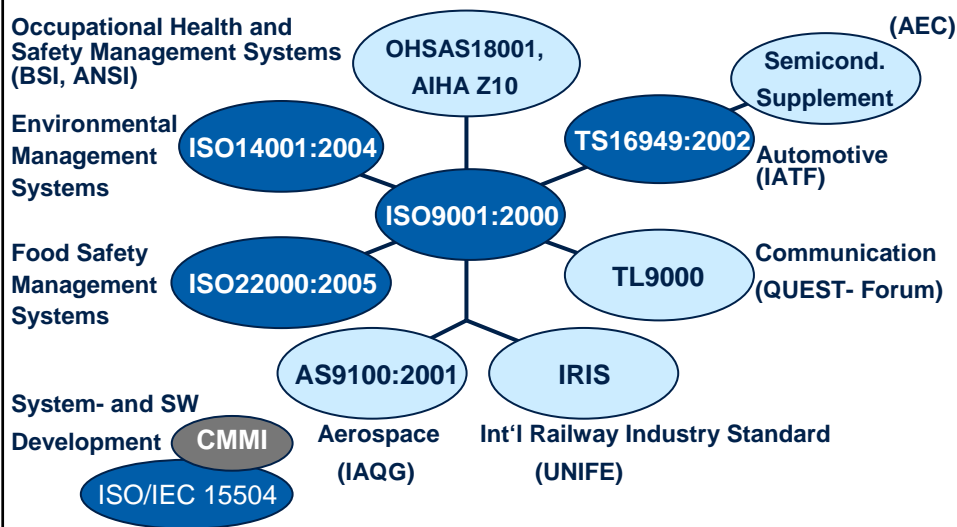
■ Market requirements for solutions in the areas

- Individual mobility
- Entertainment (convergence of text-sound-pictures)
- Personal safety
- Energy efficiency

■ Management system oriented requirements

- International standards
- Sector specific standards
- Customer specific requirements

Semiconductor Industry – The Challenges (3): QMS-Standards



06.03.2008

For internal use only

Copyright © Infineon Technologies 2008. All rights reserved.

Page 9

Areas of concern – QMS-Standards



ISO9001 & TS16949

- How international is it really with regard to . . .
 - participation in development of standards and sanctioned interpretations
 - application of standards as guidelines to build individual QM- Systems
 - common understanding of requirements and sanctioned interpretations
- How transparent is the standards development process to stakeholders ?
 - roles and positions of involved stakeholders and individuals
 - active participation vs voting power by National Committees

TS16949 specific

- Customer Specific Requirements (CSRs) introduce specific requirements on top of QMS- standards by-passing the ISO ballot process („Trojan horse“)

06.03.2008

For internal use only

Copyright © Infineon Technologies 2008. All rights reserved.

Page 10

Areas of concern – Evidence of Conformity (1/2)



ISO9001 & TS16949

- Only third party registration is established and accepted in the marketplace
- Inflexible audit approach disregarding company's maturity and performance

TS16949 / IATF specific

How transparent and open is the definition process for certification requirements, auditing rules & regulations, auditor training?

- TS16949 was assigned as a project to TC176, not to ISO TC 176 SC2 -
In practice TS16949 is still owned by IATF (as was QS-9000)
- Participation vs voting power by National committees
- Role and influence of other stakeholders (tier n)

How „international“ is it really regarding common application and interpretations

- Confusing statements / interpretations of TS2 applicability across the entire automotive supply chain in contradiction to Tier-N deployment requirement

Areas of concern – Evidence of Conformity (2/2)



TS16949 / IATF specific (cont'd)

Audit regulations are not controlled by ISO/CASCO procedures

- Audit frequency - auditor man days allocation per location size - no sampling
- Issued individual production site specific certificates can be in contradiction to Business Governance model and setup of QMS of audited company

Customer Specific Requirements (CSRs) move more and more into the center of third party audits, i.e. customers outsource compliance check of their „add on, beyond standard requirements“ and let their suppliers pay the bill

IATF requests a mandatory fee from registrars
(% of revenue created by TS16949 on site auditor days)

Standards and Certification – Proposals for QMS-Standards



ISO9001 & TS16949:

- Increase acceptance, simplify wording, consolidate portfolio of management system standards
- Only lean sector- specific Add-Ons to basic standard, if any

TS16949:

- No reference to individual CSRs, because it is contractual bilateral issue
- Overcome restrictive requirements, e.g. use of accredited labs, PPAP, deployment to suppliers

Standards and Certification – Proposals for Evidence of Conformity (1/2)



- Elaborate value chain oriented partnership model rather than company sites oriented paradigm
- Increase credibility by offering superior alternatives to ever more tightened auditing regulations (examples see next page)

Standards and Certification – Proposals for Evidence of Conformity (2/2)



Examples for alternative methods:

- **By First Party („The company“)**

- From traditional internal system audits to advanced employee centered & process oriented continuous improvement (e.g. Self Assessments)
- Self Declaration according to **ISO/IEC 17050:2004**

- **By Second Party („The Customer“)**

- From traditional customer audits to joint Risk & Opportunity assessments in development projects
- Mutual recognition of performance evaluation (market surveillance)

- **By Third Party („The registrar“)**

From annual „One Fits for All“ surveillance audit scheme to flexible options for alternative methods to be customized by „The Company“ & „The Registrar“ taking into account maturity and performance of the company

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

