SEMICONDUCTOR STANDARDIZATION LANDSCAPE

PUBLIC

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SECURE CONNECTIONS FOR A SMARTER WORLD

KEY ROLE OF STANDARDS IN SEMICONDUCTORS

- The semiconductor (IC) market is 50 years old
  - It has created an enormous value for the world economy
  - by and large has the basic standards it requires to get where it is today
    - of course there are new innovative standards topics every year
- it is at the center of geopolitical tensions

- The semiconductor (IC) industry is a market of 1,000's of product submarkets; products are very low cost and require high investments to develop^:
  - Each submarket has a few strong players – only the top 1 or 2 can be profitable
  - Market fragmentation can kill many submarkets

- The (European) semiconductor industry needs:
  - ***Stable basic standards*** as a basis of the broad portfolio of products
  - Broadly accepted industry standards and uniform regulatory requirements *to ensure global markets do not fragment in "regional" versions*
  - **Security** functions are a major focus of the EU semiconductor industry

- Regional standards or regional certification requirements can create **trade barriers,** attention is required

STANDARD LANDSCAPE: SEMICONDUCTOR COMPANY PERSPECTIVE

Example: NXP is a member of >100 standards organizations, has >300 people involved more or less actively in SDOs

Functional product standards:

- System level standards / ecosystems

- Function level standards

Examples of standards and organizations

Non-functional product standards:

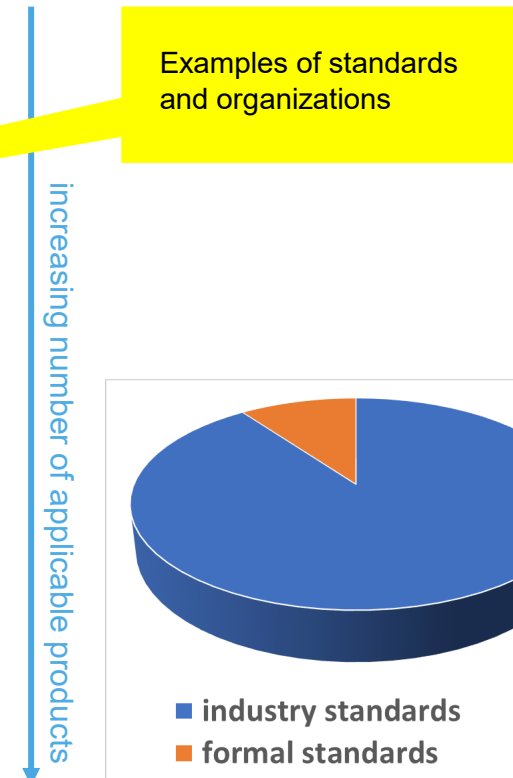- Security, Functional Safety, Quality, EMC, Reliability, ESD etc
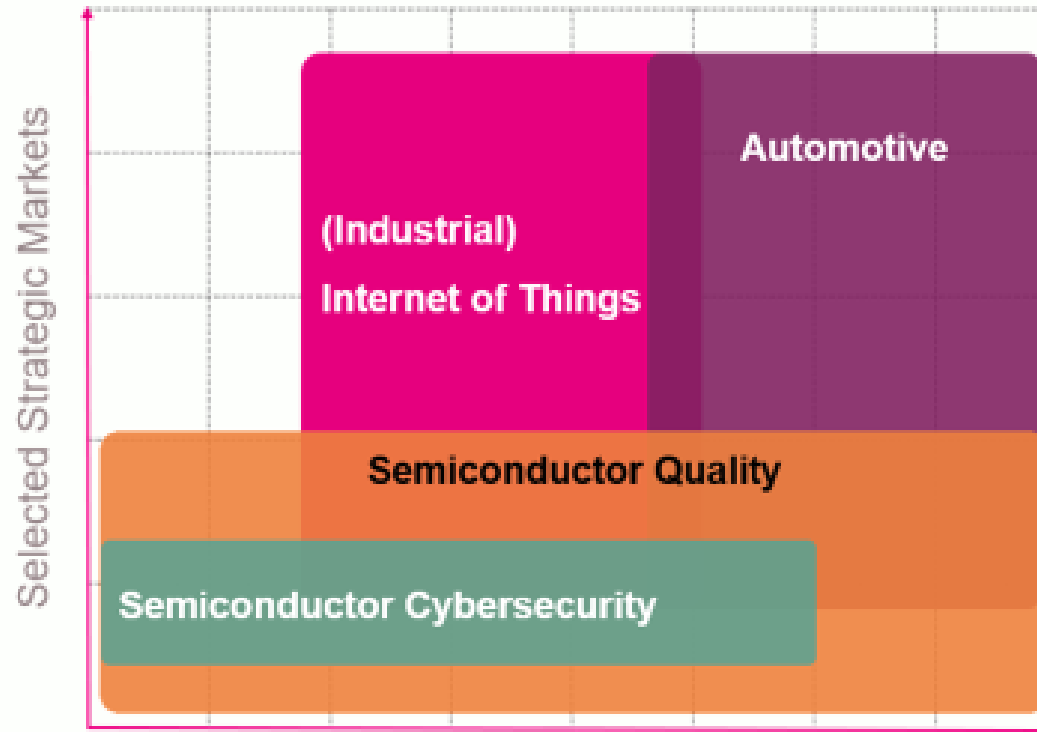
Process standards:

- Automotive quality, Security, …

Testing & certification

increasing number of applicable products

ISO 21434

IEC 62443-4-1

- industry standards
- formal standards

Fields: Wired & wireless connectivity & applications, IoT (CE, Industry), Security technology, applications, certification, Chip- & wired- Interfaces, Product Quality, Compute & SW standards

Priorities

TRUSTED CHIPS – A COMPETITION / TRADE BARRIER PERSPECTIVE

- Unknown/new certification requirements in any field & standards adopted by customer base
  - Specifically, those of a horizontal nature, affecting many products:
    - **Security** (blocking market access or undercutting market by different or lower quality standards)
    - Quality (e.g. undercutting market standards, changes requiring costly requalification's)

- Formal (international) vs. Industry standards risks:
  - Specifically: unnecessary, competing or poor standards gaining formal international recognition
  - Undesirable/unnecessary shifts away from industry standards towards formal standardization

- Sub-"standard" semiconductor products being imported directly or as part of subassemblies or end-products

- Increased activity in new innovative standards topics is expected;
  support for a next generation of engineers needed → education program is required,

NXP

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