Single European Semiconductor Strategy for Europe

A working document prepared by:
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and facilitated by SEMI Europe

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Introduction

Over the last 50 years, Europe has built a Semiconductor Industry that offers several world leaderships, localized in various areas along the value chain.

This diversity, if managed coherently by its actors and if supported by public authorities with a focus on its strengths and with a global European approach, will lead to a strong competitive positioning of the European Semiconductor Industry versus other regions of the world.

The Semiconductor Industry, recognized by the European Commission as a Key Enabling Technology, is most certainly maximizing the value creation in application sectors where innovation is driven by electronic content and where Europe’s industry has strong positions, skills or perspectives: IT, Automotive, Energy, Security, Healthcare and many others.

Strengths

The European Semiconductor Industry has developed several strengths, which are the fundamental pillars of its competitiveness:

- World-class technology R&D leadership, both in “More Moore” and in “More than Moore” arenas
- Industrial leaderships, more specifically in Low-Power Digital, Power, MEMS and Sensors, Analog and Mixed-Signal, Security and Emerging Technologies
- Several leading equipment & material suppliers, for example in lithography, thin films and etching, SOI and other
- Very dense portfolio of technology and product/applications IPs
- Competitive microelectronics clusters where education, R&D, SMEs and industry are synergizing around regional centers of excellence
- People expertise with high levels of education and professional experience

Challenges

The European Semiconductor Industry is facing several challenges, which have to be addressed to reinforce its global competitiveness:

- DimensionSCALE of its Manufacturing “Machine”, mainly due to lack of investments and relevant incentives
• Limited incentive support from public authorities, mainly for manufacturing and suppliers, and non-favorable regulations

• Insufficient exploitation of synergy potential between actors, cooperation not being encouraged by an easy global funding process and a single European Semiconductor Industry policy

• High-level education not sufficiently promoting manufacturing science

• “High Tech” not sufficiently embedded within European culture

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**Vision**

The European Semiconductor Industry’s vision is to **recover a leading position** in the world throughout the entire value chain and to **reverse the current negative trend** of its world-wide competitiveness.

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**Strategy**

• Capitalize and focus on Strengths along the value chain

• Benefit from a single explicit European Semiconductor industry Policy

• Increase public authorities’ focus on manufacturing

• Maintain a high level of R&D effort, in a balanced way between the 150/200/300/450mm fields, between “More Moore” and “More than Moore”

• Strengthen all elements of the value chain, from design to application

• Develop cooperating programs and synergy initiatives between all semiconductor Actors operating in Europe
Proposals for Action

1/ Focus in the diversified European landscape

Leading-edge Technology Research in Research Institutes and Academia:
1. Strongly cooperating and developing the complementarities of their respective expertise
2. Focusing their programs on prioritized European industry needs in 150mm, 200mm, 300mm and 450mm
3. Contributing to innovative and/or differentiated solutions with strong added value for Europe

Accelerated development of advanced Equipment and Materials thanks to:
1. Specific joint partnership programs with relevant R&D Institutes and Industry Actors, including equipment and material evaluation platforms
2. Focused efforts in specific areas, to strengthen business leadership or to meet strategic interest (More than Moore and More Moore including 450mm)
3. Selective Incentive Programs from Public Authorities focused on leading supply positions, with specific attention to SMEs

Larger scale of Manufacturing in Europe thanks to:
1. Closer cooperation with European R&D institutes in line with their complementary missions
2. European Pilot Lines for demonstrating innovative solutions in Key enabling Technologies and Products
3. Higher investment levels enabled by Incentive programs for Manufacturing from Public Authorities and focused on leading positions

Stronger cooperation with other Industry segments:
1. Where Europe has particular strengths for System integration and Application development
3. With the goal of strengthening the entire value chain
2/ Create the right policy environment around priorities

**Budget for Key Enabling Technologies:**
1. At the level of International Competition (USA and Asia regions)
2. With focus on semiconductor industry priorities
3. With medium term roadmaps for encouraging industry investment

**Public Incentive Programs:**
1. Available for R&D but also for Manufacturing and Suppliers
2. With priority on leading Innovation and Differentiation solutions providing added value to Europe
3. With priority on globally competitive European microelectronics clusters

**Explicit European Semiconductor Industry Policy:**
1. Based upon European industry’s needs and priorities
2. With a funding process for cross-border cooperation, offering simplified procedures and enlarged eligibility criteria
3. Creating a level global playing field by better balancing fair competition within the EU and the need to promote global competitiveness

**Higher priority of EU funding on regional Initiatives and Clusters:**
1. Contributing to the growth of competitive regional microelectronics ecosystems built around large Enterprises, SMEs, R&D and Education organisations
2. Intensifying the specialization of each cluster around a core mission
3. Encouraging inter-cluster cooperation via relevant funded programs (“Silicon Europe” project)

For further information on SEMI and on this initiative, please contact:

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