European System-driven Semiconductor Initiative

ESSI

Chip-to-System Acceleration

Detailed Overview – 30.01.2025

Industry players from all vertical markets are welcome to follow ESSI on
https://www.linkedin.com/company/essi-think-tank/

A web page is under construction at www.essi-eu.org

Scope & Genesis

European System-driven Semiconductor Initiative
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Chip-to-System Acceleration

The EU System-driven Semiconductor Initiative (ESSI): a think-tank
involving European industry-experienced members
from the semiconductor ecosystem and from system makers

Aims at identifying & promoting practical and impactful actions
to increase and accelerate the generation of economic value
enabled by European semiconductor products

Emerged from the observation that the European R&DI effort in
the semiconductor ecosystem could generate much more value faster,
if better aligned to and leveraged by EU system makers

Who is involved ?

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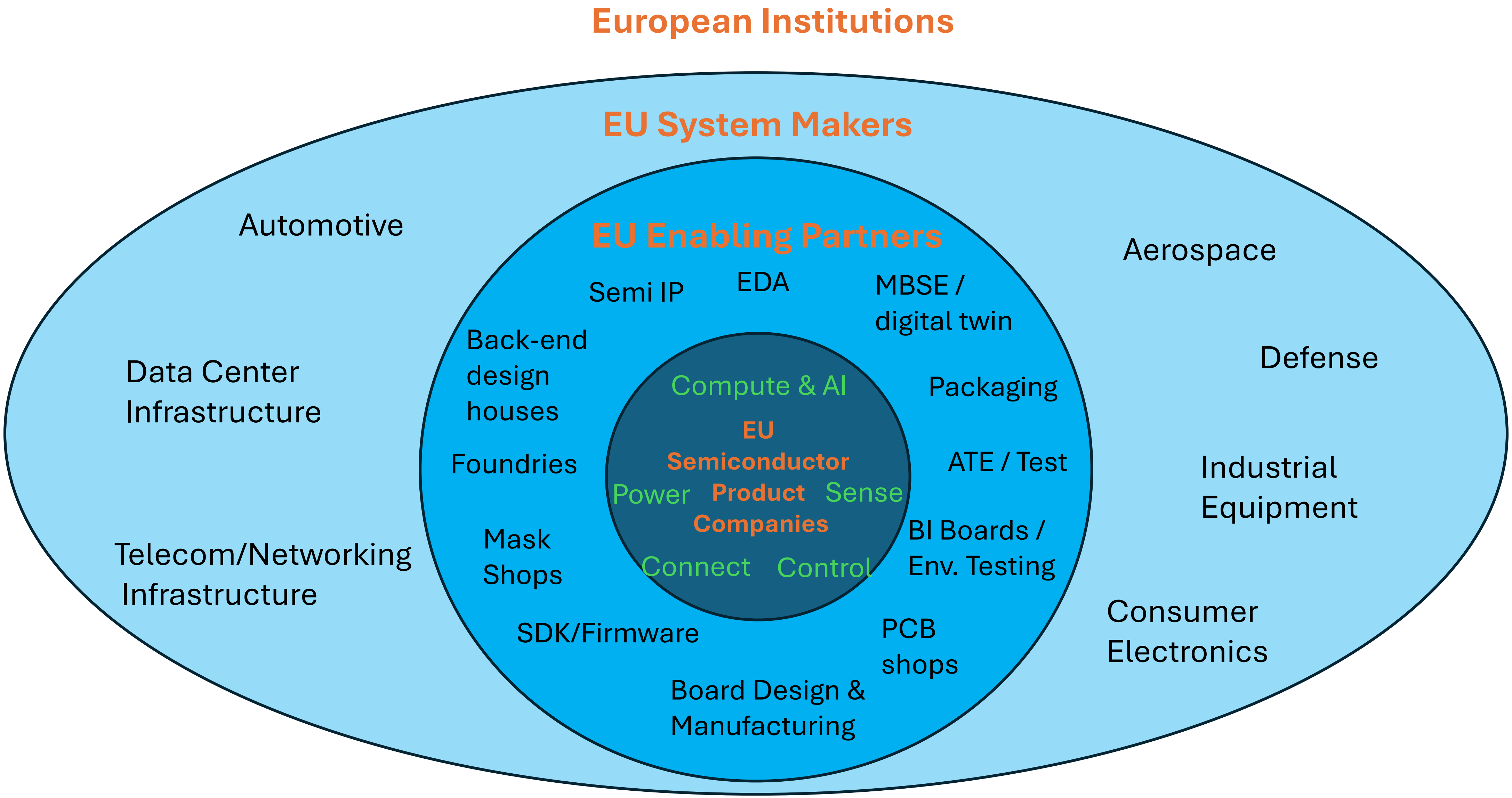

Multiple Reports Highlight the Urgency to Act

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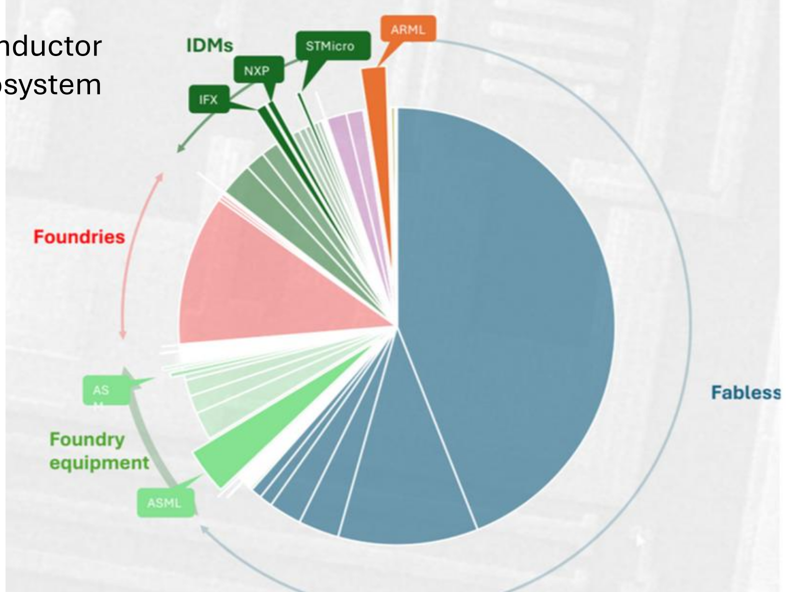
Coordination of research challenges and demand requirements ...will determine the EU's ability to...lead in selected industrial segments.

(The future of European competitiveness – Semiconductors - Mario Draghi Sept 2024)

Lack of fabless champion in Europe
(while this is the fastest and largest value-generation segment)

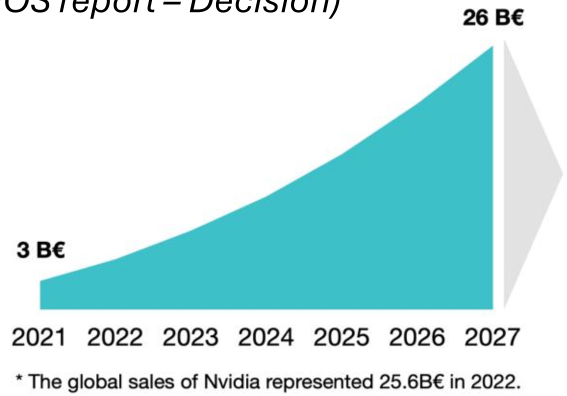
Semiconductor Ecosystem



Public companies with market cap > $1B (Nov 2024)

European system champions have a growing dependency on non-EU semiconductor products

e.g. the expected 26B€ demand in Europe for "thick computing semiconductor" will be mainly addressed by US fabless players. *(EPOS report – Decision)*



EU demand for thick computing semiconductors
Source: DECISION

Many actions are taken to foster and fuel the EU innovation, R&D and manufacturing capability

But there are "blind spots" in the path towards the value creation Europe needs (revenues & equity)

Expected global impact of ESSI

Trigger a sustainable virtuous cycle

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Strengthen (revive) the leadership of EU system makers

(automotive, aerospace, infrastructure, telecom & networking, industry 5.0, compute & data storage, ...)

Accelerate and multiply the value-generation

Across the entire semiconductor and electronics ecosystem.
Increase the EU semiconductor market share.

Motivate higher private investments

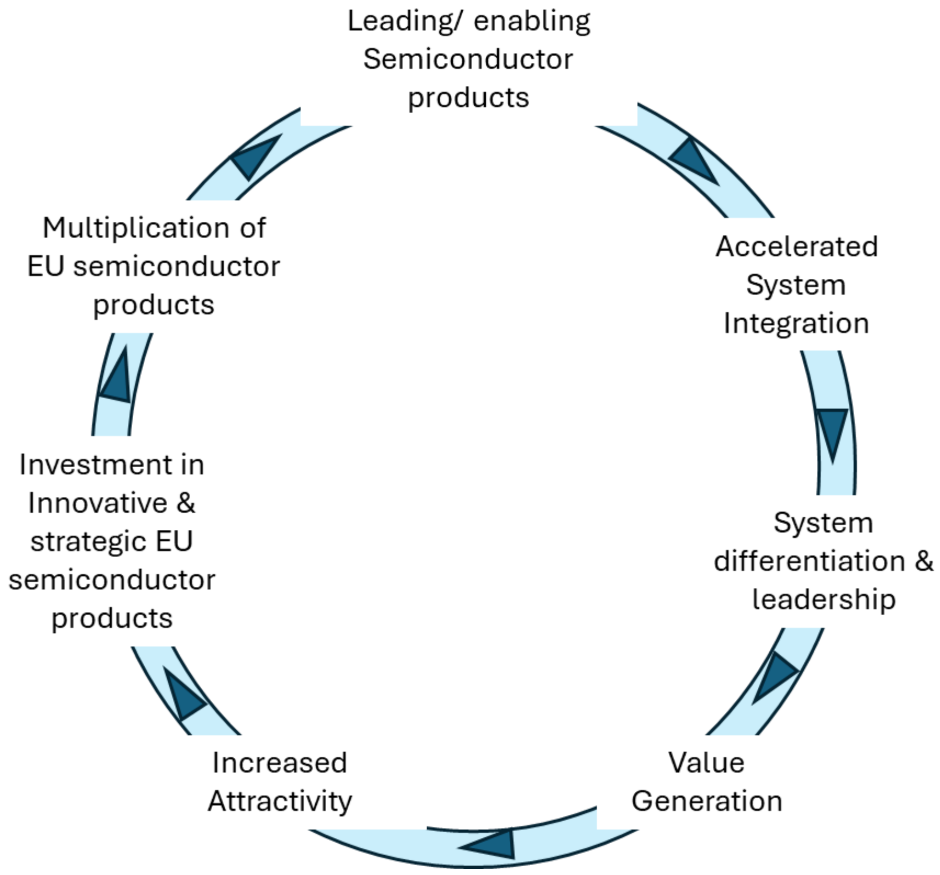
In EU semiconductor products companies and market-leading systems.

Make EU a good place to stay and grow

For semiconductor product startups/ mid-caps, protected from non-EU predators.

Provide EU with a stronger bargaining power

Assure economic security and supply within the global semiconductor ecosystem.



A stable business foundation for EU wealth creation, (re-)industrialization and jobs

ESSI Gives & Gets

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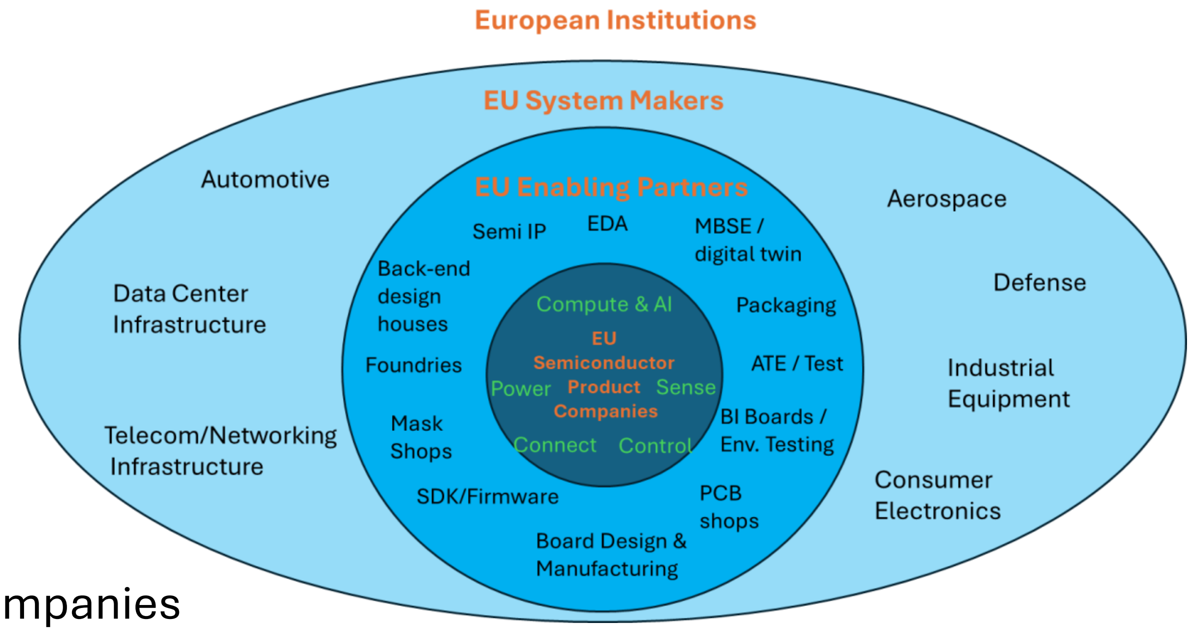
Please refer to the ESSI Gives & Gets dedicated presentation



- For European Institutions
- For EU System Makers
- For EU Enabling Partners
- For EU Semiconductor Product Companies

Expected benefits

Expected benefits from the deployment of the ESSI-recommended actions

Expected involvement

Expected involvement within the scope of the ESSI think-tank and resulting actions

Call for actions: why we are here ?

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Once you have reviewed this “ESSI Overview” and the “ESSI Gives & Gets” presentations

Please let us know if you wish to express support to ESSI

You are welcome to get involved in the Think-tank activities
You can also provide a Letter of Support to strengthen the voice of ESSI
(example at the end of this presentation)

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Key Anchor Points

EU semiconductor products could become a strong wealth engine for Europe, *if focus is made on economic value generation, exploiting the well-fueled EU innovation pipeline.*

➔ Structuring and coordinating for highest EU economic impact is critical

EU electronics systems market is fragmented *with no single player driving very large volume, limiting the attractiveness for semiconductor products companies.*

➔ Overcoming the ROI dilemma of EU semiconductor product companies is critical

Market deployment of systems is required to generate economic value from the investment in the semiconductor ecosystem (*materials, equipment, fabs, EDA, product design)*

➔ Accelerating the development & deployment of EU systems is critical

EU System Makers are fiercely competing with each other and must be *provided with solutions enabling their differentiation (chips, tools and infrastructure)*

➔ Chips & infrastructure for SW-defined and AI-driven systems are critical

It is up to the EU chip industry to provide attractive solutions. *EU system makers focus on leading their industry. They select chips if enabling their leadership (cost, performance, TTM).*

➔ Building up a compelling system-aligned EU chip offering is critical

Private Investors are putting money where they feel comfortable *wrt risks, potential & timeline. Europe shall become attractive for these 3 criteria for EU investors.*

➔ Structure to trigger EU private investments in EU semiconductor products is critical

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Roadblocks slowing down the EU momentum

EU System Makers (OEMs) would like to leverage innovative semiconductor chips to enable system features, cost reduction and time-to-market.

BUT

!
Early adoption risks
Cost of adoption & System makers are competitors

EU Private Investors (VC/PE/Family Offices/CVC) would like high-returns from innovative semiconductor chips.

BUT

!
Market adoption risk
High-impact of redesign + Exit in US is the best path

EU Semiconductor Product companies would like to accelerate the mass-deployment of their chips into various systems

BUT

!
High funding required
OEM early adoption is required

EU Semiconductor support ecosystem (fabs/foundries, OSAT, EDA, design services,...) would like more chips to go to production to grow their business

BUT

!
Need chips industrialization
Need deployment in systems

Risks should be mitigated to unlock a virtuous cycle of value-generation!
Selecting innovative EU semiconductor products should be attractive for EU System Makers and EU Investors

Why Foster EU System Makers Leadership ?

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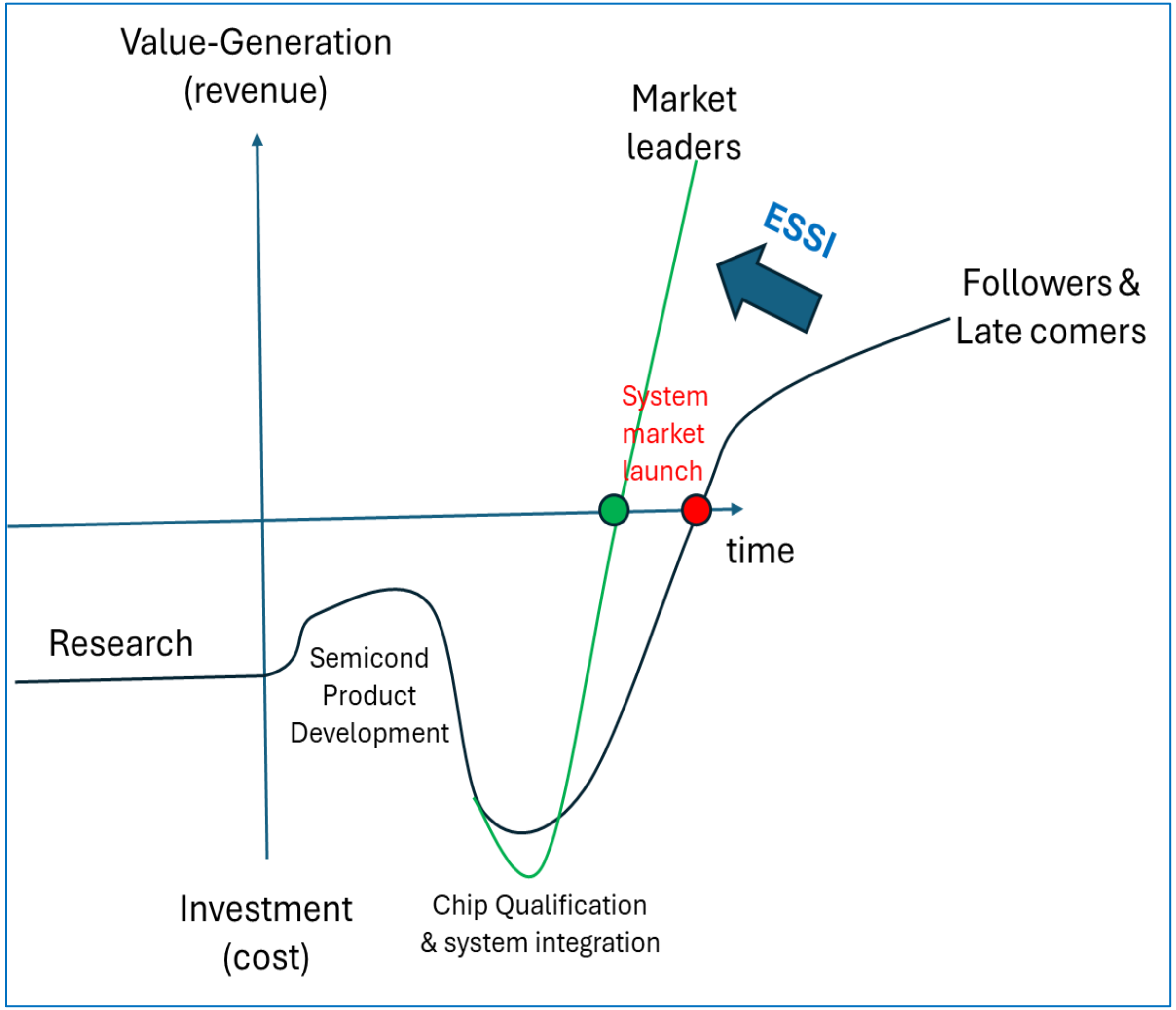
Because every successful market deployment of a leading EU electronics system has a high impact

- ✓ **Benefit for the entire ecosystem**
- ✓ **Broadest economic impact**
- ✓ **Global social/employment impact**
- ✓ **Bargaining power for supply**
- ✓ **Geopolitical weight**

Because it works !

- ✓ **USA, JPN, Korea, China**



What about the current EU actions ?

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IPCEI
Important Projects of Common Interest
> 90 B€

- 90+ % R&D. Many projects with overlap and no structured coordination.

Ex: IPCEI CIS : 120 projects
IPCEI ME-CT : 68 projects

- Impact expected from dissemination and “spill-over”
- No coordination towards coherent EU infrastructures

Large potential of deliverables to tap into

EU Chips Act (2023-27)
- Chips JU (11 B€)
- EIC Accelerator (650M€)
- EIF (6.5B€ LP / 26.2B€ total)
- EIB (1248 B€)

- EU Design Platform limited to chips IP/prototyping
- Pilots Lines in R&D centers with no clear production path
- Quantum Chips without ecosystem & SW coordination
- Competence Centers mainly focused on R&D and skills
- EIC fund: 50% on R&D and 50% on startup acceleration
- EIB funding debt and series D/E

Large potential of funding to accelerate the value generation (revenues / equity)

EU Associations
- INSIDE
- AENEAS
- EPoSS
- EU Semiconductor Alliance
- ESIA

- The existing Industry Associations are active in representing their members in front of the EU Commission, their scope is mainly focused on R&D.
- Recommend to build a stronger link between the chips and the systems and software.

Large potential of support to assure coordination and relay across the industry

Four Foundational Recommendations

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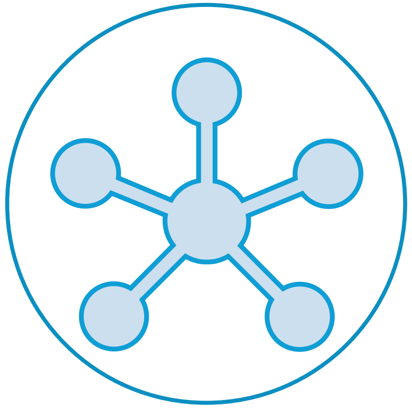
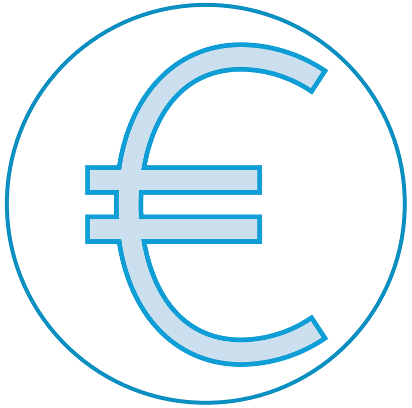
1. Gather and fund an industry-experienced team to facilitate chip-to-systems acceleration

- Focus on bridging semiconductor products with systems and closing gaps for fastest system launch
- Work with Inside, EPOSS, AENEAS, ChipJU, IPCEI… to leverage past & present R&D projects



2. Deploy strategic EU infrastructures to enable faster adoption of EU chips in systems

- System Design infrastructure (Extension of EU Design Platform)
- Advanced AI-as-a-Service Infrastructure
- Edge-to-Cloud continuum wireless infrastructure



3. Extend the EU R&D funding/calls to "chip-to-system acceleration" projects

- Acknowledge the high level of innovation in the tools and techniques developed to accelerate the qualification & industrialization of a chip.
- Automation engineering,

4. Establish an insurance fund to cover for some risks in early investment or adoption of semiconductor products

- Mutualized fund from countries hosting semiconductor product companies
- Conditioned on strict verification of the design

Chips ACT should be the catalyst environment for acceleration

The Power of EU Infrastructures

Apply the highway or railway model

ESSI-recommended coordination & acceleration

EU Parlement/Commission/Countries strategic support, policies & funding

→ Assure access to a large consolidated market and favor strategic EU-biders

Infrastructure Tenders & Awards / Orders
(All Critical components from EU companies, with business plan)

→ Secure revenues and growth for EU contributing companies

→ Attract private investors in participating EU start-ups & mid-caps

Infrastructure development, integration & deployment
(Led & controlled by EU system companies)

→ Infractructure can be leveraged by the EU industry to be more competitive

→ Infrstructure will attract non-EU investments

Infrastructure Exploitation by EU companies
(users pay per use with discount for EU companies)

→ Revenue generation will reimburse the EU initial investment

→ Growth potential will attract investors for further funding

How to express your support to ESSI ?

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Get involved and provide feedback

- Follow the ESSI think-tank LinkedIn page (https://www.linkedin.com/company/essi-think-tank/)

....and the upcoming ESSI web site (www.essi-eu.org) and LinkedIn page when available

- Provide feedbacks and suggestions of improvement regarding the ESSI recommended actions
- Communicate about ESSI and expand awareness across your ecosystem
- Participate to the ESSI calls, activities and events
- Contribute to the construction of consortia for Chip-to-System Acceleration Projects

Send a Letter of Support

Example: These letters will help the ESSI collective voice to be heard

“To whom it may concern.
On behalf of [Company, Organization], we wish to express our support to the European System-driven Semiconductor Initiative (ESSI). We adhere to the objectives towards a higher European industry competitiveness, and believe its recommendations can have a significant impact. We wish to participate to the ESSI think-tank and contribute to the European Chip-to-System Acceleration effort as it shapes.“

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