The EU Chips Act in a nutshell

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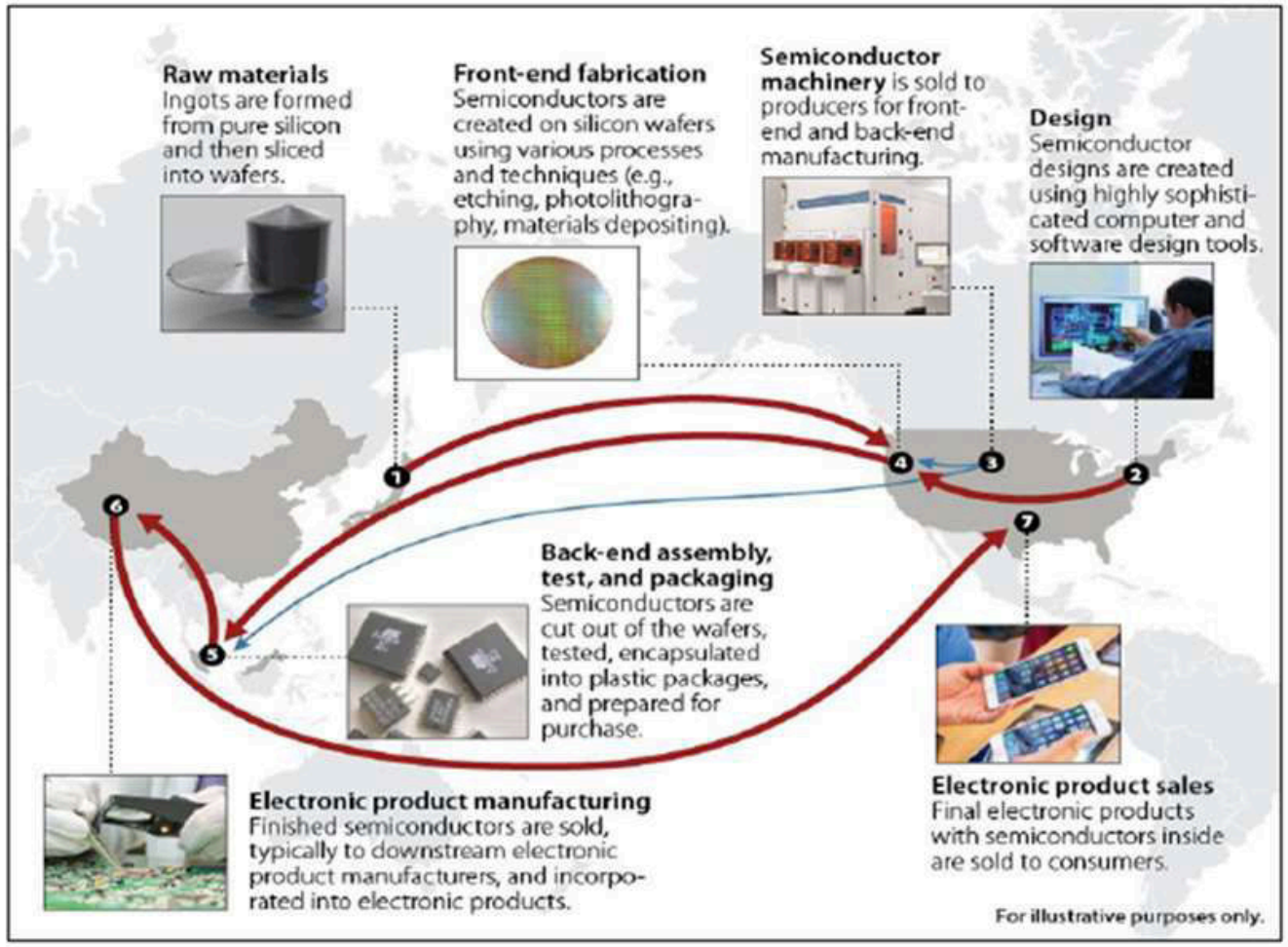
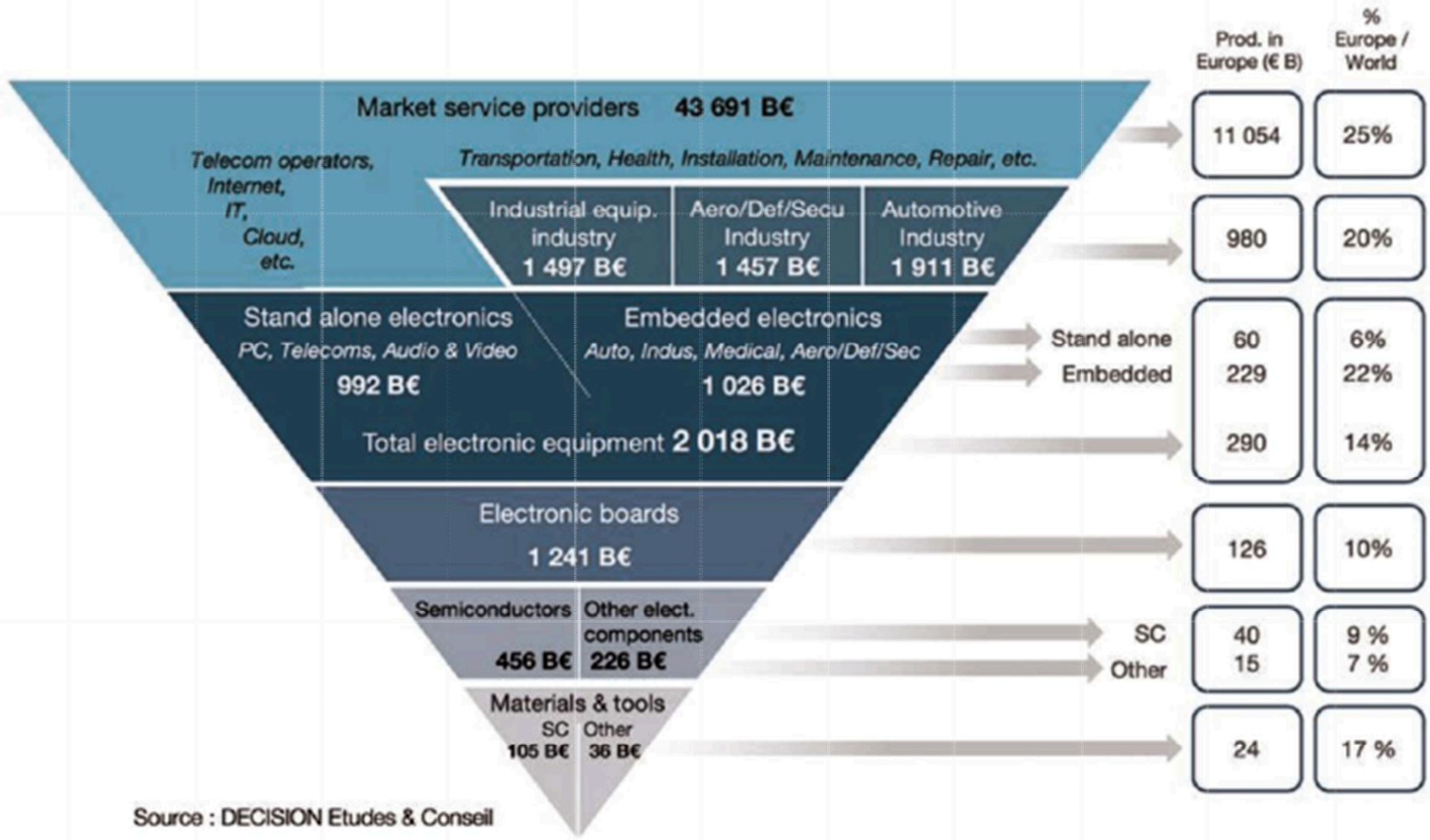
The global model of the semiconductor industry is coming to an end ?



Source: CRS, adapted from information provided by SIA.

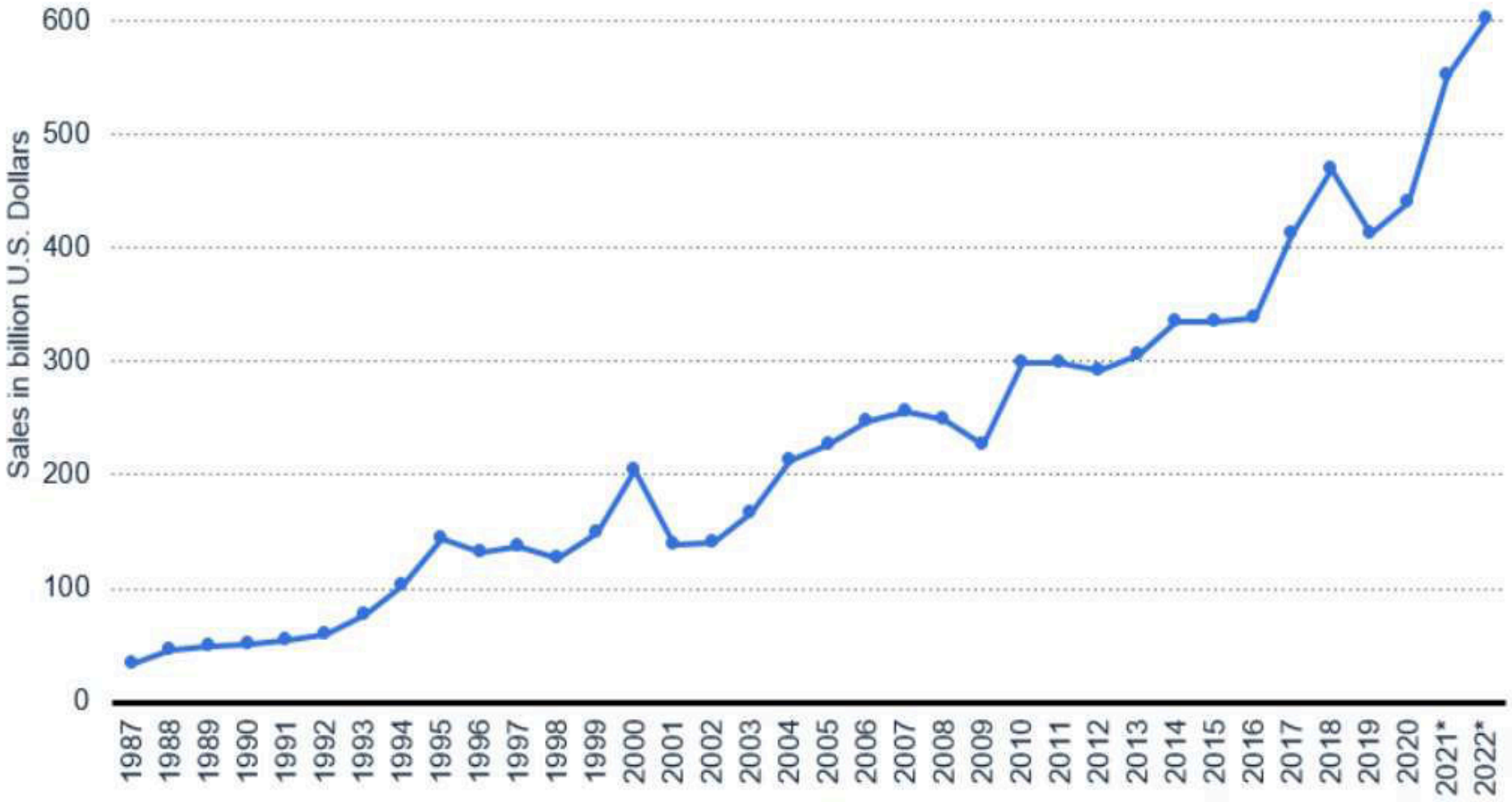
The digital supply chain: Where does EU stand?



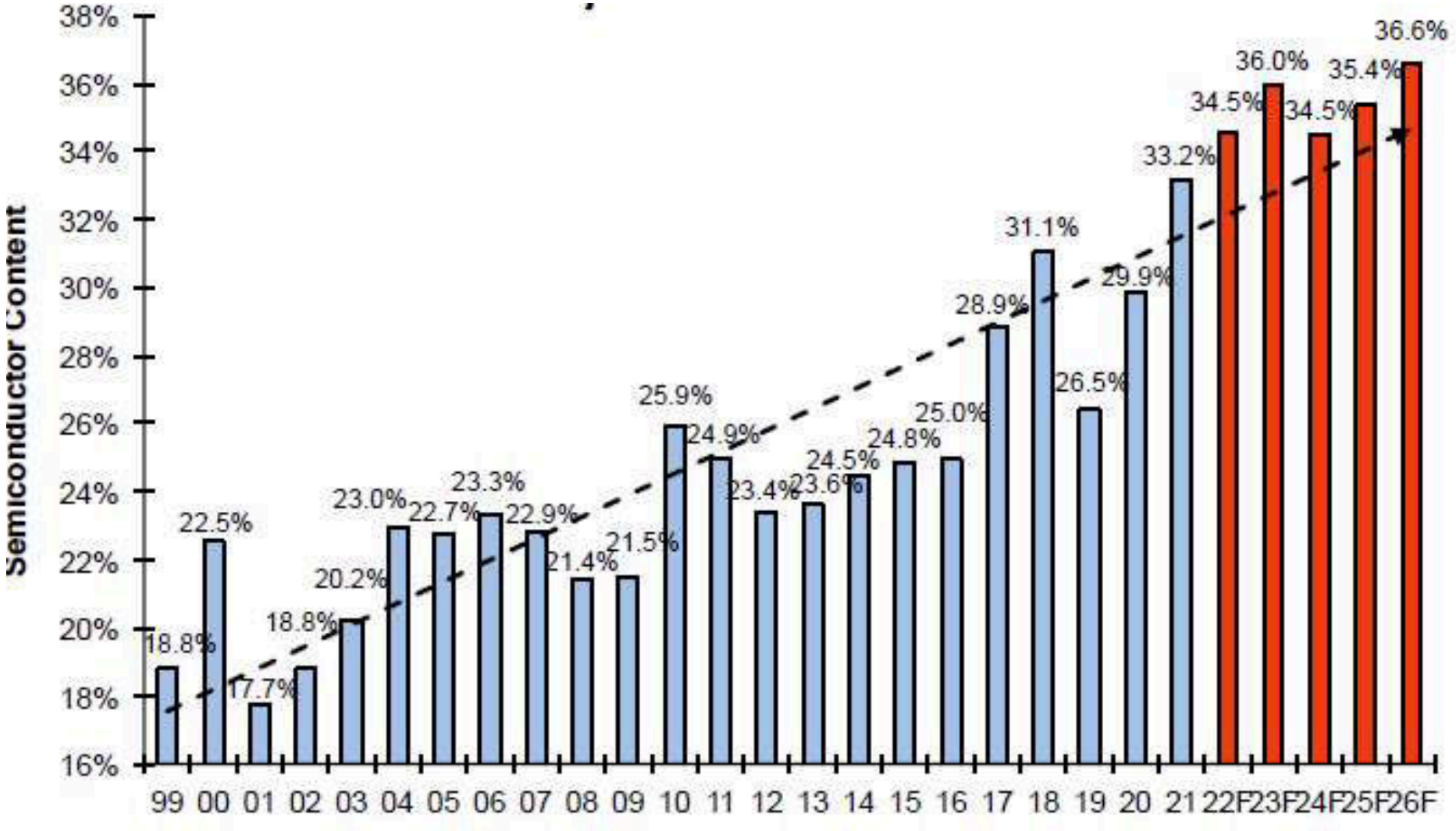
Source : DECISION Etudes & Conseil

Data of 2018

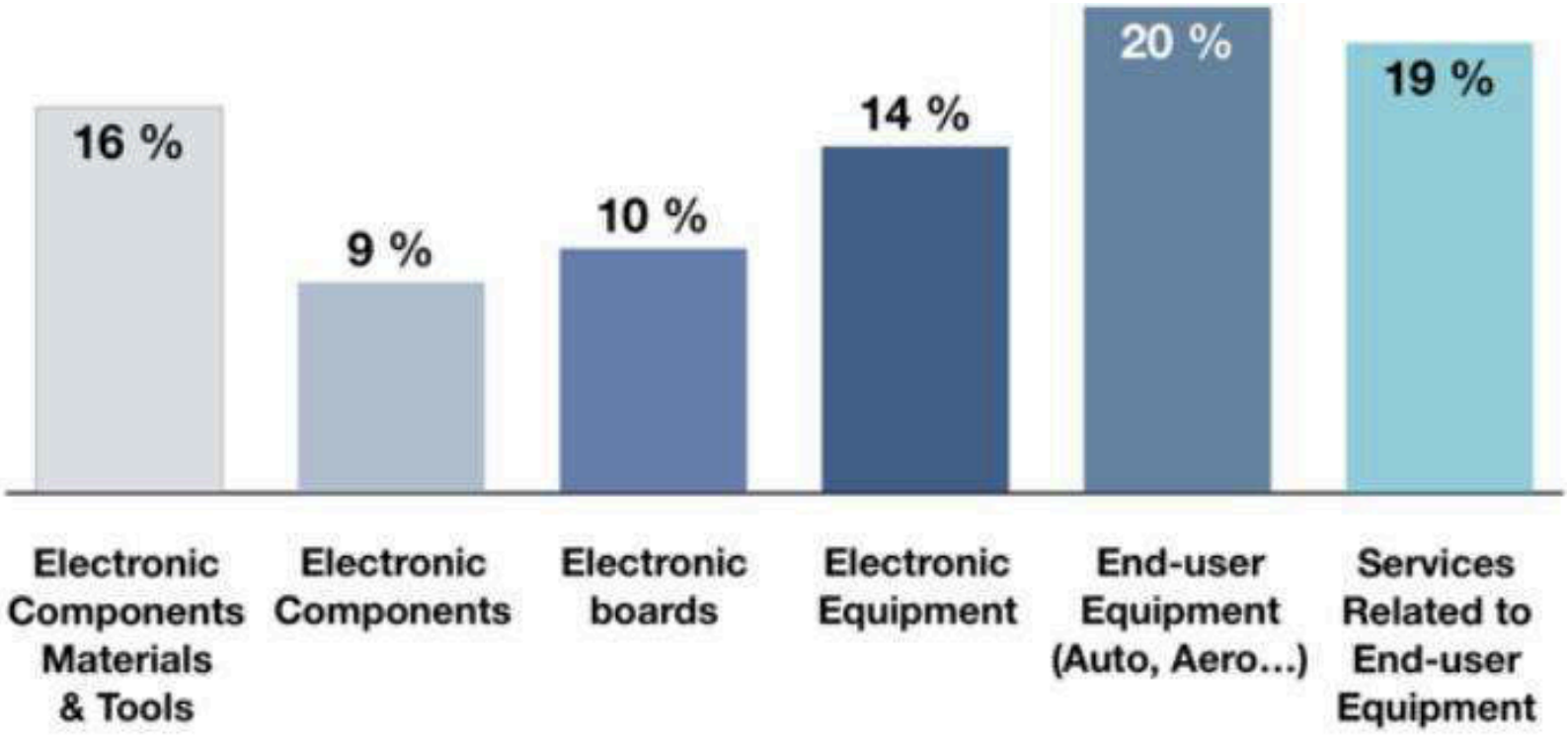
Semiconductor Industry Sales Worldwide 1987-2022 (Source: WSTS)
USD 556 B in 2021



Semiconductor content in electronic systems (Source: IC Insights, ST, TI)



European share of global sales (DECISION, 2019)



Strengths and weaknesses of the European ecosystem

Investments in production facilities in Europe in the past two decades was rather limited, as a consequence EU's share of worldwide capacity decreased from **11.7% in 2005** down to **7.2% in 2020** , with little presence in the more advanced digital nodes.

In 2021, the EU's trade deficit for semiconductors was almost EUR 20 billion with exports amounting to **EUR 31.5** billion while imports amounted to **EUR 51** billion, and this with fabs working at full capacity.

A Chips Act for Europe

On 8 February 2022, the European Commission proposed the **Chips Act**, a comprehensive set of measures to confront **semiconductor shortages** and **strengthen Europe's technological leadership**

COM(2022) 45. Communication from the Commission: A Chips Act for Europe. 08/02/2022

COM(2022) 46. Proposal for a Regulation establishing a framework of measures for strengthening Europe's semiconductor ecosystem (Chips Act). 08/02/2022

On 11 May 2022 the European Commission published a Staff Working Document named **"A Chips Act for Europe"**

The Three Pillars of the Chips Act

- Pillar 1: **The Chips for Europe** Initiative: R&I and Capacity Building (**Pilot Lines**)

- Pillar 2: **Security of supply** by attracting investments and increasing production capacities (concept of "**first of a kind**")

- Pillar 3: coordinated actions for **Monitoring and Crisis Response**

Pillar 1: the Chips for Europe Initiative

- Closing the gap from Lab to Fab (investing in **Pilot Lines**)
- Investing in a virtual **design platform** that leverages on the Pilot Lines.
- Access via **National Competence Centers** that will also provide the necessary skills, not only in the use of the design tools and infrastructures but also in those required to address the **severe skills shortages** faced by the EU microelectronics sector

Implementing the Chips for Europe Initiative: the Chips Joint Undertaking

- The present **KDT JU** will enlarge its scope and be renamed **Chips JU**.
- The Chips JU will implement the following components of the Chips for Europe Initiative:
  - design capacities
  - new and existing pilot lines
  - competence centers and skills development
  - technology and engineering for quantum chips

Pillar 2: A Framework to Ensure Security of Supply

- the EU needs to reinforce its capacity in the production of **mature nodes**, essential for the functioning of its economy, while at the same time preparing for investing in production of nodes **smaller than 10 nm**.

- In terms of induced employment, according to SIA and Oxford Economics, for each worker employed by the semiconductor industry, an **additional 5.7 jobs** are supported in other sectors of the economy.

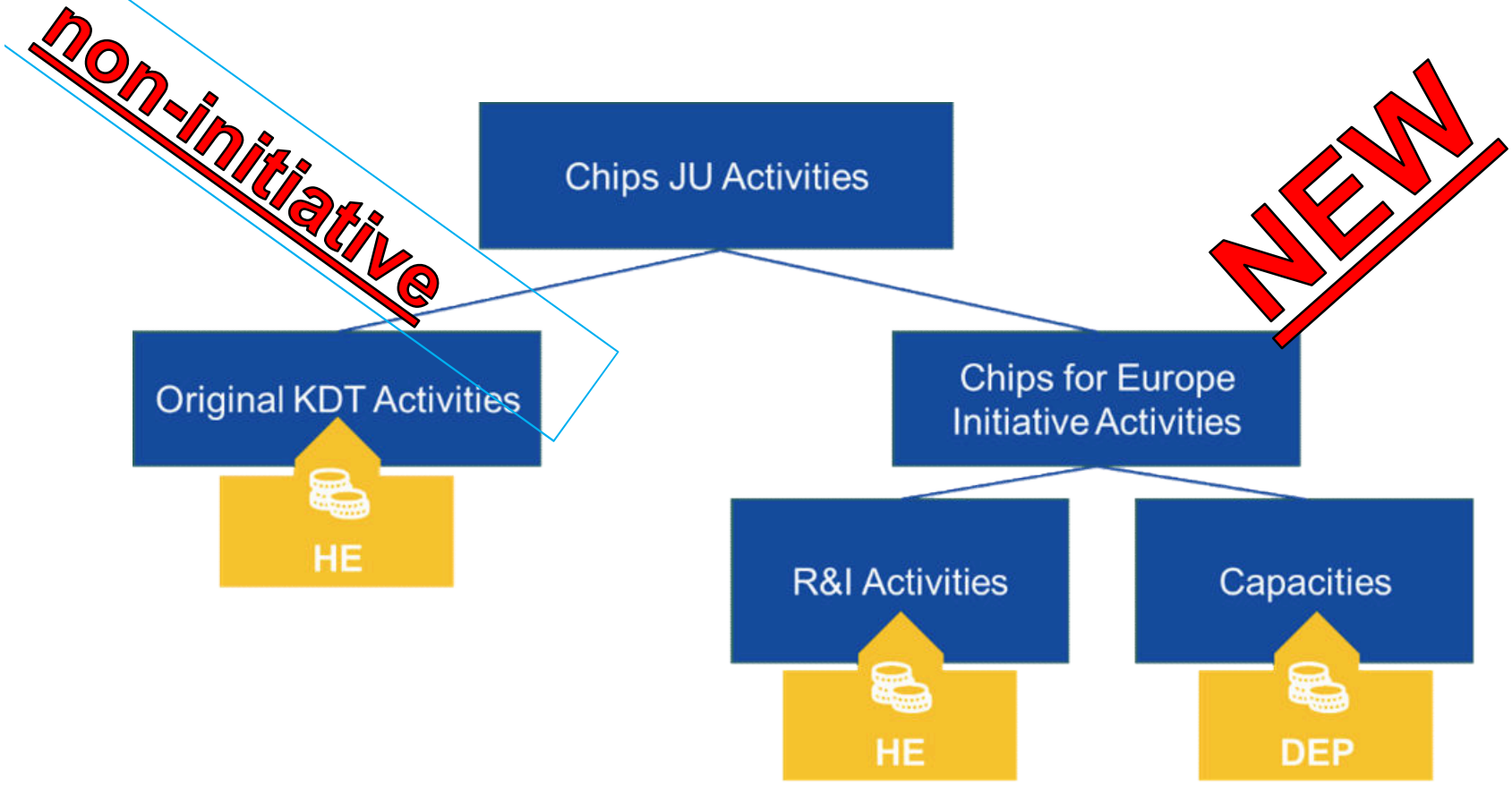
First-of-a-kind **facility**

- definition of a ***First-of-a-kind*** facility in the Union as an industrial facility (front-end, back-end), that is not already present in the Union. Applicable to any technological node, leading edge or not.
- *the Commission will consider the First-of-a-kind label among others into account in the possible State aid procedure.*
- *First-of-a-kind* facilities can be Integrated Production Facilities (IPF) or Open EU Foundries (OEF).
- some obligations are foreseen to make sure the facility contributes to the security of supply in the Union.

Pillar 3: Monitoring and Crisis response

- The current **shortage** has demonstrated the need for improved tools to address emergency situations.
- the Chips Act proposes a mechanism for monitoring the semiconductor value chain.
- Example: Priority rated orders, already present in other jurisdictions, such as USA.
- To ensure this measure remains proportional, the scope of priority rated orders would be focused on companies that have likely benefitted from significant public support.

Budget



Two sources: Horizon Europe and the Digital Europe Program

Some numbers (M€)

Overall level of policy-driven investment in excess of 43 B€, including 11 B€ for the Chips Europe Initiative from EU and Member States

EU funds accompanying the proposed Chips Act

	Chips for Europe initiative	Non-initiative	Total
Research and Innovation (Horizon Europe)	1.350	1.300	2.650
Capacity building (Digital Europe Program)	1.525	-	1.525
Total	2.875	1.300	4.175

K.P.I.

The EU Chips Act will be considered successful if a gradual and tangible progress towards the following objectives can be assessed:

- Strengthen EU **research and technology leadership**

- Address the **skills shortage**, attract new talent and support the emergence of a skilled workforce

- Reinforce the **capacity** of Europe for innovation in **design, wafer manufacturing and packaging**

- Establish a framework to **increase substantially production capacity** by 2030

- Develop an in-depth understanding of global semiconductor supply chains and enable the EU to take appropriate measures when necessary

Commitment of the Italian Government to the high-level of national resources implied by the Chips Act

- The establishment of an Expert Group by the Italian Ministry of Research
- Decreto Ministeriale 455 del 13-05-2022
- Scope:

"per lo studio e la formulazione di contenuti in materia di tecnologie dei semiconduttori, avente la finalità di supportare questo Dicastero nel dialogo interistituzionale sulla tematica, e di permettere la definizione di una strategia per lo sviluppo di tecnologie innovative e sostenibili per microprocessori, in coerenza con quanto delineato nelle misure proposte dalla Commissione dell'Unione Europea.»

Conclusions – Remarks

- Commitment from the highest levels of the EU
- Amount of resources made available so far (< 6 B€) still negligible compare with the KPI's (and other Countries commitment, e.g. the US Chips Act)
- About 90% of claimed 43 B€ coming from Member States and private sector.
- Mismatch between the EU Gantt Chart (at least 12 months for approval in the European Council and European Parliament) and the needs of the semiconductor ecosystem
- Need to harmonize Stakeholders legitimate interests: EU, Private Members, Member States
- The Italian Government is well aware of the increasing role of semiconductors in modern industrial societies