Utrecht University

The Governance of Transformers: Three AI Policy Problems in the EU

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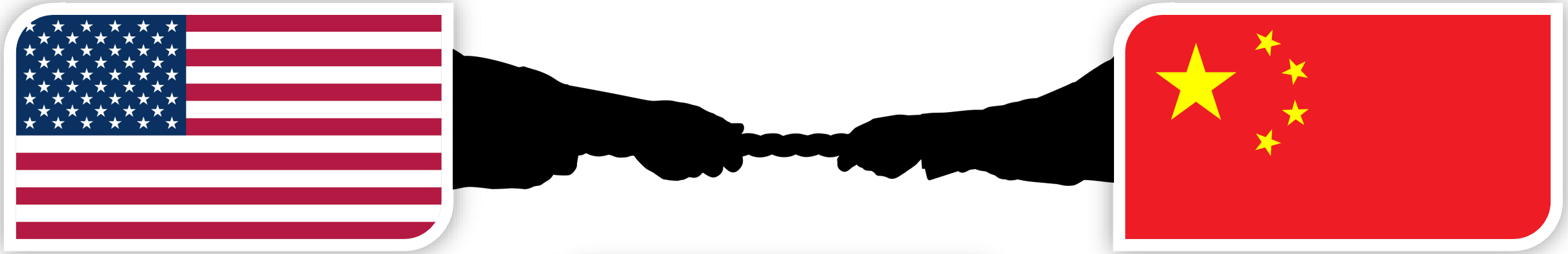


Europe unveils plan to become ‘AI continent’ with simpler rules, more infrastructure

1. Why focusing on governance?

2. Three EU governance problems

3. Implications for LLM development

1. Why focusing on governance?

Governance = the process of overseeing the control and direction of something

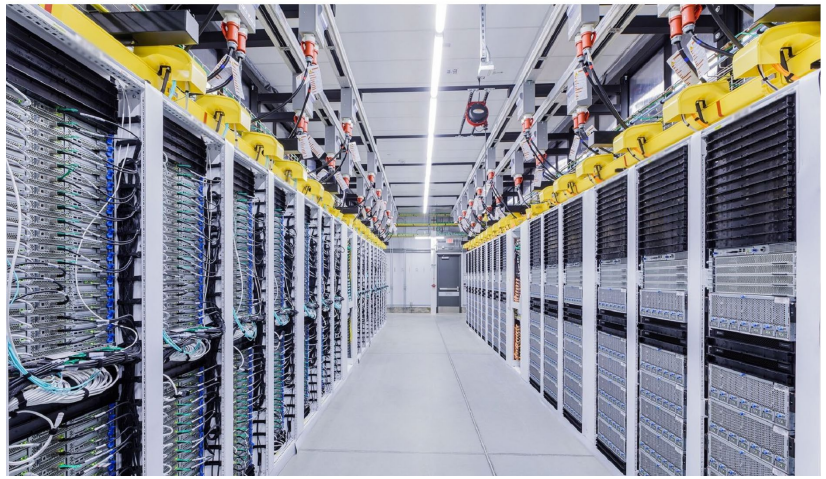
With AI, this is extremely difficult:

- **Terminology (e.g., ‘foundation models’)**
- **Concentrated knowledge and expertise**
- **Regulators are often reactive and slow**
- **Dilemmas (e.g., innovation vs. safety)**

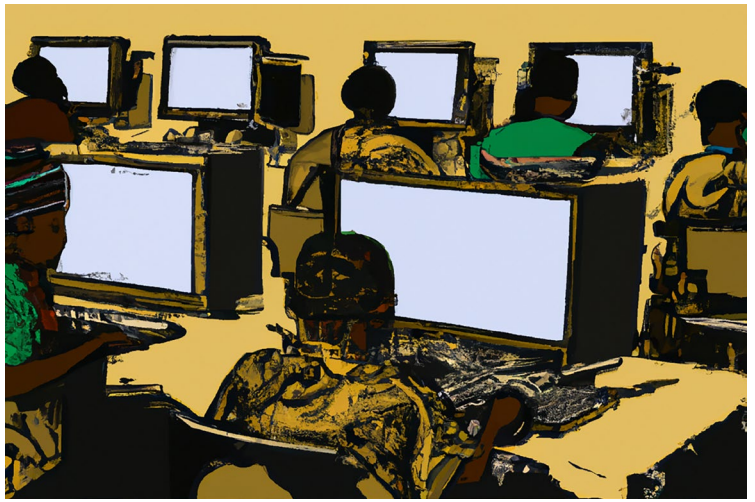
Why does AI governance matter?

- AI and economic competitiveness
- AI as a matter of national security
- Transformers as a key architecture

Ecological costs



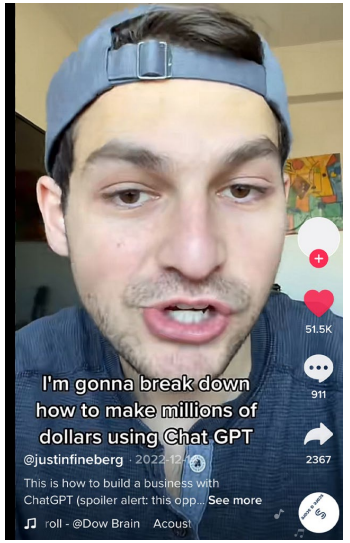
Hidden labour

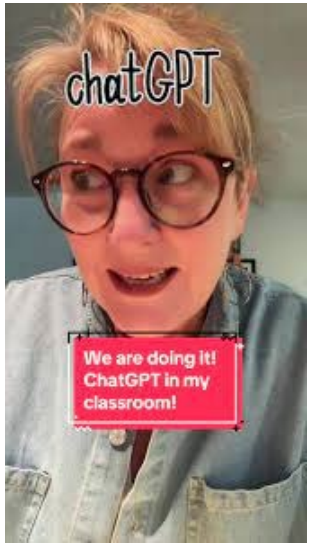


Transformers

Legal frameworks

Cultural change





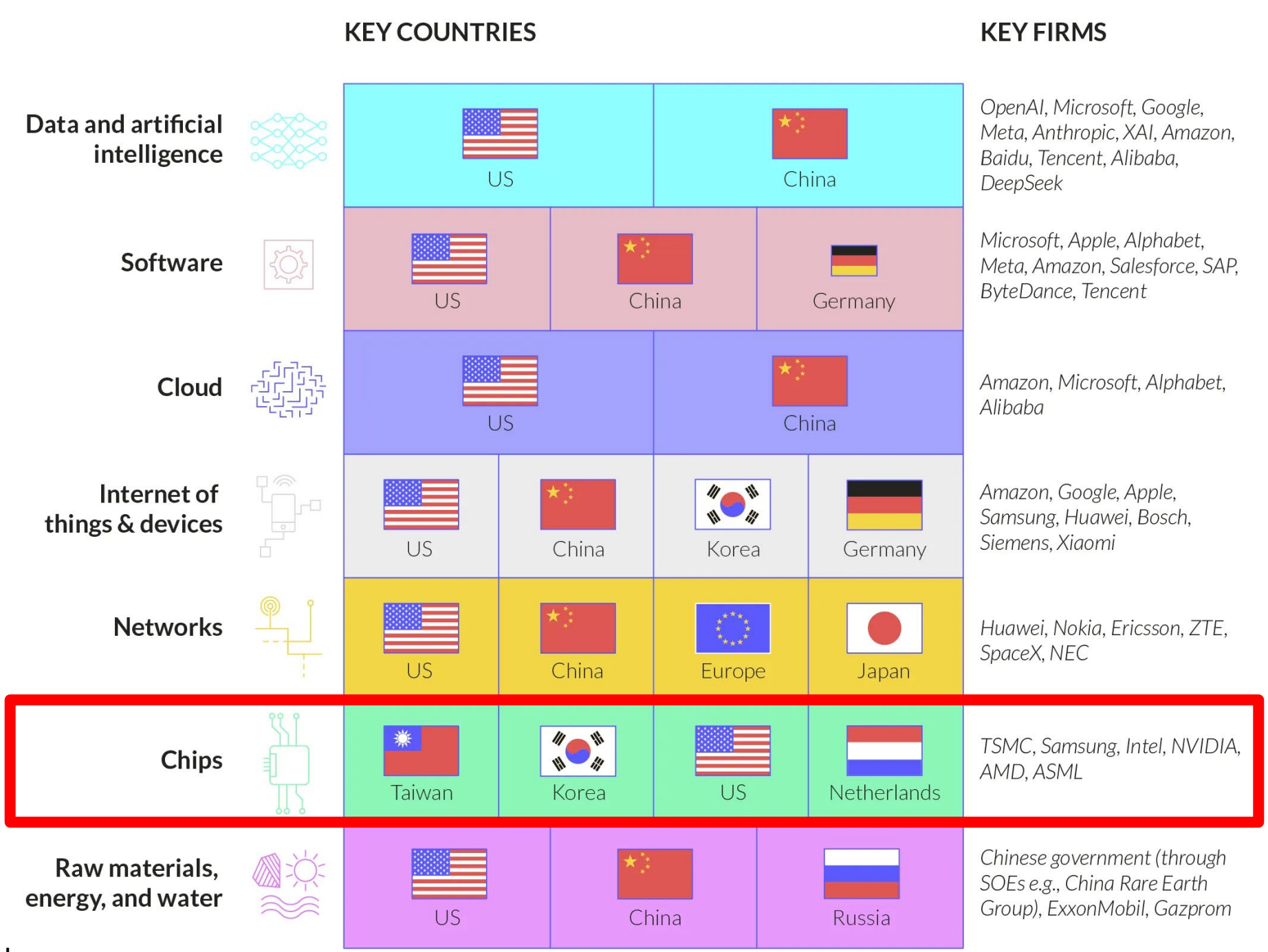
2. Three EU governance problems

1. Foreign ownership of the AI stack

2. Public funding, private interests

3. Geopolitical trade-offs

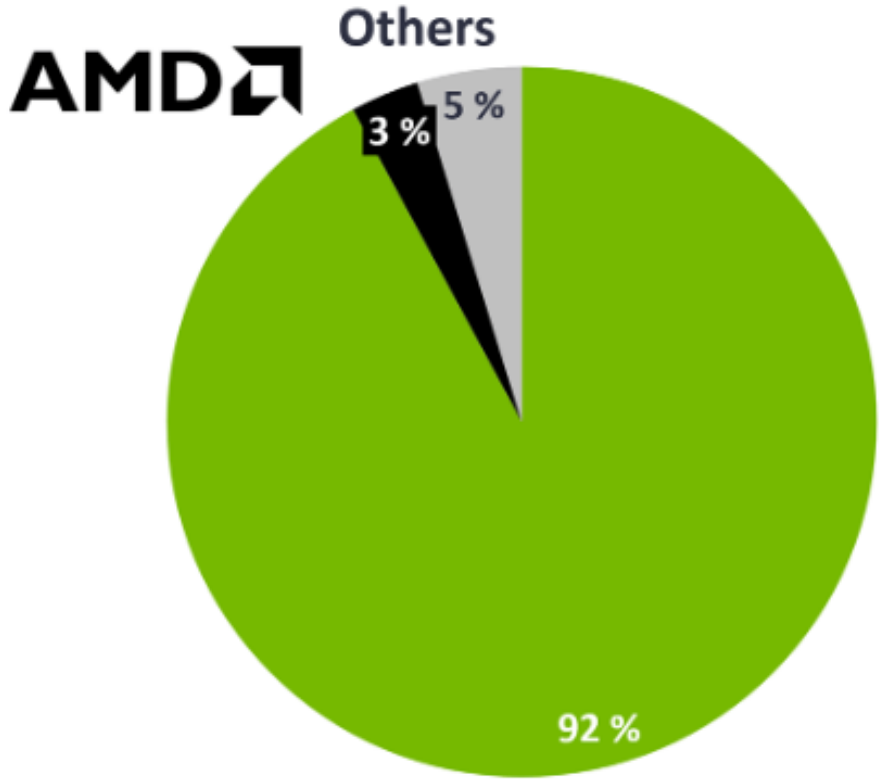
Foreign ownership of the AI stack



Source: EuroStack

Foreign ownership of the AI stack

- **No EU processor technology in world's top 500 high-performance computers**
- **Large-scale computing = large-scale subsidization of Nvidia as leading provider**
- **GPU export controls dangers**

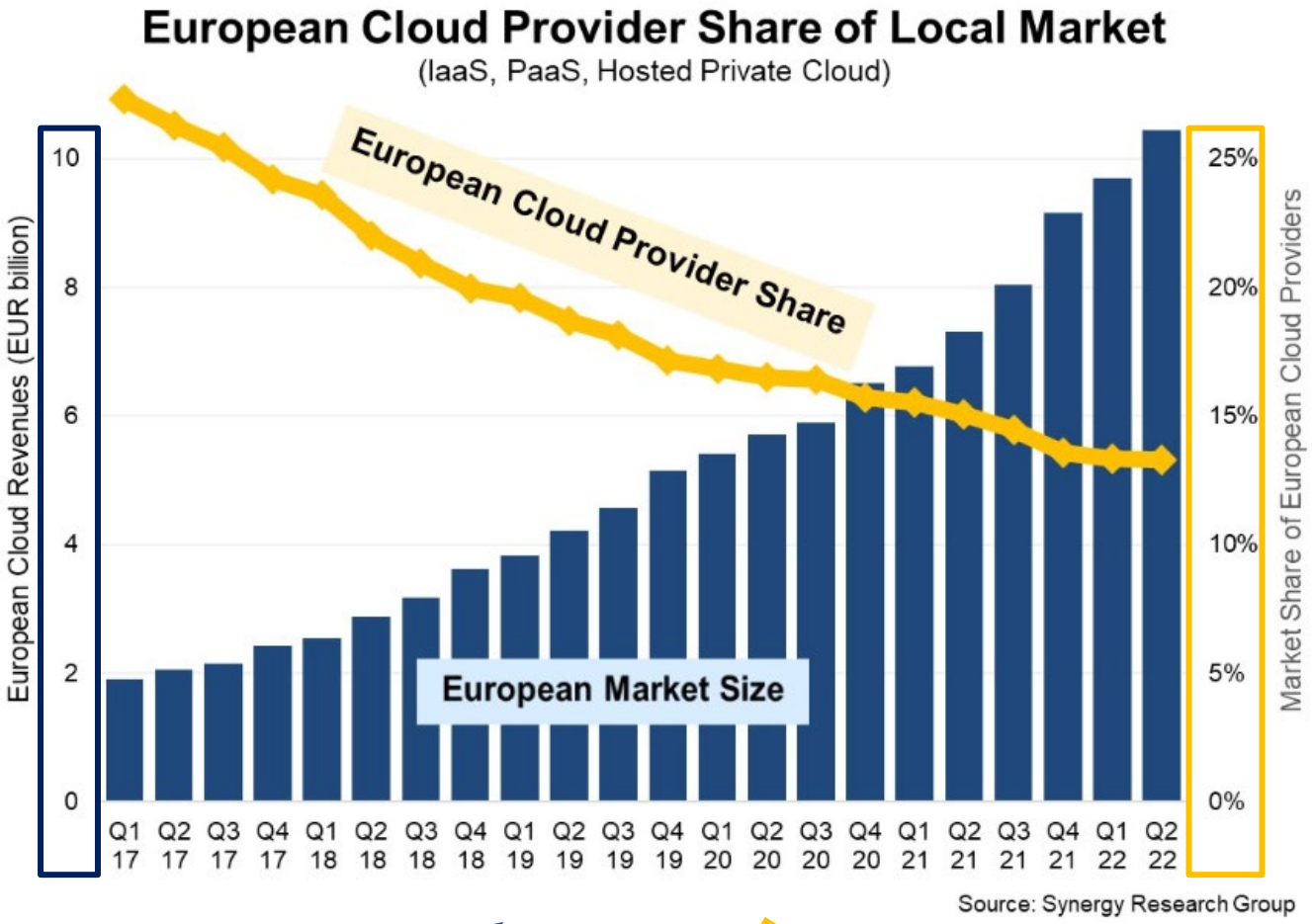


IOT ANALYTICS

NVIDIA

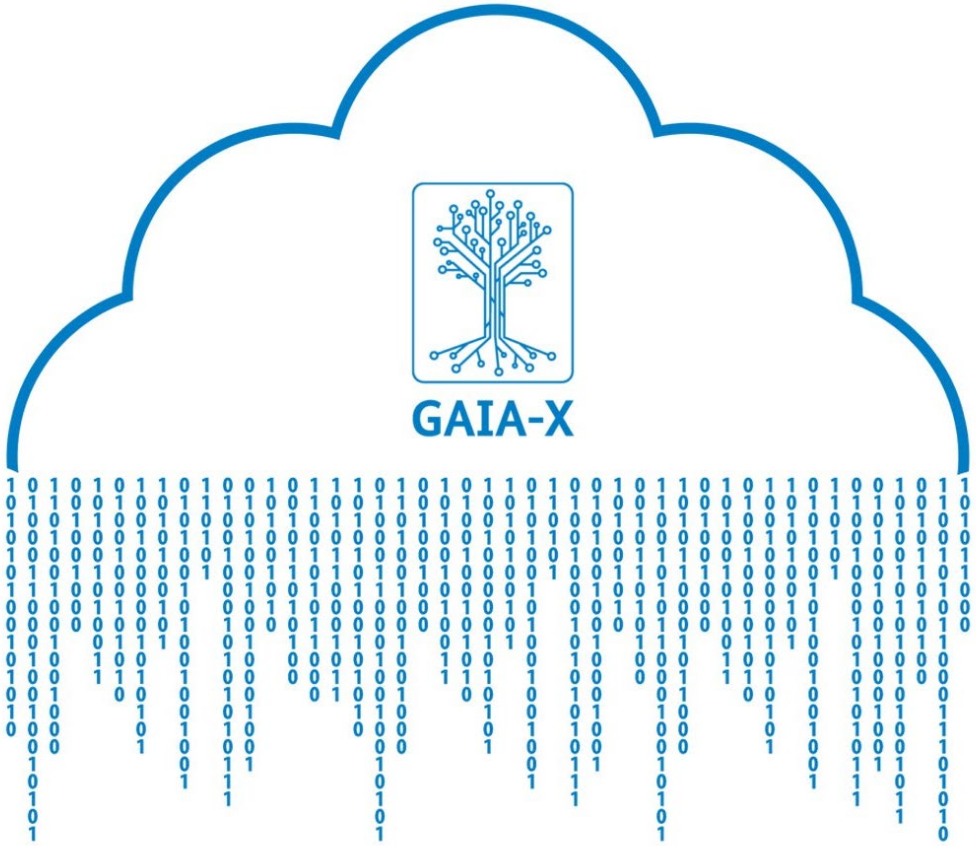
Source: IOT Analytics

The EU cloud computing paradox



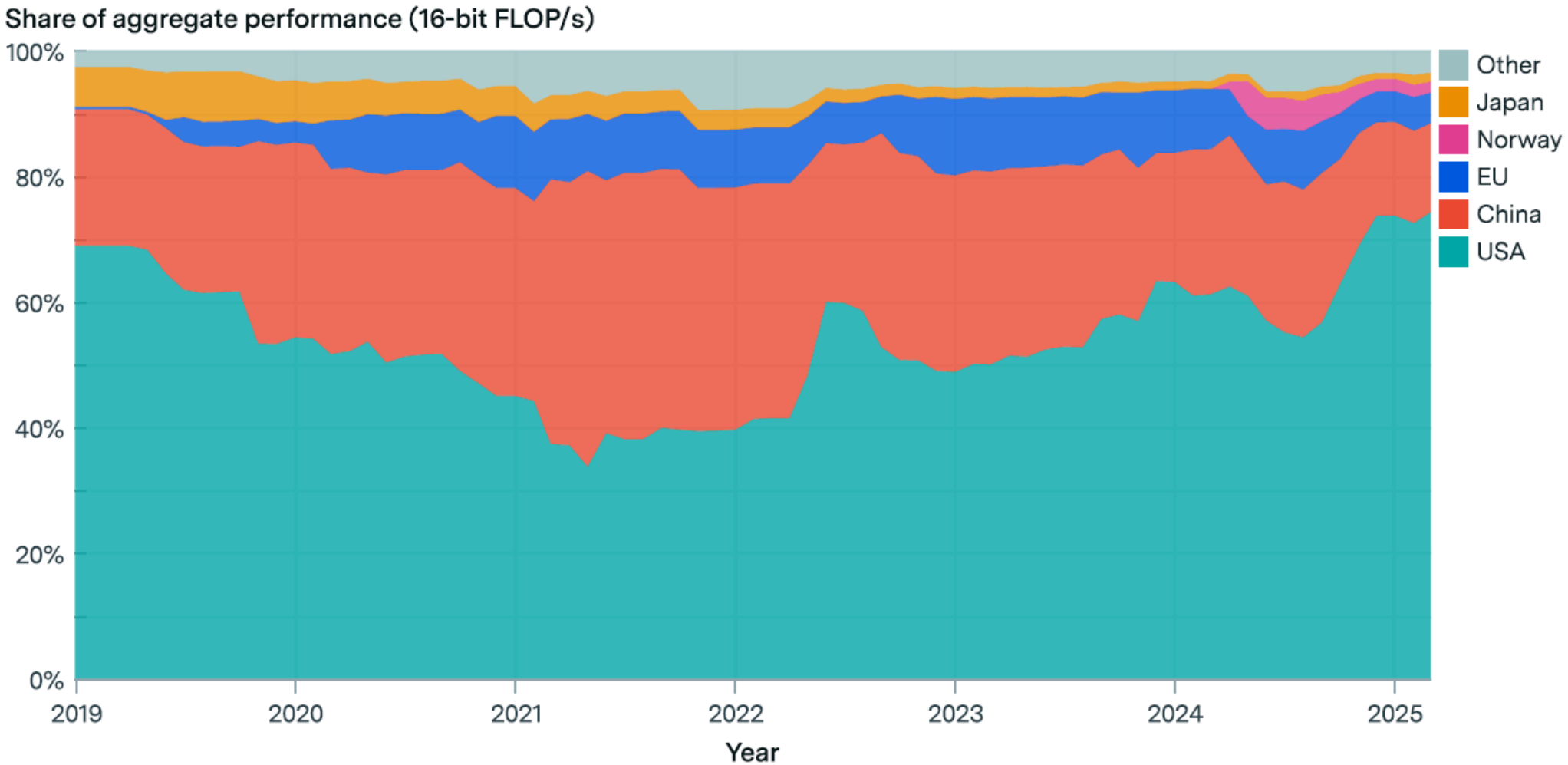
EU cloud market

EU provider share



Google Cloud Azure aws

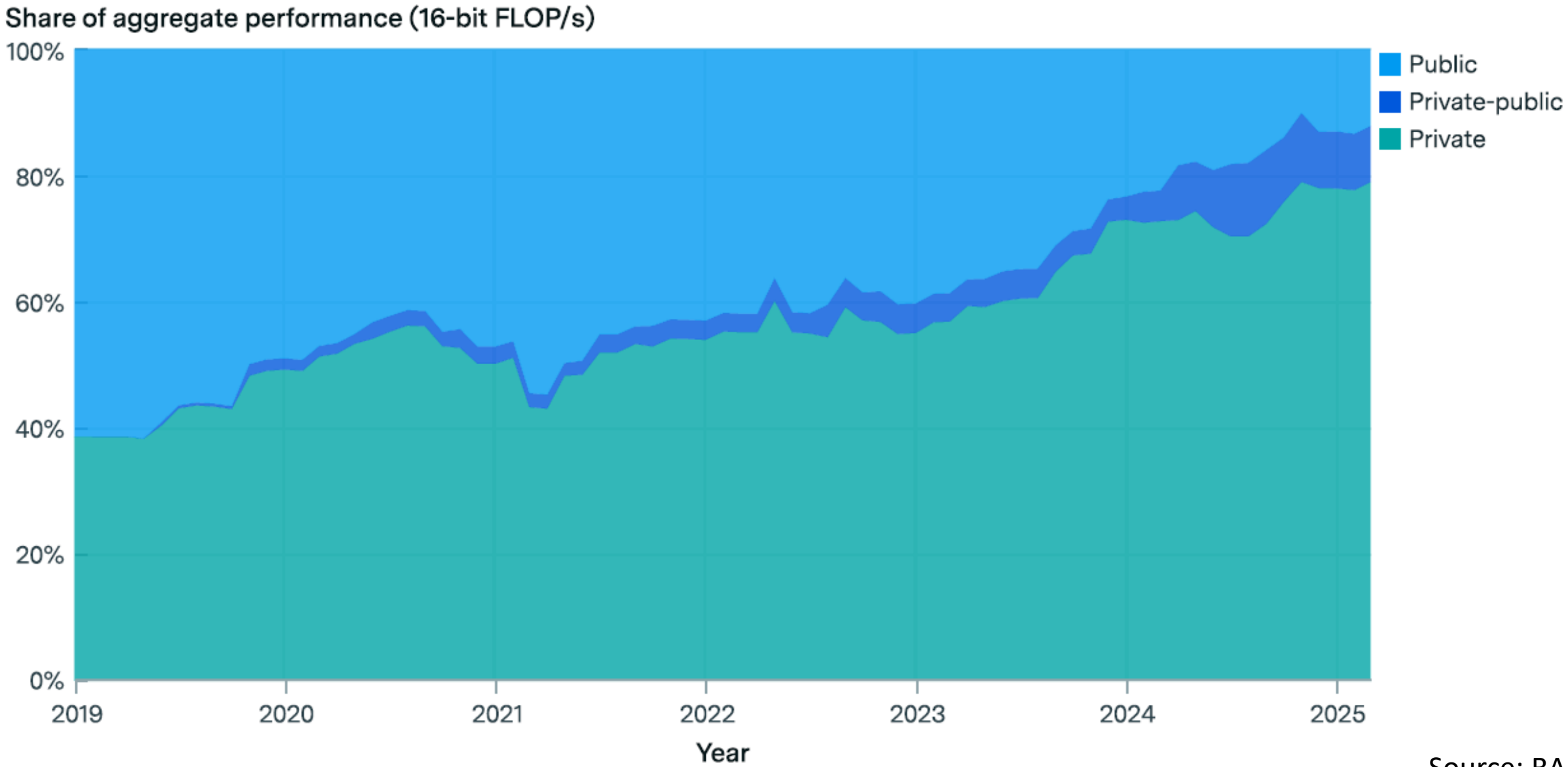
72% of the EU cloud market



Our dataset covers an estimated 10–20% of global aggregate AI supercomputer performance as of March 2025. While coverage varies across companies, sectors, and hardware types due to uneven public reporting, we believe the overall distribution remains broadly representative. Future country shares may change dramatically as exponential growth continues in both AI chip performance and production volume.

Source: RAND

Share of aggregate AI supercomputer performance by public/private sector over time



Source: RAND

Public funding, private interests

The EU and AI sovereignty

PRESS RELEASE | 16 November 2023 | Brussels

Commission opens access to EU supercomputers to speed up artificial intelligence development

02 November 2023

The Netherlands starts realisation GPT-NL, its own open AI-language model

ARTIFICIAL INTELLIGENCE • STARTUPS • VENTURE

European OpenAI Competitor Aleph Alpha Raises $500M

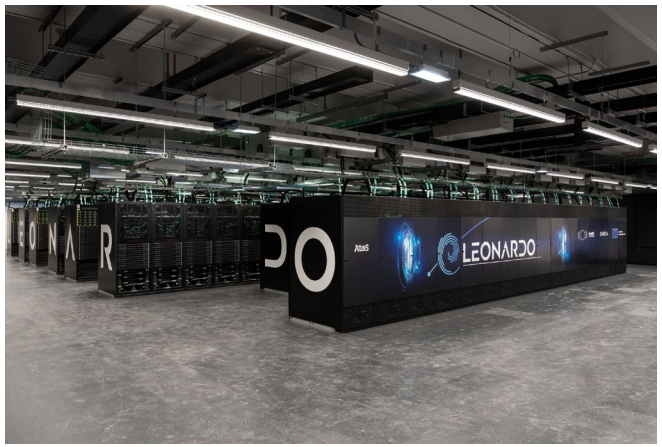
Chris Metinko November 6, 2023

Mistral, French A.I. Start-Up, Is Valued at $2 Billion in Funding Round

The company has publicly released its latest technology so people can build their own chatbots. Rivals like OpenAI and Google argue that approach can be dangerous.

Closed software ecosystems

MISTRAL AI_

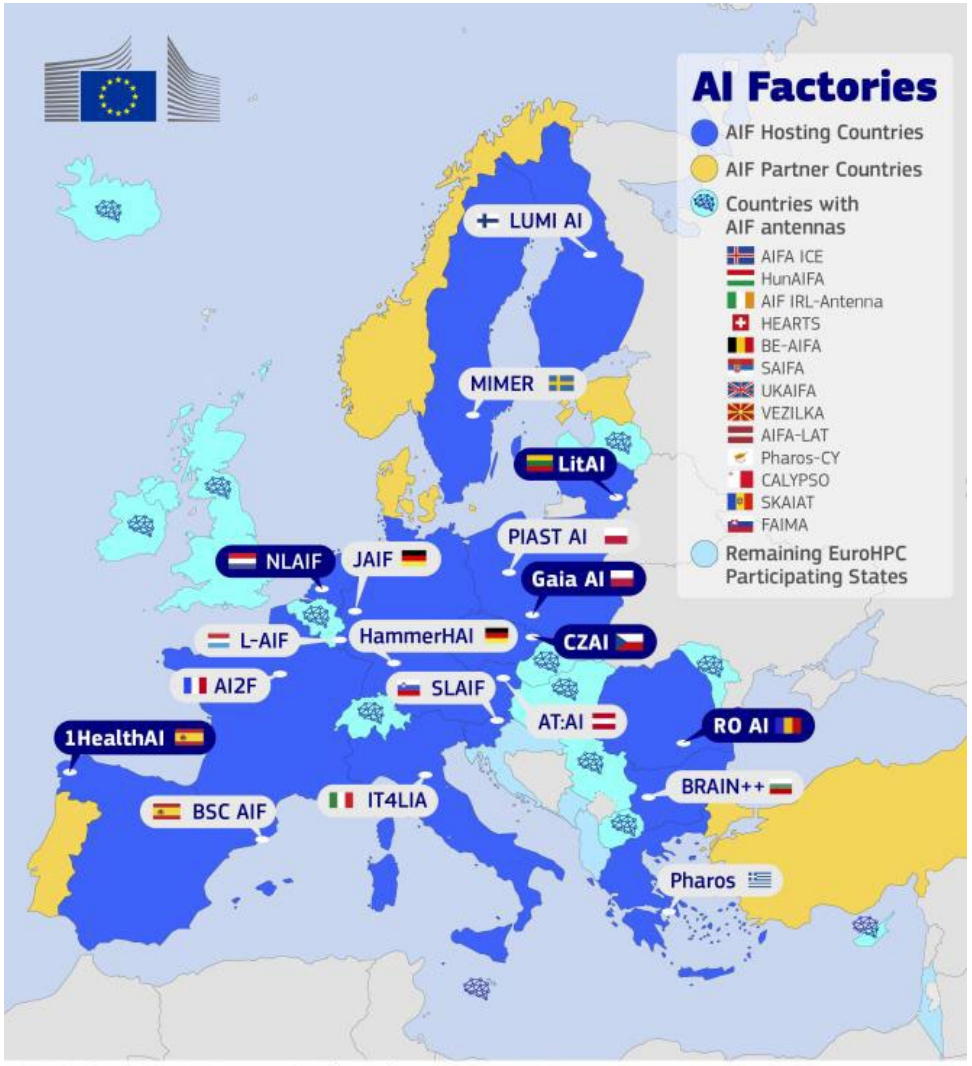


CoreWeave

NVIDIA CUDA

- Cuda software as industry standard (lock-in effects)
- Partnerships and acquisitions (e.g., Microsoft/Mistral)
- Ecosystem power

AI factories and AI gigafactories

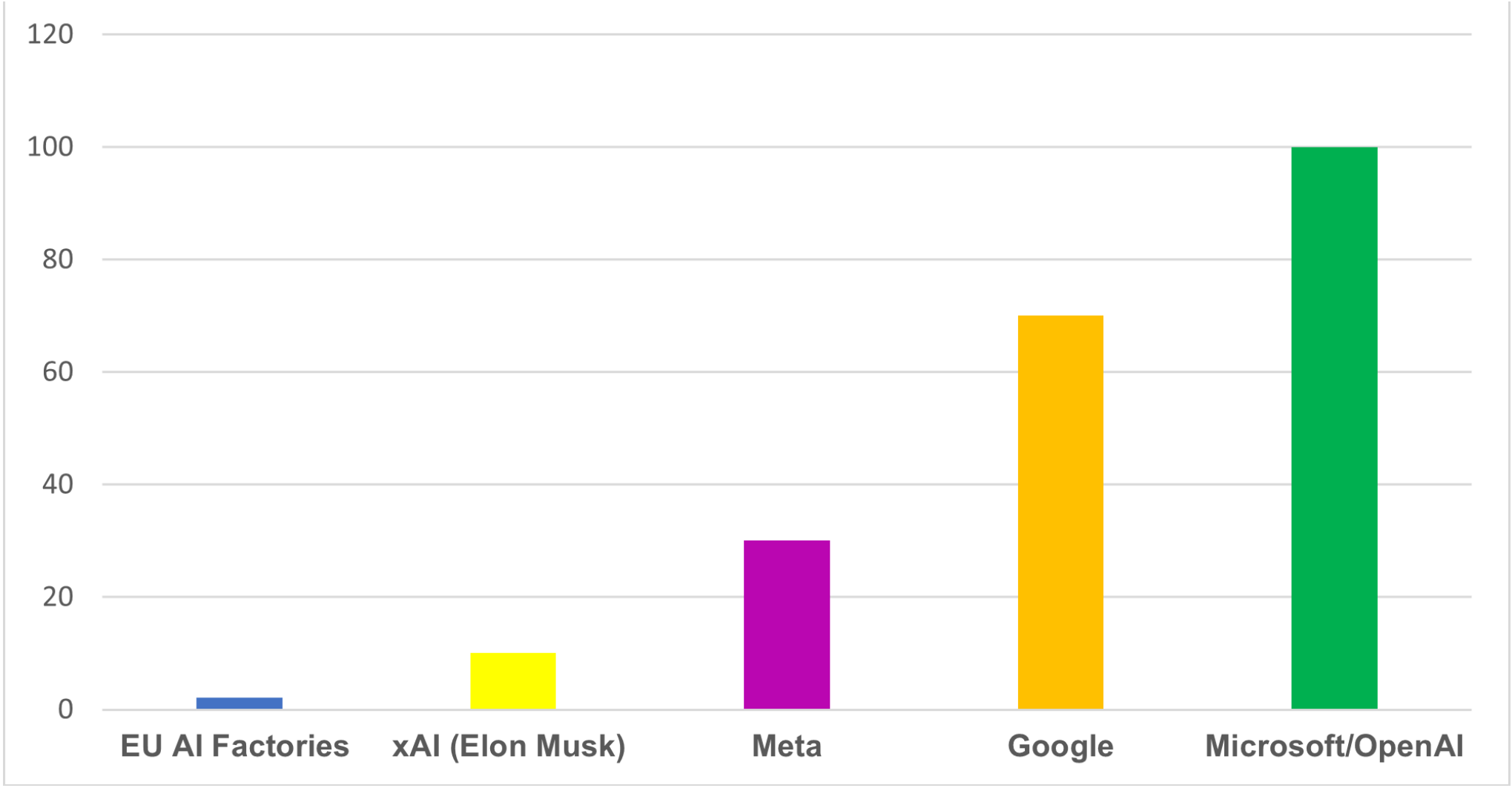


- **Public-private partnerships**
- **Use by SMEs & start-ups, labelled as “largest public AI investment in the world”**

15 EU AI factories: ~25,000 GPUs
5 EU Gigafactories: 100,000 GPUs

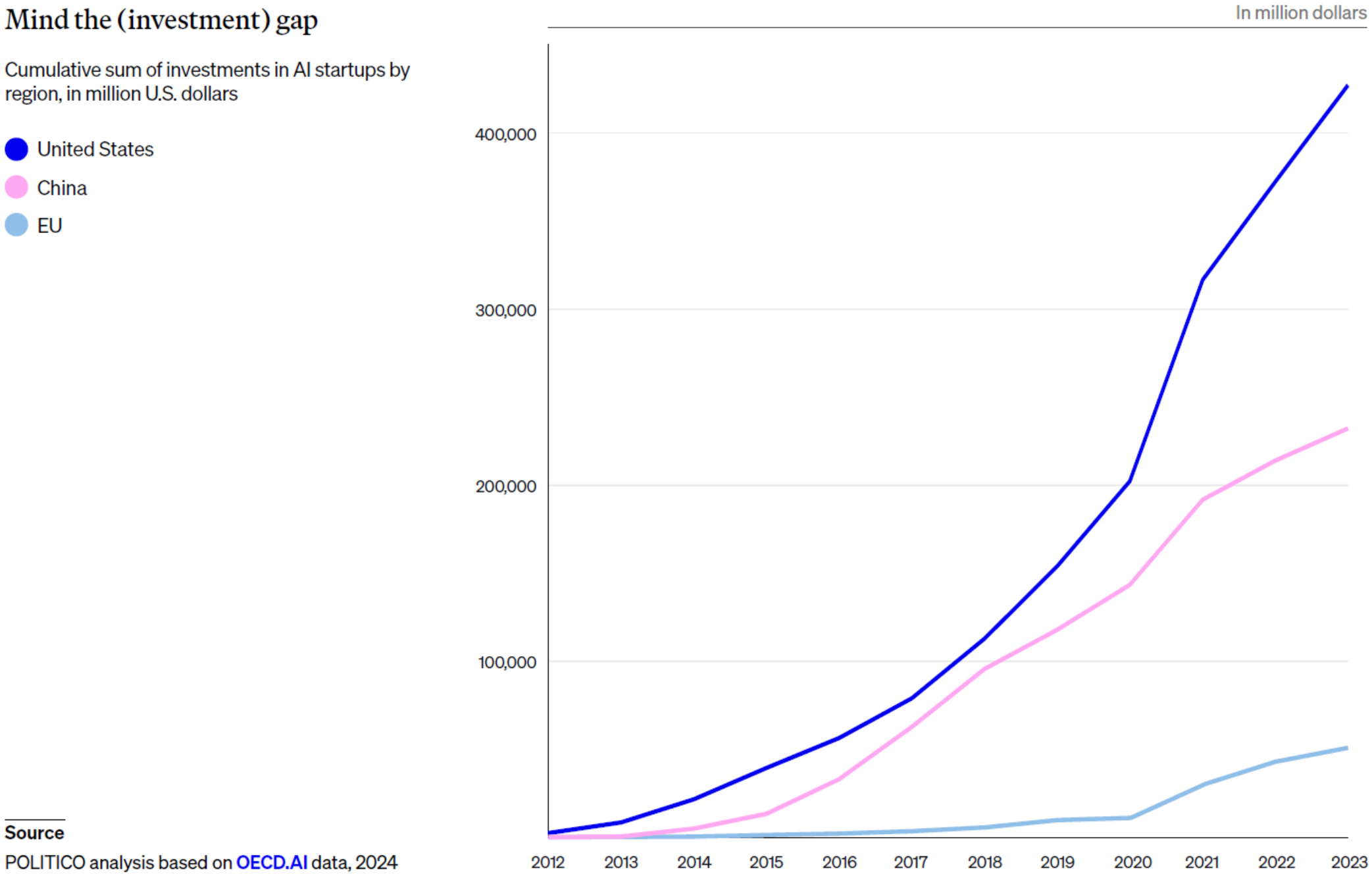
- **Meta: >1,300,000 GPUs**
- **OpenAI: >1,000,000 GPUs**

AI infrastructure spending (in billion $)



Mind the (investment) gap

Cumulative sum of investments in AI startups by region, in million U.S. dollars



Source

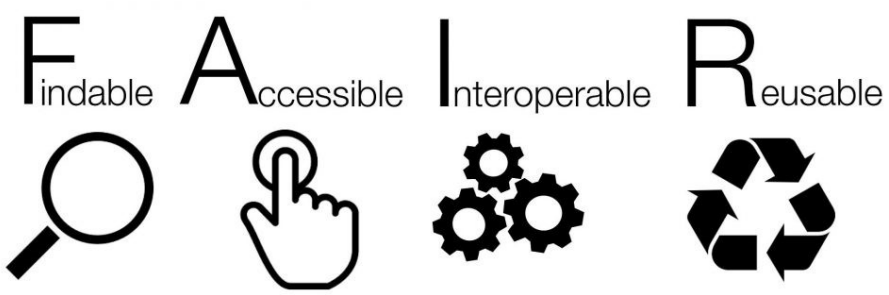
POLITICO analysis based on OECD.AI data, 2024

Public funding, private interests

- ***Sovereign AI*** **by itself is not a socially beneficial purpose or end goal**
- **No framework to check if public AI investments benefit society at large**

→ **Need for benchmark!**

Public money, public conditions?



- **Common practice in research funding: no compliance with FAIR conditions, no money**

AstraZeneca

- **Embedding public values *by design*, not as afterthought**

SURF

- **Role of public values in AI infrastructure funding?**

Who owns the means of LLM production?

Public

- Maximum control over procurement policies (e.g., role of chips or GPUs)
- Maximum control over access & use policies, strategic management of compute resources

→ Key problem: Risks of a planned economy

Public-Private

- Limited control over procurement and use policies (e.g., role of consortia)
- Private investments come with strings attached: vendor lock-in, licensing, profit expectations

→ Key problem: Public-private value tensions

Private

- No public control over procurement and use policies (i.e., dependency)
- No long-term public governance rights, unclear societal returns on public investments

→ Key problem: Logic of shareholder interest

Geopolitical trade-offs

Emerging digital trade wars

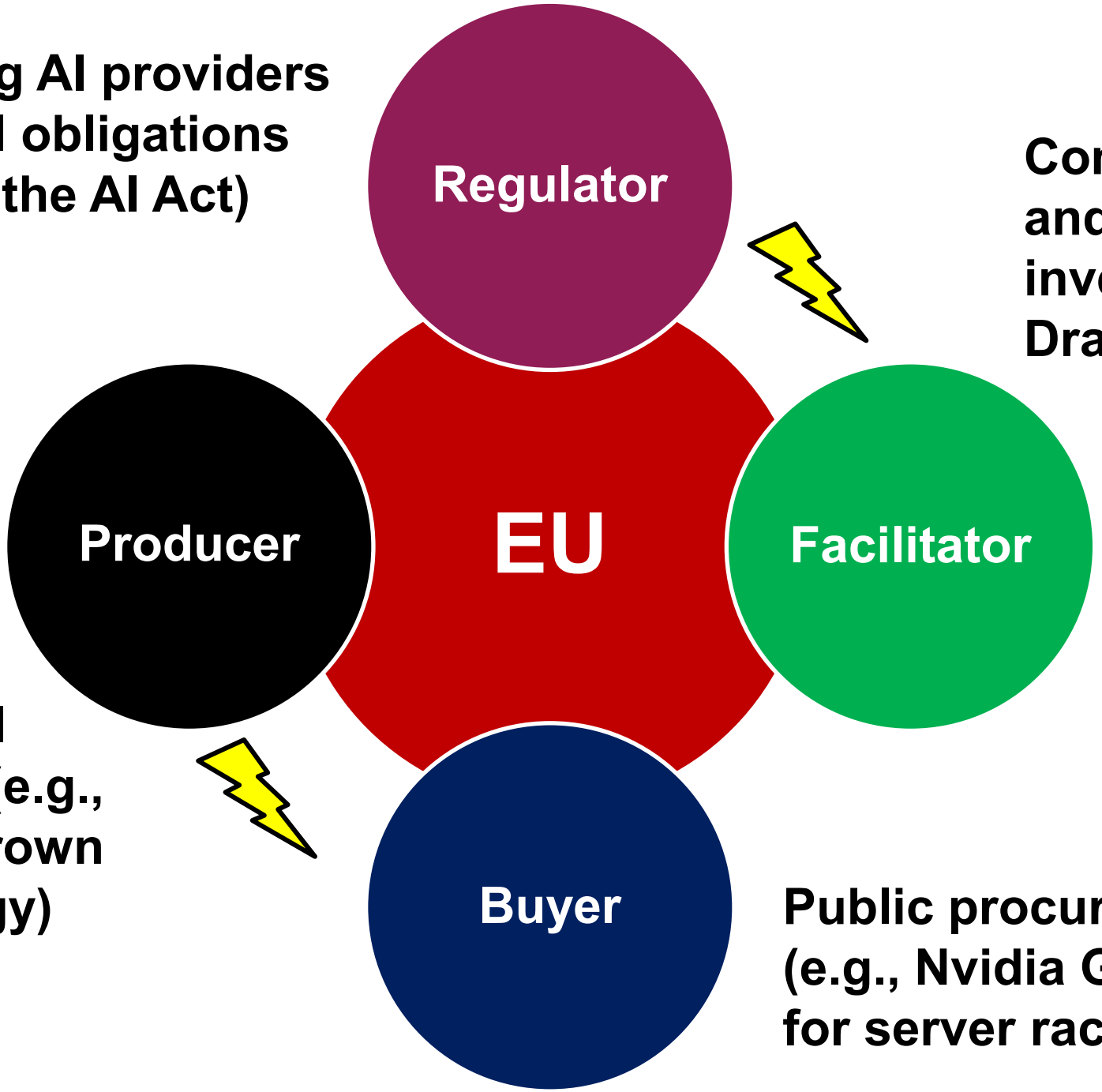
Digital Services Act | **Digital Markets Act** | **AI Act**

Europe was a world leader in A.I. regulation. Will Trump change that?

Trump orders trade chief to revive tariff retaliation against digital taxes

EU prepares to hit Big Tech in retaliation for Donald Trump's tariffs

Restricting AI providers (e.g., legal obligations as part of the AI Act)

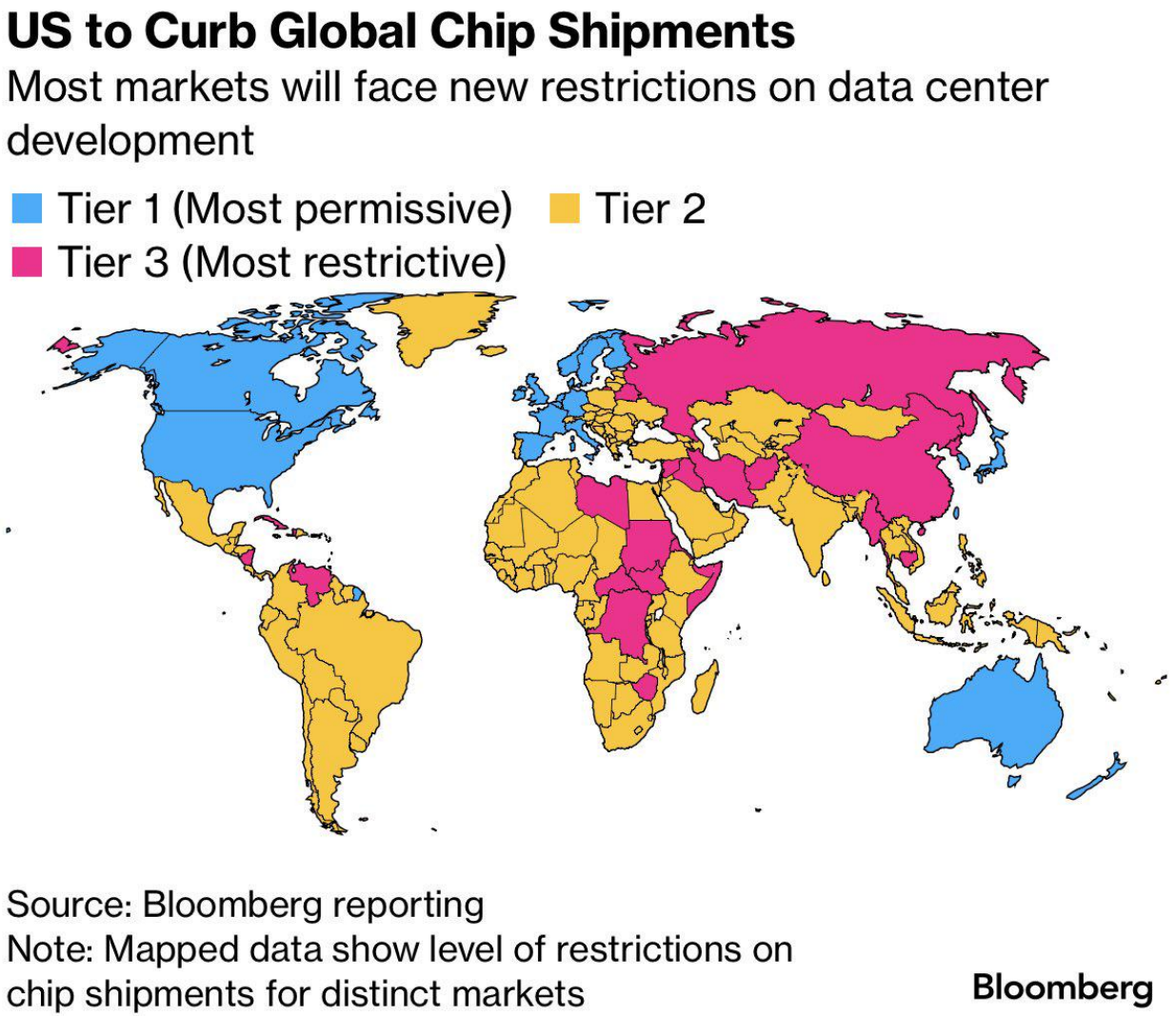


Competitiveness and attracting AI investments (e.g., Draghi Report)

State-owned AI infrastructure (e.g., lack of homegrown GPU technology)

Public procurement (e.g., Nvidia GPUs for server racks)

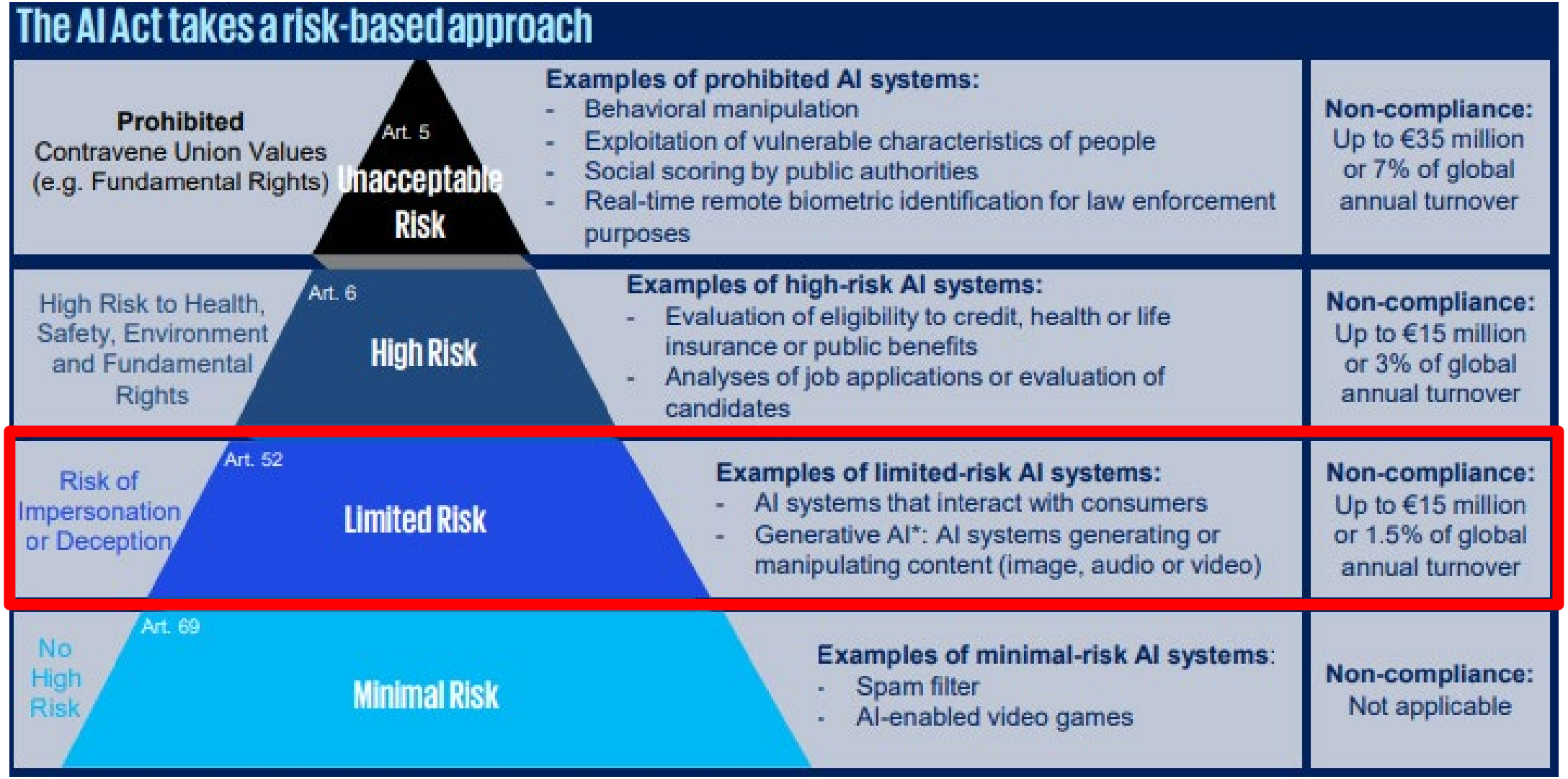
The EU's developer dilemma



- **Chips and compute power as geopolitical leverage to achieve foreign policy aims**
- **Build on US stack: fast, but geopolitically exposed**
- **Build on EU stack: state subsidized but a change in workflows and capability**

3. Implications for LLM development

Generative AI and the EU AI Act



Source: KPMG

GPAI models and high-impact GPAI models

CLASSIFICATION	KEY REQUIREMENTS *(non-exhaustive list)* [a]
ALL GPAI MODELS AND SYSTEMS Large models and systems capable of competently performing a wide range of distinctive tasks, such generating video, text, images or computer code, or conversing.	▪ Transparency obligations before market placement, including: - Drawing up technical documentation for downstream providers - Complying with EU copyright law and disseminating detailed summaries about the content used in training - Watermarking AI generated or manipulated content
HIGH-IMPACT GPAI MODELS Foundation models trained with large amount of data and with advanced complexity, capabilities, and performance well above the average, which can disseminate systemic risks along the value chain.	▪ Complying with all requirements applicable to all GPAI models and systems ▪ Conducting model evaluations ▪ Assessing and mitigating systemic risks ▪ Conducting adversarial testing ▪ Reporting of serious incidents to the EU Commissions ▪ Ensuring sufficient cybersecurity protection ▪ Reporting on energy efficiency

- Designation criteria:
  - FLOPs[a] > 10~25 for computing used in training (to be kept under review).
  - Other qualitative / quantitative criteria (e.g. number of business users).

Source: Deloitte

The Lack of Language Model Transparency

Evaluated Public Summaries

Below is an overview of the evaluation with each model assigned a grade. A+ is the highest grade and F the lowest, with ! shown for missing summaries. Click the model name to go to the detailed evaluation page which has more information, a link to the summary, and our evaluation notes. You can also see a detailed overview of scores for each section of the public summary.

Model	Provider	Transparency	Usefulness
Apertus	Swiss AI Initiative	A	A+
Demo	Demo org	A	A+
Bria 3.2	Bria AI	B+	A
SmolLM3-3B	HuggingFace	B+	B+
Bielik v3 11B Instruct	SpeakLeash	B+	C+
Phi-4	Microsoft	D	F
Claude Sonnet 4.5	Anthropic	!	!
Gemini 2.5 Flash Image	Google	!	!
GPT-5	OpenAI	!	!
GPT-OSS	OpenAI	!	!
Sora 2	OpenAI	!	!

A Quality Assessment Framework for GPAI Model Public Summaries required by AI Act Article 53(1)(d)
Dick A. H. Blankvoort, Harshvardhan J. Pandit, Maximilian Gahntz
ACM Conference on Fairness, Accountability, and Transparency (FAccT), 2026. (open-access)

Associated Media:
- Website: *Project website with analysis of public summaries*
- Data & Repo: *Github*
- Editorial: *(Tech Policy Press) How Big AI Developers are Skirting a Mandate for Training Data Transparency*

PERSPECTIVE

How Big AI Developers are Skirting a Mandate for Training Data Transparency

DICK BLANKVOORT, HARSHVARDHAN PANDIT, MAXIMILIAN GAHNTZ / MAR 4, 2026

TECH

Researchers have trouble finding AI training data summaries

Information required under the EU's AI rules is not only often missing, per a Mozilla-funded study, it's hard to locate

Maximilian Henning **Euractiv**

AI Act Pressure Points for LLM Development

Before training

- Document data sources from day one, retroactive compliance is tricky
- Respect TDM opt-outs and robots.txt

Before release

- Publish a training data summary Article 53(1)d)
- High-impact models face evaluations, incident reporting, cybersecurity

After release

- Ongoing reporting to the EU AI Office
- Energy efficiency disclosure
- Systemic risk monitoring (if high-impact model)

Conclusion and discussion questions

- **Can you build “sovereign” EU AI models while structurally depending on foreign hardware, foreign software, and foreign capital?**
- **Is the EU over-regulating AI? Is it preventing innovation that could rival the US and China?**
- **How will LLMs be leveraged geopolitically?**

Questions?

Sharing science,
shaping tomorrow

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