Europe, Tech and War

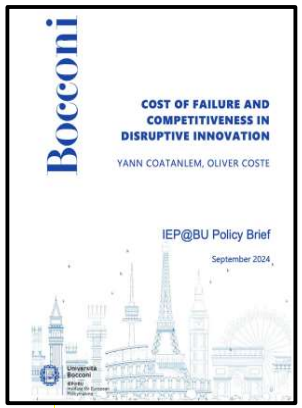
Renewing Europe's Economy for Better Growth and Security

ECIPE Webinar

Oliver Coste

EuropeTechandWar.com

30 January 2025



Agenda

A: Tech experiences

B: Disruptive Innovation, Cost of Failure

C: Profitability of tech investment

D: The Usual Suspects

E: Tech and War, Tech and Growth

F: Solutions within the European social model

Tech experiences – large groups

Fixed to Mobile

Data Centers to Cloud

Metaverse to AI

Innovation: Incremental vs Disruptive

ChatGPT

Incremental innovation ⟷ Disruptive innovation

20%
of Projects Fail

80%
of Projects Fail

Cost of Failure: Europe vs Rest of the World

2 to 6 months
of compensation

Low cost of failure

x10

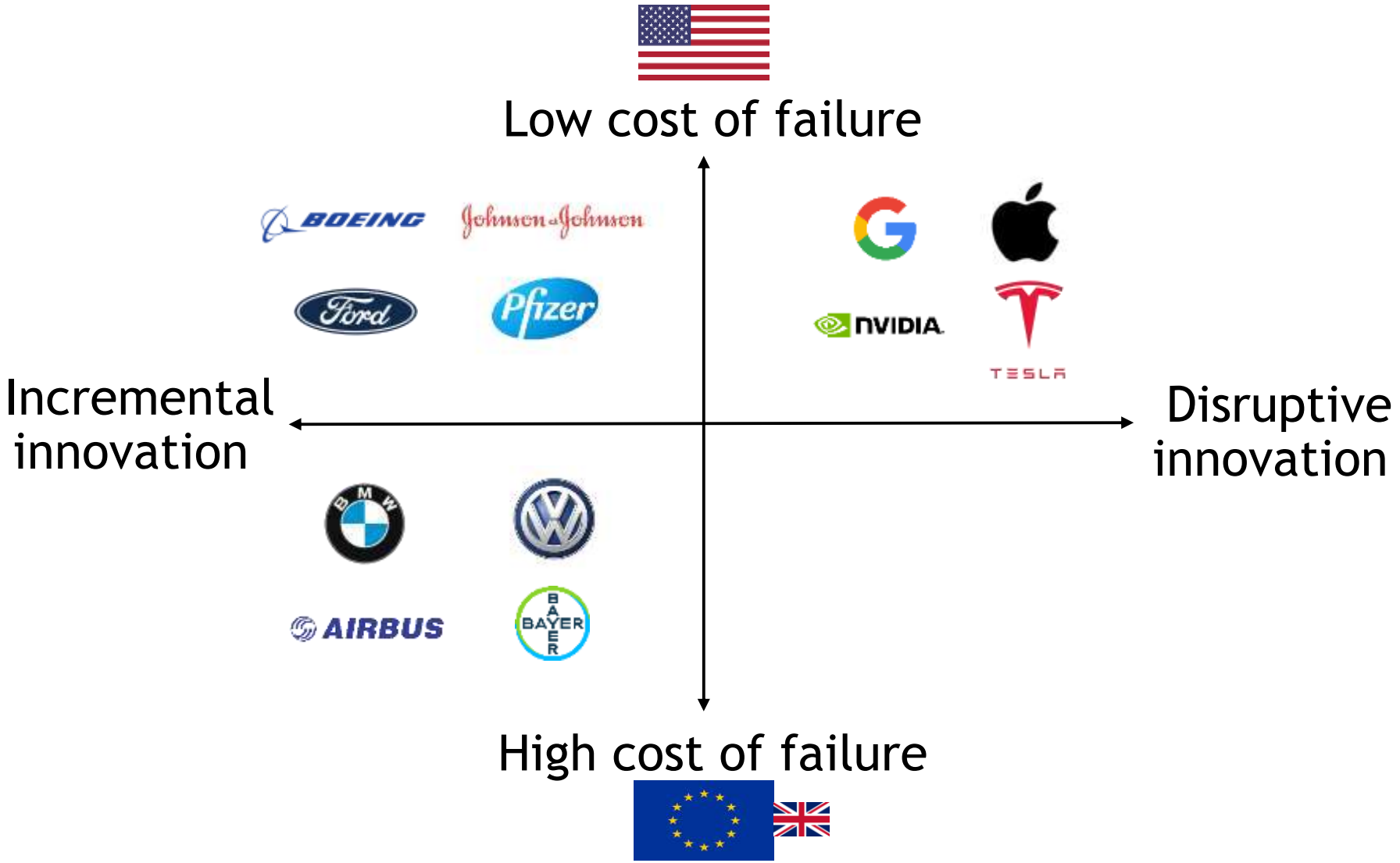
Total Costs of Failure include:

- Operational losses during social negotiation
- Severance pay
- Training, Reindustrialization…

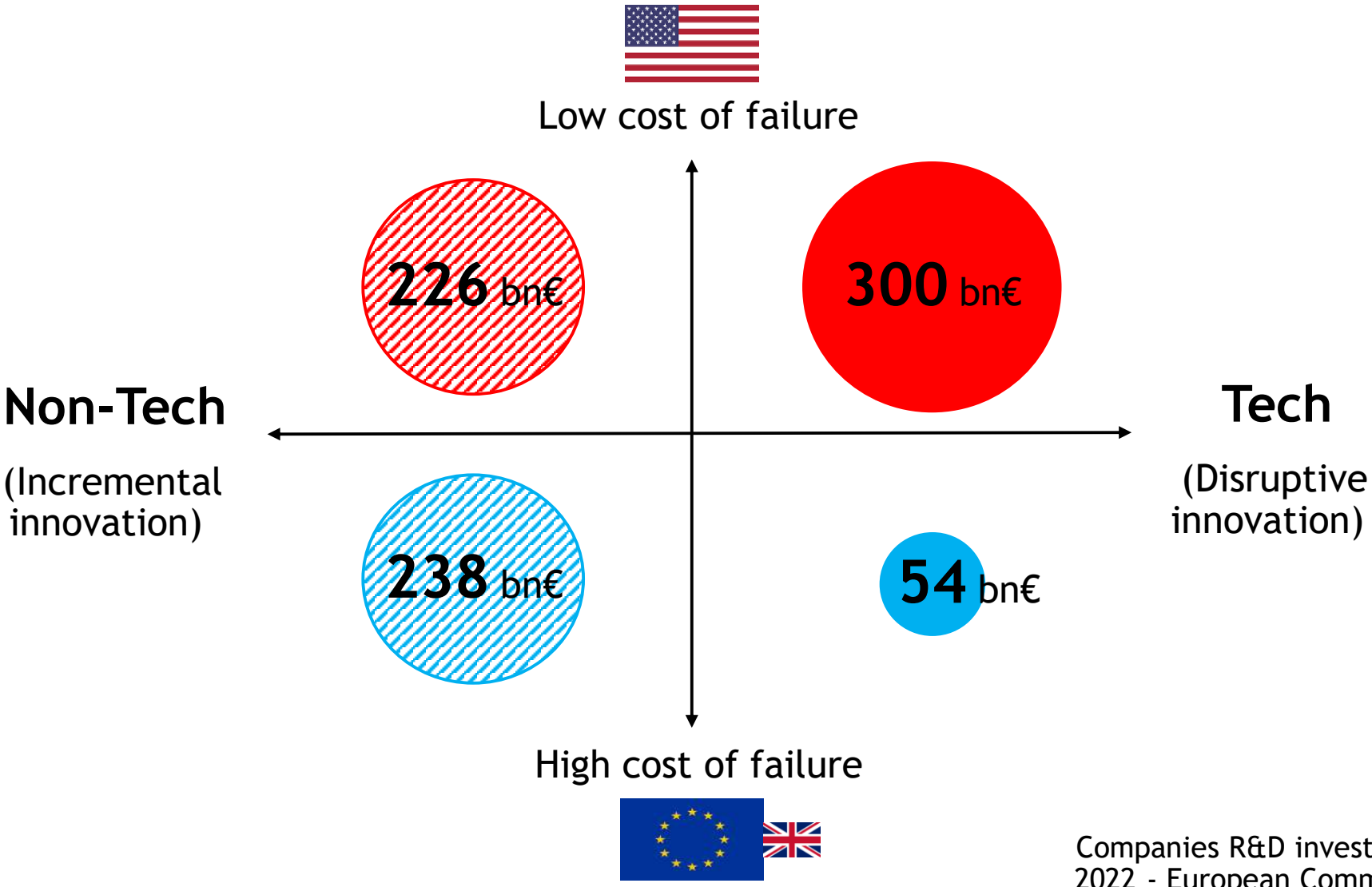
24 to 48 months
of compensation

High cost of failure

Europe: no leader in disruptive innovation

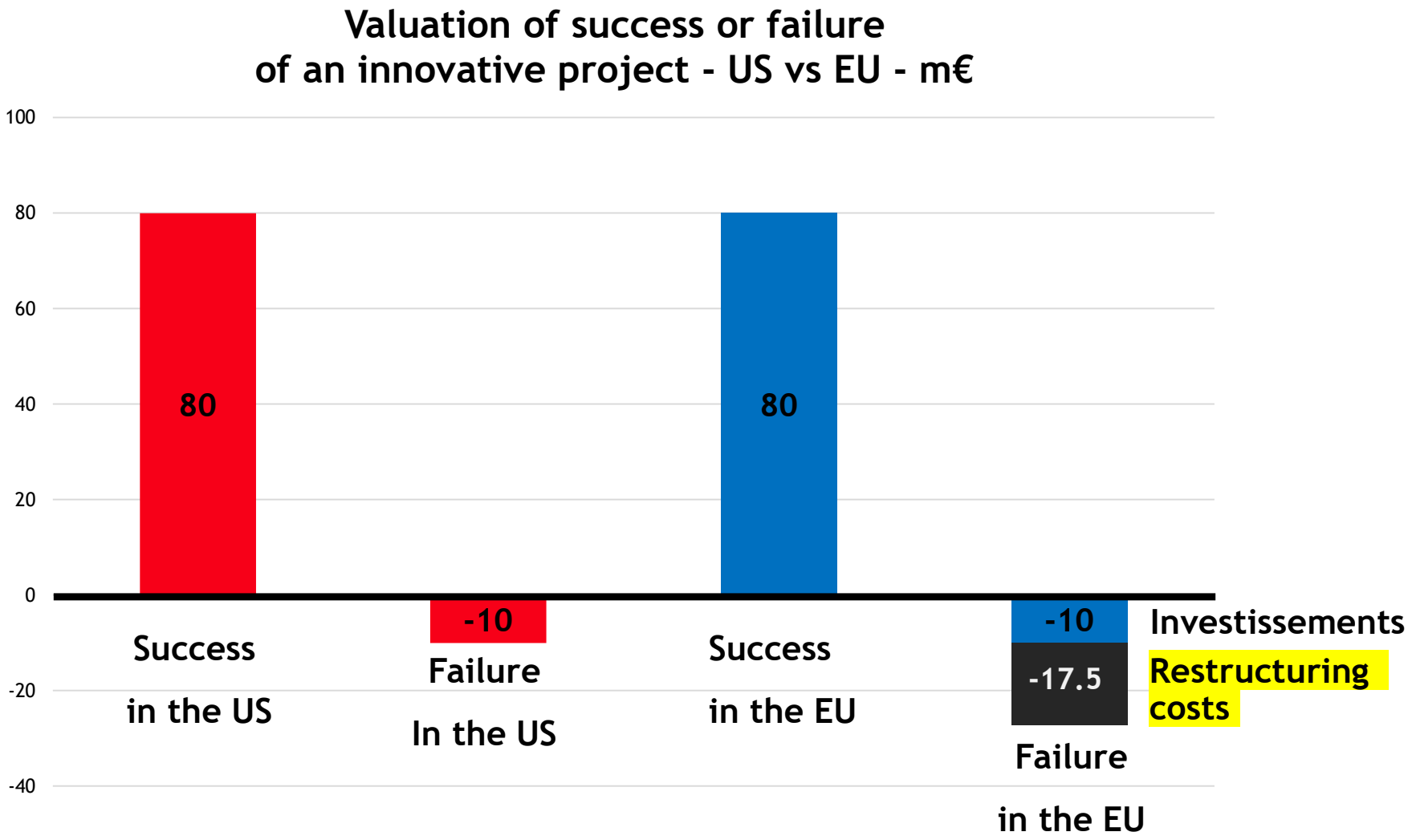


Innovation in Europe: poor R&D in tech

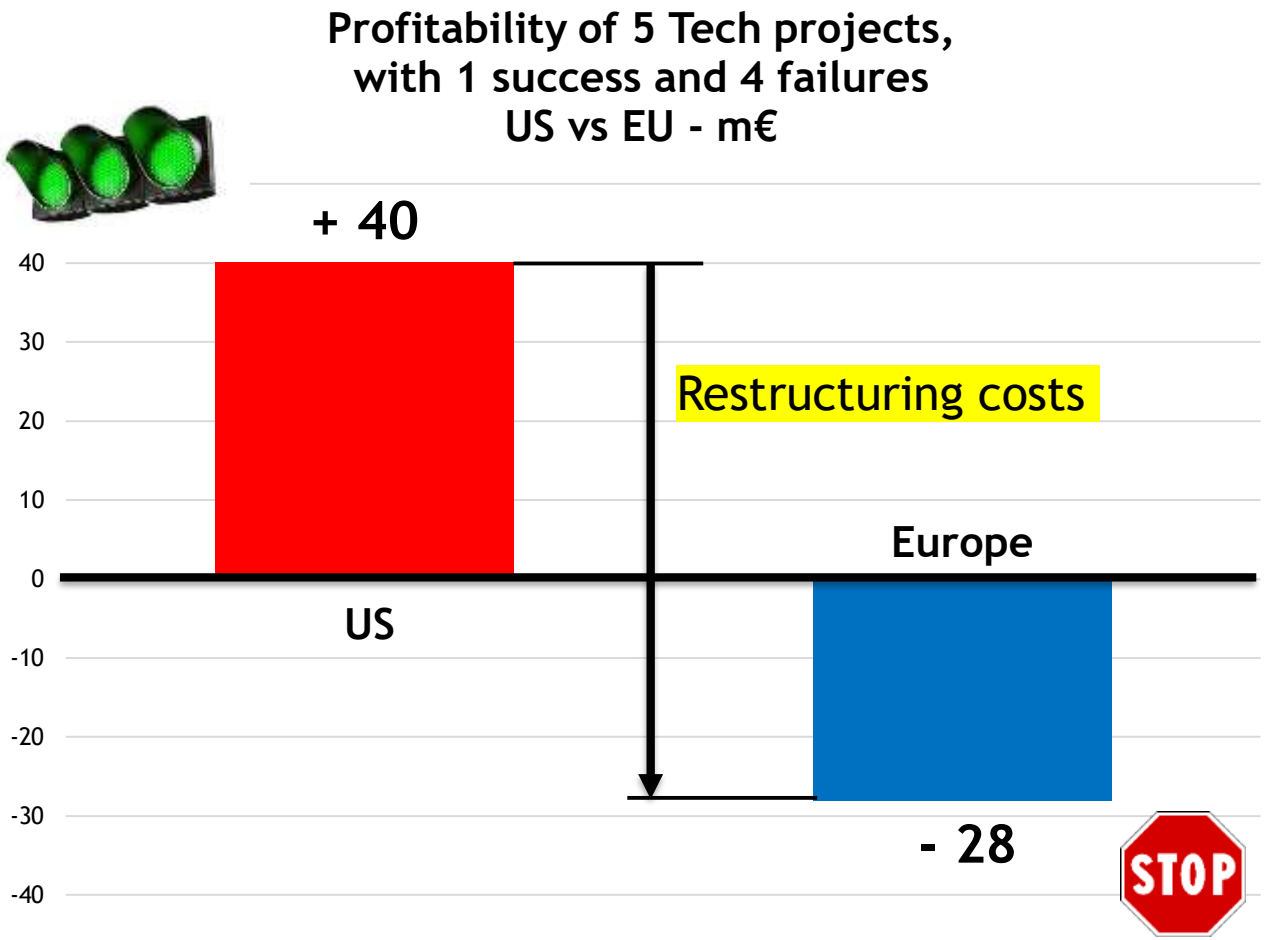


Companies R&D investments 2022 - European Commission

One tech project in large groups



Five tech projects in large groups, with 4 failures



High Failure Rate

x

High Cost of Failure

=

No profitability

=

No investment

Causes for Innovation Deficit: the Usual Suspects

Fragmentation of the European market?

No for deep tech

Poor market appetite

Poor entrepreneurial culture?

Just rational management

Poor financing of innovation?

Just poor profitability

Cost of failure

Defense spending and lower public support?

Just poor leverage on private investment

Overregulation?

Yes

Dogmatic competition policy?

Second order

Industrial Revolutions and Wars

1st Industrial Revolution	2nd Industrial Revolution	3rd Industrial Revolution
Steam engine	Internal combustion engine	tech
1800	1900	2000
		
First Opium War	*Second World War*	*Ukraine*
1839 – 1842	*1939 - 1945*	*2022*
Steamships vs Junks	*Aircraft, tanks, aircraft carriers*	*Precision missiles vs aircraft and tanks*

US – China confrontation for world dominance

Europe is out of the race

Xi Jinping, May 2021

« Technological innovation has become the main battleground of the global playing field, and competition for tech dominance will grow unprecedentedly fierce.»

President Biden displaying a semiconductor. He has promised to sign the CHIPS bill. Doug Mills/The New York Times

Joe Biden, August 2022

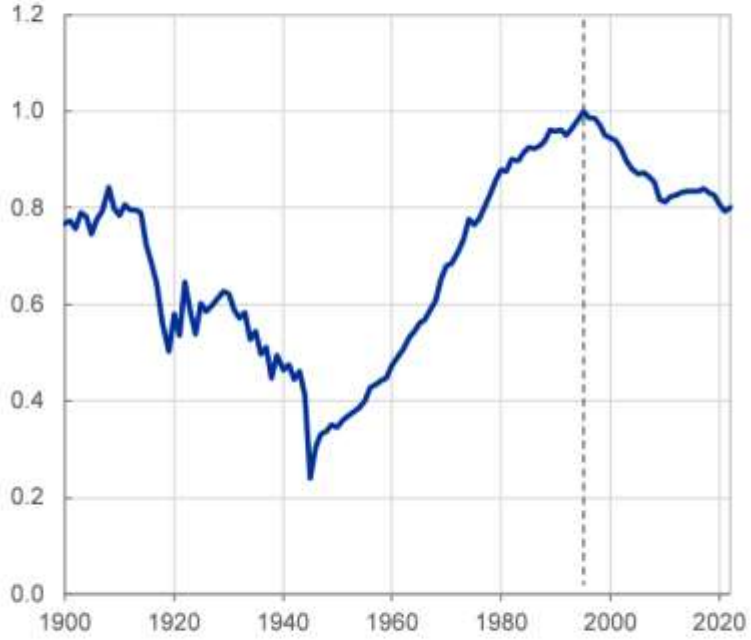
$280 bn «to counter China»
Embargo on US semiconductors
Prohibition of Huawei, Alibaba
OpenAI vs DeepSeek

ECB: declining relative productivity since 1995

Euro area started to lose competitiveness at the turn of the millennium

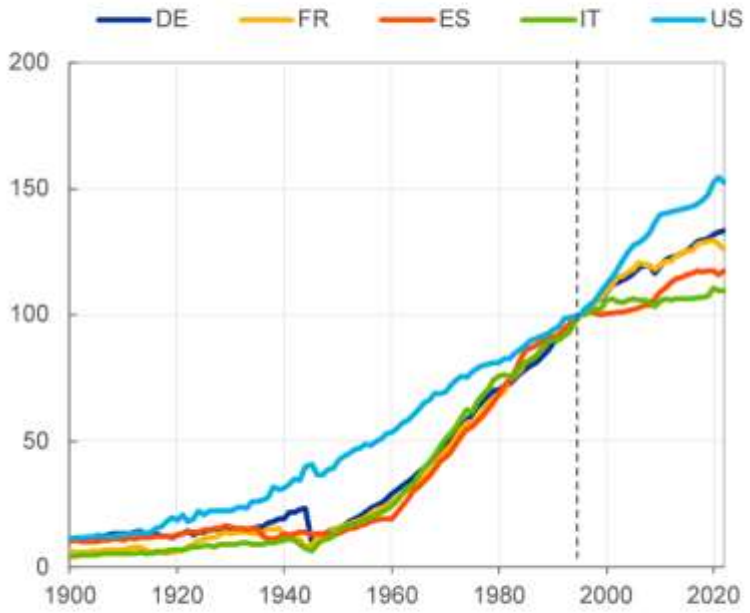
Long-term developments in productivity per hour worked

Ratio of EA-4 to US



Source: Long-Term Productivity Database and ECB calculations.
Notes: EA-4 is a weighted average of productivity developments in Germany, France, Italy and Spain.

Index: 1995 = 100



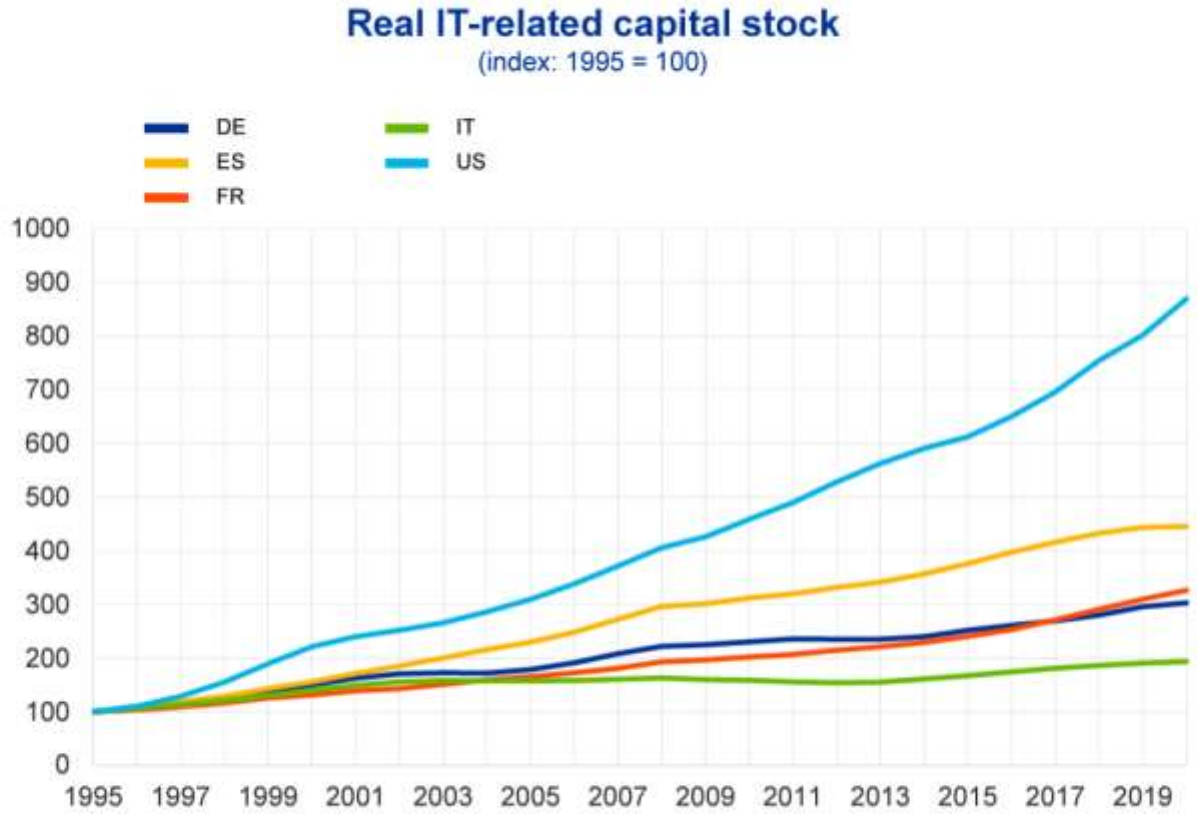
Source: Long-Term Productivity Database and ECB calculations.

16 February 2024

Isabel Schnabel, Member of the Executive Board of the ECB
Inauguration lecture, EMU Lab, European University Institute

ECB: the root cause is in poor tech investment

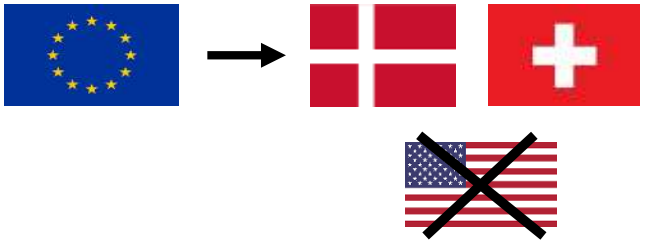
Rising gap in IT-related capital stock between euro area and United States



Source: EUKLEMS.
Note: IT-related capital stock is the sum of computing equipment and computer software & databases for all NACE industries. See Schivardi, F. and Schmitz, T. (2020), "The IT Revolution and Southern Europe's Two Lost Decades", Journal of the European Economic Association, Vol. 18(5), pp. 2441–2486.

Proposal within the European social model

Proposal: **Flexicurity only above ~50k euros / year** (top 5% to 10%)



Only highly educated and well-paid employees

Not the US social model! No revolution!

Scaling up startups to world leaders

Triggering R&D investments from 50 bn to 300 bn euros / y

Increasing tax revenues by 1000 bn euros / y

But need for:

- solid documentation - fund economic analysis (Foundation for the Economic Analysis of Disruptive Innovation)

- preparation of public opinions

Let’s do it!

Mario Draghi on 9/9/24:

“EU companies face higher restructuring costs compared to their US peers, which places them in a position of huge disadvantage in highly innovative sectors”

Ursula von der Leyen on 29/1/25

The Commission will thus propose a 28th legal regime, which will simplify applicable rules and reduce the cost of failure, including any relevant aspects of corporate law, insolvency, labour and tax law.

Thank you! EuropeTechandWar.com

Publications

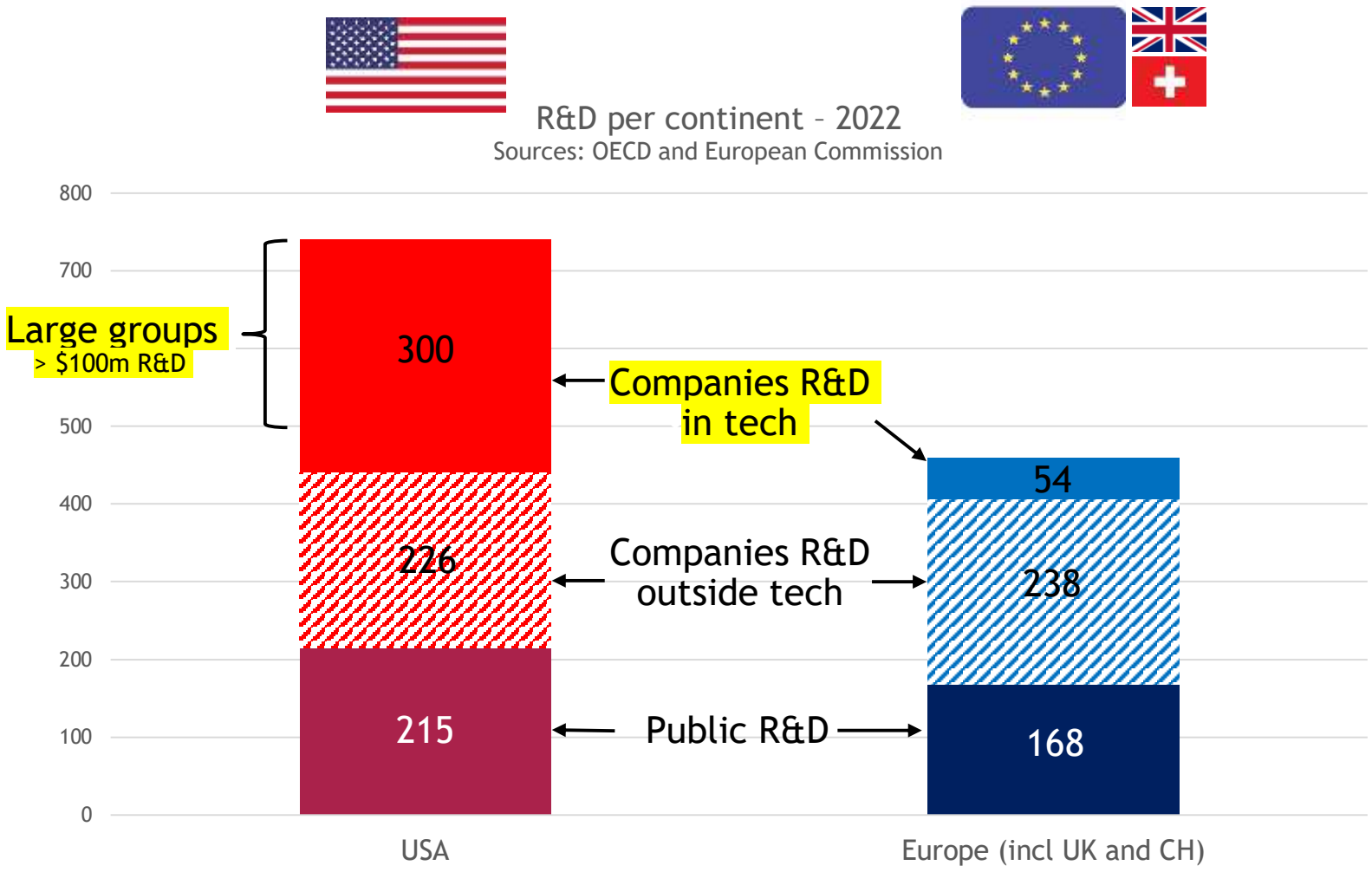
Contributions & Mentions

Press (Selection)

FT on 9/24/24: "A paper by Oliver Coste and Yann Coatanlem, published by Bocconi University in Milan, makes another important and still broader point about regulation: new and dynamic companies have to be able to adjust their costs quickly in the light of market developments."

Backup

A. Europe's R&D gap is in tech



B. Tech experiences – startup companies

Clients 

"Is it proven in the US?"

No hiring 

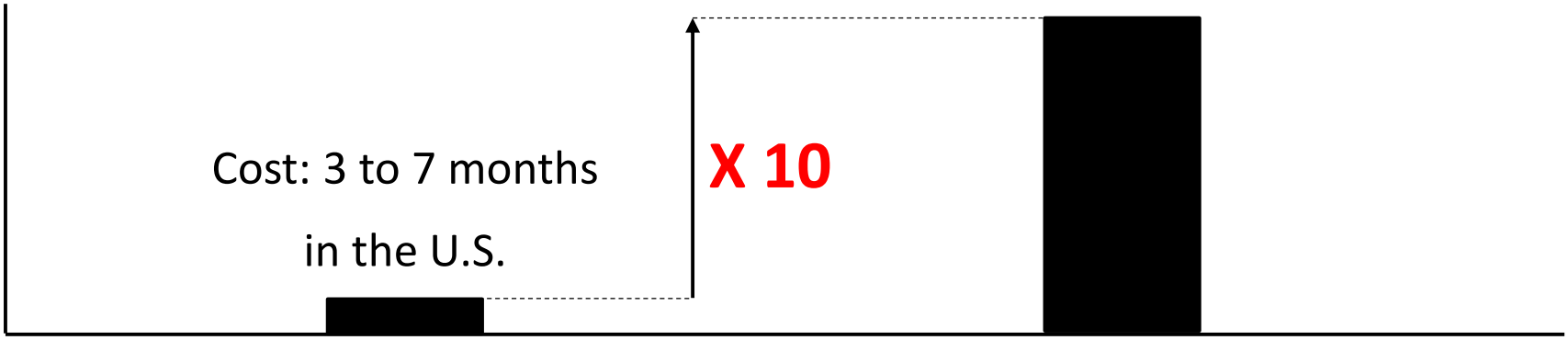
Clients 

"Let's try!"

Hiring dedicated teams 

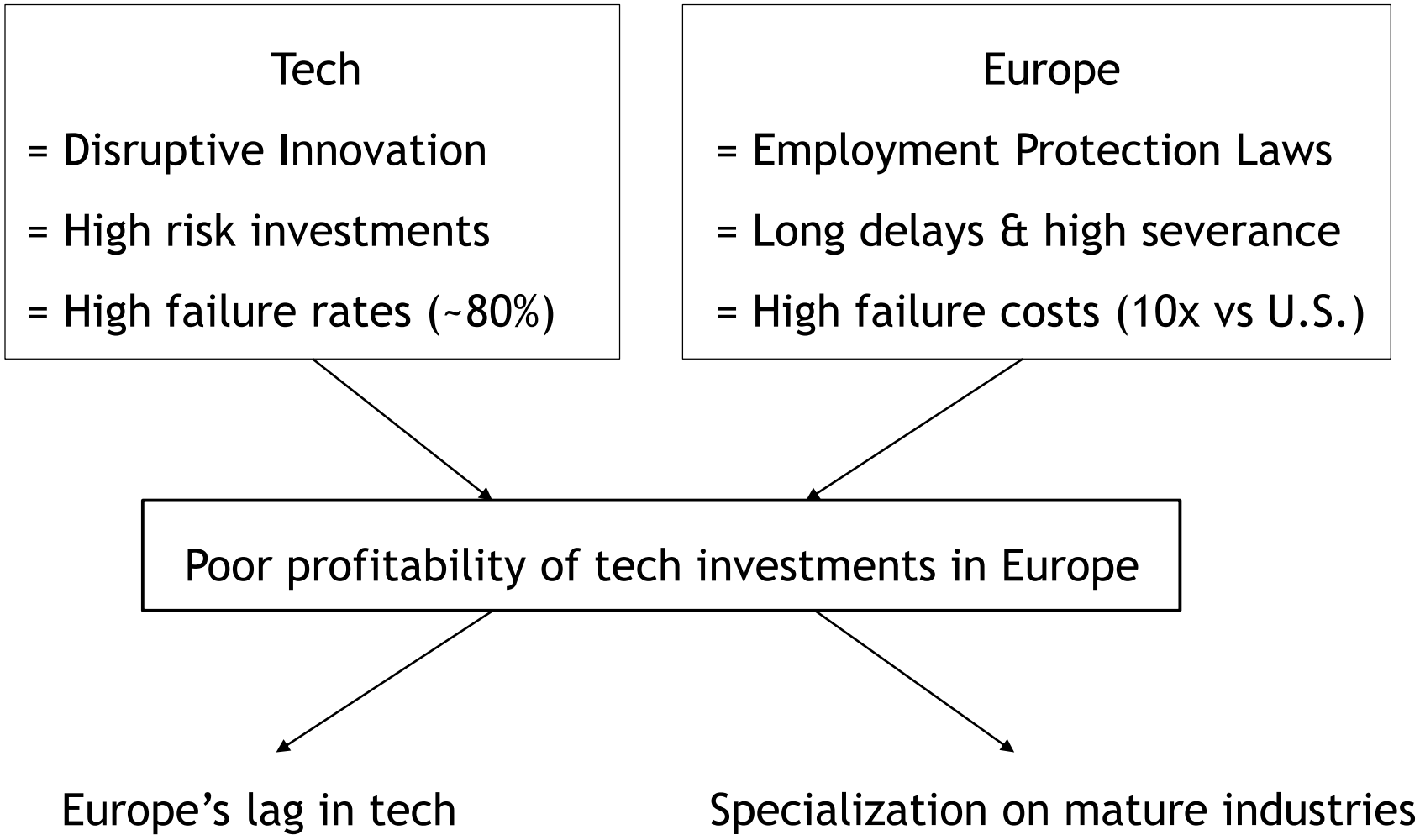
Restructuring costs 10x higher in Europe

Restructuring Costs includes severance pay, operational losses during negotiation, training, re-industrialization – in months of compensation

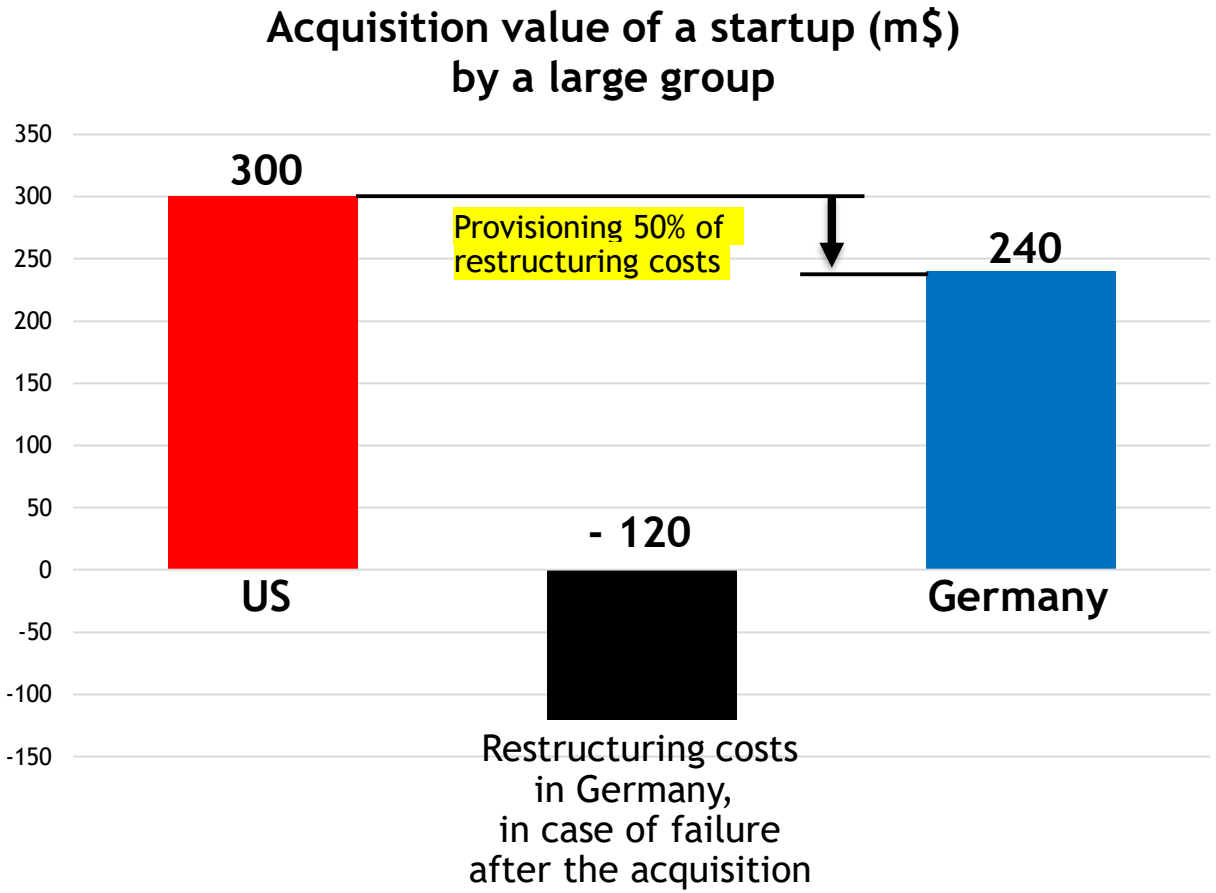


Source: Provisions for restructuring in public announcements and in financial reports, with assumptions on Europe's share of the workforce

Failure costs choke the profitability of tech investments

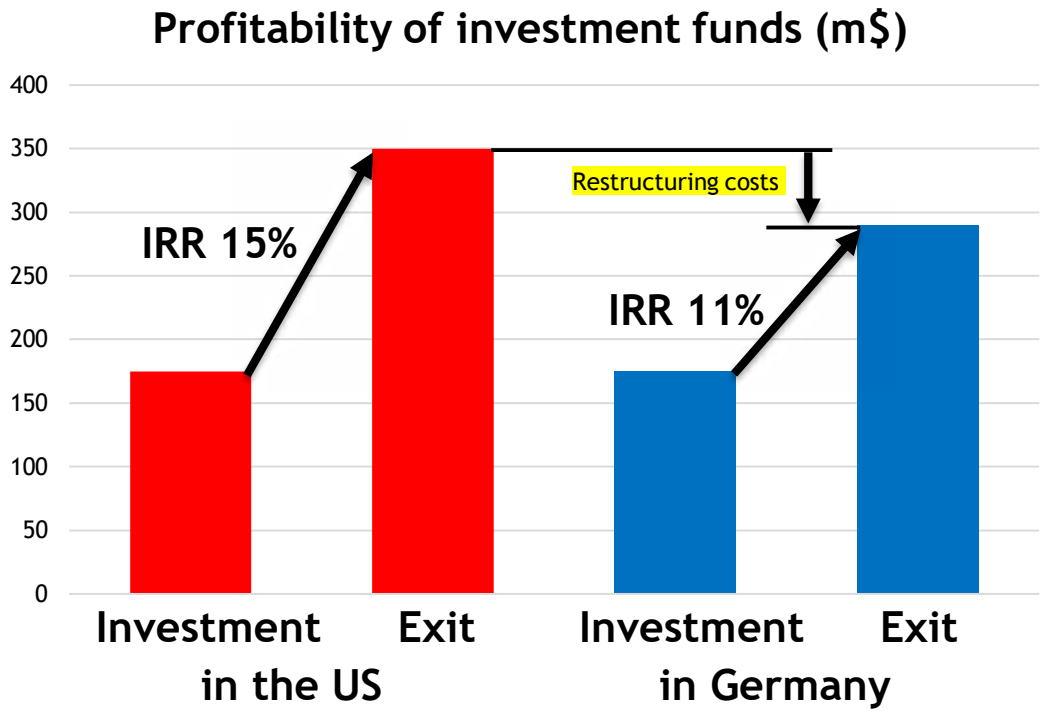


D: VC funds - cost of failure and exit strategy



Potential restructuring costs in case of failure have an impact on acquisition prices by large groups, therefore on exit prices for VC funds.

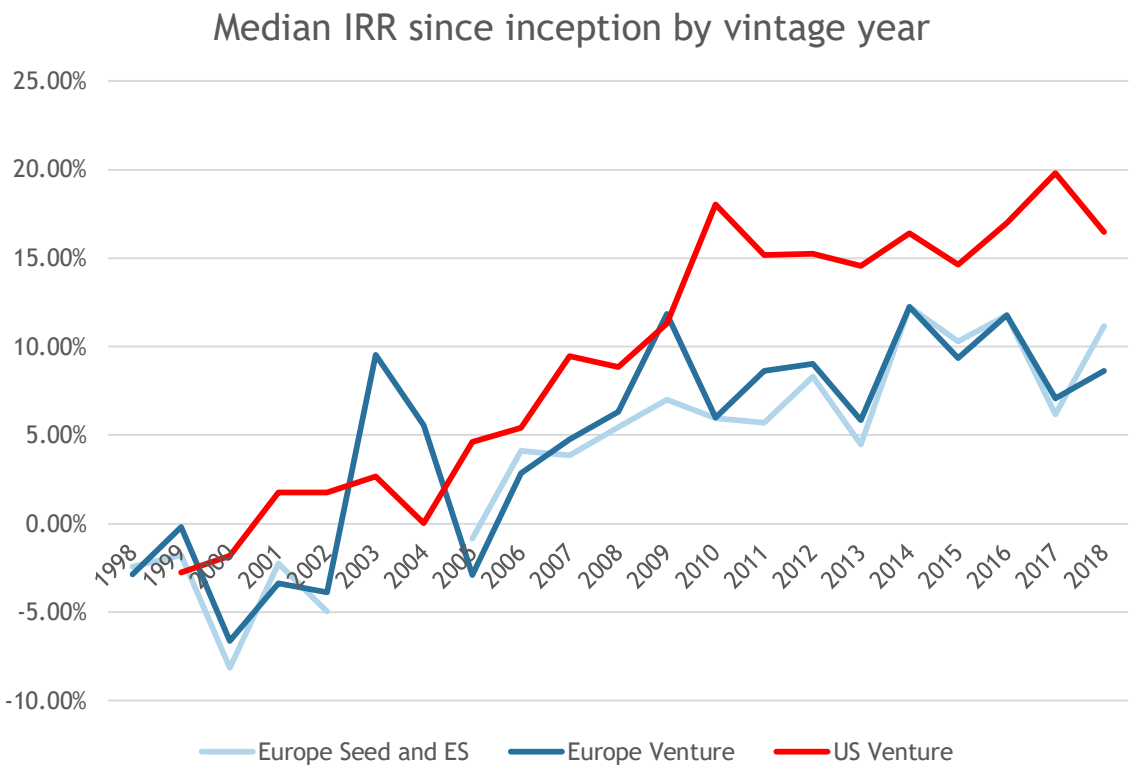
D: VC funds - lower profitability in Europe



Predicted Gap due to cost of failure:

4 points of IRR

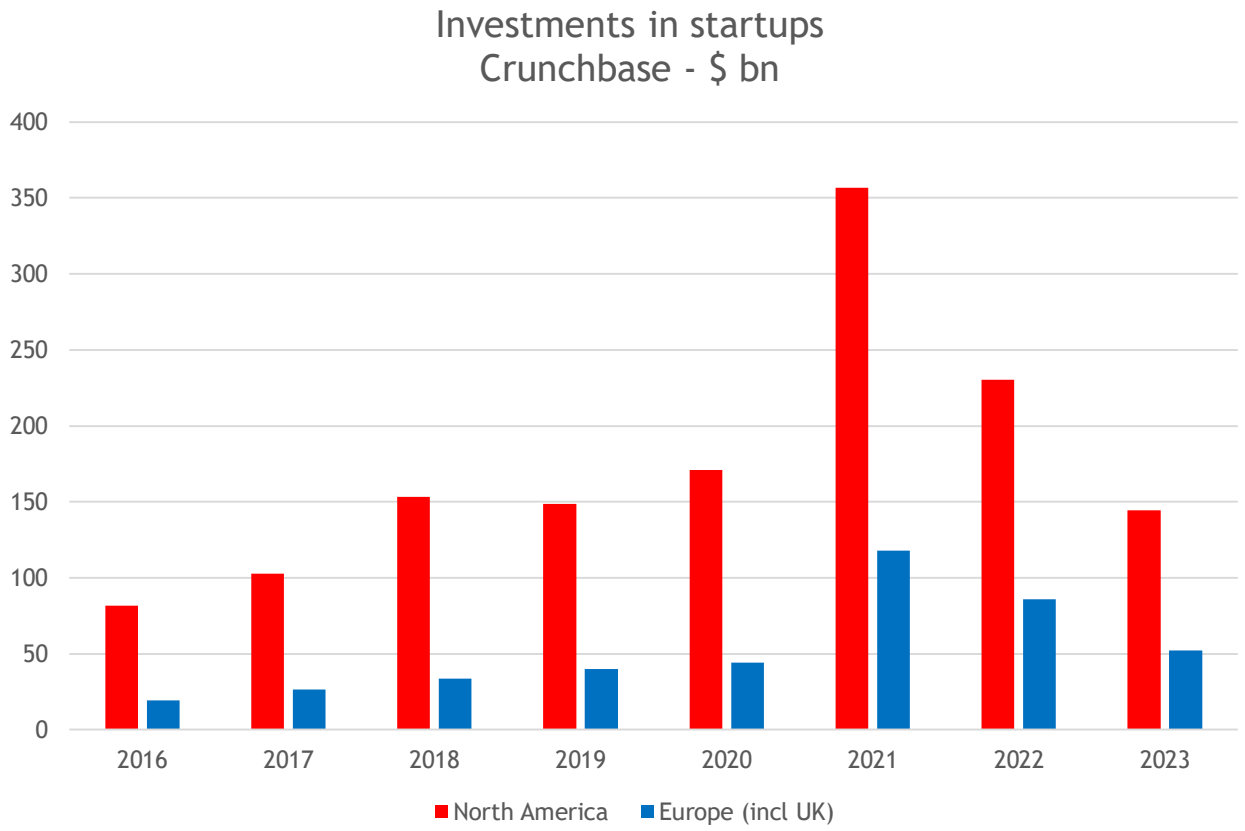
D: VC funds median IRR



Measured Gap
1998 - 2018:
5 points of IRR

IRR: Internal Rate of Return since inception per vintage year as per Pevara for European funds (800 funds) and Cambridge Associates for US funds (2500 funds)

D: VC Funds investments: US = 3 x Europe

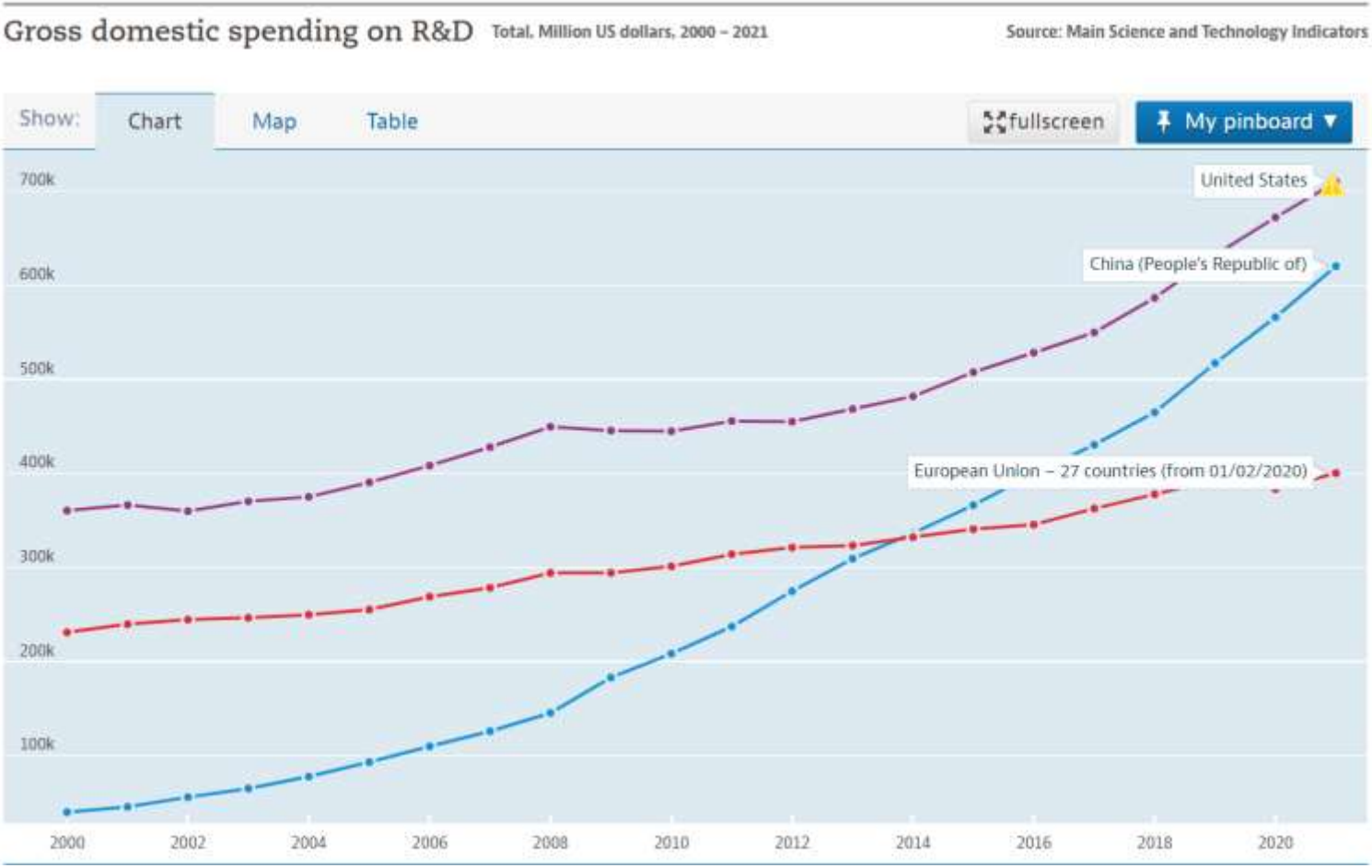


= 3 x

D. Industrial Revolutions and Wars

The Economist, 15 August 2024

A. Total R&D, governments and companies

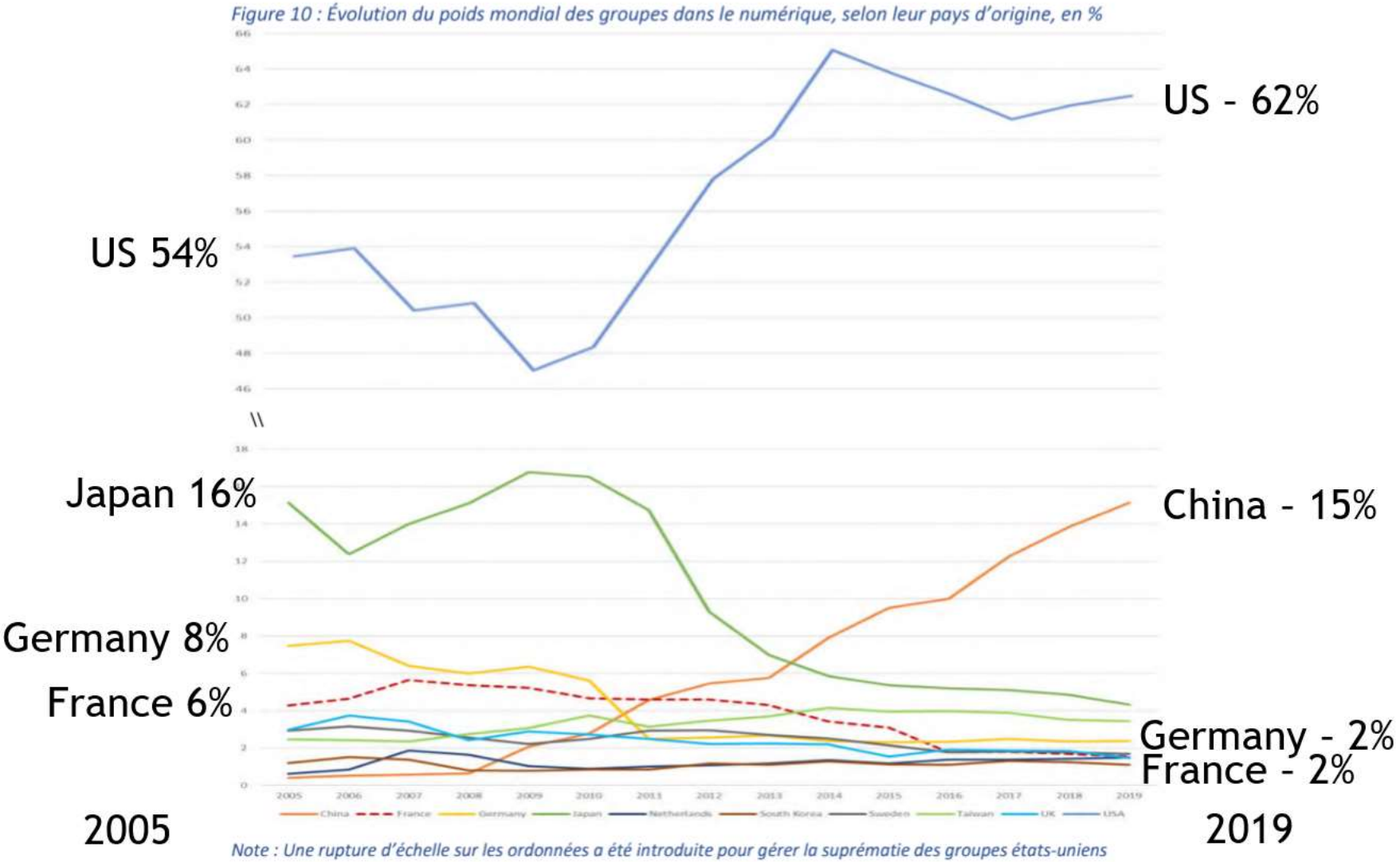


USA - $710 bn

China - $620 bn

EU - $400 bn

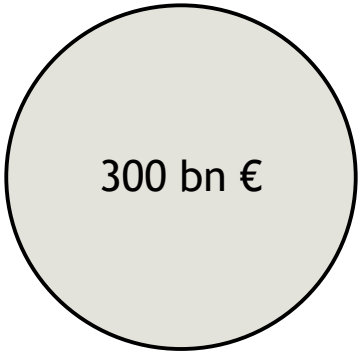
A. R&D in tech: Europe's fall over 15 years

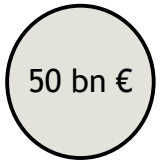


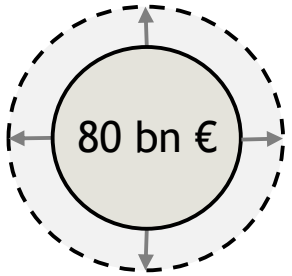
Europe is a laggard in tech

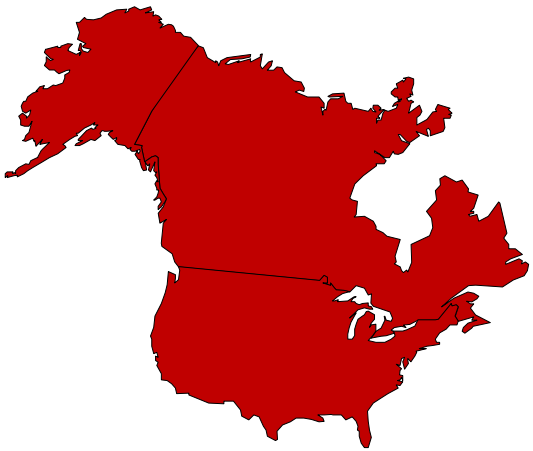
Tech R&D

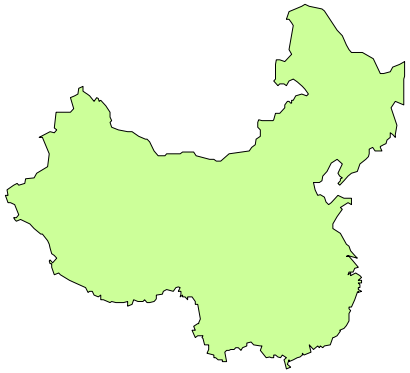
2022 – European Commission









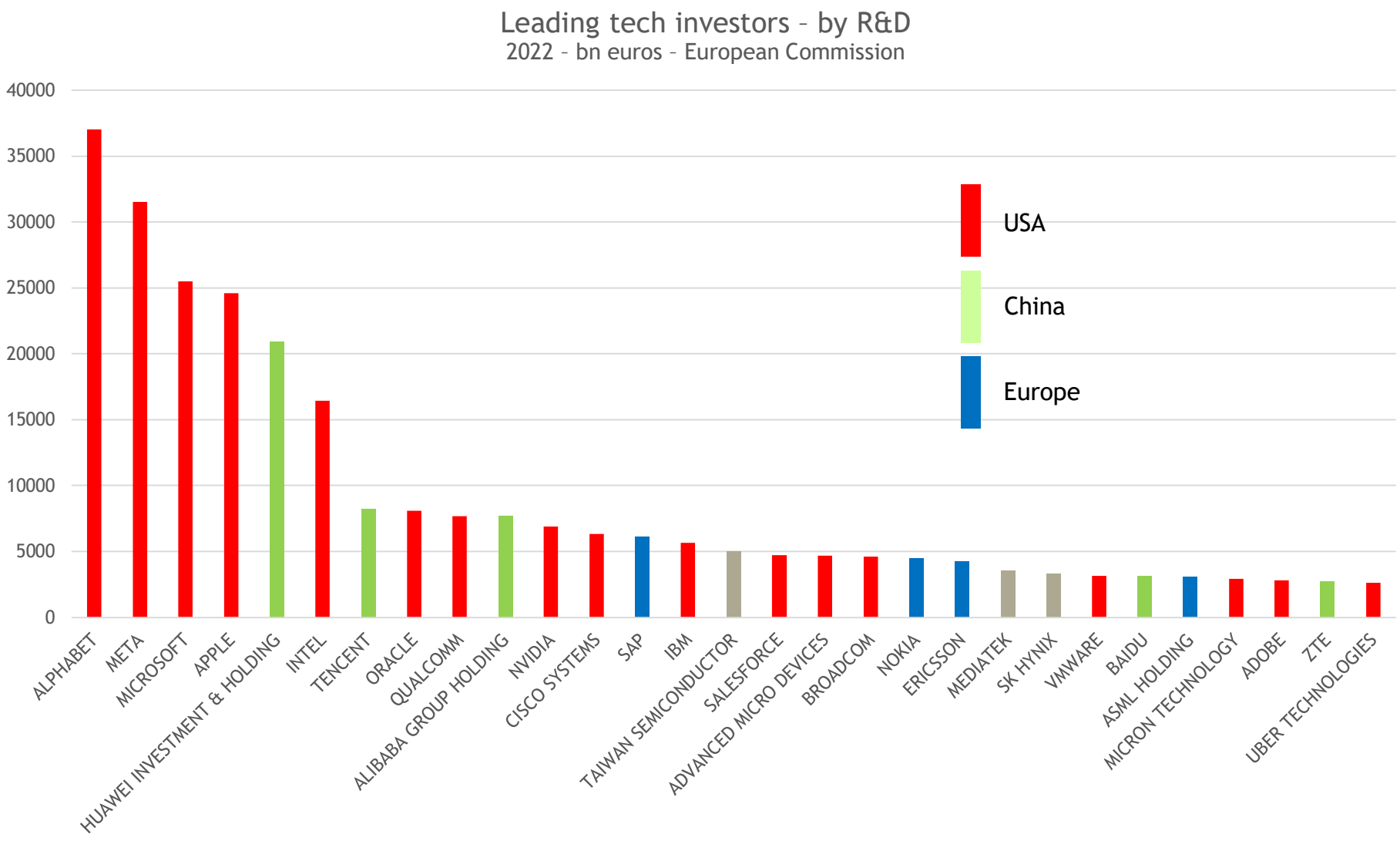


GDP in 2022 : $25 tn

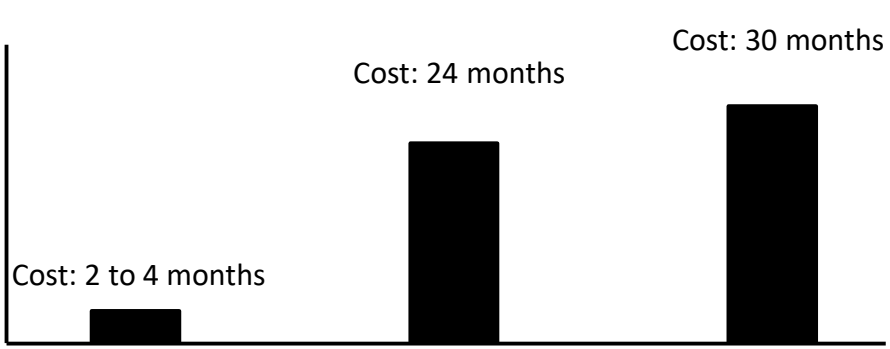
$20 tn

$18 tn

Tech leaders: Europe behind the USA and China



C. Cost of failure for large groups



Source: authors' experience in large groups (Alcatel-Lucent, Siemens, Atos), confirmed by informal exchanges with other groups

Microsoft

SAP

Meta

NOKIA

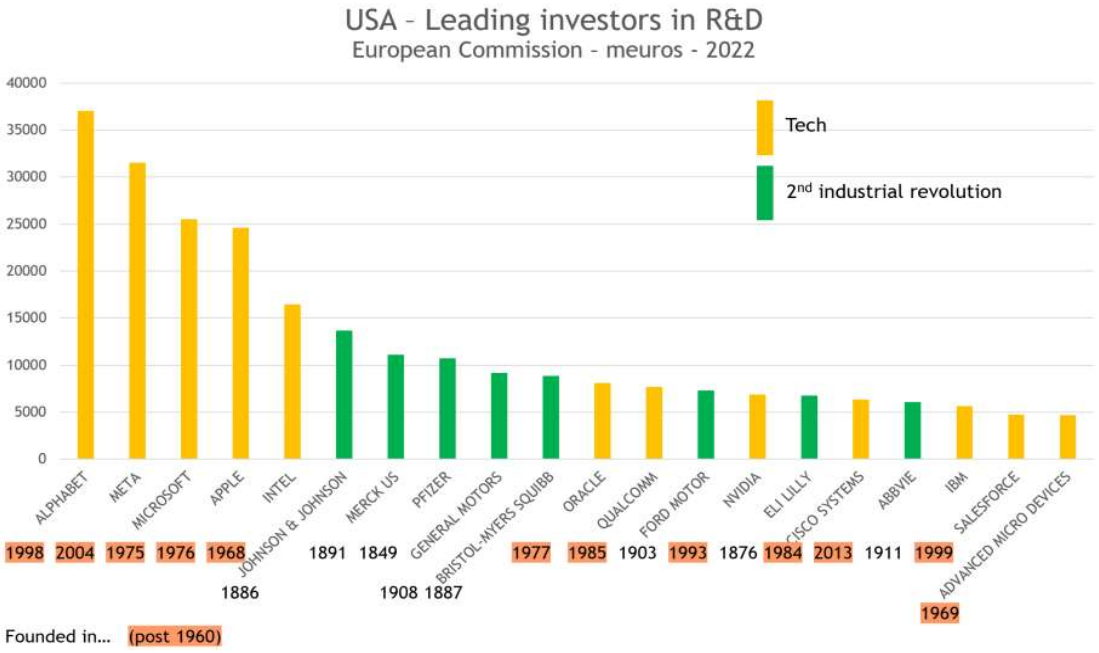
Source: Public announcements and financial reports, with assumptions on Europe's share of the workforce

Cost: includes severance pay, operational losses during negotiation, training, re-industrialization – in months of yearly pay

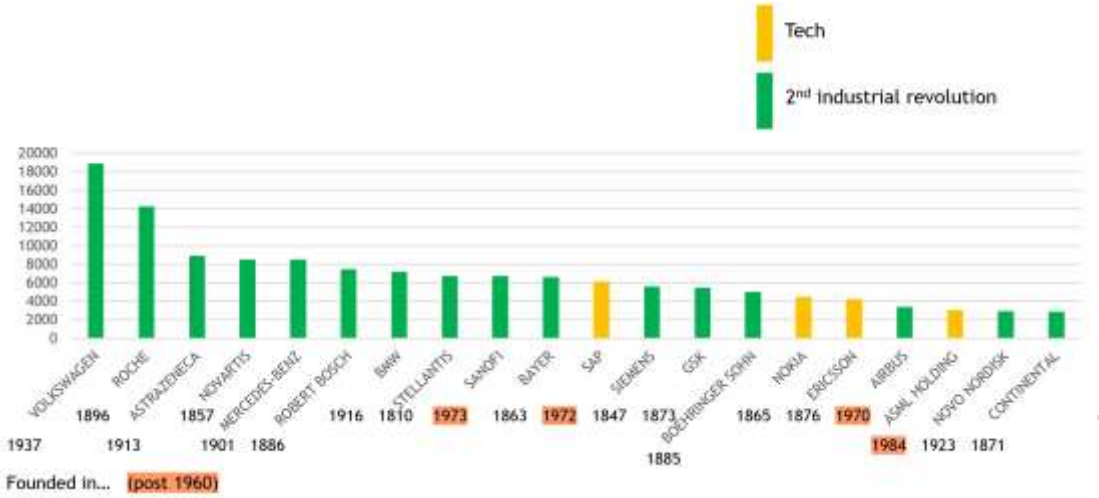
European unicorns – spring 2023

GP Bullhound, June 2023

C. Impact : specialization of continents



Tech



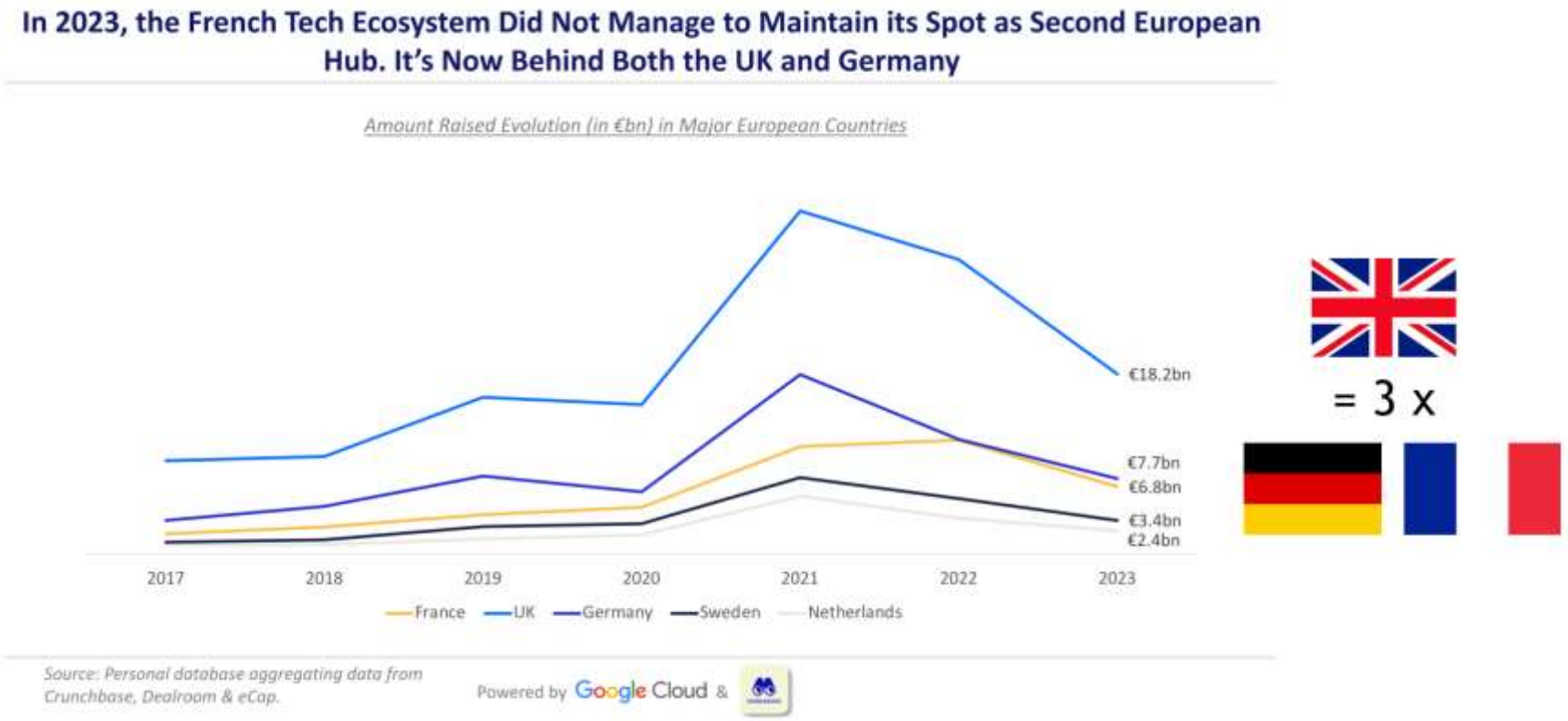
Automotive

Chemicals / Pharma

Aeronautics

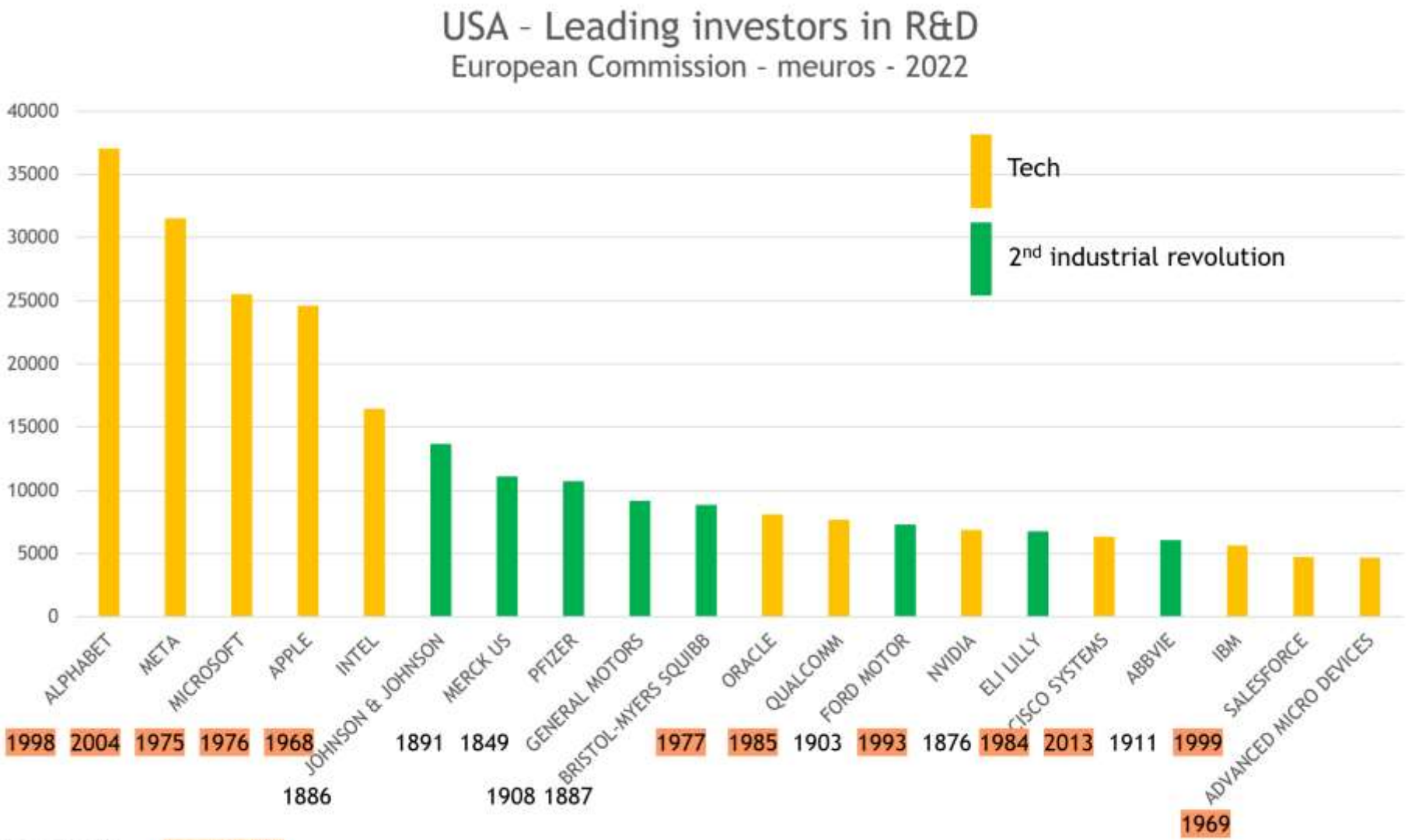
Energy

Investments into startups in Europe

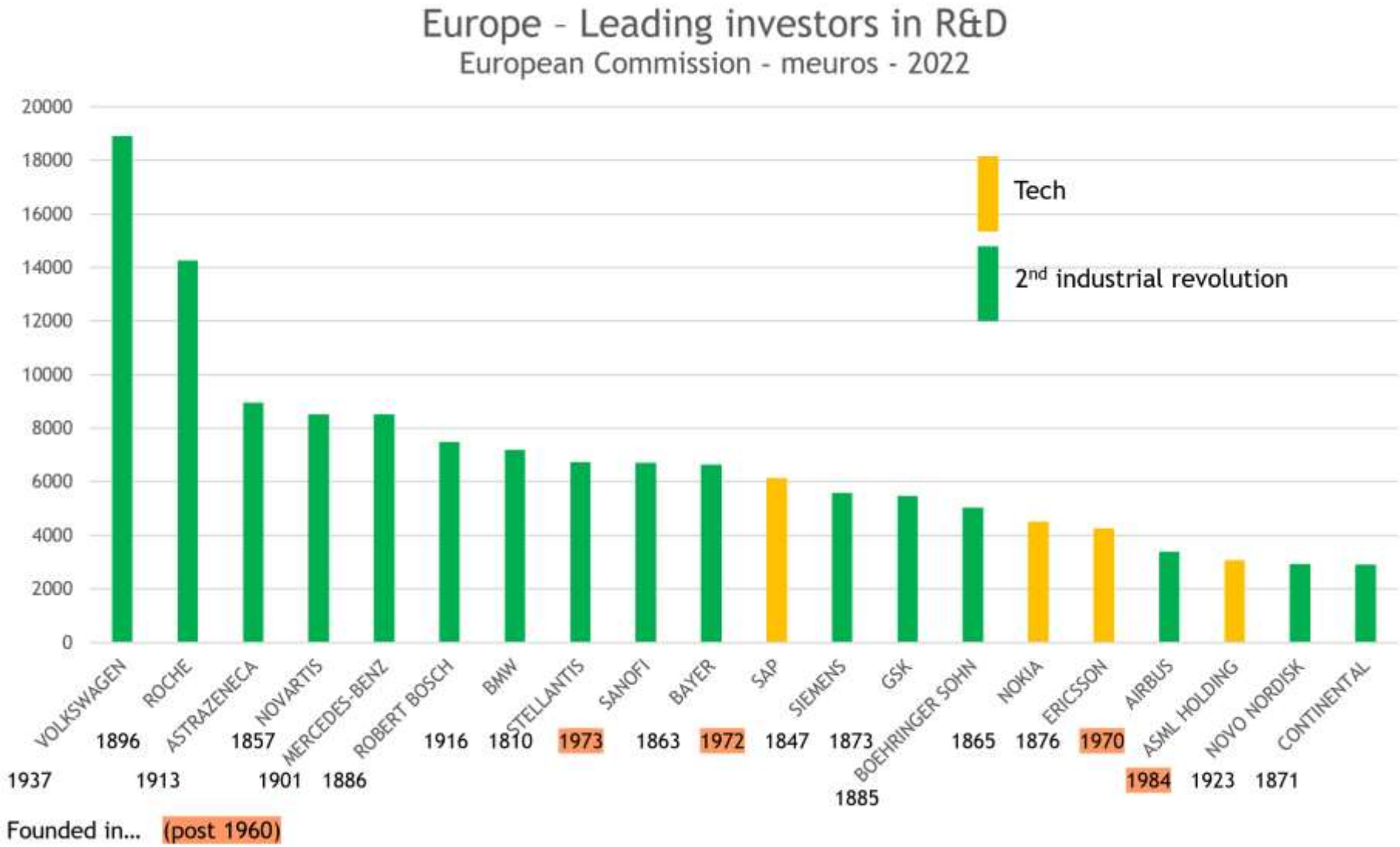


Eurazeo, 2023 – the State of the French Ecosystem

B. Impact on Large Groups: US specialization in tech…

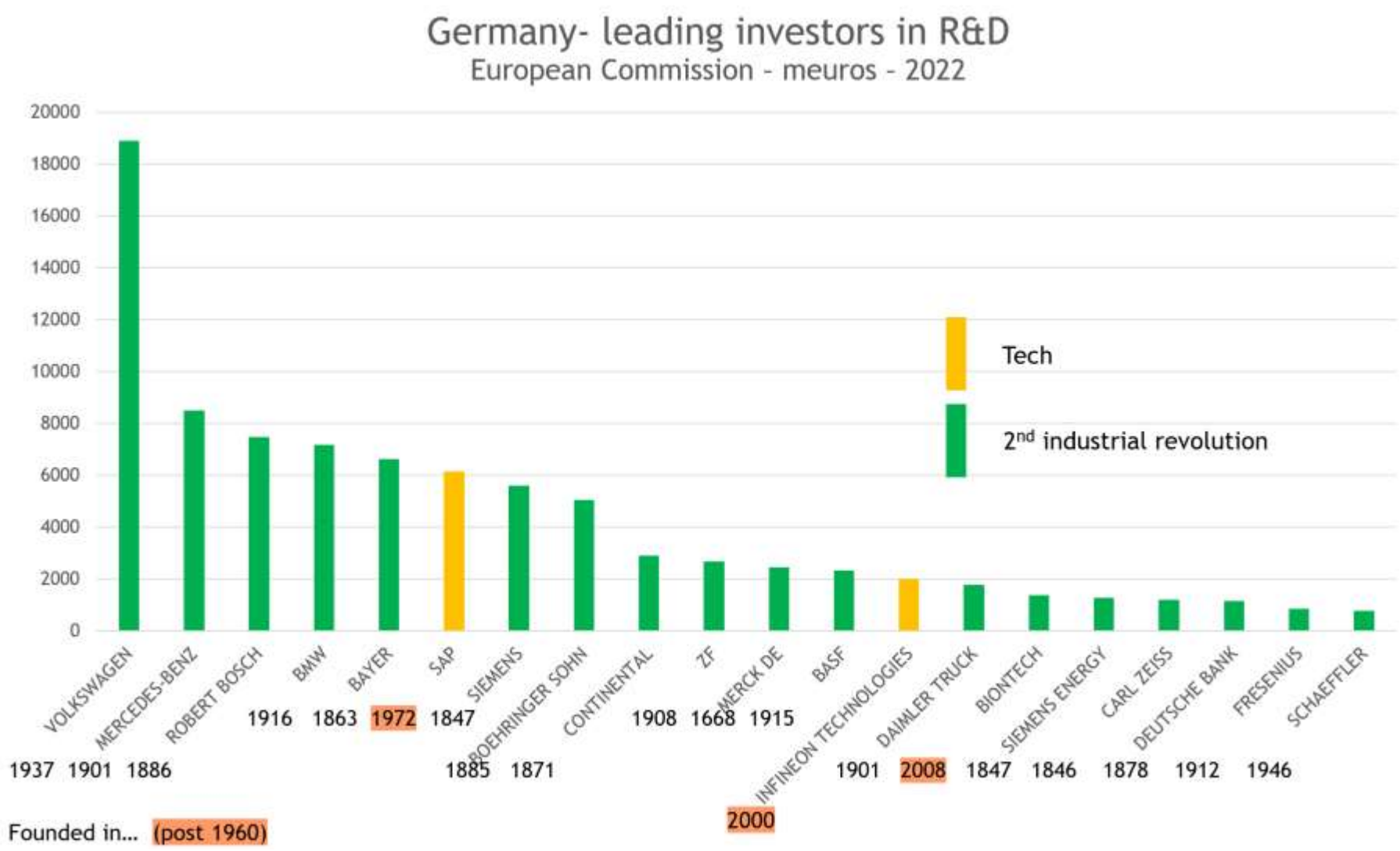


…Europe's specialization in 2nd industrial revolution

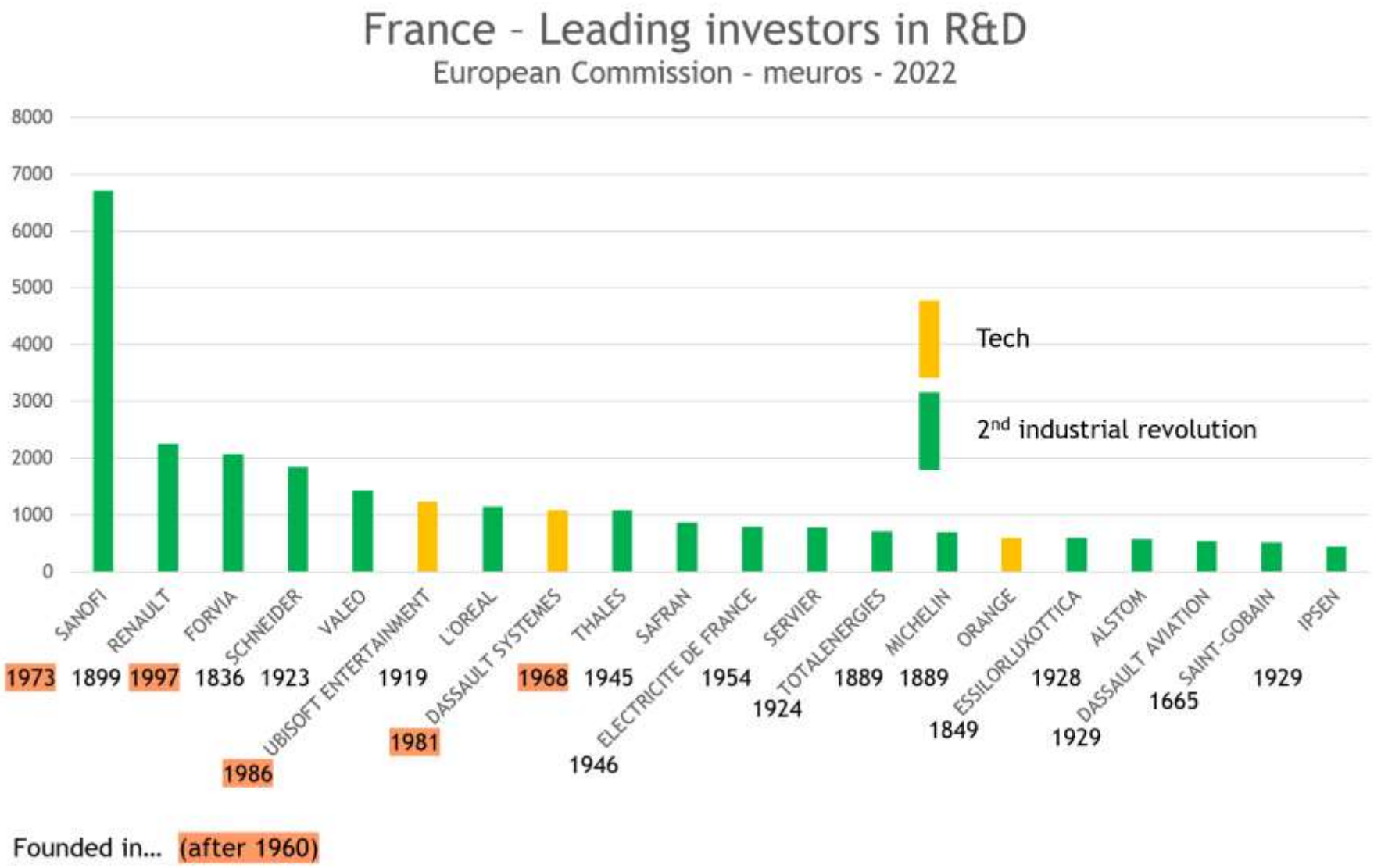


China's specialization: tech

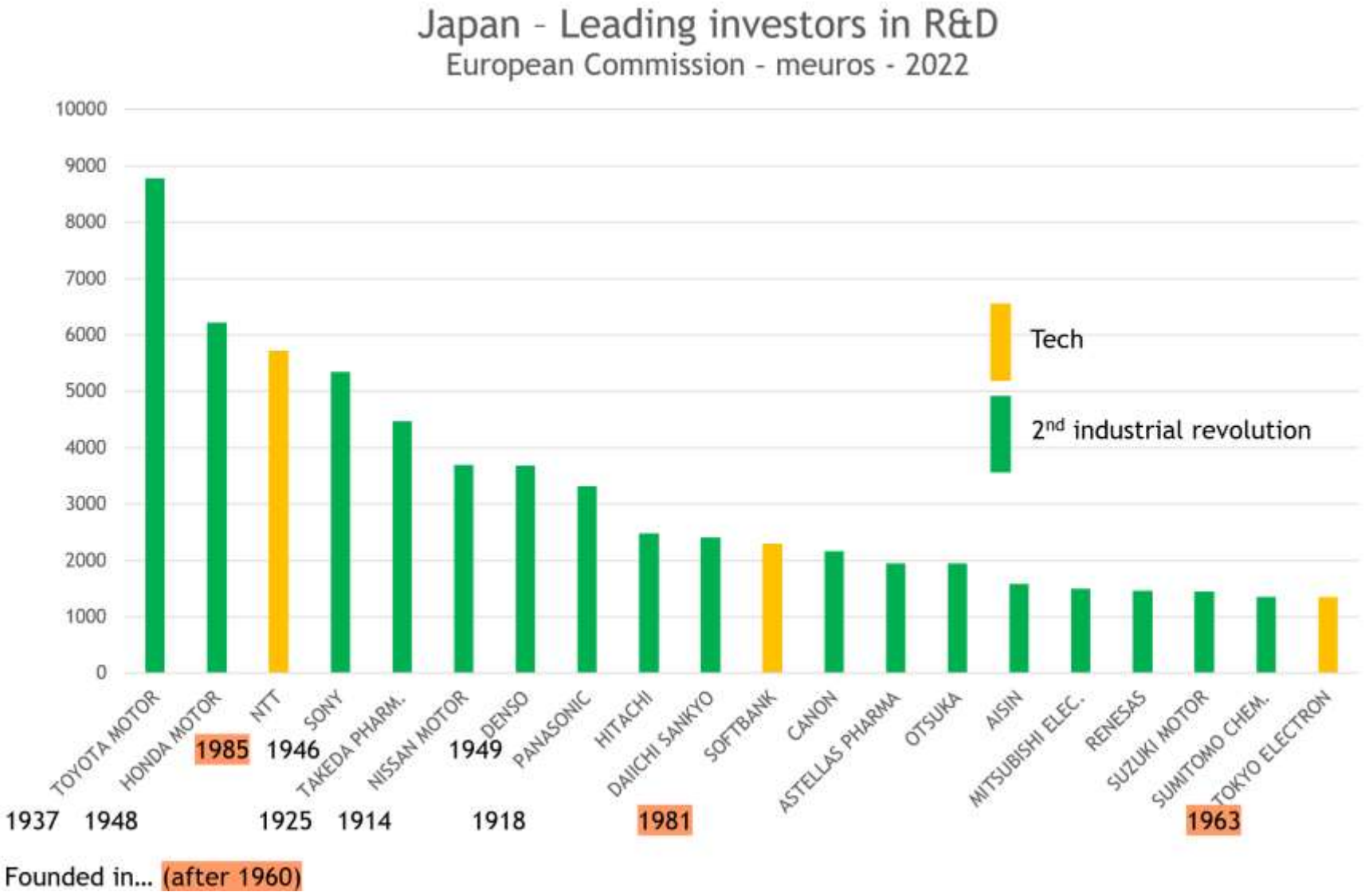
German specialization: 2nd industrial revolution



French specialization: 2nd industrial revolution

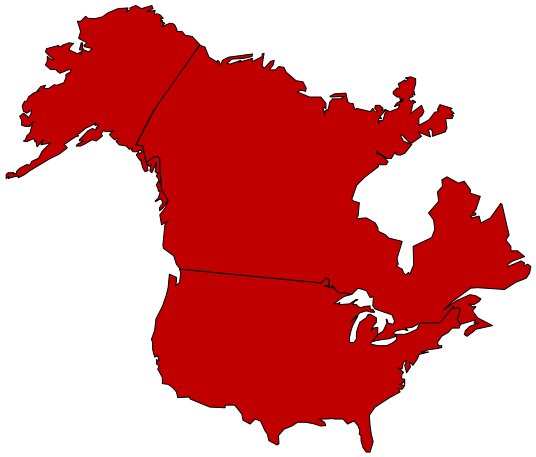


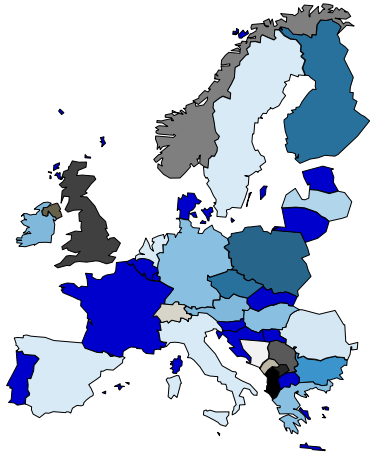
The Japanese specialization

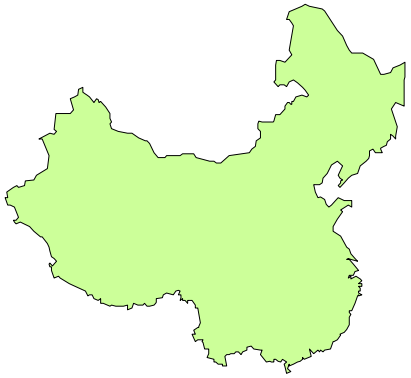


Fragmentation of the European market? (1/2)

Is the fragmentation of the European market a major cause for Europe's lag in tech?



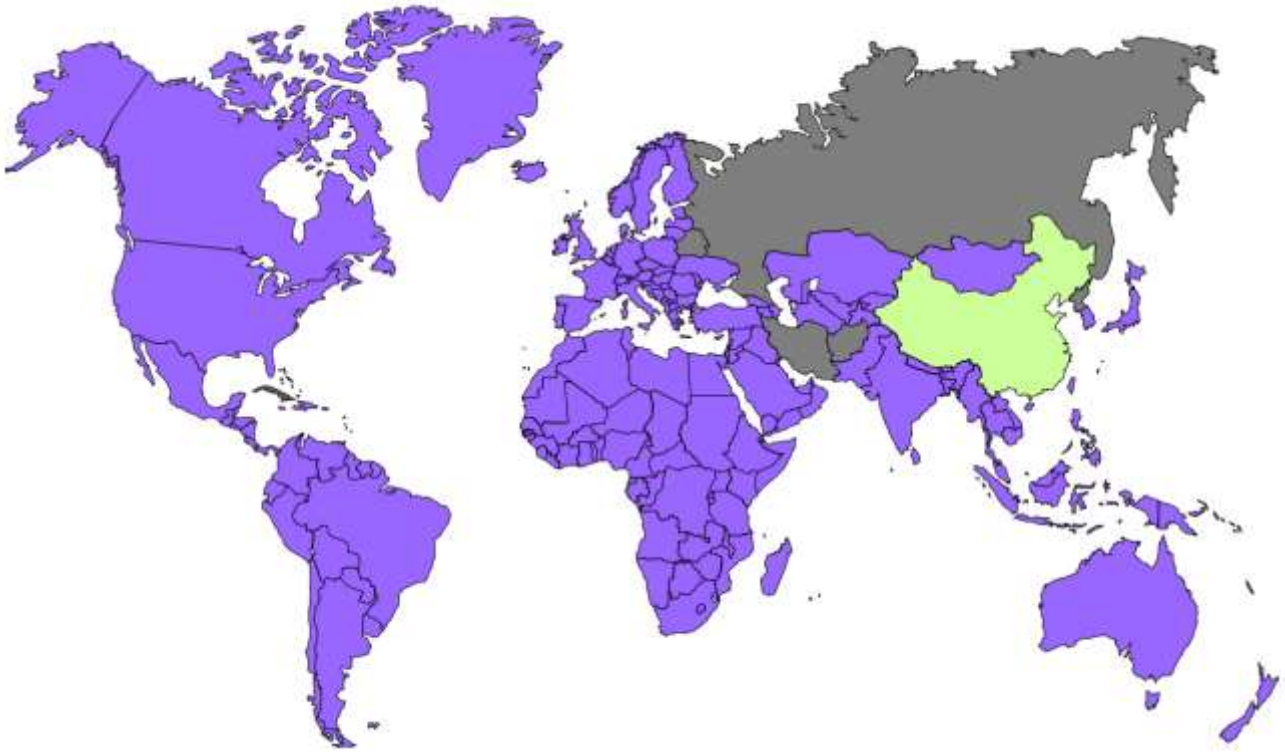




Yes for tech applications, namely on regulated markets like finance, healthcare, transportation

Fragmentation of the European market? (2/2)

Much less clear of deep tech, like semiconductor, software, OS, cloud, AI, telecoms, quantum computing… where the market is mostly the world



The tech markets are often worldwide, and not country specific

Industrial policies? (1/2)

1960 – 1970 in France : « Industrial policies»

Technological catch-up on US innovation

Concorde

High Speed Train

Nuclear Power Plants

1990 – 2000 in China : « Industrial policies »

Technological catch-up on Western innovation

High Speed Train

Nuclear Power Plants

Smartphones

Industrial policies? (2/2)

Possible Success

- For technology catch-up
  (e.g. semiconductor)

- With a large enough market
  (e.g. Europe)

- With legitimate political authority
  (e.g. national governments)

Probable failure

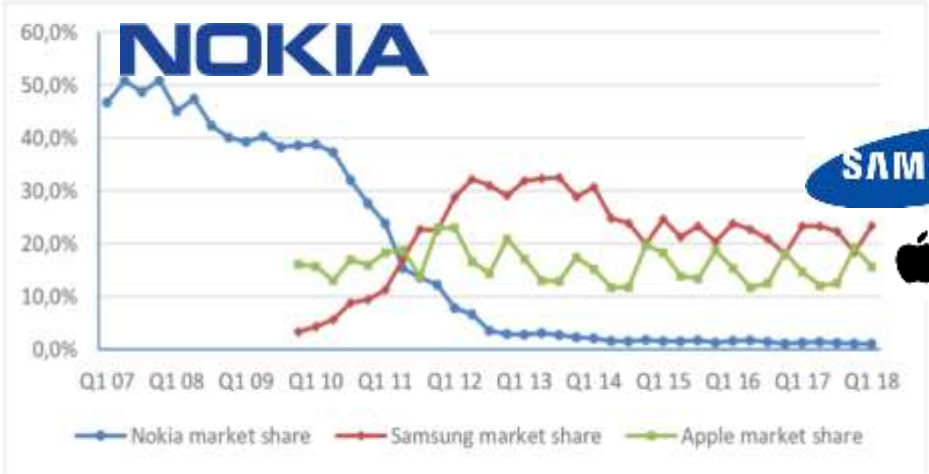
- For disruptive innovation
  (e.g. the unforeseeable)

- With a too small market
  (e.g. France)

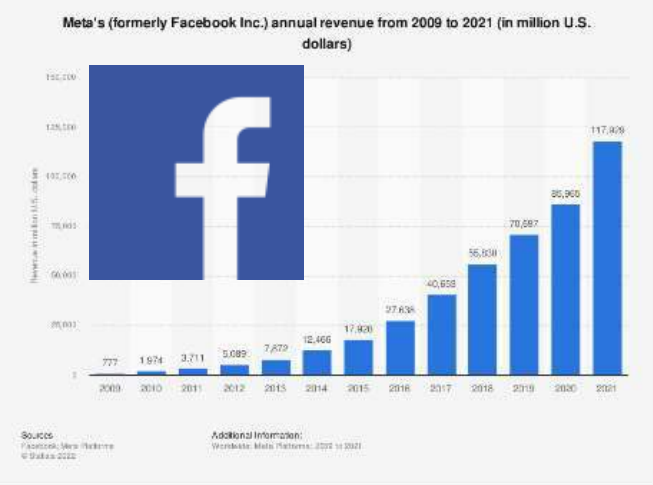
- With insufficient political authority
  (e.g. EU institutions?)

Disruptive vs Incremental innovation

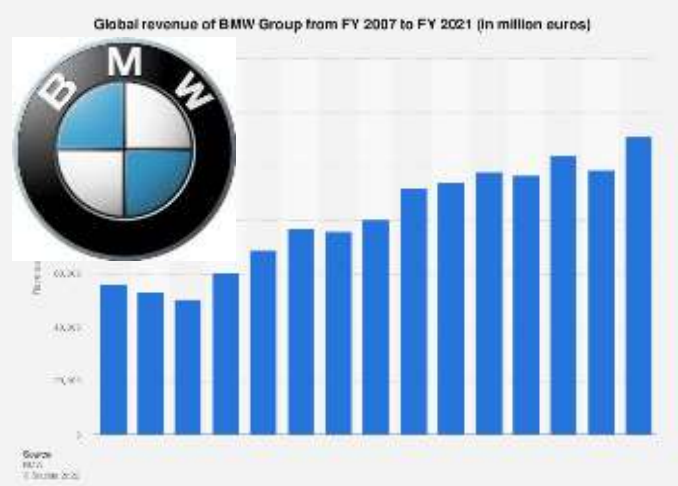
Disruptive innovation



Global market shares held by smartphones Nokia 2007-2017, Apple 2009-2017, Samsung 2009-2017 Source: Statista.com/statistics



Disruptive innovation



Incremental innovation

Innovation at GAFAM: 1 success for 5 projects

Success

amazon

Google

Microsoft

aws

kindle

prime

Gmail

Google Maps

YouTube

Microsoft Azure

LinkedIn

Microsoft Teams

Failures

Fire Phone

Mayday

Google+

Google Hangouts

Google Duo

Google Voice

Google wave

NOKIA

Bing

skype

Windows Mobile

Groove

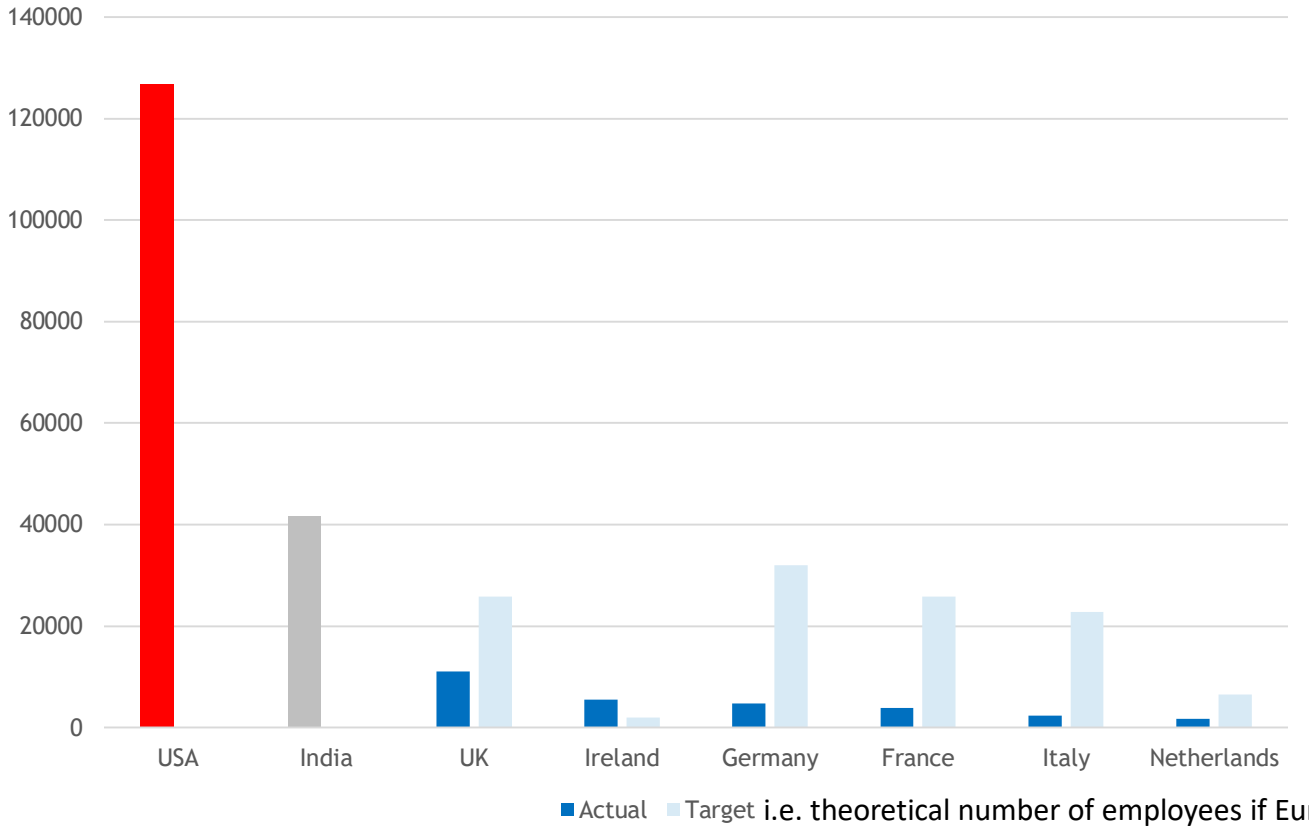
Cost of failure and tech decline

Where can a failing project be closed?

Share of world Tech R&D

Growing ■ Declining ■

Google employees



i.e. theoretical number of employees if Europe had the same attractiveness per capita

If Europe was as attractive as the US, Google would have 7 x more employees there

Innovation is possible within the Europe social model

US	Ger - Fr – It - NL – B – Sw	
~~Unemployment benefits~~	Unemployment benefits	 European Social Model 1880 - 1950
~~Health coverage~~	Health coverage	
~~Free education~~	Free education	
~~Pension systems~~	Pension systems	
~~Employment Protection Laws~~	Employment Protection Laws 	First oil crisis Schmidt Giscard – 1975

Academic Literature

Many Academic Papers Confirm that EPL is a First Order Factor in Europe's Lack of Investment in Disruptive Innovation (although usually based on Limited EPL Information, such as OECD High Level Indicators), in particular:

- Bartelsman, E., Gautier, P., & Wind, J. D. (2016). Employment Protection, Technology Choice, and Worker Allocation. *International Economic Review*.
- Berdugo, B., & Hadad, S. (2008). How Do Firing Costs Affect Innovation and Growth When Workers' Ability Is Unknown? Employment Protection as a Burden on a Firm's Screening Process. *The European Journal of Comparative Economics*.
- Bozkaya, A., & Kerr, W. (2014). Labor Regulations and European Venture Capital. *Journal of Economics & Management Strategy*.
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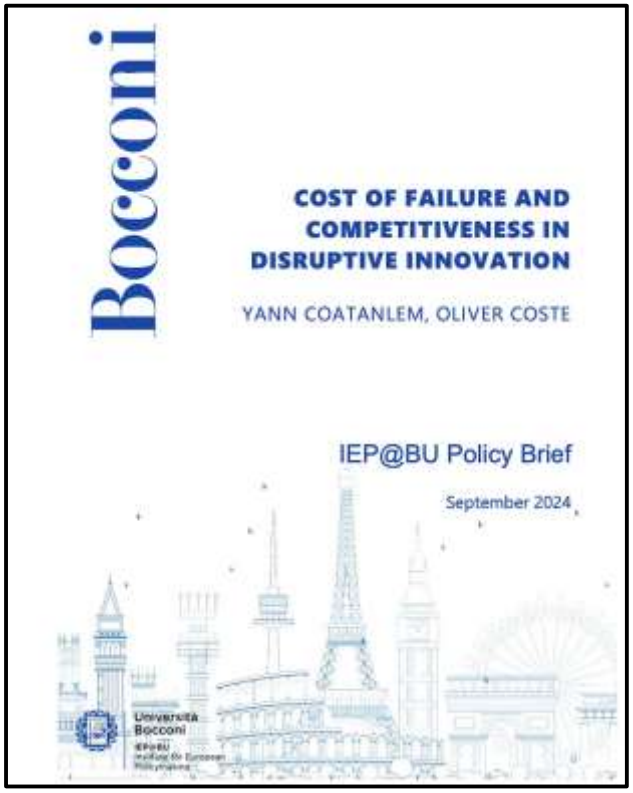
Question: How do we Confirm our Diagnosis on a Large Scale, so that we can move to a more operational stage?

The Goal is to Compare Restructuring Costs to Average Compensation and to Document Homogeneously Cost of Failure in Terms of Months of Employee Compensation



Authors Bios

Yann Coatanlem is an economist and entrepreneur.

A co-founder of GlassView, the inventors of Neuro-Powered Media™, he was previously head of several research departments at Salomon Brothers and Citigroup. He is currently the Chief Executive Officer of DataCore Innovations LLC, a Fin Tech start-up specialized in "antifragile" investment strategies.

Member of the board of the Paris School of Economics, he is the co-author of "Capitalism against Inequalities" (PUF, 2022), that received the "Prix Turgot" in 2023 and the "Prix Louis Marin" of the French Academy for Social Sciences *("l'Académie des sciences morales et politiques")*. In 2018, he received from the same Academy the Special Prize of the Political Economy, Statistics and Finance section for his book "The government of citizens" (PUF, 2017), as well as for the work he has accomplished at the Club Praxis, the think tank of which he is president, and that promotes the use of Big Data in policy making, in particular in revamping the tax and welfare system.

Yann Coatanlem was part of a Commission of economists appointed in 2016 by the *"Académie des sciences morales et politiques"*, along with Olivier Blanchard and Thomas Philippon, to make recommendations on the teaching of Economics in High School. He is also a French Trade Advisor and head of an economic mission on France attractiveness in collaboration with Business France and the French Embassies in the United States, Canada and Mexico.

He graduated from ENSIMAG and HEC Paris. He is a recipient of the French National Order of Merit and of the Gold Medal of *La Renaissance Française*.

More at https://fr.wikipedia.org/wiki/Yann_Coatanlem

Olivier Coste is an entrepreneur and a corporate executive of the tech industry.

After working at the European Commission (DG Competition, then Cabinet of Commissioner de Silguy), he served as industrial advisor to the French Prime Minister Lionel Jospin, where contributed to the launch of Airbus as a company. He worked for Alcatel-Lucent where he managed several activities with European or worldwide presence and created a mobile television business which acquired customers in Europe, the USA and India. He co-founded and managed a video chat startup for e-commerce, which was adopted by Microsoft and IBM in the USA and by SoftBank in Japan. He led an Atos division in the US. Throughout all these experiences, he had to cope with both rapid growth and rapid decline of tech activities on both sides of the Atlantic.

He has lived in New York since 2014. He published "Europe, Tech and War" and "L'Europe, la Tech et la Guerre" (Amazon, 2022), that won the Strasser Prize by France's Académie des Sciences Morales et Politiques, "Tech : quand l'Europe s'éveillera" in Commentaire in December 2023, and "La double surprise des telecoms" in Commentaire in Spring 2012.

He graduated from Ecole Polytechnique and Corps des Mines.

More at https://www.linkedin.com/in/olivercoste/