

# PTC'DC

Washington, D.C.

September 4, 2025



**Bill Barney**  
President & Chair  
PTC Board of Governors



# The Dawn of Superintelligence...

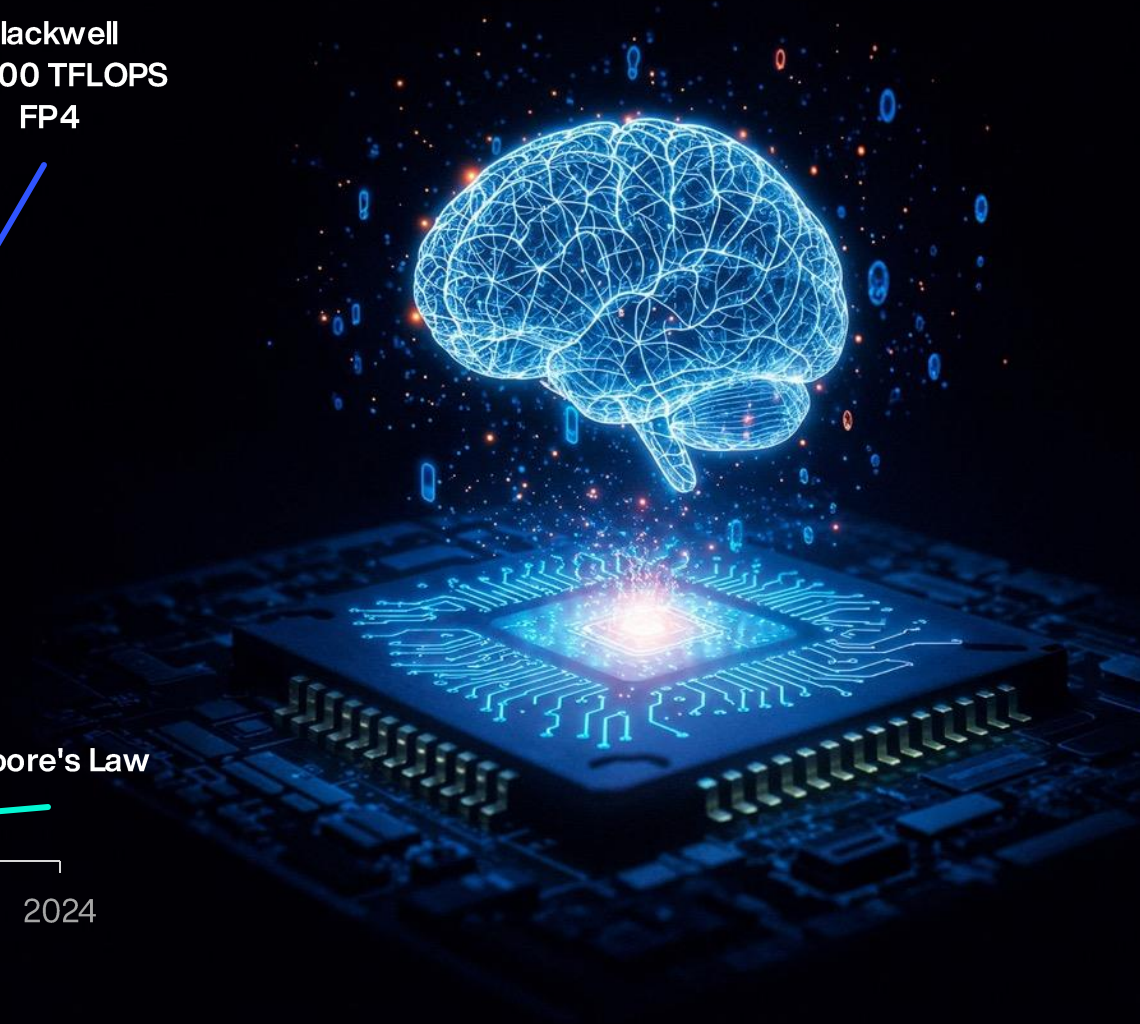
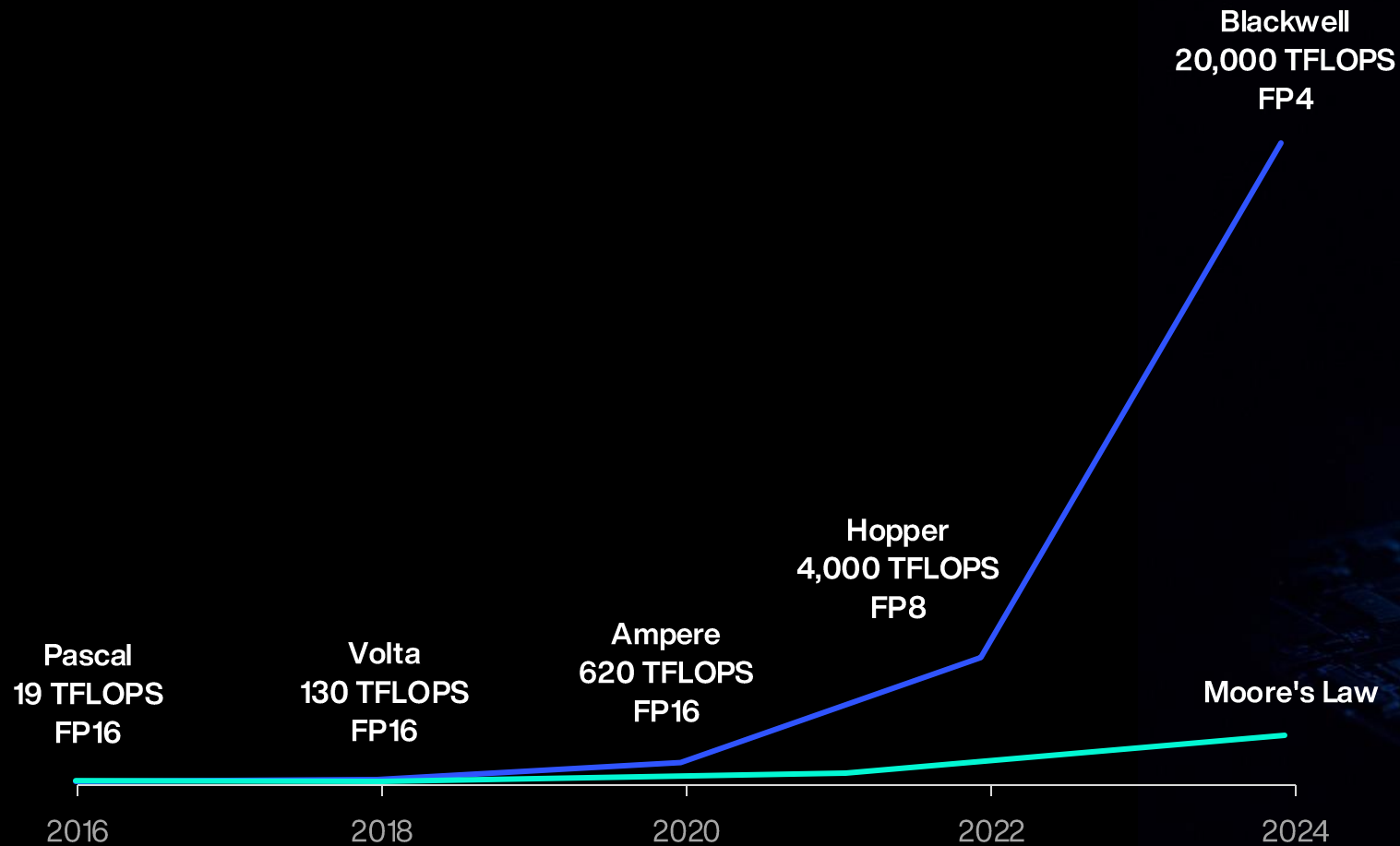


**“Artificial super intelligence will be 10,000 smarter than the human brain ...and will exist by 2035”**

➤ Masayoshi Son  
Chairman & CEO  
Softbank Group

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# We have witnessed the end of Moore's Law by AI !



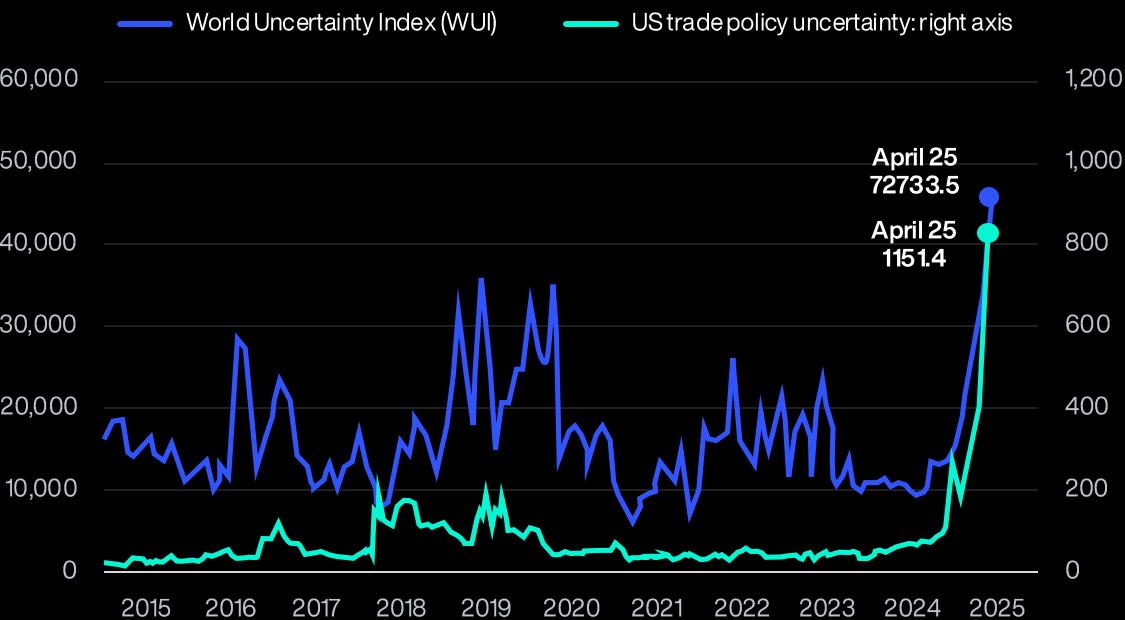
# While the bubble was expanding in the last four years – the dangers of a melt down have accelerated in the last two quarters



The World Uncertainty Index (WUI), an index measuring uncertainty in the world's economy and policies, is significantly higher than crises such as the COVID-19 pandemic. The US trade policy uncertainty index is more than four times higher than it was in 2018-19, when US-China trade friction was heating up.

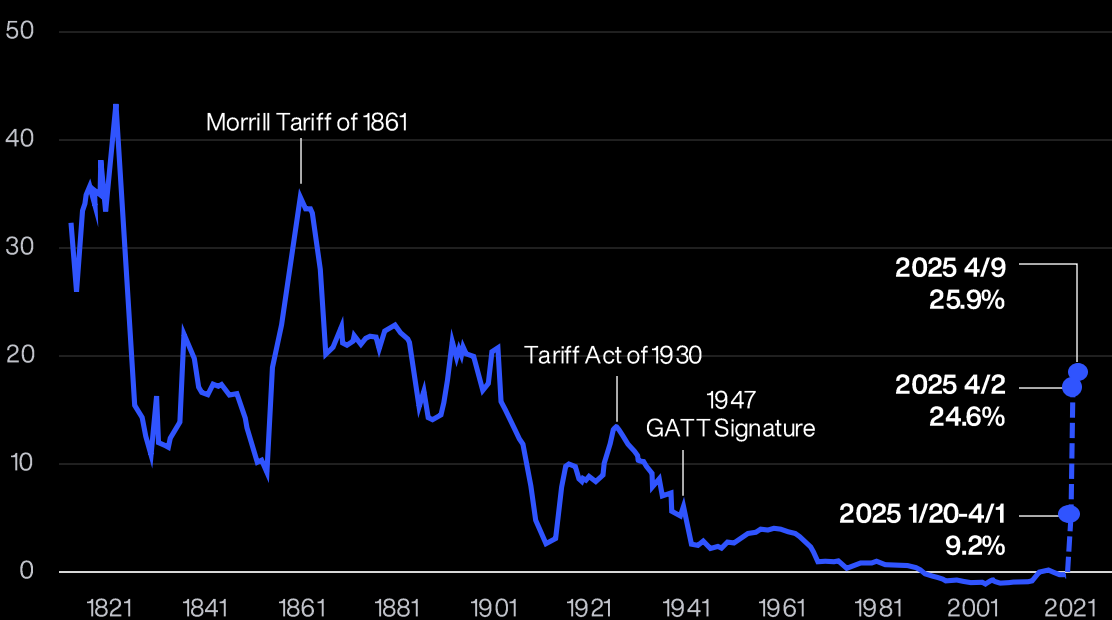
Based on the announcement as of April 9, the average effective tariff rate in the United States is over 25%. This is the highest tariff level in about 120 years since 1908.

## Global Economic and US Trade Policy Uncertainty Index



Note: The WUI is calculated by calculating the frequency of use of "uncertainty" and similar terms in the Economist Group's country reports. Trade policy uncertainty is calculated based on a text search of major US newspapers.


## Changes in the US effective tariff rates (average for all items)



Note: As of April 2, the reciprocal tariff rates by country announced on the same day were applied, and as of April 9, the 145% rate for China and the reduced reciprocal tariff rate (10%) were applied.



# Agenda



- Introduction
- Building the AI-Driven Digital Infrastructure
- Navigating Market Dynamics, Risks, and the Quest for a Virtuous Cycle
- The Geopolitical Chessboard: AI, Digital Infrastructure & the New Global Détente
- Securing the Digital Frontier: Preventing Disruption and Addressing Vulnerabilities
- AI's Future: Caution, Augmentation, and Our Path Forward
- Final Thoughts

# Building the AI-Driven Digital Infrastructure



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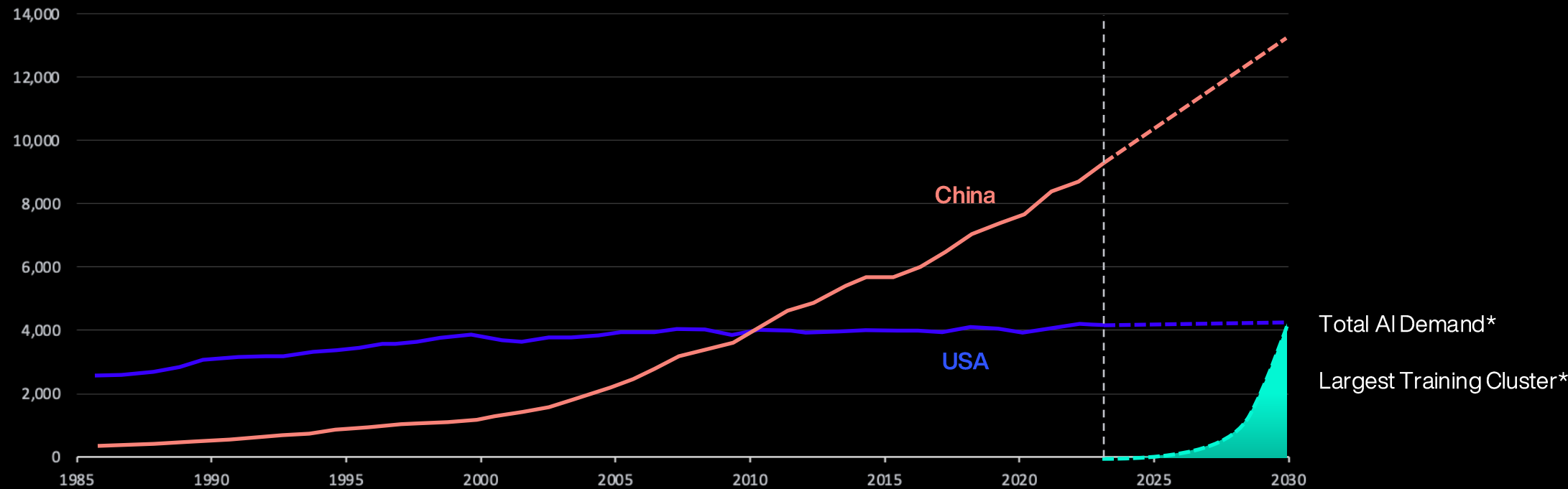


# There is a race to build the supporting infrastructure for AI ...and China is in the lead



## US & Chinese Electricity Generation

Annual Electricity Generation (TWh)



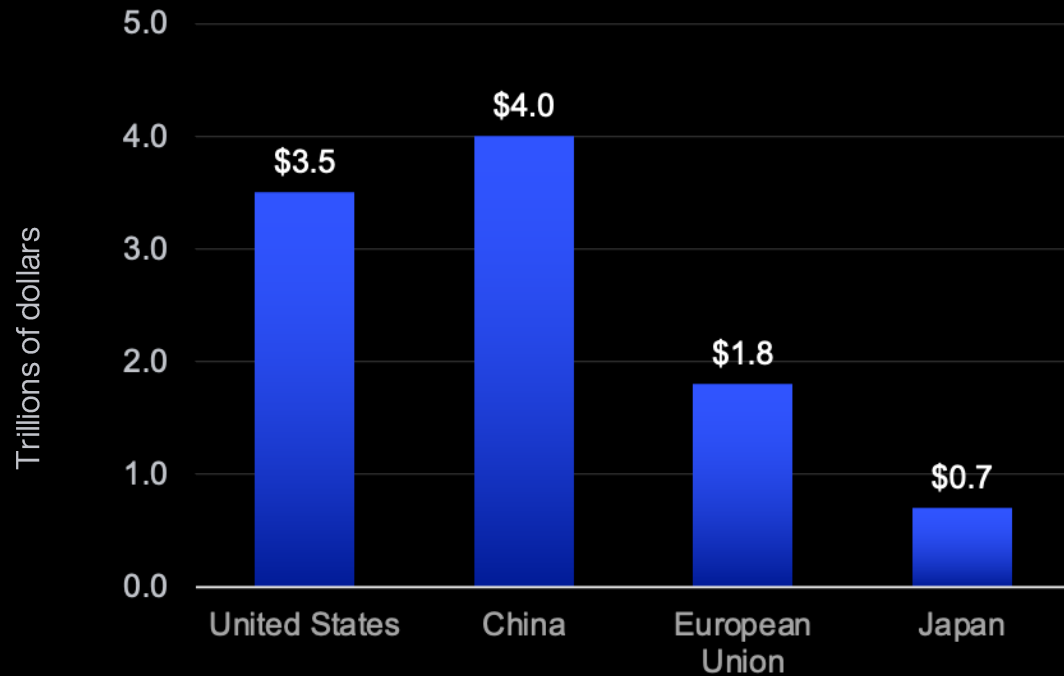
\*Back-of-the-envelope calculations.

Source: Situational Awareness: The Decade Ahead” by Leopold Aschenbrenner”, June 2024. Note the China Power Grid data has been superimposed on the US Grid Data for the sake of comparison.

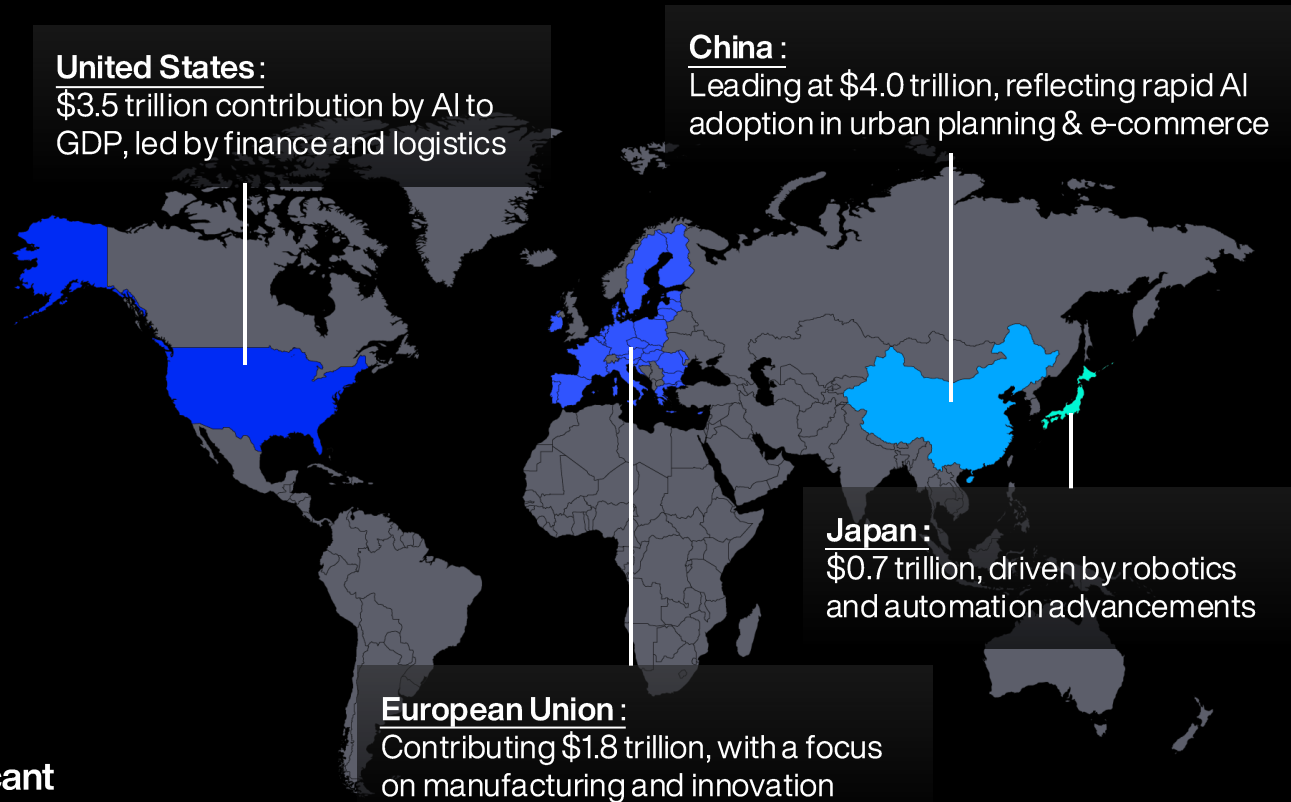
# Projected GDP contributions of AI



## Projected monetary contributions by AI to GDP in 2025



AI is a major driver of economic growth across regions, with significant impacts on productivity, efficiency, and new industry development.





**“AI has the potential to be more transformative than electricity or fire.”**

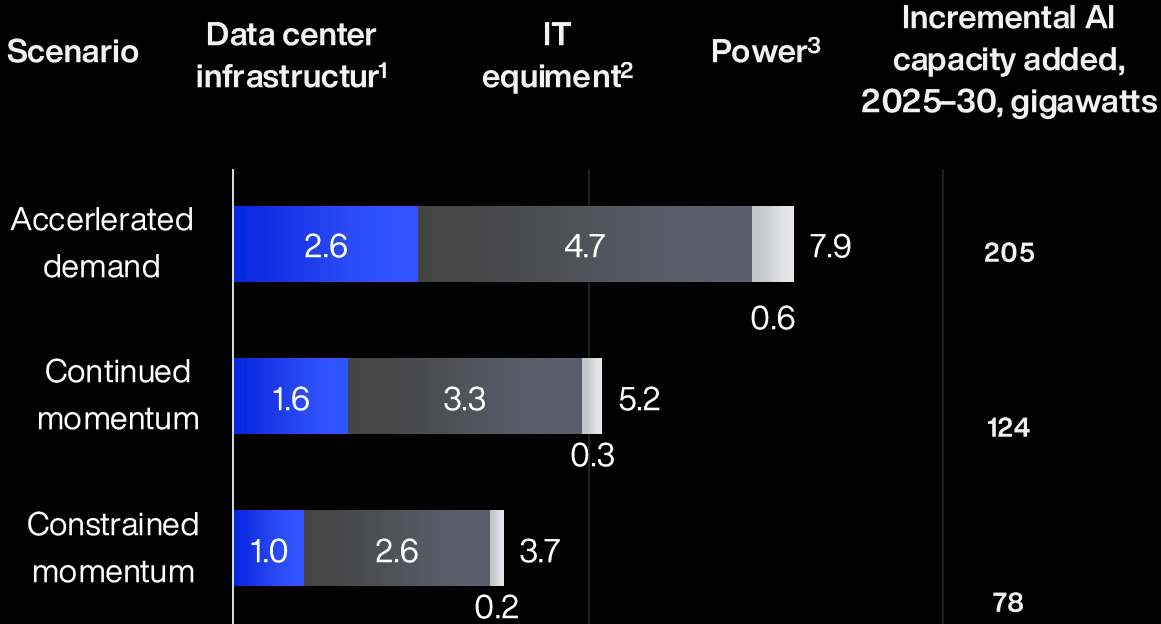
➤ Sundar Pichai  
CEO of Google



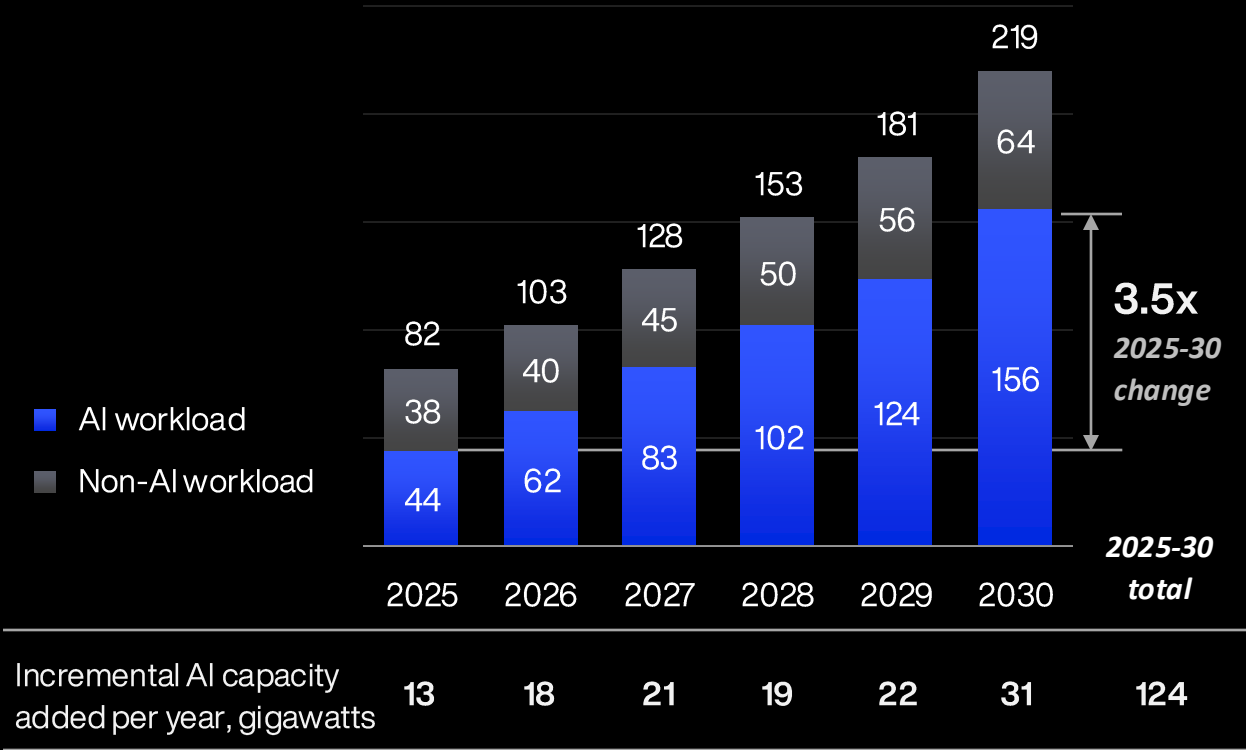
# Despite the chaos of the first 90 days of 2025 – Demand for AI tech is accelerating



Global data center total capacity expenditures driven by AI, by category and scenario, 2025-30 projection, \$ trillion



Estimated global data center capacity demand, 'continued momentum' scenario, Gigawatts

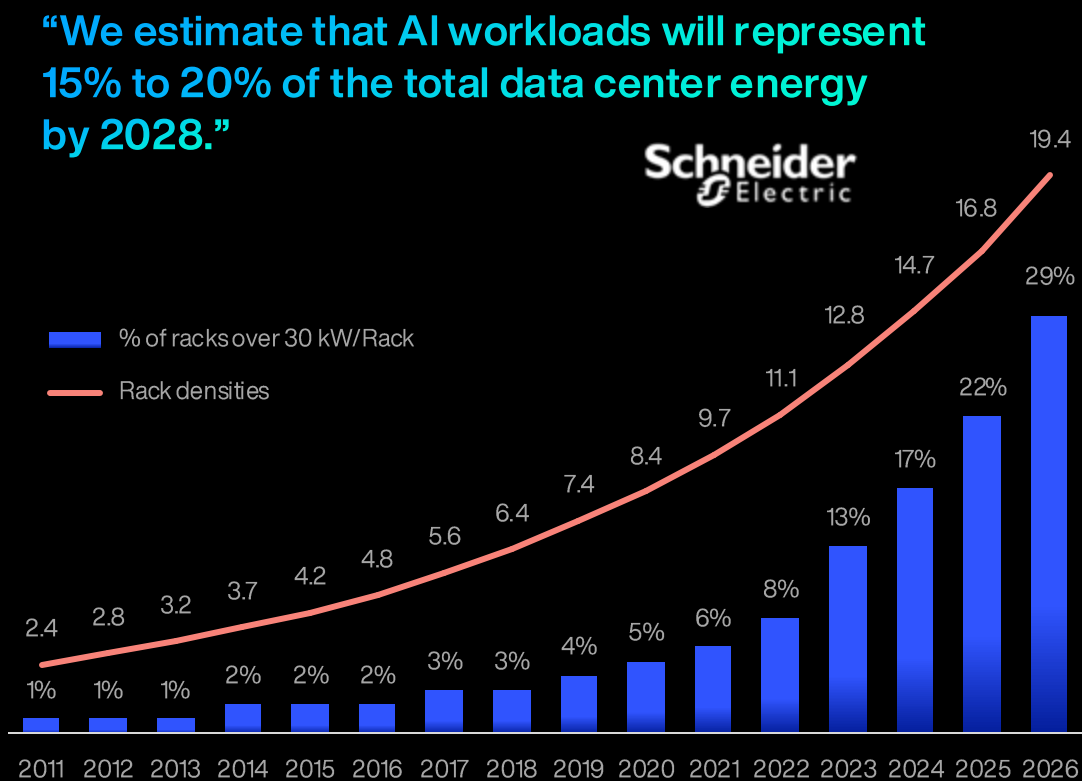




# These components for the digital infrastructure are evolving

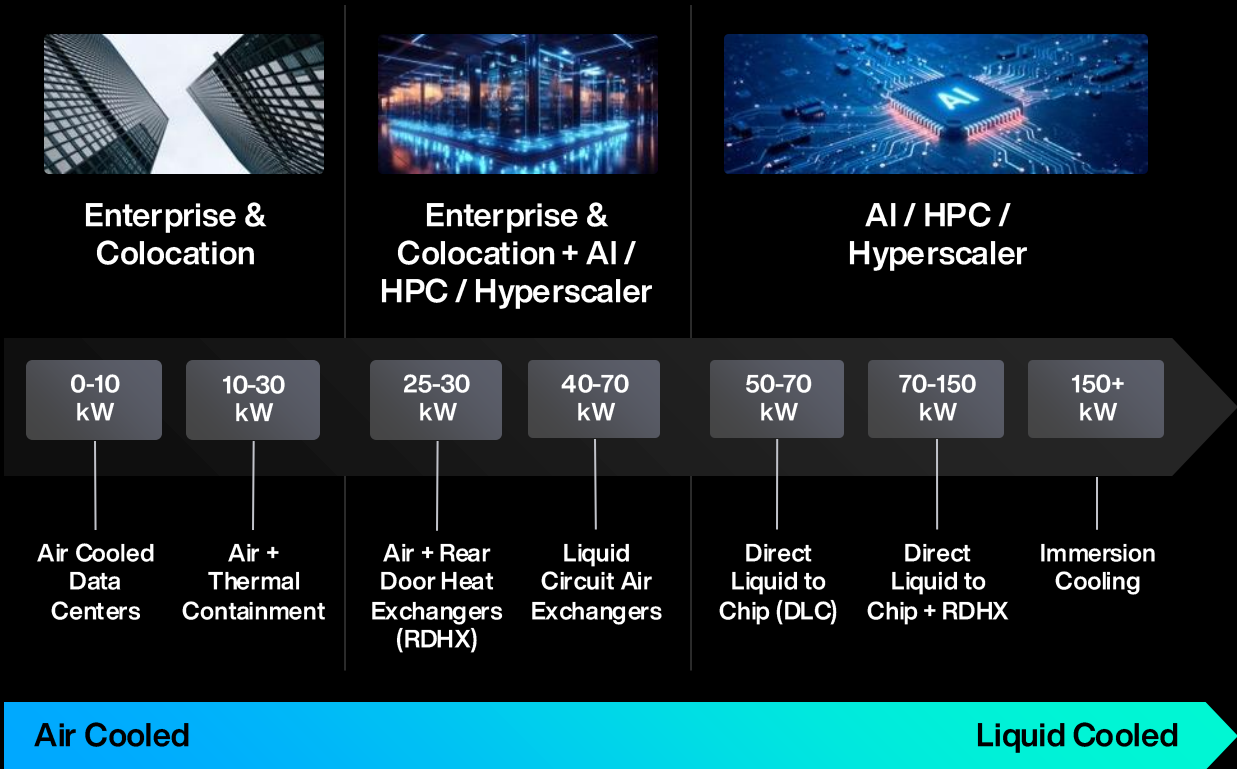


Average Rack Density Increase and % of Racks >30kw



Source: EY-Parthenon Analysis, Data Center Dynamics.

Cooling Technology by Threshold of Rack Densities



Source: Digital Realty.



# Navigating Market Dynamics, Risks, and the Quest for a Virtuous Cycle

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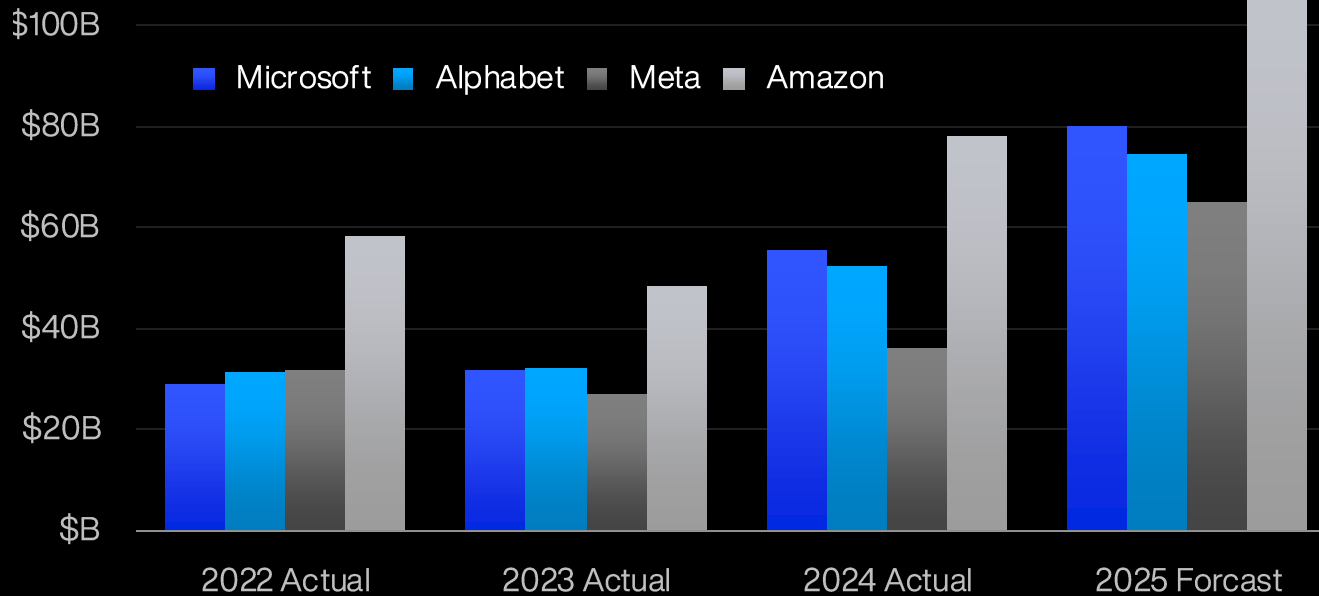


# How the Big Spenders are Shaping AI



## Big tech's big AI bet

Actual and announced capital expenditure and investment plans as of February 2025



- Tech giants are making bold bets on AI, pouring billions into research, infrastructure, and talent to dominate the future.
- Microsoft, Alphabet, Meta and Amazon are expecting to spend a cumulative \$325 billion in capital expenditures and investments in 2025 driven by a continued commitment to building out artificial intelligence infrastructure.
- Together, this marks a 46% increase from the roughly \$223 billion those companies reported spending in 2024.
- Collaborations with innovators like OpenAI and Anthropic are driving groundbreaking advancements and redefining what's possible.

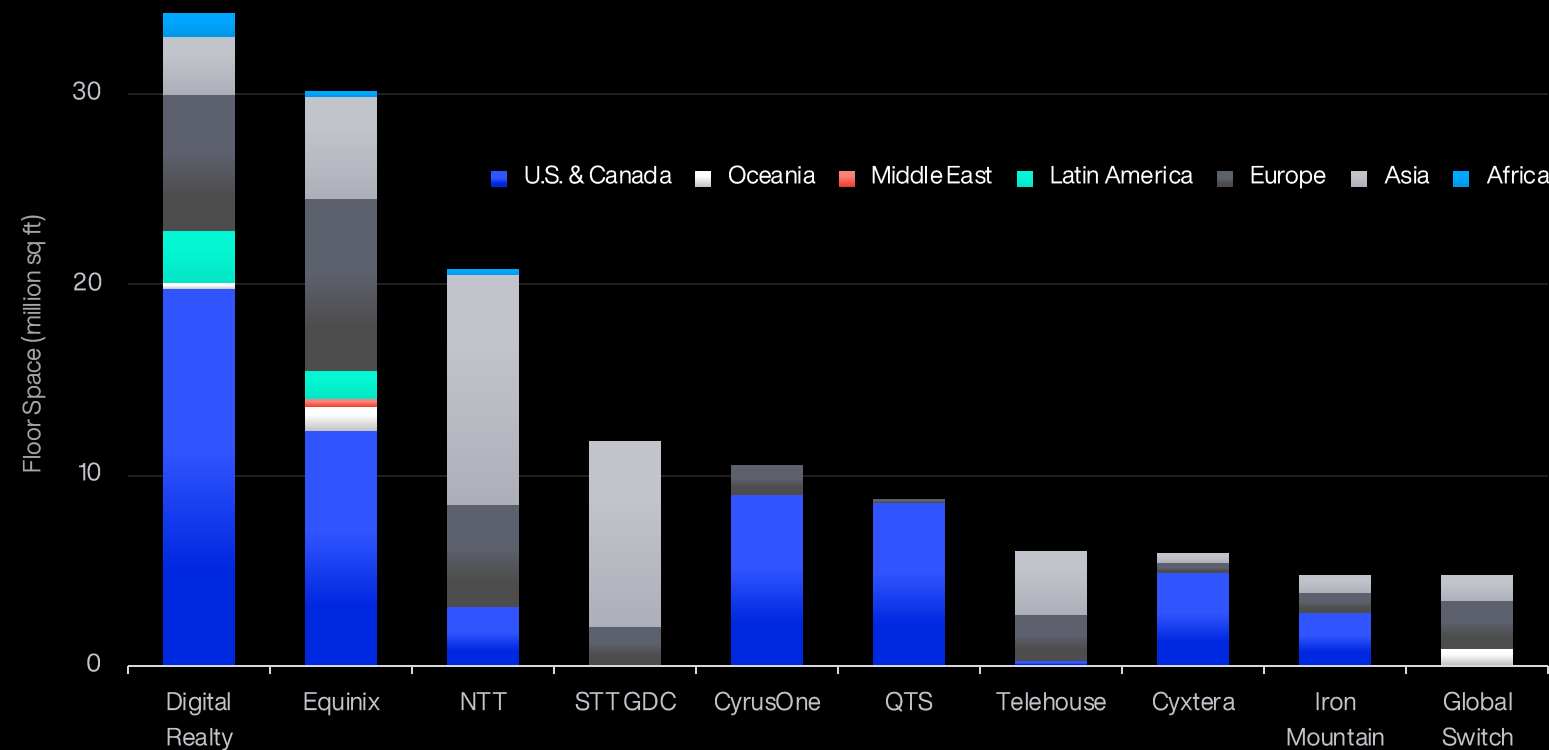
Source: Company data

Note: Microsoft fiscal years end June 31, and all figures include finance leases

# The data center market has been dominated by about 10 players for nearly 20 years, thriving by primarily serving 20 major buyers



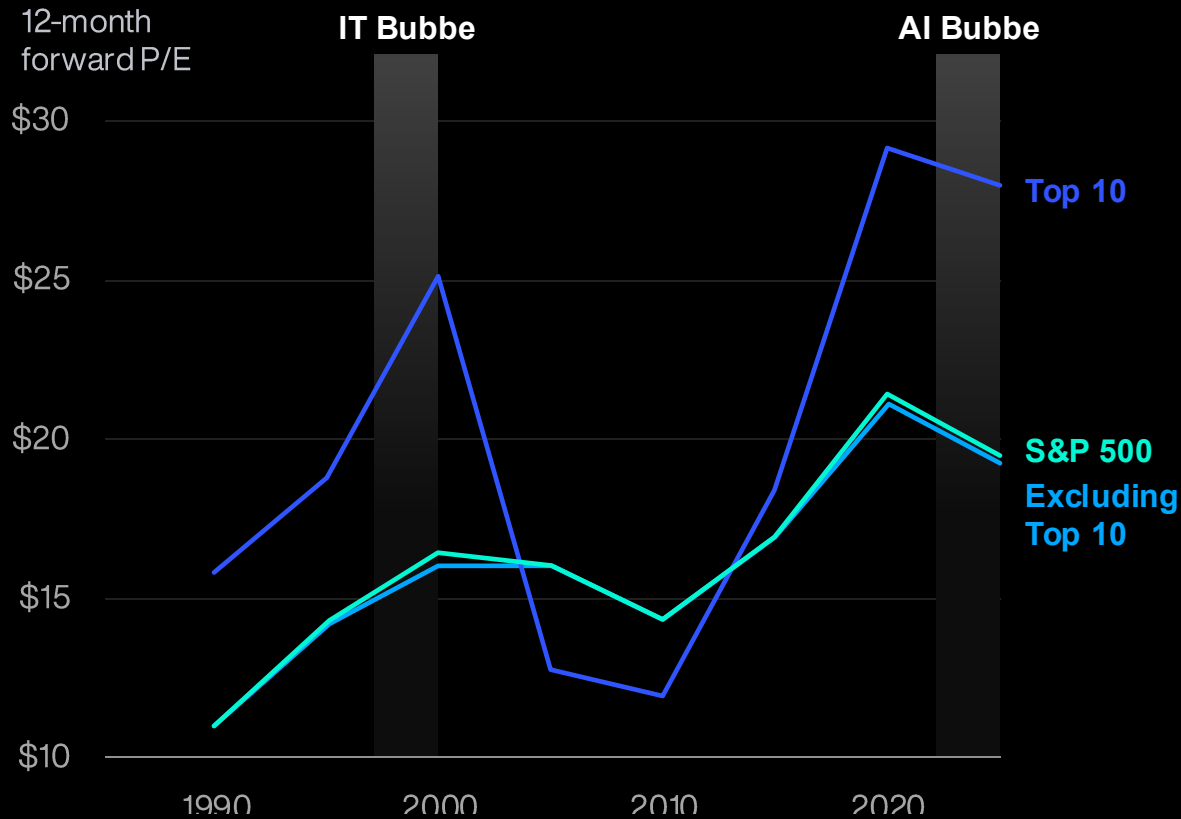
Data center operators  
Largest Commercial Data Center Operators, 2023



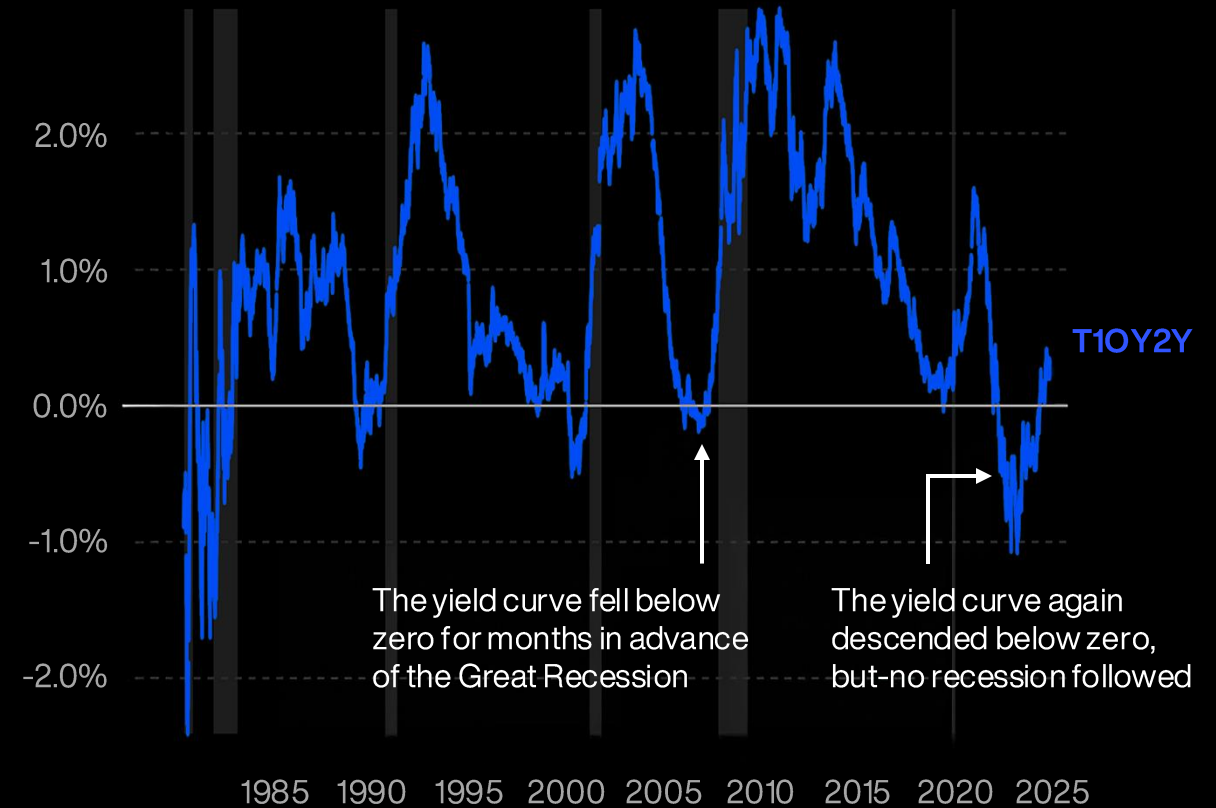
Source: TeleGeography

DRT has roughly 3 GW of capacity under management. If any of the five projected Mega AI centers get built – those companies would overnight become the largest data center companies in the world

# There are many similarities between where we sit right now, and the tech melt down of 2001...



Sources: Bloomberg, Apollo Chief Economist • Data as of July 2025



Source: Federal Reserve Bank of St. Louis via FRED, National Bureau of Economic Research

# A massive correction can be avoided yet it will require flawless execution of a “back to growth” strategy



Capturing innovation and overseas demand, creating a virtuous cycle in the economy.

## The vicious cycle of shrinking equilibrium

## To break the vicious cycle...

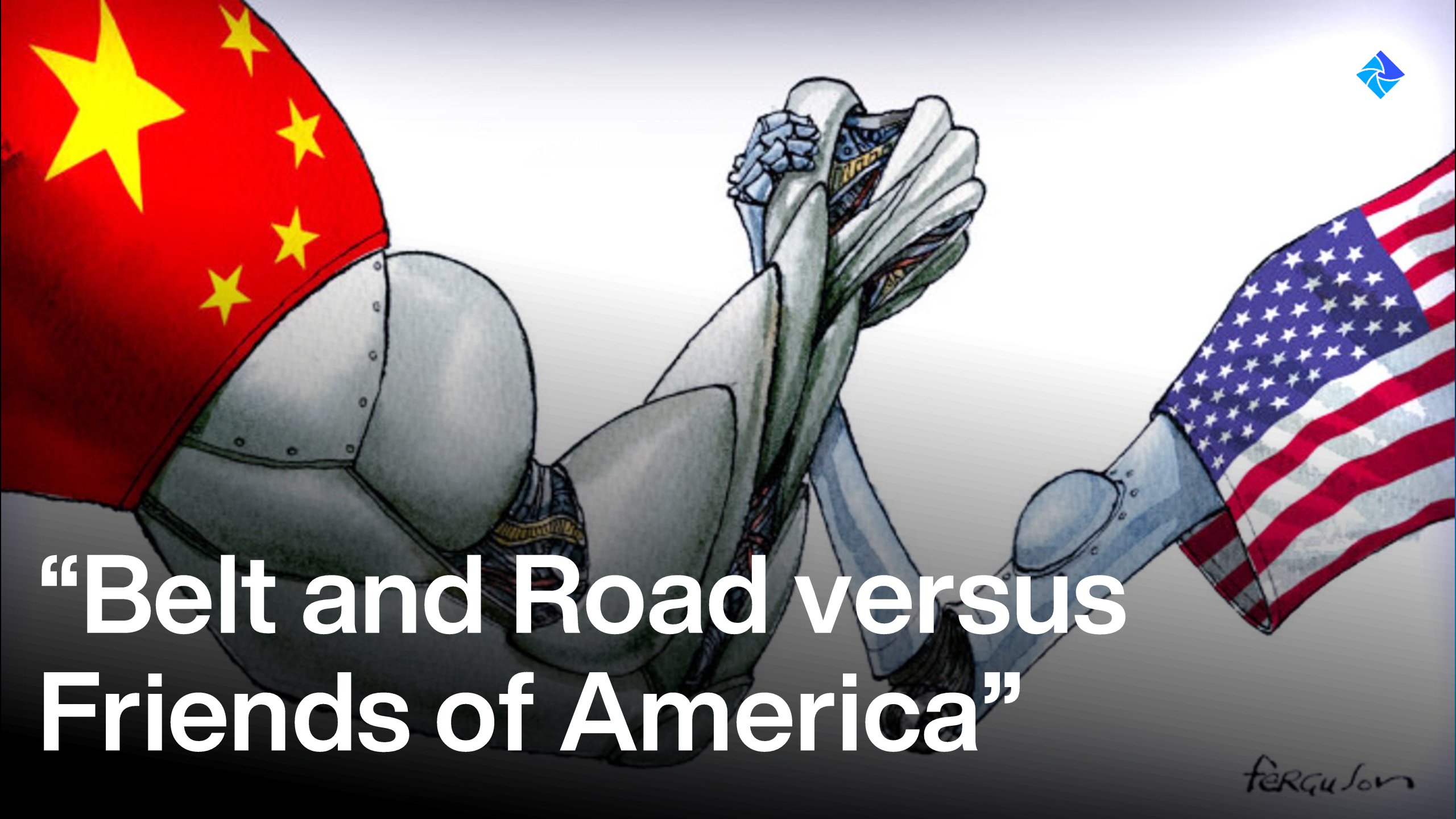






# The Geopolitical Chessboard: AI, Digital Infrastructure & the New Global Détente

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# “Belt and Road versus Friends of America”

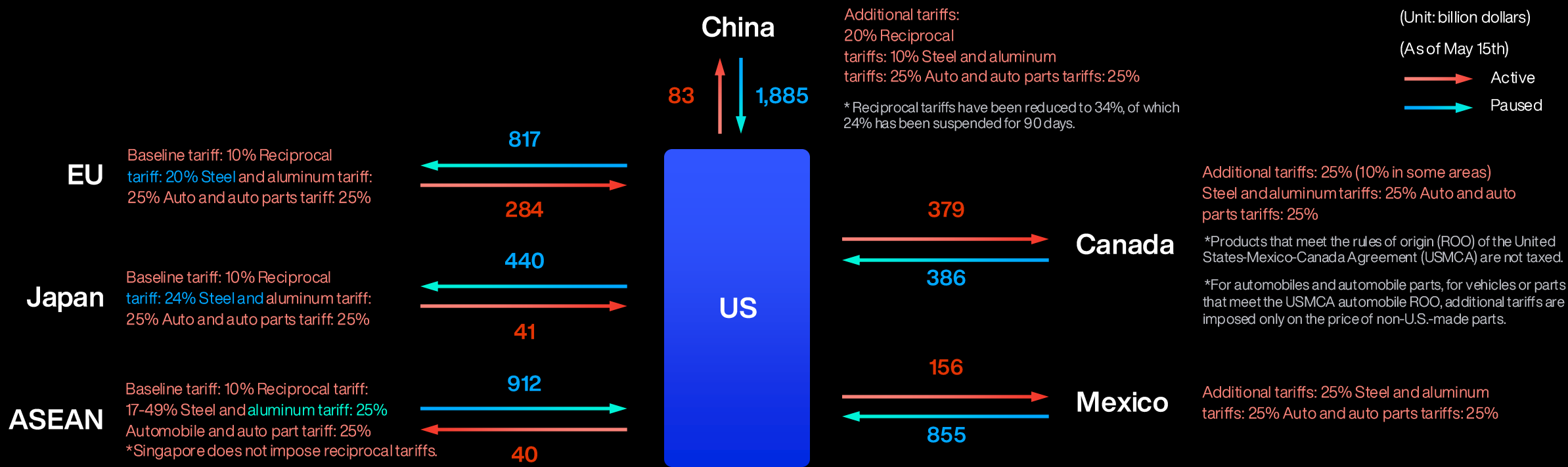
ferguson

# The US trade situation has become untenable...



- China 's exports of final durable consumer goods to the United States were \$188.5 billion, far more than any other major country or region.
- In terms of imports, one-third of the total is dependent on China, while exports from the United States to China account for less than one-twentieth of the total.
- With regard to other major countries and regions, with the exception of Canada, the United States also has a large trade deficit.

## Trade of final durable consumer goods (export basis) in 2024



Notes: 1. Total of final durable consumer goods processed products according to the 5th edition of the UN BEC. 2. The tariff rates listed next to each country are the tariffs imposed by the US on each country/region. 3. The amount of exports from China and ASEAN to the US is calculated by multiplying the amount of imports from China and ASEAN to the US (US statistics) by the CIF/FOB rate.

Source: UNComtrade

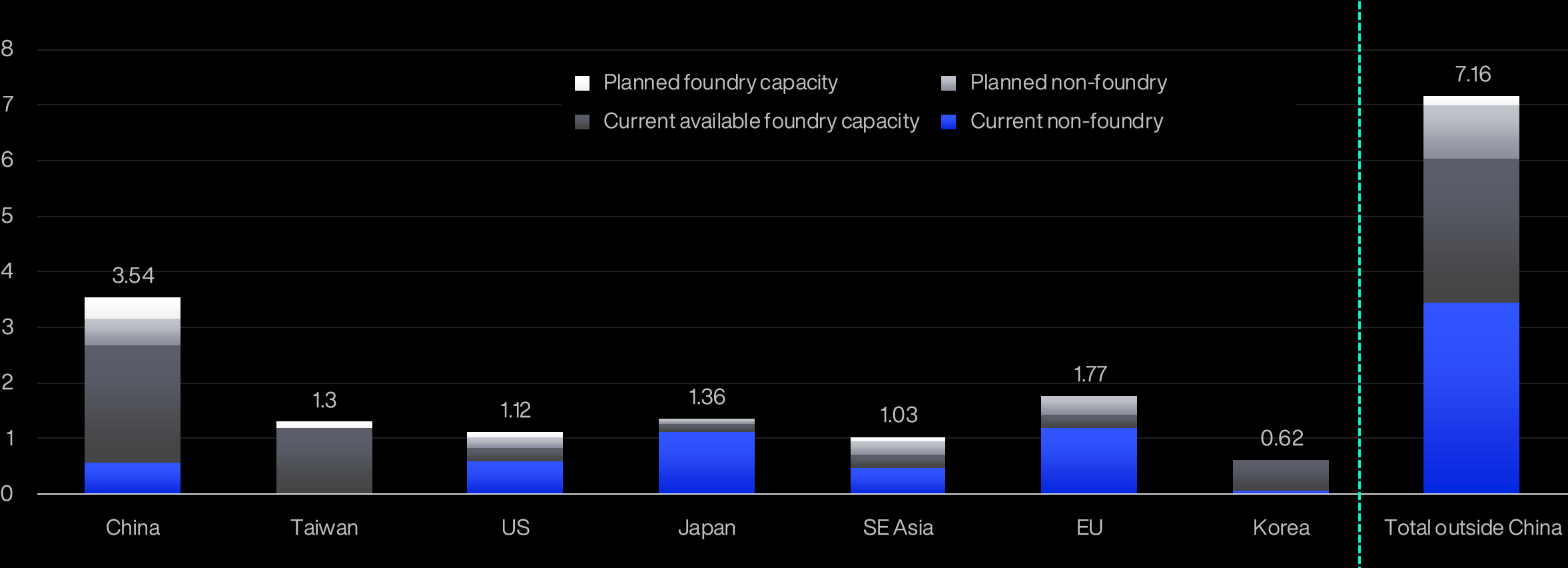


# The US is highly dependent on the Far East for “chips”



China and Taiwan control around 70% of 50-180nm foundry capacity globally and continues to lead in this area

Current and planned wafer capacity (excluding memory) at 50-180nm as of March 14, 2023, million wafer starts per month (mwspm)



Source: SEMI World Fab Forecast

# China will have the excess power over next five years to take the lead in AI and Cloud



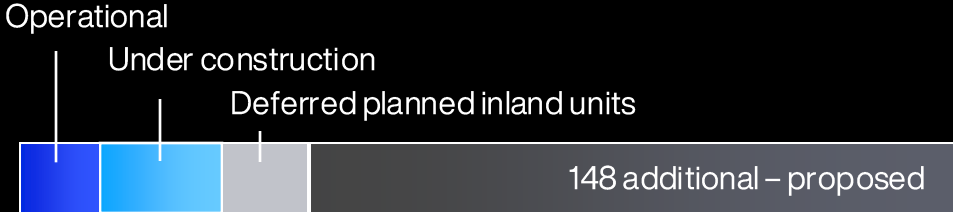
## Nuclear plants



## Electricity production share in 2024



## Nuclear plant breakdown – percent



## 2024 uranium requirements

As percent of known resources in China



# The US will not have the capacity to compete in AI due to shortage of electrical power



## US Electricity Generation



\*Back-of-the-envelope calculations.

# The decoupling with China needs to be done carefully



Unlike the Biden administration, the Republican Party has taken a tough stance against China, even in areas that are not important for national security, such as revoking the Permanent Normal Trade Relations (PNTR). Regarding inward investment from China, it states that it will block the acquisition of real estate and companies in the United States. Some companies have pointed out a de facto decoupling of the United States and China.

## Examples of major regulations by the United States

### China

Strengthening export controls (semiconductors, etc.)

- Additional tariffs (Articles 301, 232)
- Ban on import of telecommunications equipment
- Business and Human Rights (UFLPA)

### US

Strengthening foreign investment regulations

- Strengthening inward investment screening (CFIUS)
- Industrial Policy (IRA, CHIPS)



# Securing the Digital Frontier: Preventing Disruption and Addressing Vulnerabilities

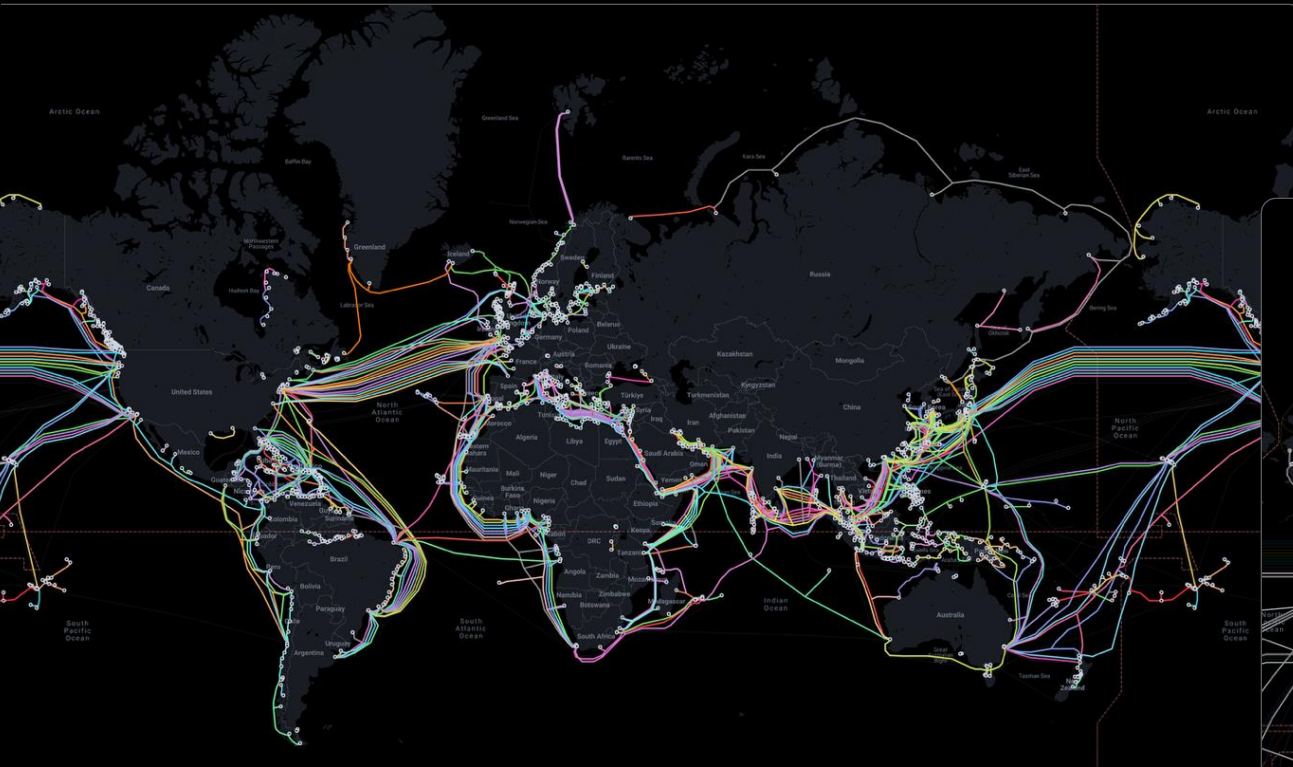


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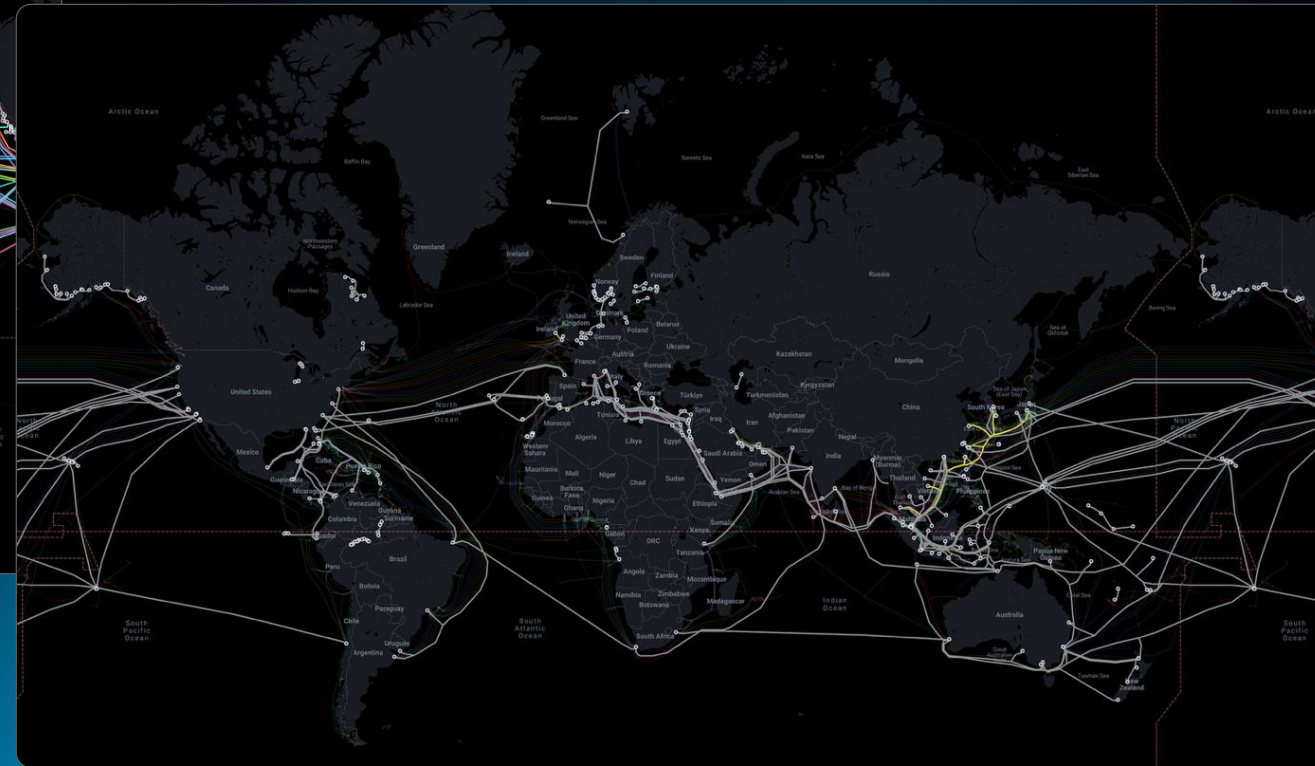
# Cables over the last 35 years were built to connect massive population centers(eyeballs) to the internet...



## ↙ Existing Submarine Cables



## ↙ Planned Submarine Cables

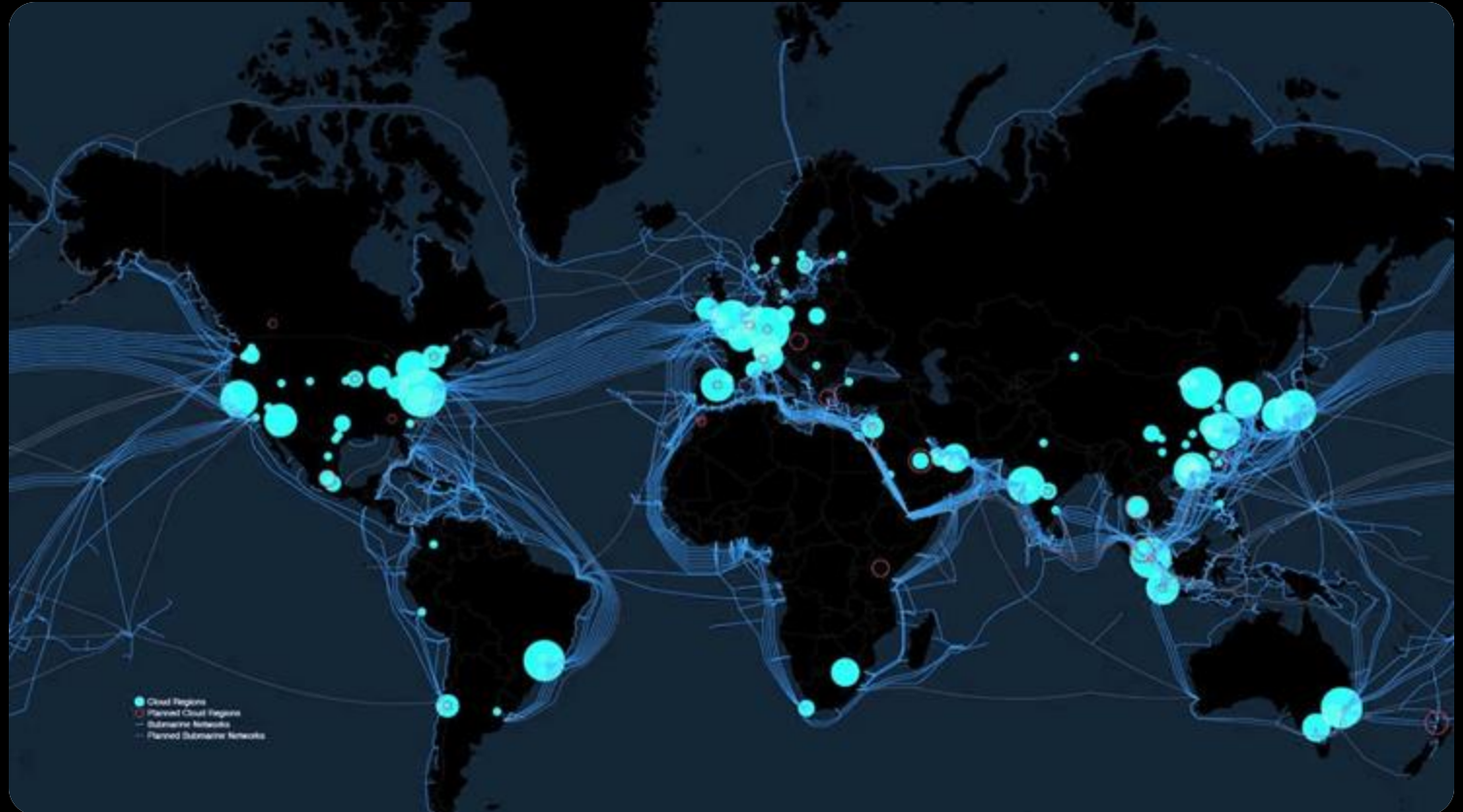


# ...the new locations will now focus more heavily on proximity to regions with excess power



## Existing + planned cables and cloud data centers

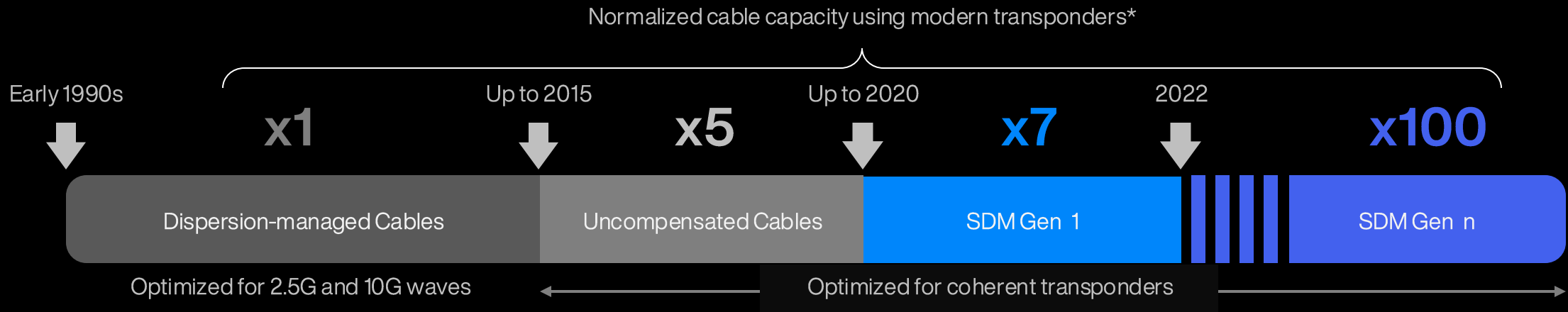
- Where will AI factories (AI-focused data centers) be built?
- New cables may be needed to locations currently not connected or underserved



# These new cables will be less in number yet much higher in capacity...

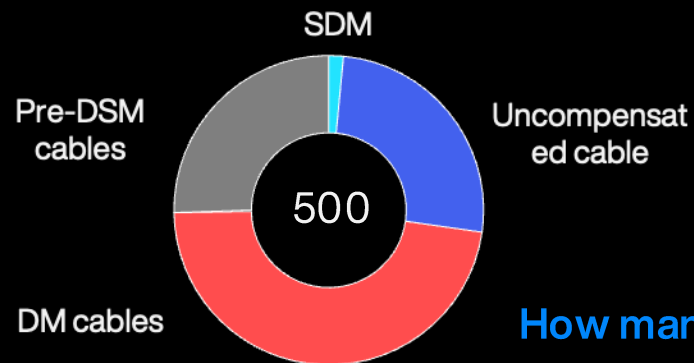


## Evolution of submarine cables



\* Compares total cable capacity of trans-Atlantic distance using fifth-generation coherent transponders

There are only a few SDM cables today, but SDM is the accepted architecture for new long-distance submarine cables



How many of each cable type?

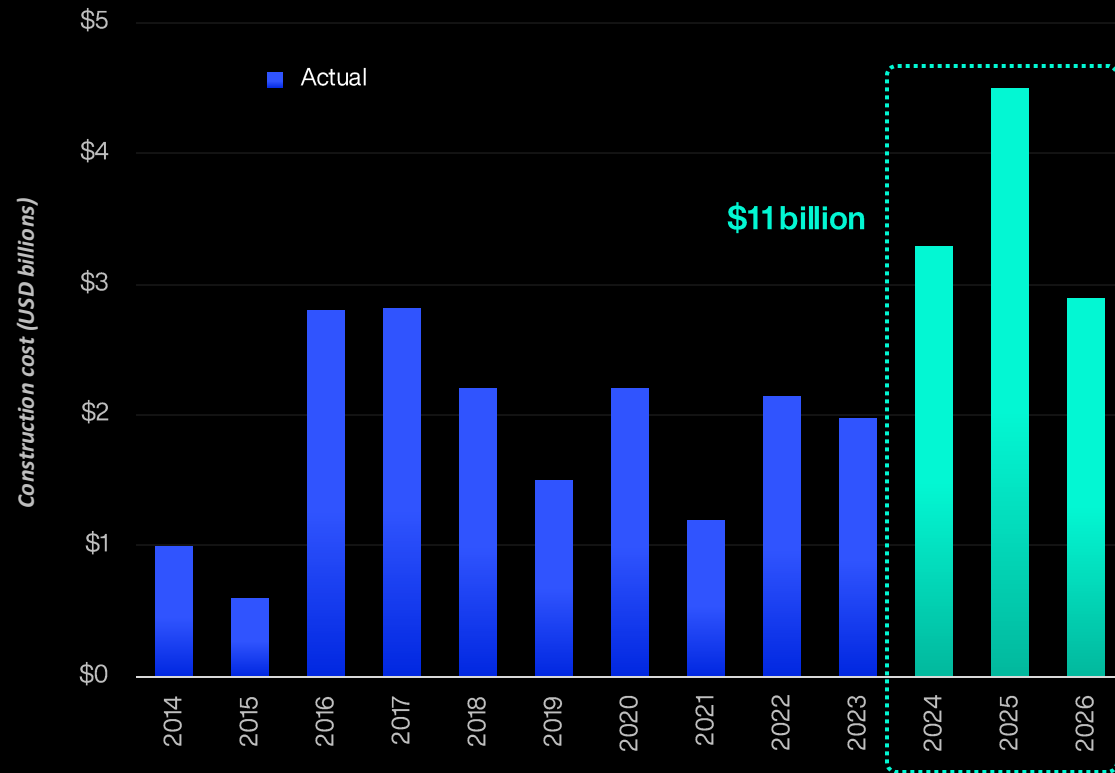


# ...and much cheaper to build!



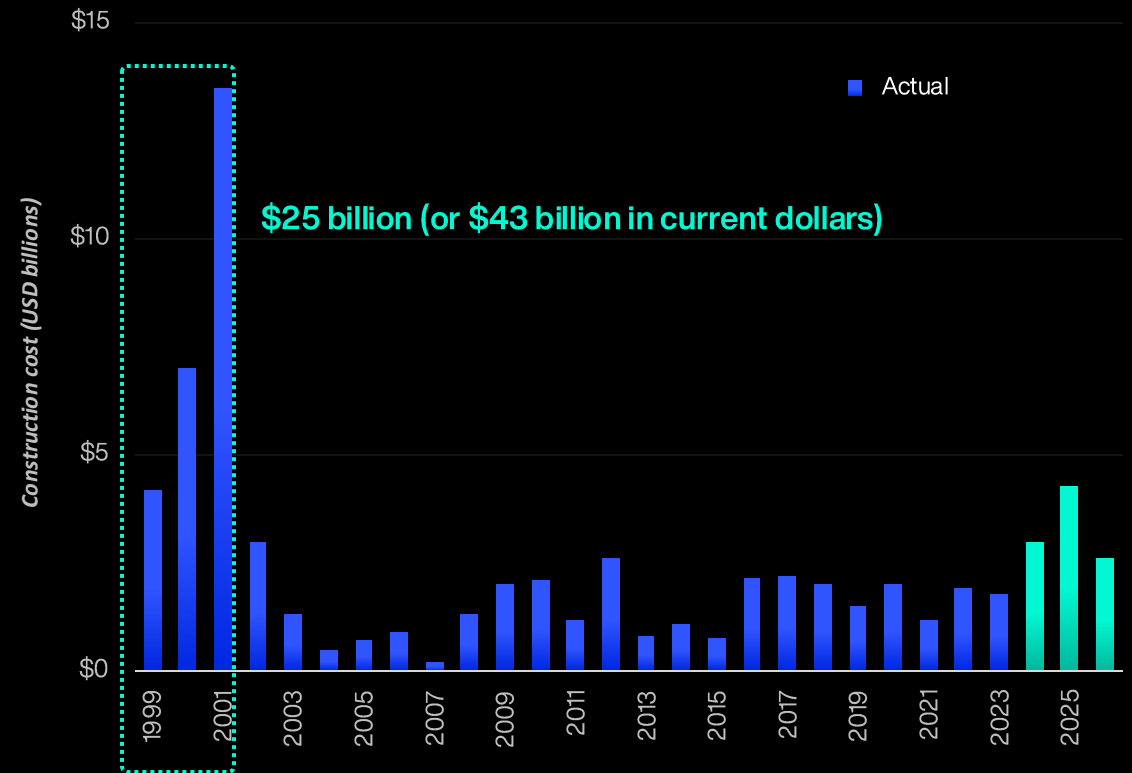
## Is there overinvestment in cables?

*Construction cost of new submarine cables by RFS*



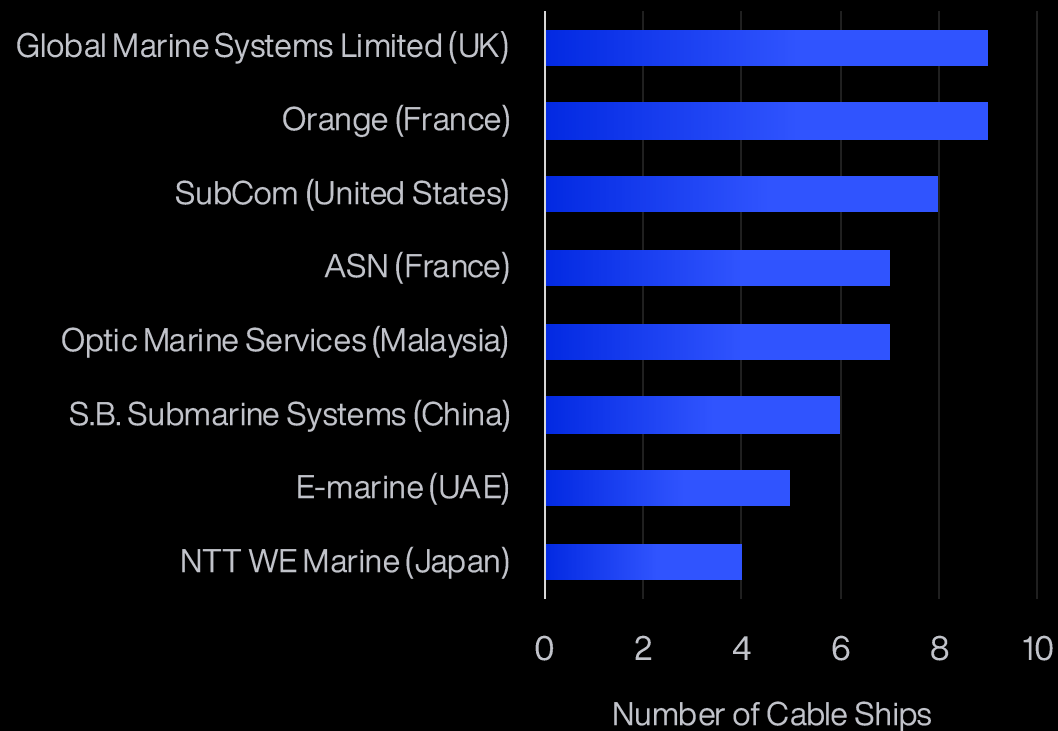
## Not partying like it's 1999

*Construction cost of new submarine cables by RFS*



# Majority of these cables to be built by non-American vendors

Cable Ship Fleet Distribution by Company



Source: Submarine Telecoms Forum, "Industry Report, 2024-2025: Issue 13," 95.  
Note: Only companies with four or more ships are included in the figure.

Submarine cable projects for which companies based in France, US, Japan and China have supplied or will supply equipment

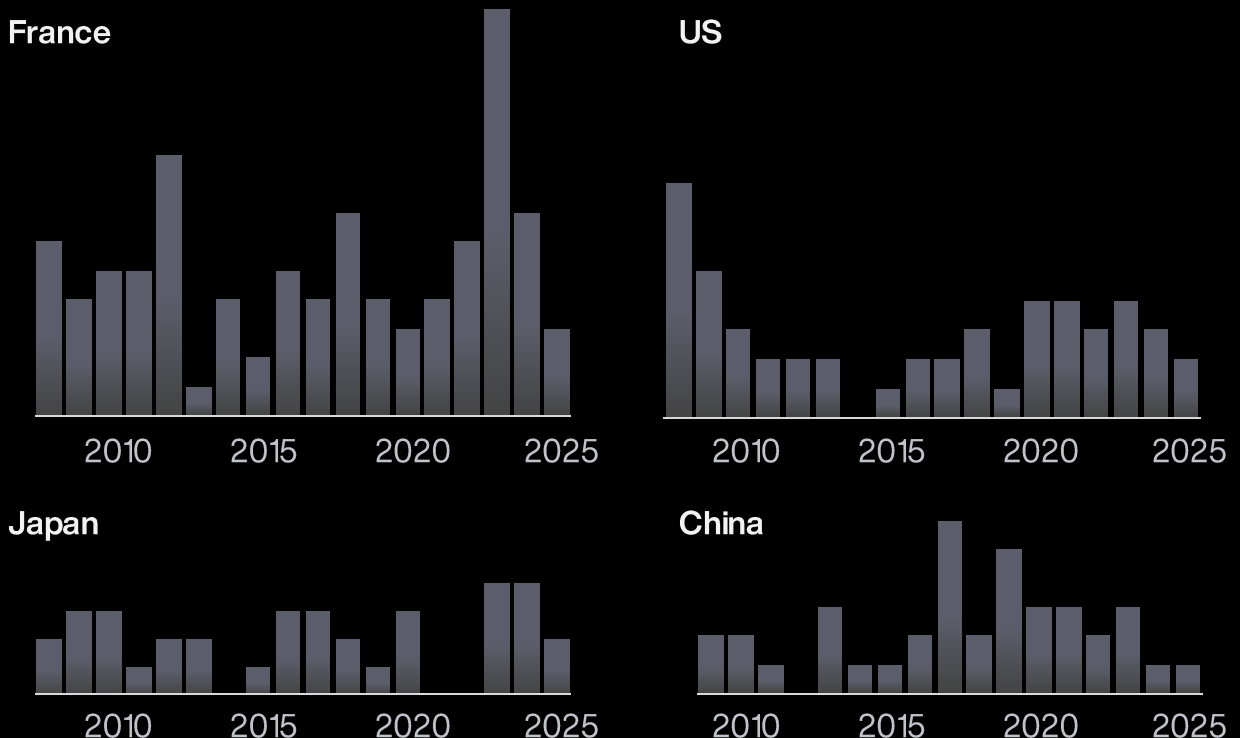


Image courtesy of Reuters

# These new cables will be vulnerable to a number of “choke” points which will have the ability to stifle digital commerce if not managed appropriately





# AI's Future: Caution, Augmentation, and Our Path Forward

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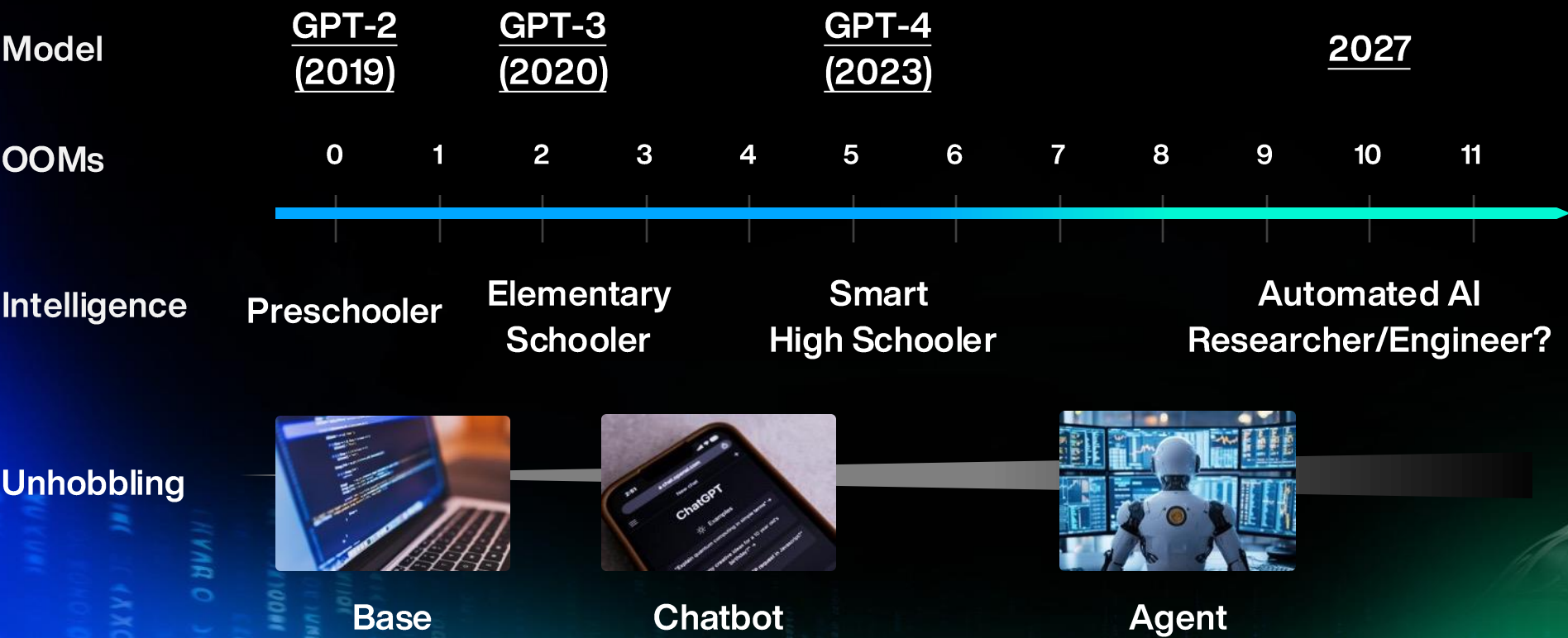
# AI – it's the end of the world as we know it



# The Evolution from Chatbot to Agent (and Agentic AI)



## Counting the OOMs



Source: "Situational Awareness: The Decade Ahead" by Leopold Aschenbrenner, June 2024.





↓  
PTC's goals for  
the next 48 hours

## Thursday, September 4, 2025

### Opening Remarks

- **Brian Moon**, Chief Executive Officer, PTC
- **Bill Barney**, Chairman, Asian Century Equity & President & Chair, PTC Board of Governors

### Session 1: The World in 2030: A Glimpse into What's Possible

- **Vint Cerf**, Chief Internet Evangelist, Google
- **Eli Noam**, Professor, Columbia Business School
- **Troy Tazbaz**, Senior VP of Corporate Strategy & Operations, Oracle
- **(Moderator) Robert Pepper**, Senior Fellow, GDIP & Member, PTC Board of Governors

### Session 2: Chasing Gigawatts in Global AI and Energy

- **Randy Brouckman**, CEO, EdgeConneX
- **Keri Gilder**, Chief Executive Officer, Colt Technology Services
- **Andrew (Andy) Power**, Chief Executive Officer, Digital Realty
- **Steve Smith**, Chief Executive Officer, Zayo Group
- **(Moderator) Tony Rossabi**, Founder & Managing Member, OCOLO

### Session 3: Private Equity: The Petrol for Data Centers – What's the Next Play?

- **Jan Vesely**, Partner, EQT
- **Tomer Yosef-Or**, Partner, Vitruvian
- **Derek Chu**, Head of American Real Assets, Mid Risk, Investments, AustralianSuper
- **Renato Mazzola**, Managing Partner, BTG Pactual
- **(Moderator) Lynn Smullen**, Senior VP, Strategic Partnerships & Pursuits, Oracle

### Session 4: Global Blueprints: The New Era of Digital Growth

- **Bjorn Brynjulfsson**, Chief Executive Officer, Borealis
- **Peter Hopper**, Partner and Co-founder, Primary Digital Infrastructure
- **Vice Minister Takuo Imagawa**, Int'l Affairs, Ministry of Internal Affairs & Comms (MIC), Japan
- **(Moderator) Tony Rossabi**, Founder & Managing Member, OCOL

### Session 5: Trading Blows: Surviving the Shifts in Global Trade

- **Don MacNeil**, Chief Revenue Officer, EdgeConneX
- **William Smales**, Partner & Chief Investment Officer, Morrison
- **Obinna Isiadinso**, Global Sector Lead, IFC
- **Chris Sharp**, Chief Technology Officer, Digital Realty
- **(Moderator) Tony Rossabi**, Founder & Managing Member, OCOLO

### Session 6: The Satellite Enigma vs. The Cable: Connectivity in the Pacific

- **Dan Dooley**, Chief Commercial Officer, Lynk Global
- **Philip Henderson**, Chief Executive Officer, Vodafone Cook Islands
- **Roary Stasko**, CEO, Telstra International
- **Sita Sonty**, Partner & Managing Director AlixPartners, AD&A Americas
- **(Moderator) Bill Barney**, Chm., Asian Century Equity & Pres. & Chair, PTC Board of Governors

## Friday, September 5, 2025

### Fireside Chat

- **Marc Ganzi**, Chief Executive Officer, Digital Bridge
- **(Moderator) Bill Barney**, Chm., Asian Century Equity & Pres. & Chair, PTC Board of Governors

### Fireside Chat

- **Joseph Alm**, Deputy Asst. Secretary for Economic Security, US Dept. of Homeland Security
- **Steve Lang**, Former US Coordinator of International Communications and Information Policy
- **(Moderator) Robert Pepper**, Senior Fellow, GDIP & Member, PTC Board of Governors

### Session 7: The Partnership Evolution: Unlocking Global Growth Together

- **Obinna Isiadinso**, Lead for Data Center Investments, Global TMT
- **Raj Mirpuri**, Vice President of Enterprise and Cloud Sales, NVIDIA
- **Mohamed Nasr**, CEO & Managing Director, Telecom Egypt
- **Ignacio Quintana**, Managing Director & Co-Head of AI Infrastructure, MGX
- **(Moderator) Lynn Smullen**, Senior VP, Strategic Partnerships & Pursuits, Oracle

### Open Forum and Closing Remarks



# Final Thoughts



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# Some of the greatest minds of our generation are extremely cautious when it comes to AI



**“AI is a fundamental risk to the existence of human civilization.”**

Elon Musk  
CEO of Tesla and SpaceX

**“Artificial Intelligence will evolve to become a superintelligence. We need to be mindful of how it’s developed and ensure that it aligns with humanity’s best interests.”**

Bill Gates  
Co-founder of Microsoft

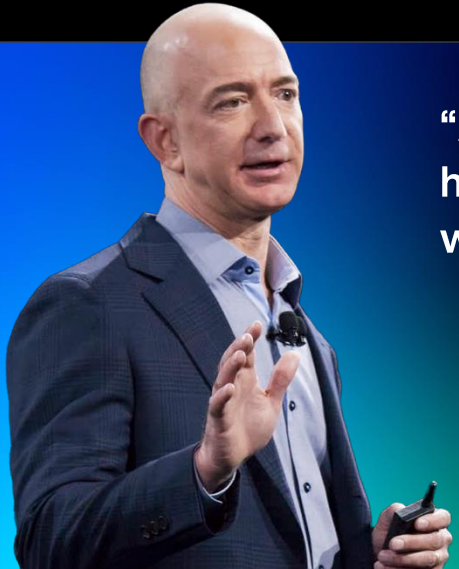


**“The development of full artificial intelligence could spell the end of the human race... It would take off on its own, and re-design itself at an ever-increasing rate. Humans, who are limited by slow biological evolution, couldn’t compete, and would be superseded.”**

Stephen Hawking told the BBC



# The realists view of AI



**“AI will enhance the ways humans experience the world.”**

Jeff Bezos  
Founder of Amazon

**“AI will not replace humans, but those who use AI will replace those who don’t.”**

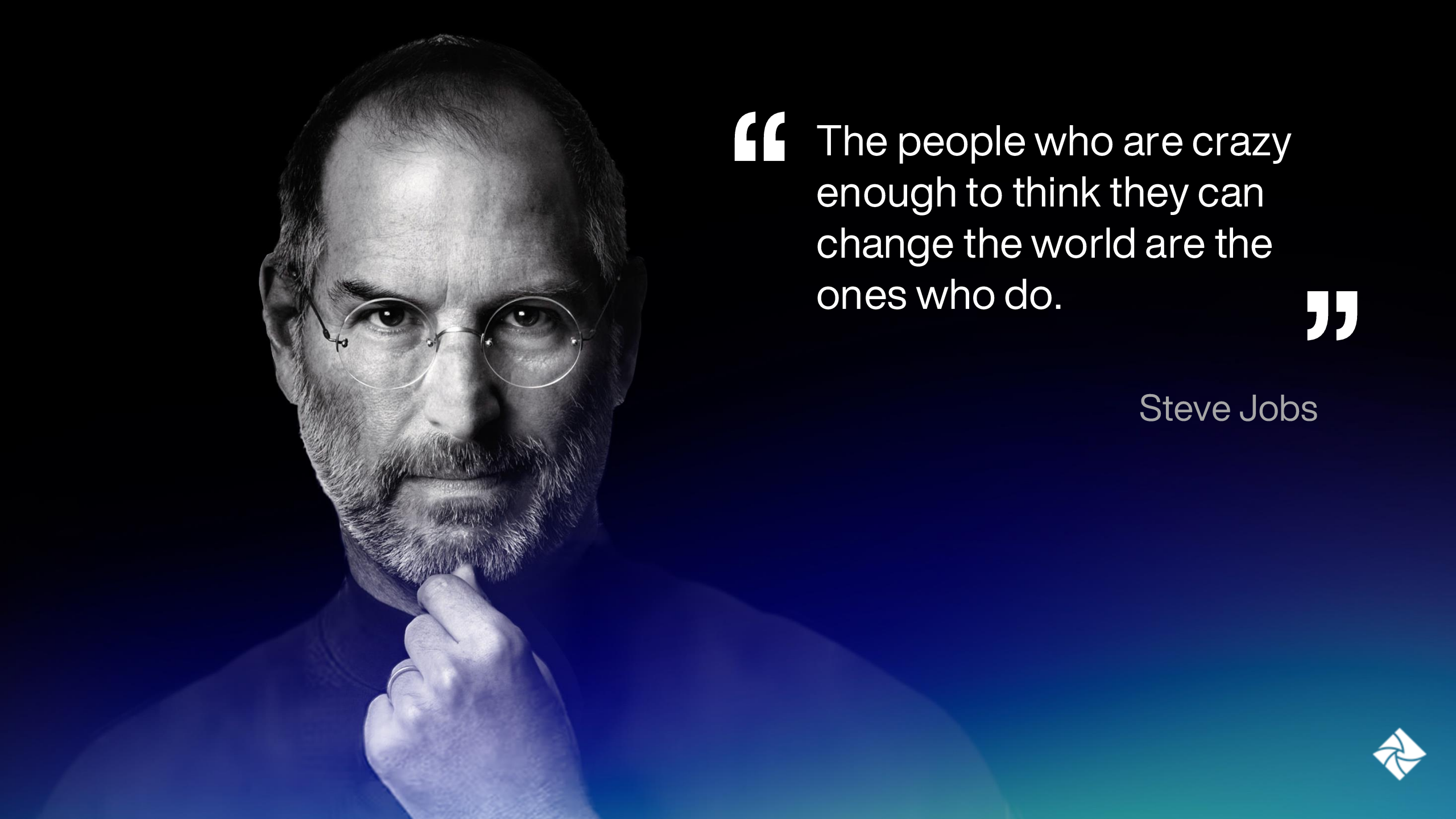
Ginni Rometty  
Former CEO of IBM



**“The future of AI is not about replacing humans, it’s about augmenting human capabilities.”**

Sundar Pichai  
CEO of Google





“ The people who are crazy enough to think they can change the world are the ones who do. ”

Steve Jobs





PTC