

# The State of Platforms

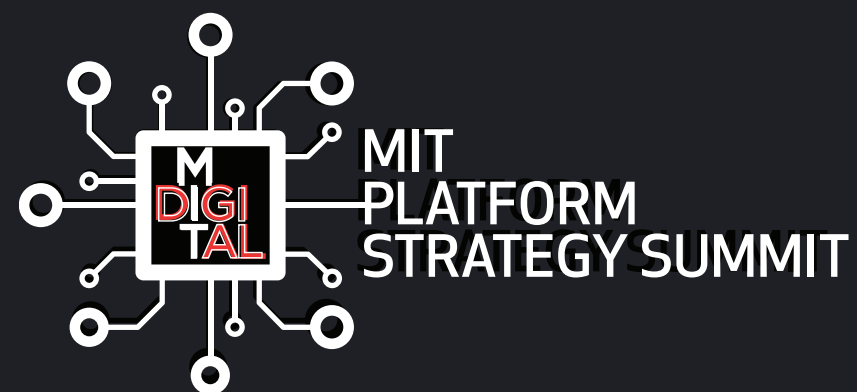
Geoffrey Parker  
Peter C. Evans  
Marshall Van Alstyne



# Platform Review and Forecast

- Regulation Geoff
- New Technology Peter
- Rise of Enterprise and Firm Inversion Marshall

# New Regulatory Constraints



# Recent Regulatory Actions

## **Supreme Court rules against Apple in antitrust suit**

**Germany accuses Facebook of abuse, slaps restrictions on how it can gather data**

## **What Amazon tells us about antitrust today**

*It's a reflection of how market power gets exercised*

## **Facebook Co-Founder: "It's Time to Break Up Facebook"**

**Google fined nearly \$1.7 billion for ad practices that E.U. says violated antitrust laws**

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**CRITICS ARE WARY OF THE  
FTC'S NEW TECH ANTITRUST  
TASK FORCE**





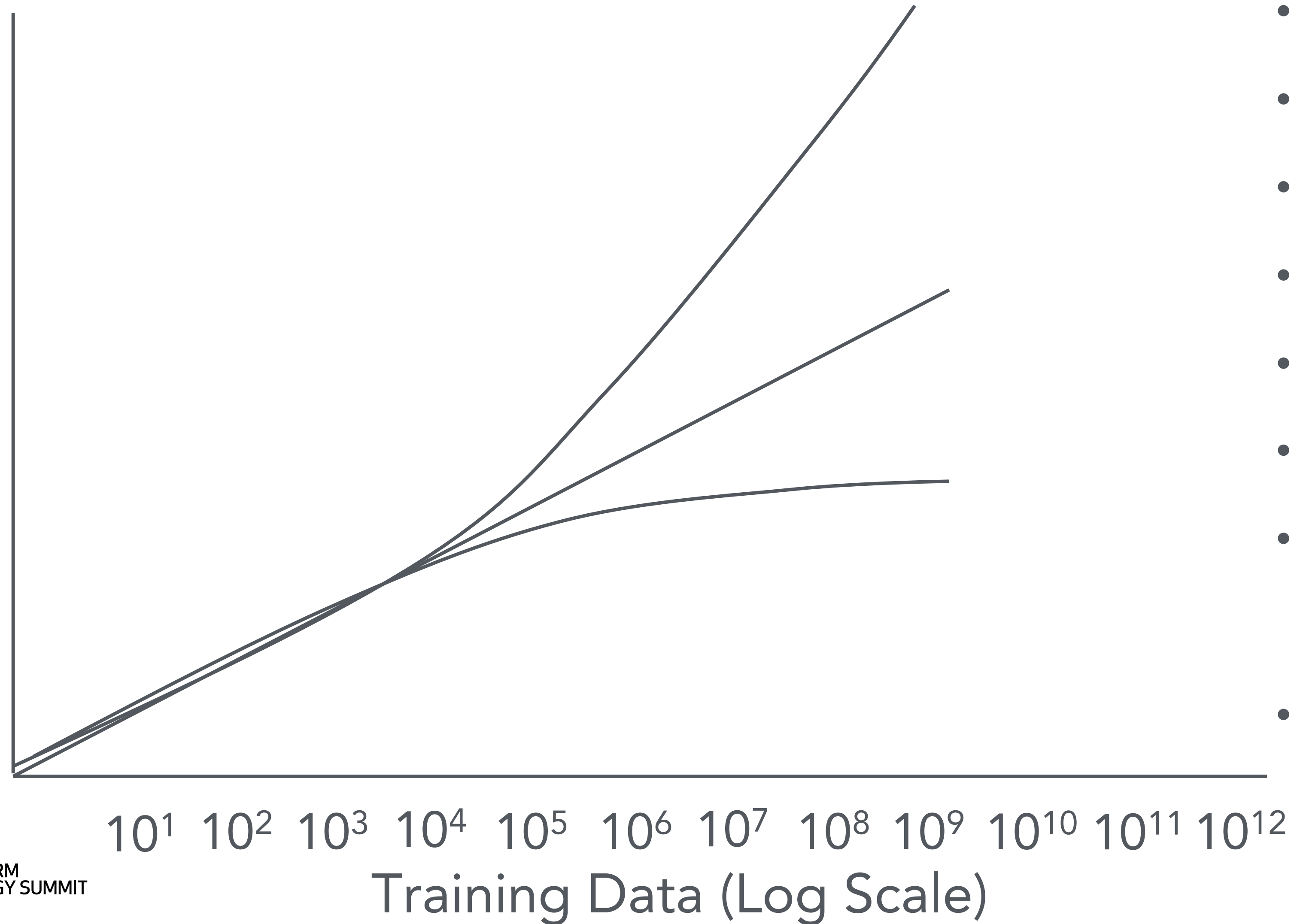
# An Essential issue: Platforms Have the Best User

- Facebook + Google
  - Data allows highly targeted advertising ...
  - get 75% of digital advertising budget in America
  - control 84% of global spending on online ads, excluding China
- In the U.S. Amazon handles:
  - > 83% of e-book sales
  - ~ 90% of online print sales
  - 44% of all e-commerce transactions
  - Mines the data to pick off the highest profit sectors



# Where Will Data Barriers to Entry Emerge?

AI/ML  
Performance

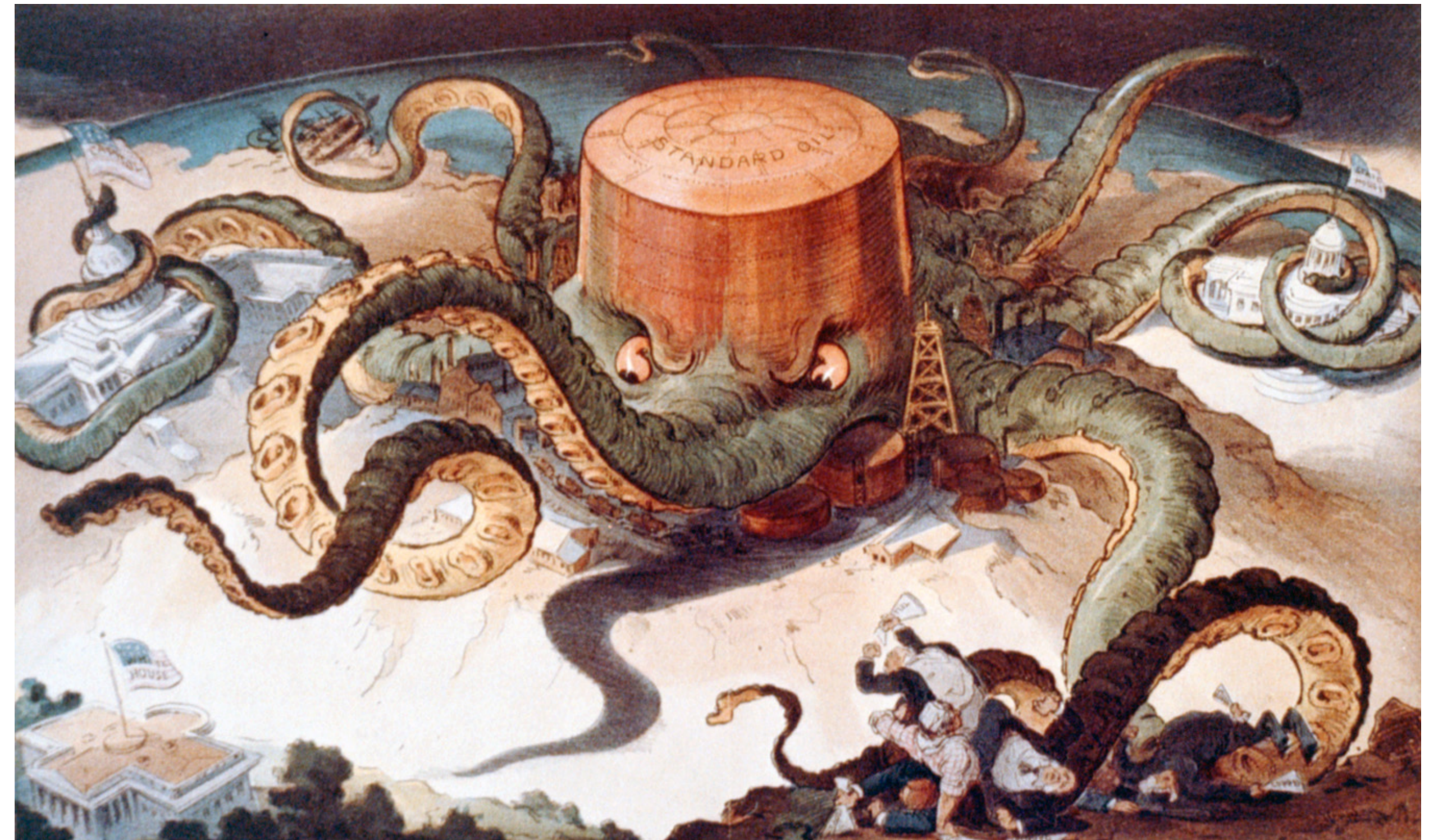


- Autonomous vehicles
- General search
- Translation
- Seismic analysis
- Banking services
- Drug discovery
- Medical diagnostics
- ... and much more
  
- How to account for spillover benefits and social welfare?



# Traditional tests of monopoly power

- Ability to fix prices
- Ability to exclude competition
- Willful acquisition or maintenance of power
- Exceptions for success as result of superior product, business acumen or historical accident

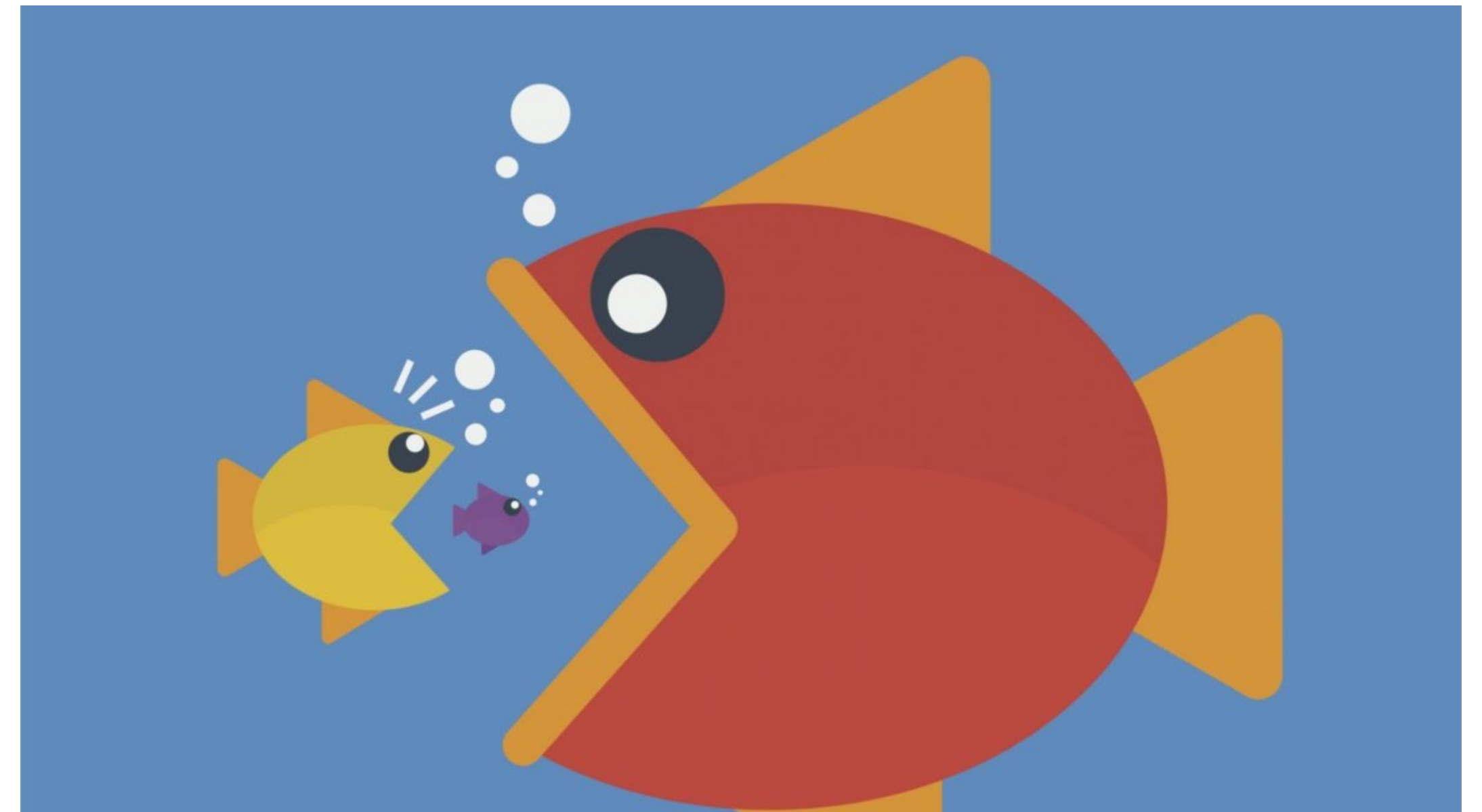




# Big tech firms don't fit model of traditional

## They. monopolists

- Often offer free services
- Operate at loss for a long time
  - Can internalize network effects to cross subsidize free services (Multi-sided networks)
- Often protected by strong network effects

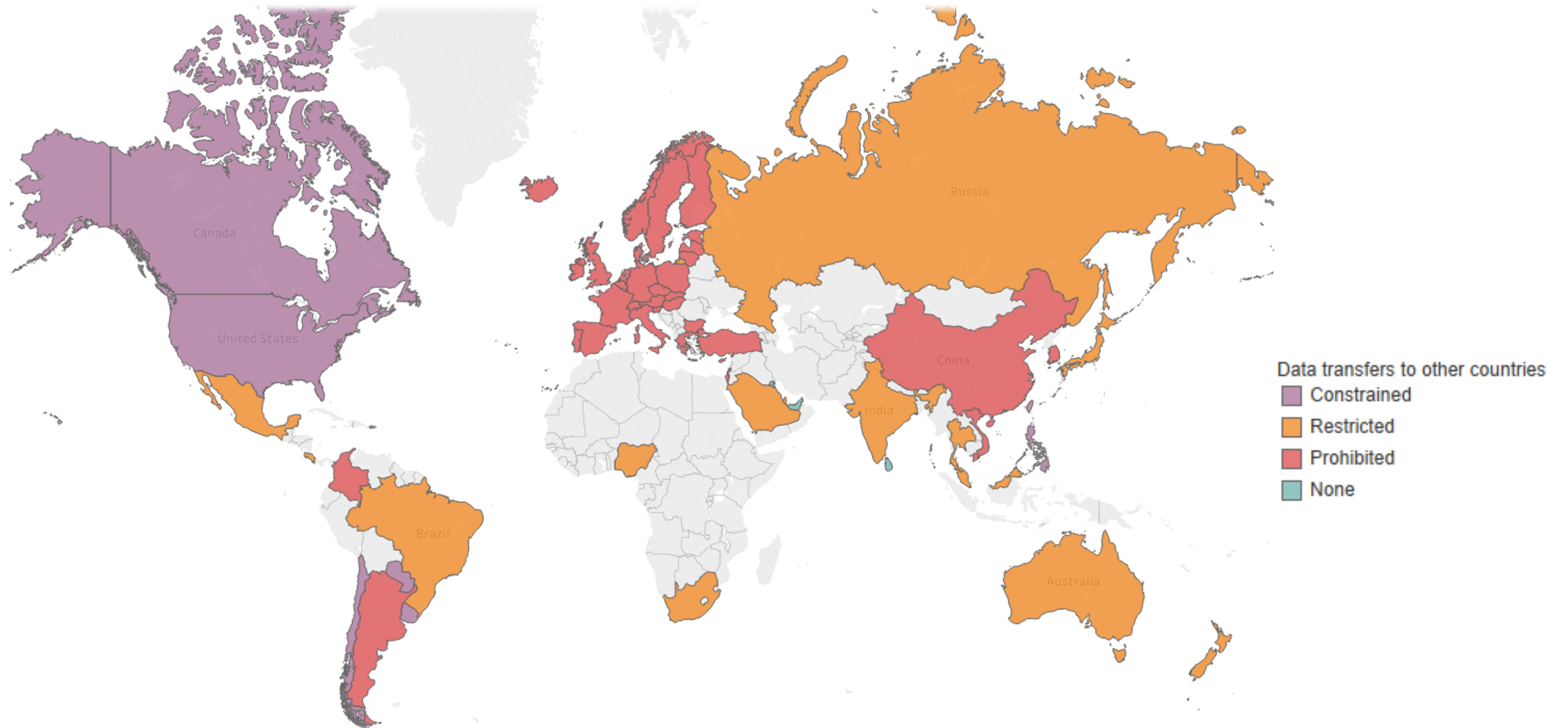




# Possible remedies (and a clear shift to focusing on data)

- Breaking up companies (what does this mean for platforms?)
- New taxes (e.g. on targeted ad revenue)
- Restrict markets where Big Tech can operate
- Rights assignment/compensation to data providers (users)
  - However; bargaining between marginal and average
- Data sharing mandates (much to be done to figure out what works)

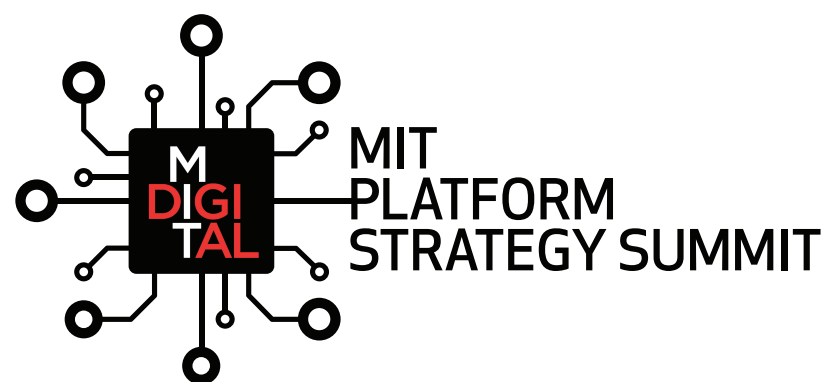
# Meanwhile, rules governing cross border data flows are growing



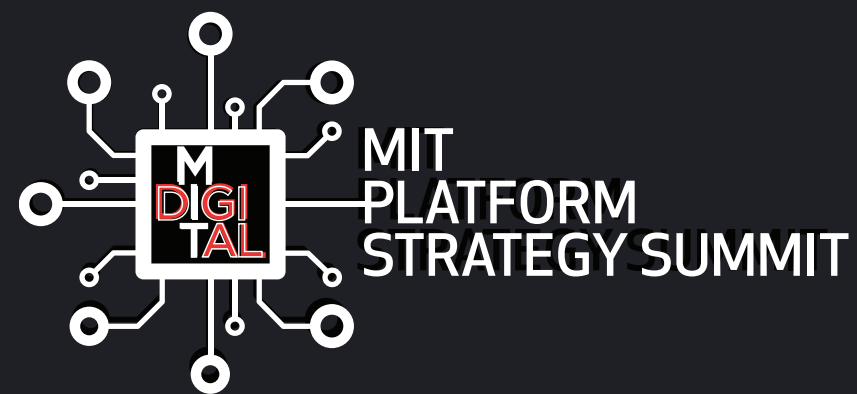


# Platform growth brings new questions

- What types of harm is posed by platforms and how?
- How are companies addressing these concerns?
- How to promote competition in a world of network effects?
- Who should regulate and in what jurisdictions?
- Will new technology reinforce or reduce dominance?
- And, what's really driving the conversation? Economic harm, digital industrial policy, or harmful effect on public governance?

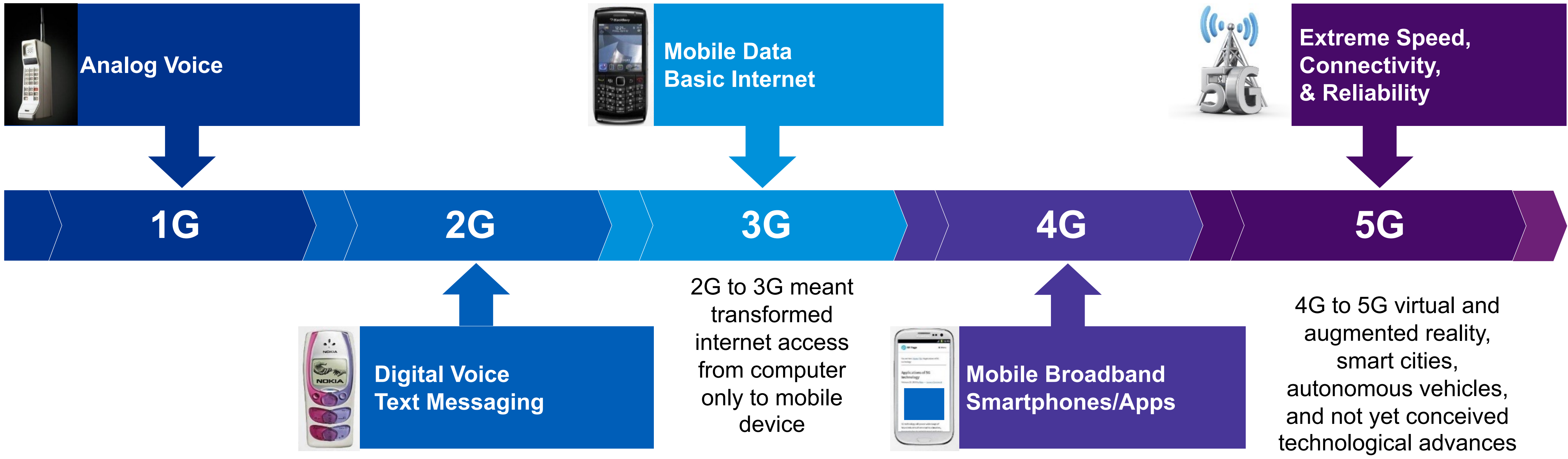


# Technology Disruption

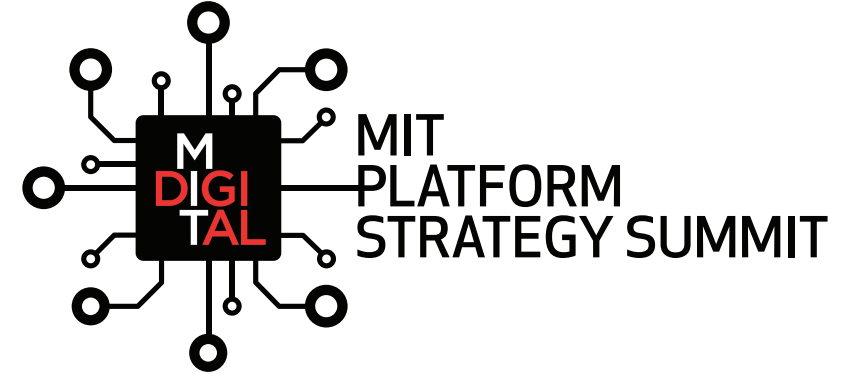




# Platform strategist only beginning to probe 5G



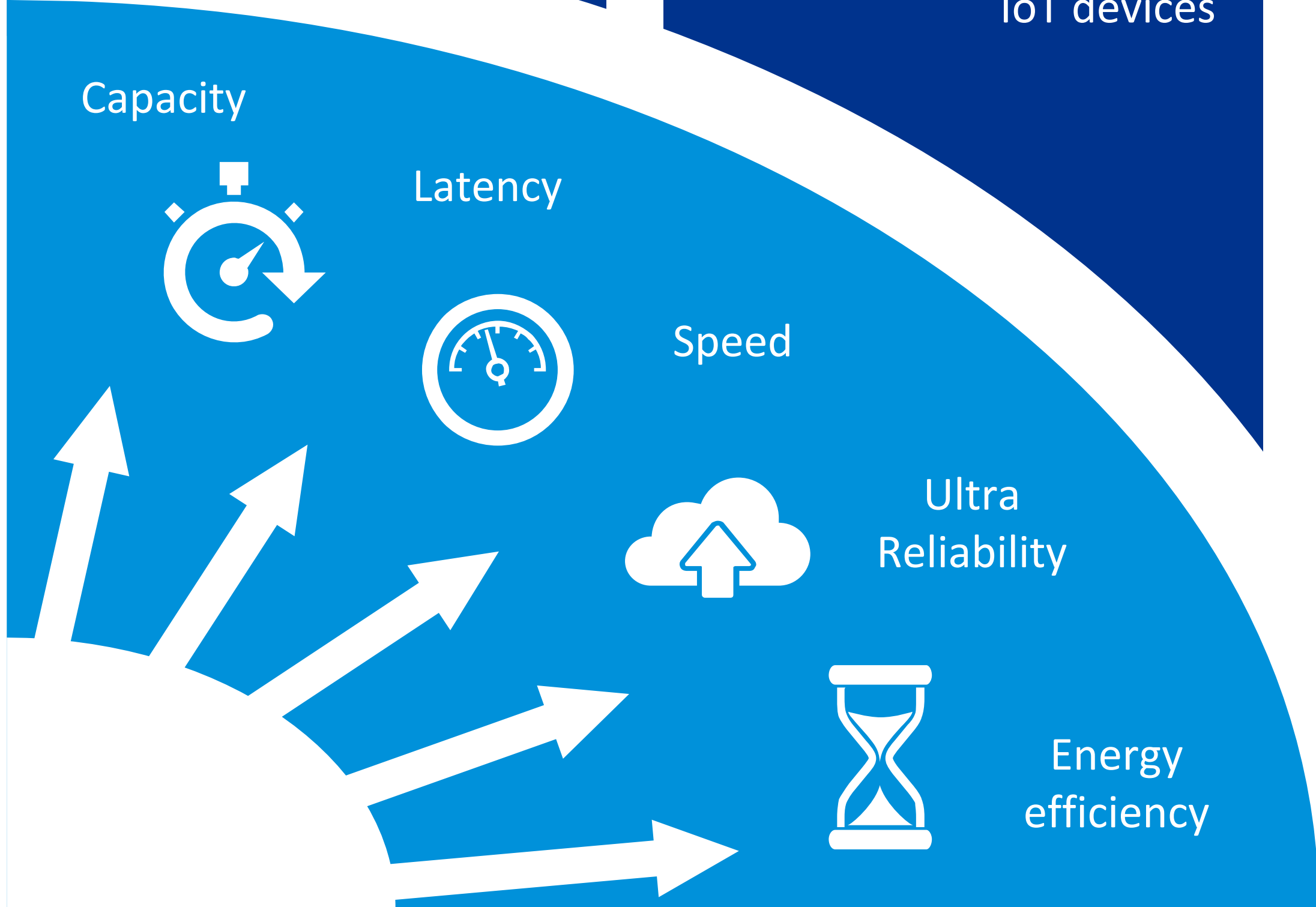
Sources: Qualcomm Everything you need to know about 5G, 5G Americas.



**10K** times more traffic

**10-100** more devices including IoT devices

extremely low latency at less than **1** millisecond



rapid download of **10** Gb per second

(or even **20** gigabits per second)


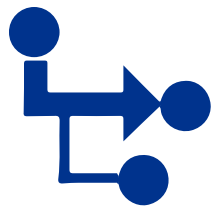

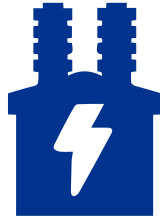











Machine-to-machine (M2M) ultra low cost **10** years battery life

**M2M** connections maintained even when device is moving at high speed

reduced energy usage on the network by **85-90%**

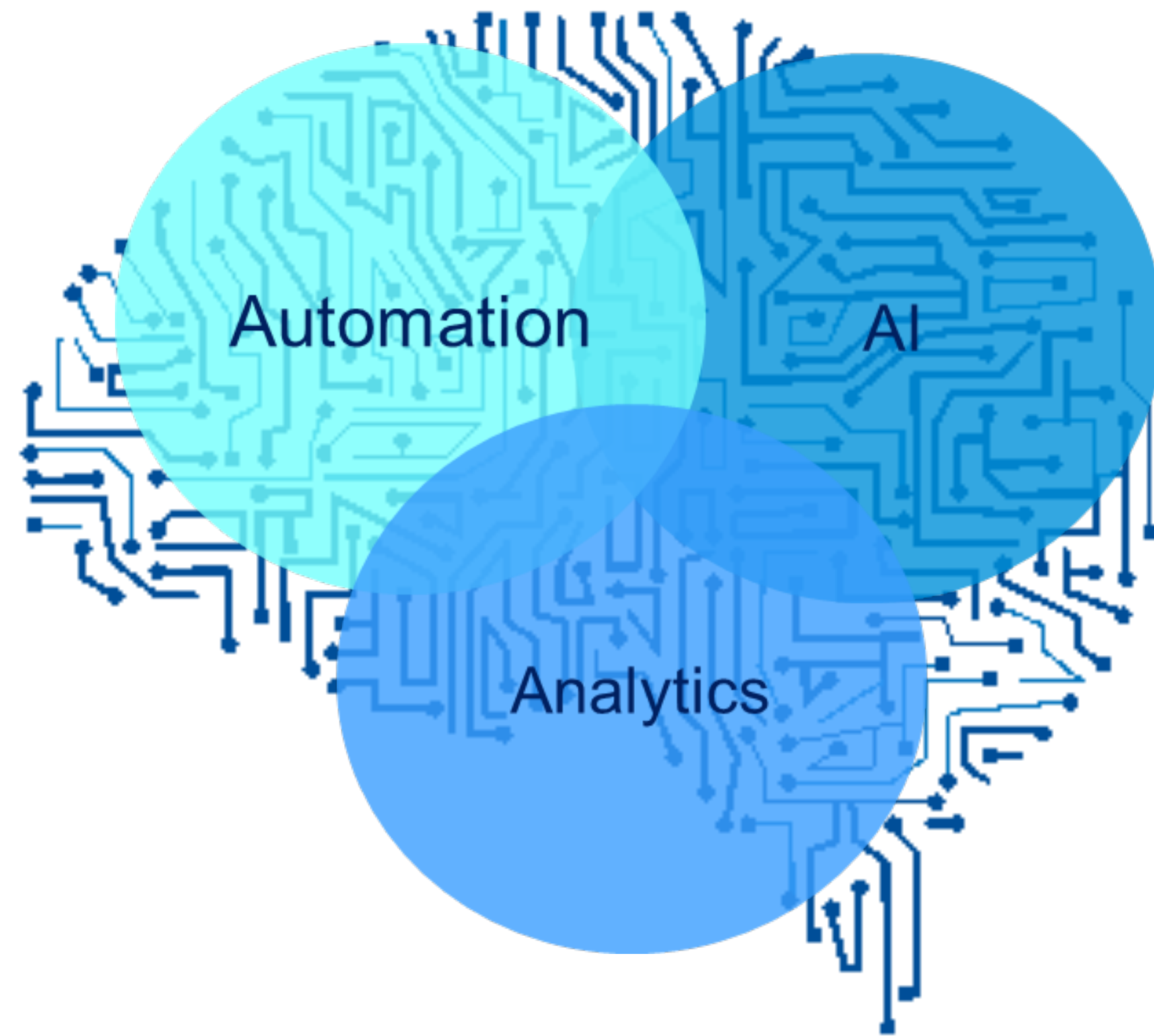


# 5G opens the door to many new platform use case

Machine remote supervision and control		Factory automation		AR/VR gaming/ retail	
Real-time energy distribution		Self-driving cars		AR-aided treatment	
Manufacturing process automation		Vehicle-to-infrastructure communication		Robotic telesurgery	
Smart meter monitoring		Smart grid control		Ultra-HD video	
Remote diagnostics		Smart buildings		Vehicle infotainment	

Sources: KPMG 5G Research Sprint, 2019.

# Technology convergence: AI, automation, analytics



While automation, analytics, and AI can be deployed separately, companies are beginning to realize these capabilities are more effective if deployed together.

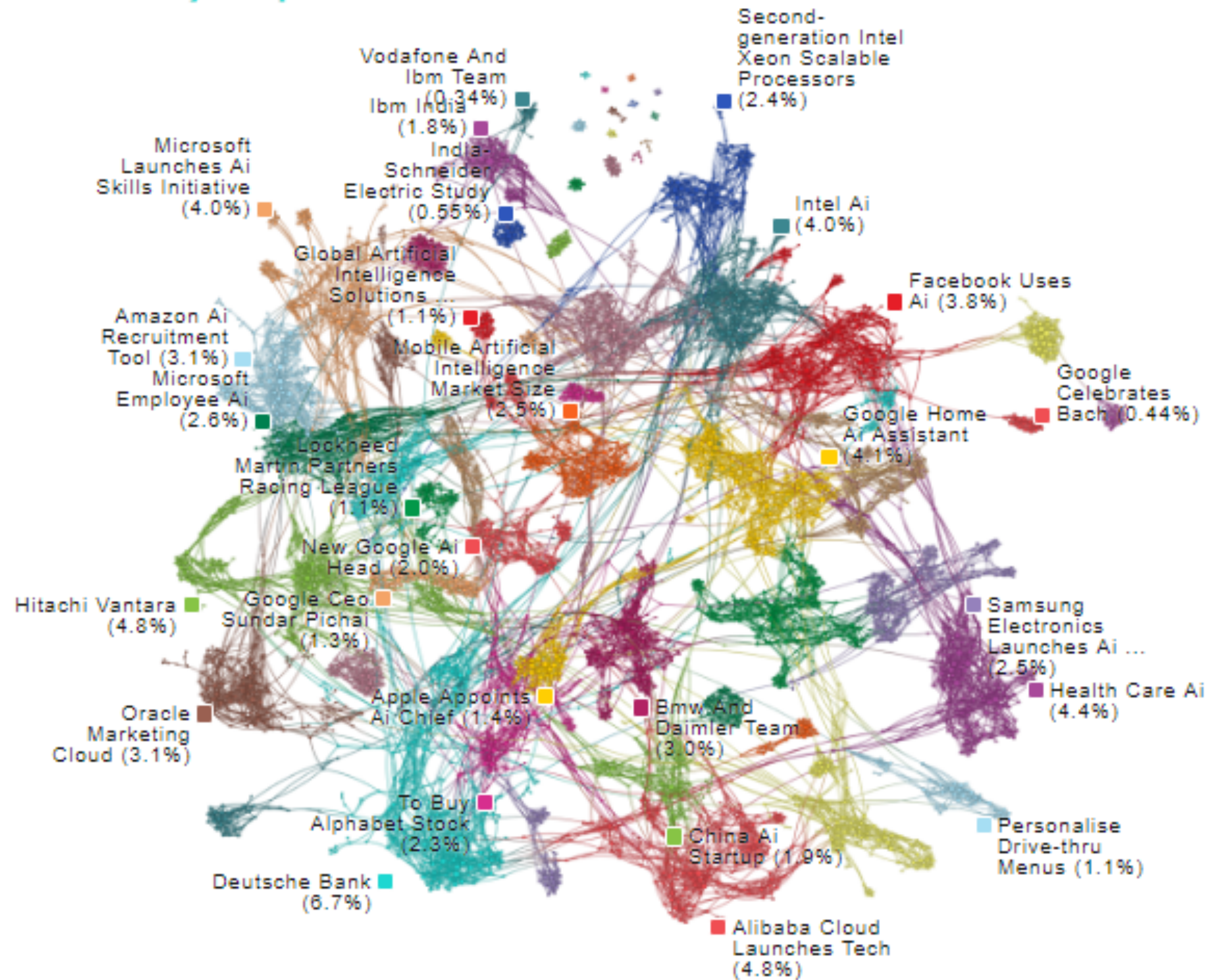
Source: KPMG's 2019 Enterprise AI Adoption Study.





# AI News and Job Posting Research Approach

## AI news mentions for AI 200 Companies



**Timeframe**

May 2018 – May 2019

**Keywords**

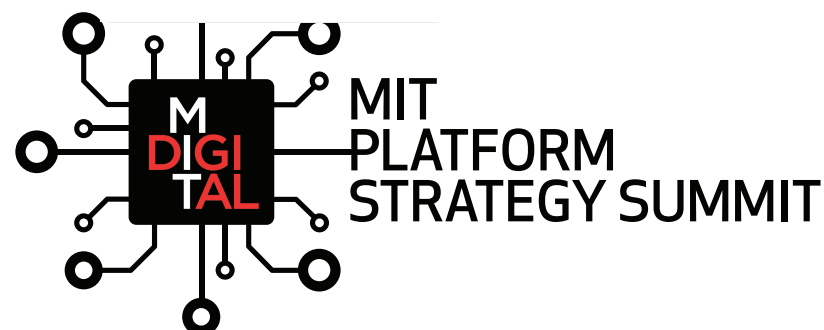
artificial intelligence, cognitive, ontology, machine learning, natural language processing (NLP), Neural Networks, ‘structured and unstructured data’, and predictive modeling

**No. of Articles**

A total of 66,300 articles were analyzed from top tier news outlets, yielding 134,257 mentions (approximately 2 per article)

**Tool and data sources**

Quid and Quid’s news database



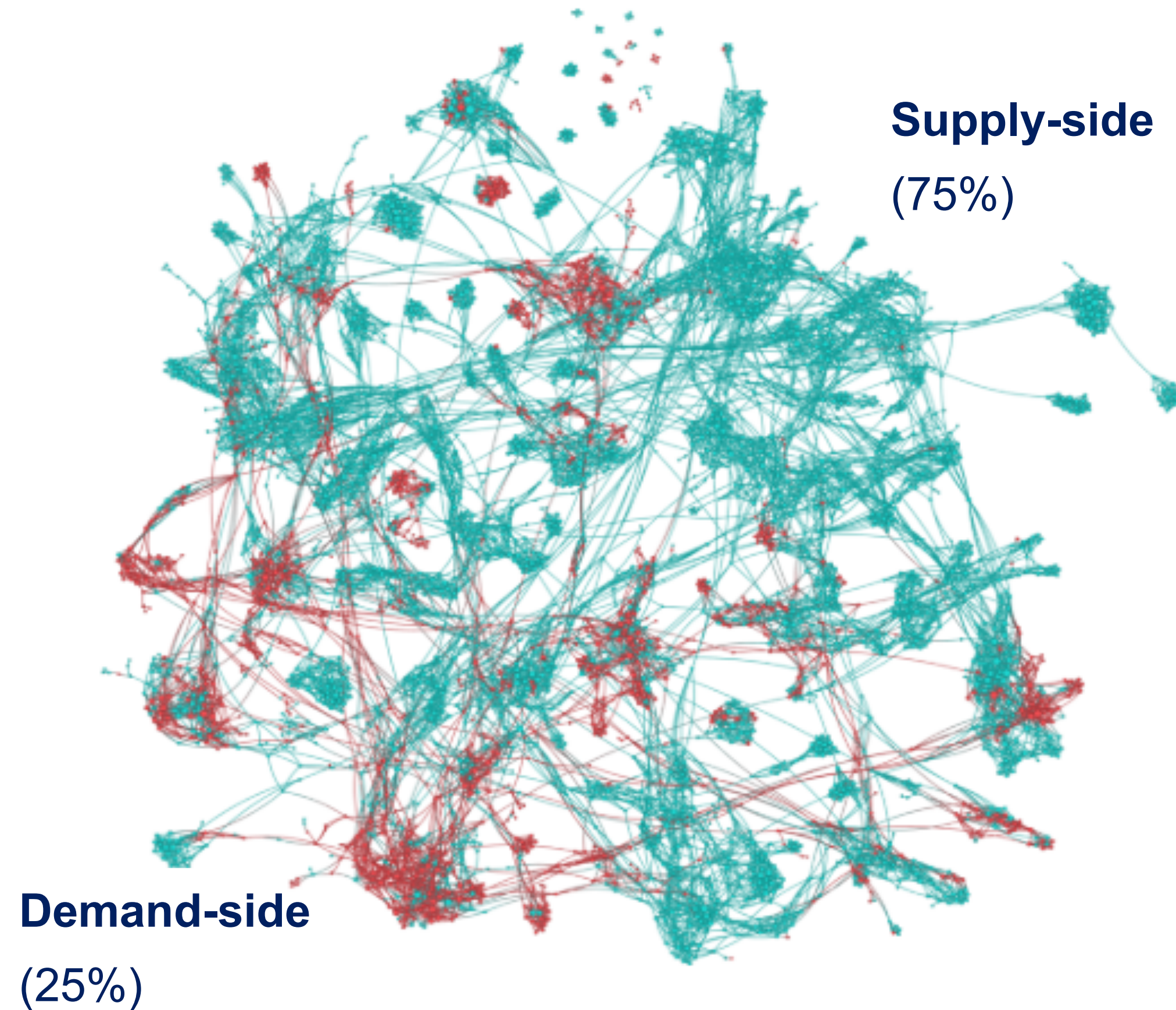
Source: KPMG’s 2019 Enterprise AI Adoption Study.



# AI News and Job Posting Research Approach



AI news mentions for AI 200 Companies

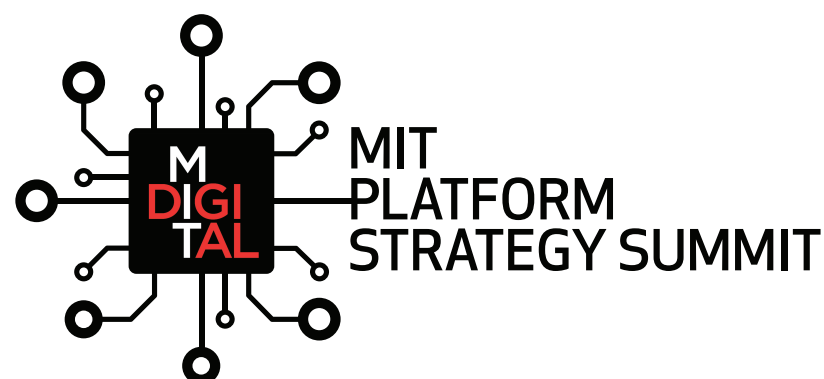


The analysis identified 134,257 articles that mentioned AI and at least one company in the AI 200.

News mentions are highly concentrated by sector. In the US over 80 percent of news mentions occur in the technology sector. Internationally, there is higher concentration in Industrial manufacturing, which represents 50 percent of the job posts. It is important to note that one reason is the presence of Samsung in that category.

The bottom line is that supply-side companies dominate news about enterprise AI.

Source: KPMG's 2019 Enterprise AI Adoption Study.

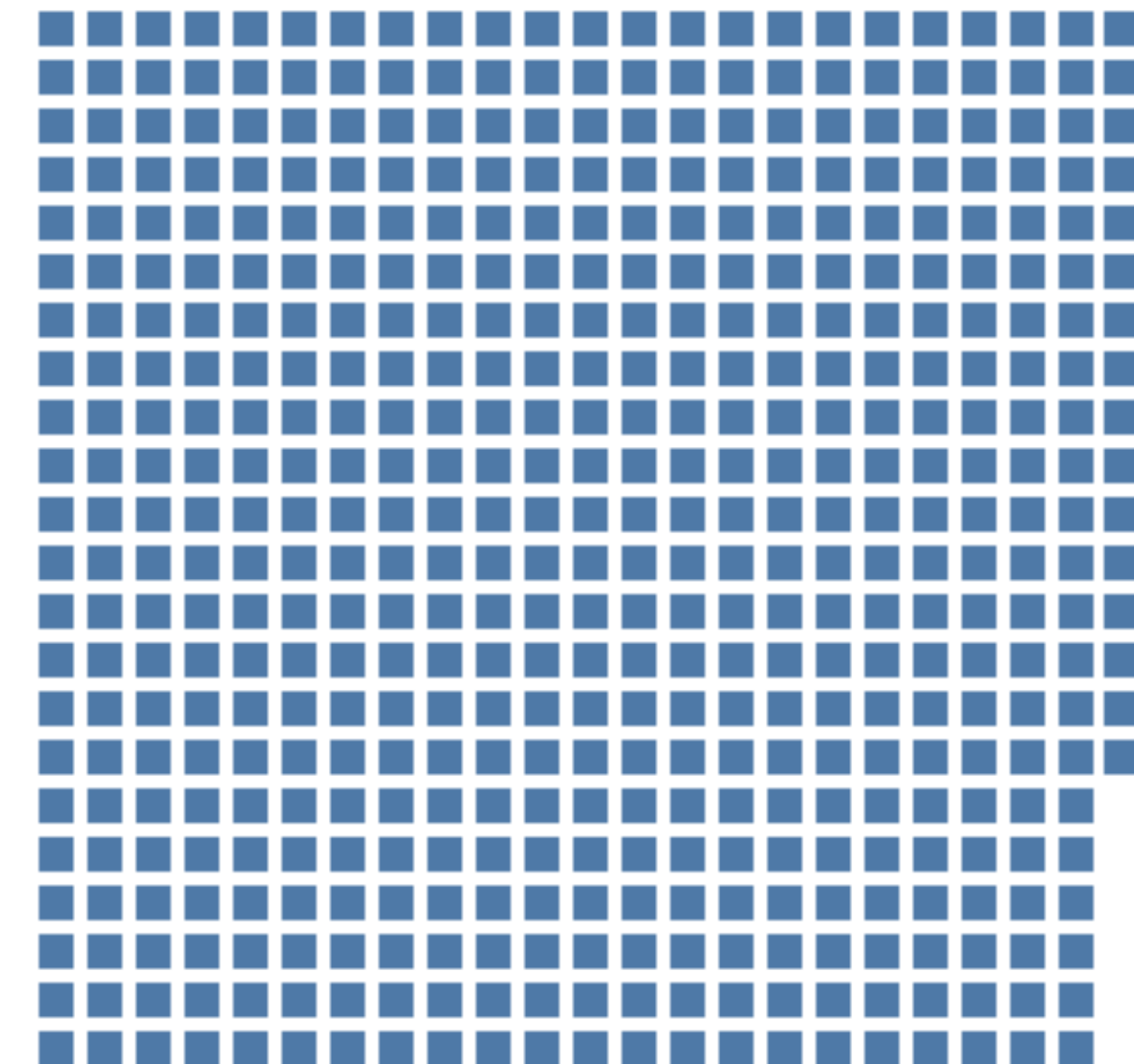
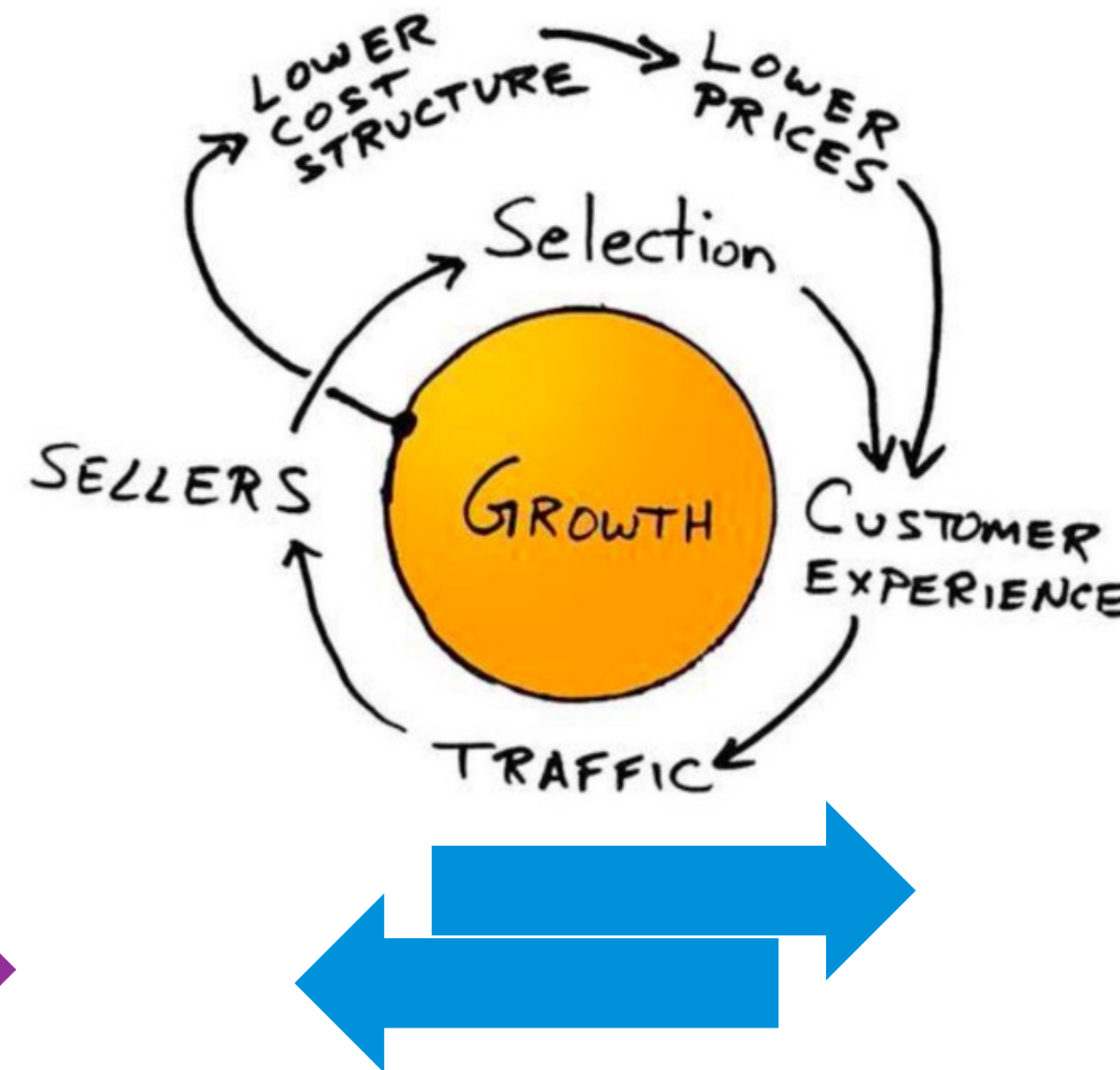


# Will AI-as-a-service generate flywheels and network effects?

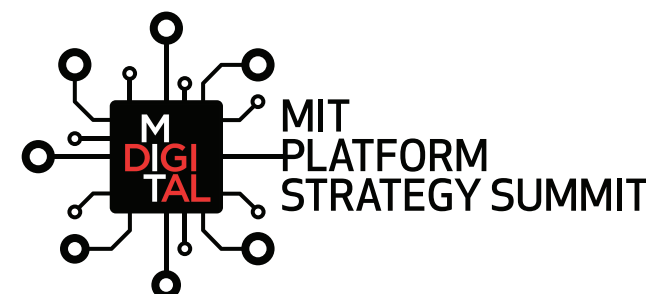
Supply-side platforms

Demand-side consumers

Microsoft  
Amazon  
IBM  
Google  
Apple  
Cisco  
Facebook  
Intel  
Oracle



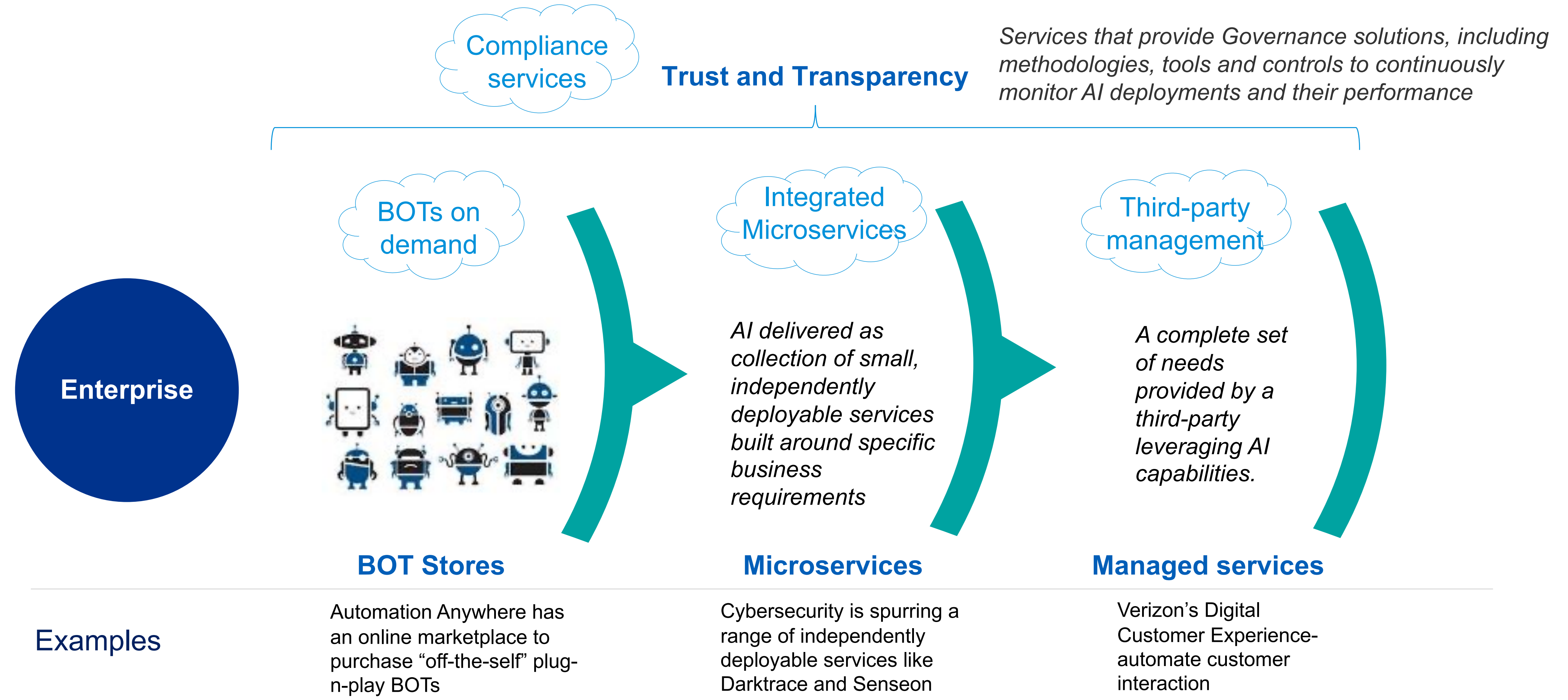
Source: KPMG's 2019 Enterprise AI Adoption Study





# The future is AI-as-a-service platforms

Supply-side investment is rapidly expanding services and delivery models



Source: KPMG’s 2019 Enterprise AI Adoption Study.



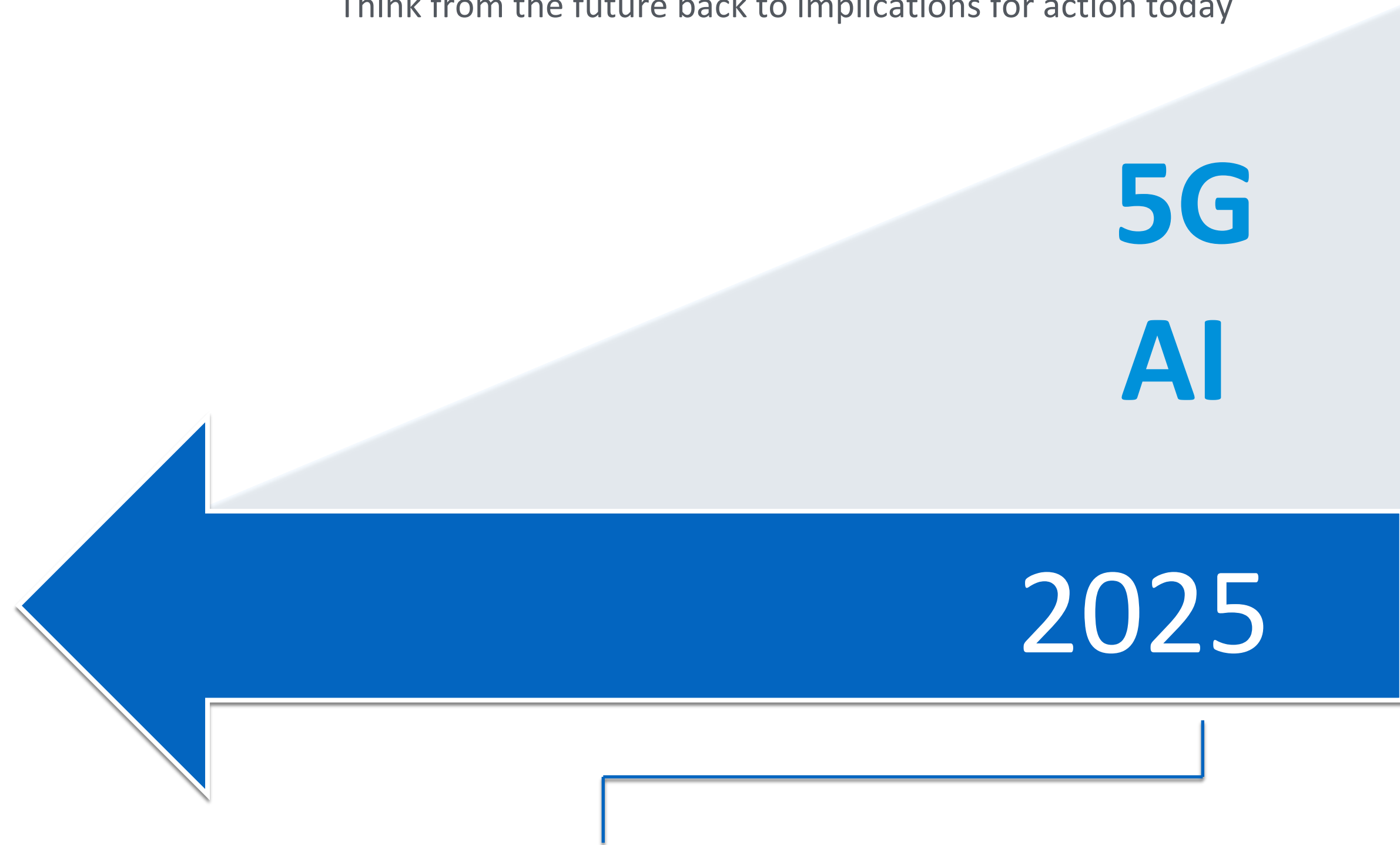
# Platform strategists need to overcome anchoring bias

Think from the future back to implications for action today

Anchoring bias =  
Tomorrow will be  
like today



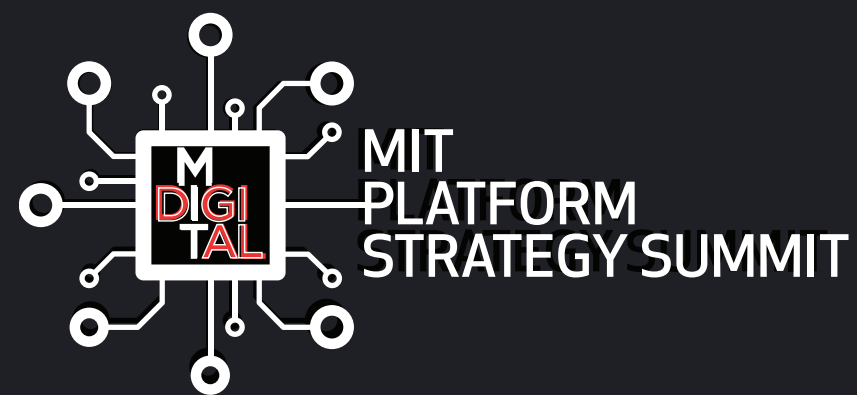
Today



- Highly responsive to customer demand and specifications
- “Always-on” – hyperconnected IoT
- Improve health care delivery
- Transform the retail experience
- Deliver next gen manufacturing

Sources: KPMG 5G Research Sprint, 2019.

# *More* Technology Disruption



## Market Boundaries Moving



Amazon bid for Boost wireless services from Sprint

- Analyst 1: Competing with AT&T is “batshit crazy,” tried Fire in 2014 and 3G Whispernet in 2007
- Analyst 2: Trojan horse for connecting 5G to cloud, entering autos & healthcare

## Regulation Changing



India introduces new platform laws

- Backdoor decryption on social media
- Weaken Section 79, their Section 230, exposing platforms to liability for content deemed unlawful
- Ban selling via partners if have  $\geq 25\%$  stake (Amazon cut 49% to 24%, 300,000 products back on 1 week later)

EU introduces new platform laws

- Article 11 “link tax” would require payment to publishers for © excerpts
- Antiterrorism law would require takedown in 1 hr for content recruiting terrorists, glorifying violence, or giving instructions for acts of violence else 4% tax on global revenue (FB = \$680 M)
- Fair markets legislation requires revelation of how ranking determined

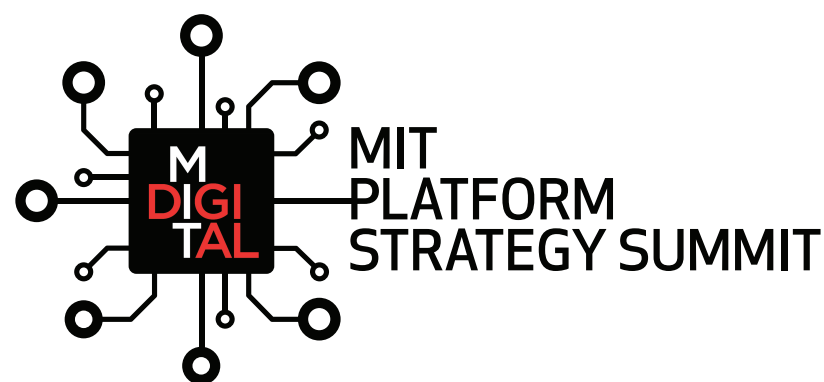
## Data Bias Evolving



Supposed to be transparent and fair

- Microsoft chatbot “Tay” picked up racial & sexist attitudes after chatting with real humans
- Apple auto-complete gave male icon for CEO
- Wisconsin system predicted disproportionately high recidivism rates for black felons relative to white

Some bias inevitable if want comprehensible. Simpler omits cases, like Type I vs Type II errors

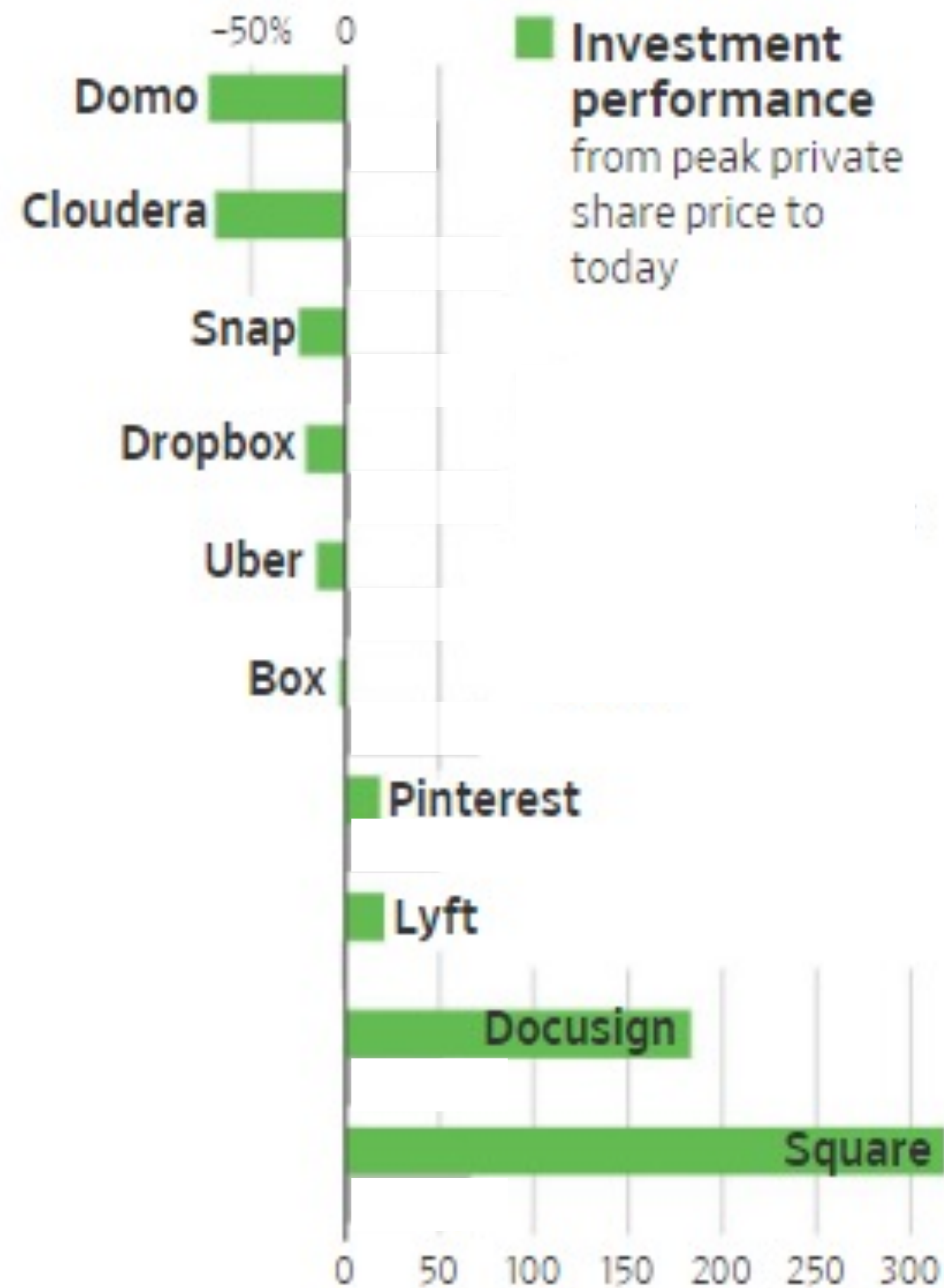




# Wall Street Not Buying What Silicon Valley is Selling

(WSJ Ma

Top 10 best-funded U.S. tech companies to go public since 2015

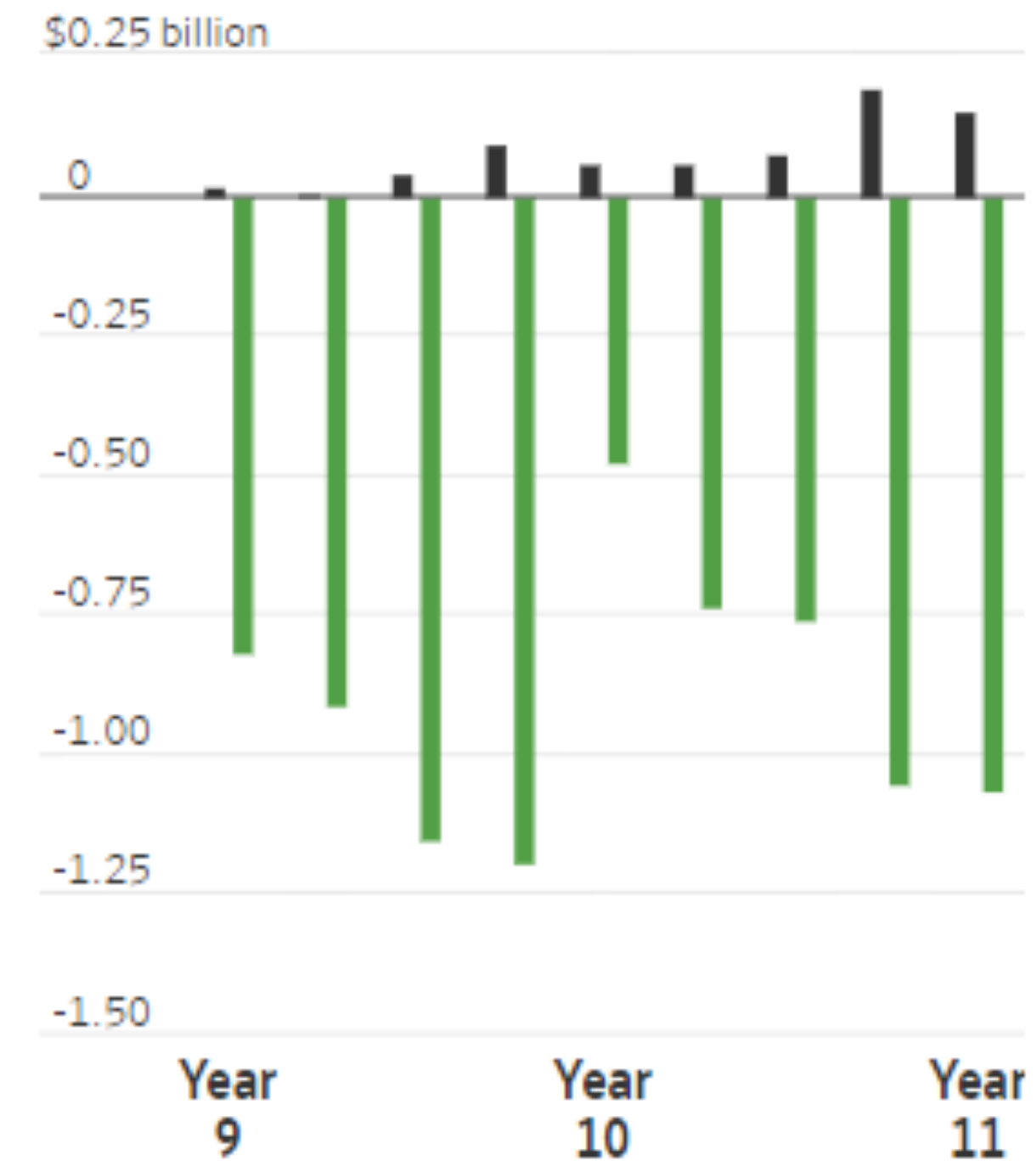


## Loss Leader

Uber's losses as it reached its first decade were a lot heavier than Amazon's at the same age.

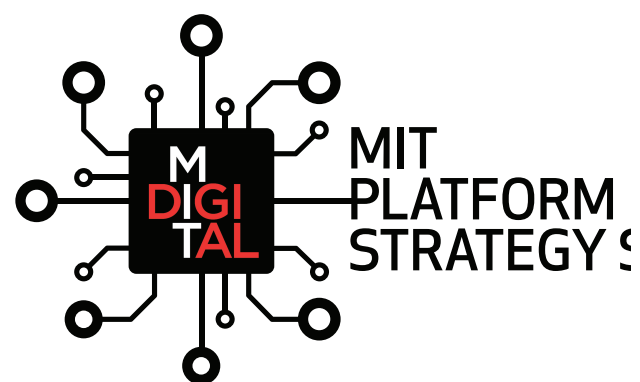
## Operating income, quarterly

■ Amazon\* ■ Uber



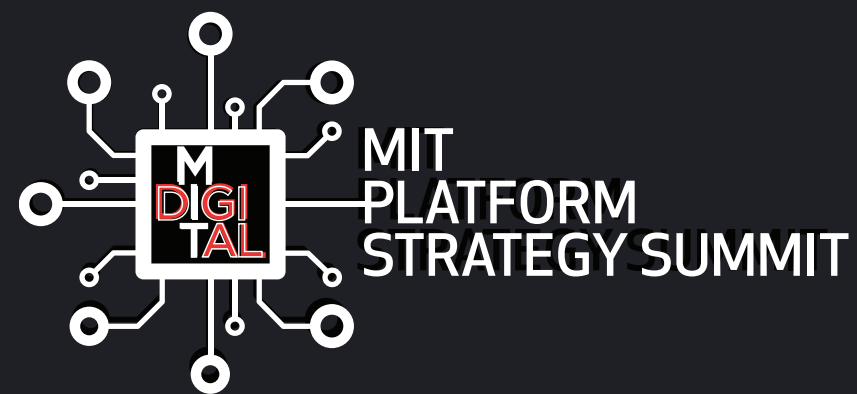
\*In today's dollars

Source: S&P Global Market Intelligence (Amazon); Uber



Source: Wall Street Journal

# Shift to Enterprise Markets



# Platforms employ an order of magnitude fewer resources

Firm	Start year	Employees	Mkt Cap (\$B)
<b>BMW</b>	1916	131,000	51
<b>Uber</b>	2009	16,000	76
<b>Marriott</b>	1927	177,000	39
<b>Airbnb</b>	2008	10,000	38
<b>Walt Disney</b>	1923	199,000	163
<b>Facebook</b>	2004	30,000	473
<b>IBM</b>	1911	350,000	125
<b>Salesforce</b>	1999	35,000	123
<b>New York Times</b>	1851	3,700	6
<b>Twitter</b>	2006	3,300	25

**Platforms are “inverted firms” having shifted production from inside to outside**





**In any market with network effects, the focus of attention must shift from inside to outside the firm.**

**Reason:** You can't *scale* network effects inside as easily as outside.

**Network Effect: Value that partners create for partners that makes the platform more valuable**

- A Google search that makes another search better
- An SAP subroutine from one ISV that helps another ISV

# Transformation Checklist

@InfoEcon

## Ready for Transformation

High proportion of value from information (e.g. news, video)

*Provides NFX spillover*

Precise, fine-grained, modular output (e.g. tweet, ride, stay, retail)

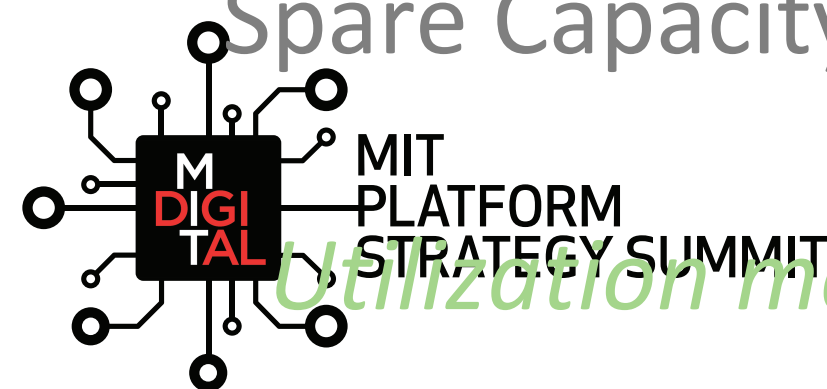
*Allows 3<sup>rd</sup> party supply / curation*

Lightly regulated, fault tolerant (e.g. videos, apps, tweets)

*Safe for experimentation*

Spare Capacity (e.g. Uber, Airbnb, loans, after markets)

*Utilization market, Decouple asset from use*



## Resistant to Transformation

High proportion of value from physical assets (e.g. mining, construction)

*Prevents NFX sharing*

Highly complex products / services (e.g. Boeing airplanes)

*Prevents 3<sup>rd</sup> party supply*

Highly regulated industries. Fault intolerant (e.g. pacemaker, nuclear pwr)

*Dangerous experiments, malice*

High utilization (e.g. surgeons, phones, perishables)

*Own not rent*



# Firm Inversion Insights



## Market Boundaries Moving

- If Amazon can create ecosystems of connected devices, M2M and M2C has more interaction volume than B2C
- Cloud connecting healthcare systems can achieve what Johnson & Johnson or AETNA insurance can't



## Regulation Changing

- Breakup that reduces Google ability to link maps to email to calendar. **Value** ↓ (same for Facebook & Instagram or Amazon market and AWS)
- PSD2 that increases competition on data, allows 3<sup>rd</sup> parties to also create links & spillovers. **Value** ↑



## Data Bias Evolving

NOT static. These systems improve at pace faster than humans

If 1 Tesla can learn from *all* other Teslas, or one interaction can benefit from all other interactions, the rate of convergence will be fast and the size of the bias small.



# Firm Inversion Insights



Enterprises inverting

- Enterprises are buying their way into developer ecosystems (Google buys Kaggle, Microsoft buys GitHub, IBM buys Redhat)



Salesforce Buys Tableau

- Buying for tech? Then product play. Seems to be #1 CRM plus #1 BI analytics
- Buying for community (like LinkedIn or Kaggle)? Then platform play.
- Real performance would come if, not just cloud, but also have partners create value for partners



B2B Enterprise

Amazon creates entire ecosystems

B2C is typically higher Value x Volume  
B2B is typically higher Value x Volume.  
Network effects easier with volume.

Constellations of complementary partners  
e.g. Roppongi Hills

Roadmap (Intel & SAP) tells partners where to build and where not to

# Now let us begin the program

