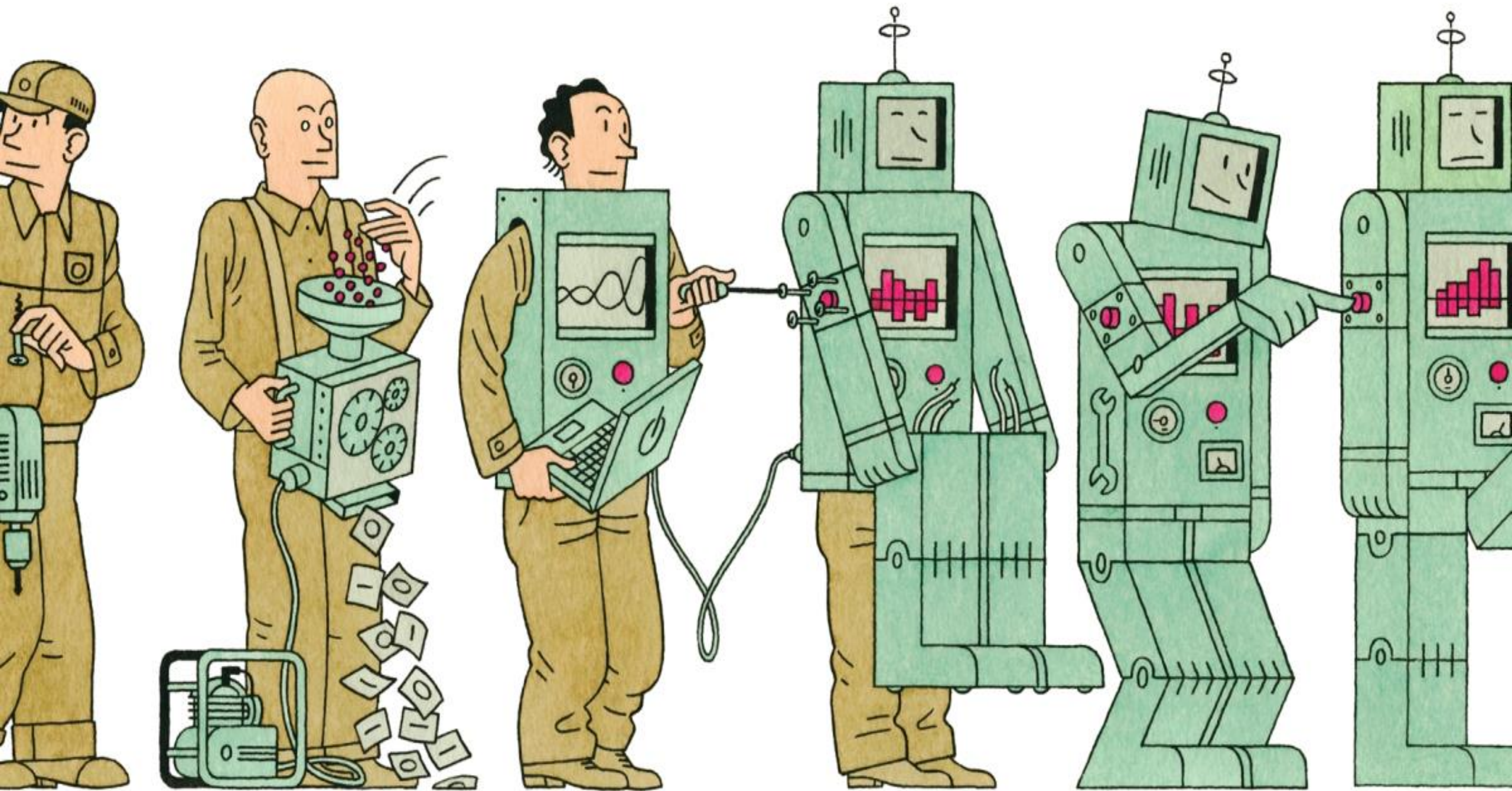« Multinationales numériques et économie des plateformes: de l'innovation de rupture à l'innovation de collision »

Thierry Warin, PhD

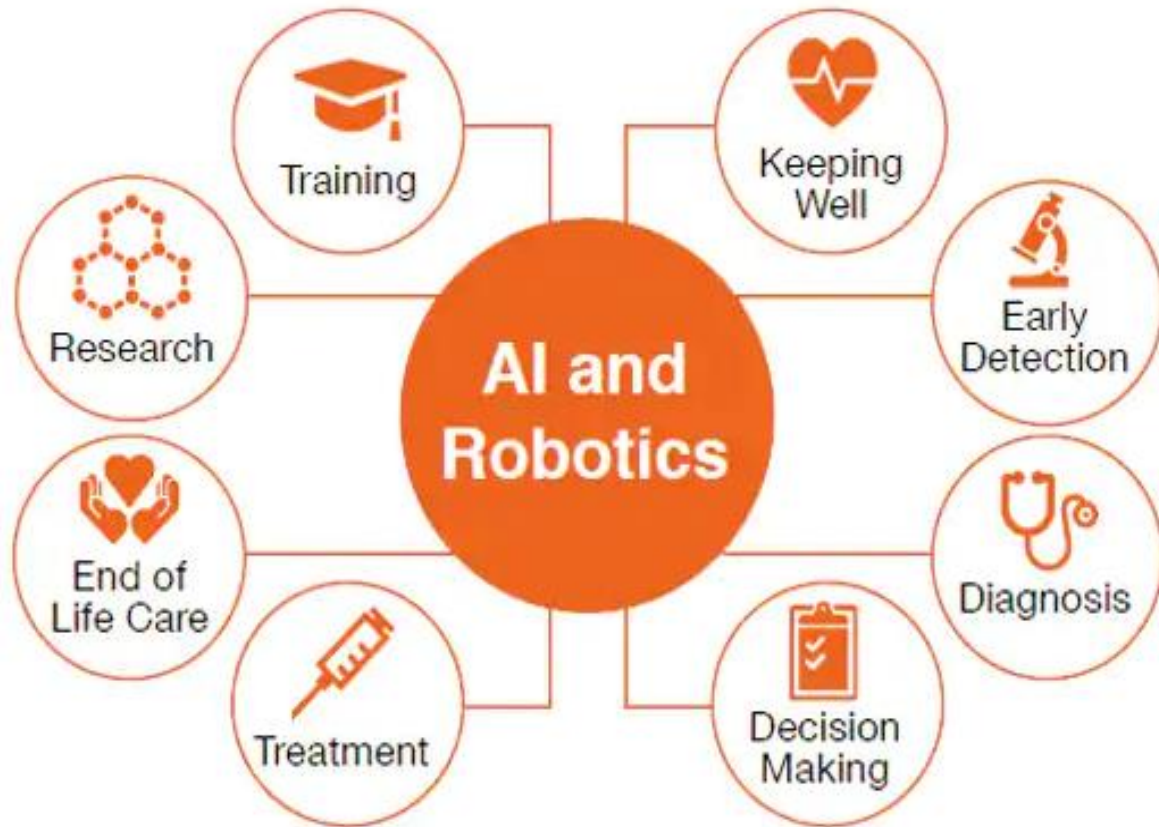# Should Algorithms be allowed to play God?

- A new priest named Mindar is holding forth at Kodaiji, a 400-year-old Buddhist temple in Kyoto, Japan.

- Robot priests can bless you, advise you, and even perform your funeral

- In their book "Competing in the Age of AI", Marco Iansiti and Karim Lakhani highlight the importance of creating an AI factory.
- This session is about the new global technological infrastructure. It will emphasize how artificial intelligence has changed the business landscape across the world.
- We will talk about the new business models and the digital transformation of our societies, something the Japanese define as "society 5.0."

Introduction

- The data revolution creates **endless opportunities to confront the grand challenges of the 21st century**. Yet, as the **scale and scope** of data grow, so must our ability to analyze and contextualize it.
- Drawing **genuine insights** from data requires training in statistics and computer science, and subject area knowledge.
- Putting insights into action requires a careful understanding of the potential ethical consequences - for both individuals and entire societies.

Introduction

Source: PWC

Transforming healthcare

- Internet of Medical Things (IoMT)
- Next slide: AI can give doctors a 48hour head start on life-threatening illness

Kraft-Heinz And Notco Form Joint Venture To Produce AI-Powered Food Products

- Called The Kraft Heinz Not Company, it will leverage NotCo's patented AI platform to develop the food products, while Kraft-Heinz will offer up its production capabilities and formidable sales channels to help bring the products to market.In joining forces with NotCo, Kraft-Heinz is partnering up with one of the hottest new brands in the fast-growing alt-milk category.

- This new JV could serve as a template for other large CPG brands looking to rejuvenate their product lines as more consumers turn to plant-based diets. Many of the old-school brands are ill-equipped to utilize newer product development tools like AI to create new products.
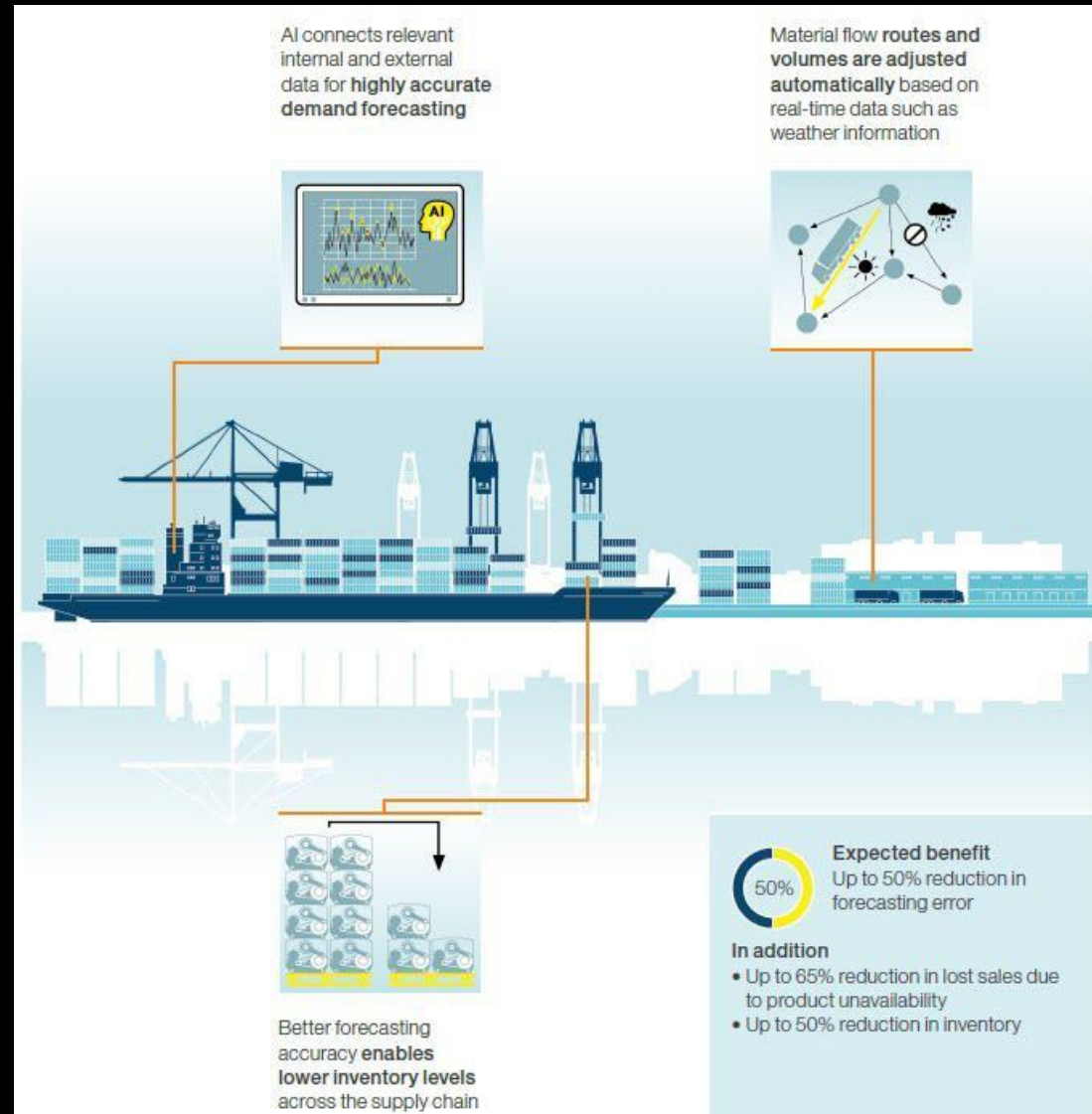
GM Plans 25 Digital Features, Services by 2026

- [General Motors aims to turbocharge its non-vehicle revenue by introducing dozens of new fee-based digital features by 2026, including one enabling a car to predict when it will need maintenance](), a top executive said on Thursday."We have 50-some value-added products and services that we'll be rolling out over the next 36 to 48 months," Steve Carlisle, president of GM North America, said at an investor conference.

- The new digital products, including in-vehicle subscriptions, will be supported by GM's Ultifi software and connectivity platform. Ultifi also will enable over-the-air software updates, and help drivers and passengers with tasks such as online shopping.
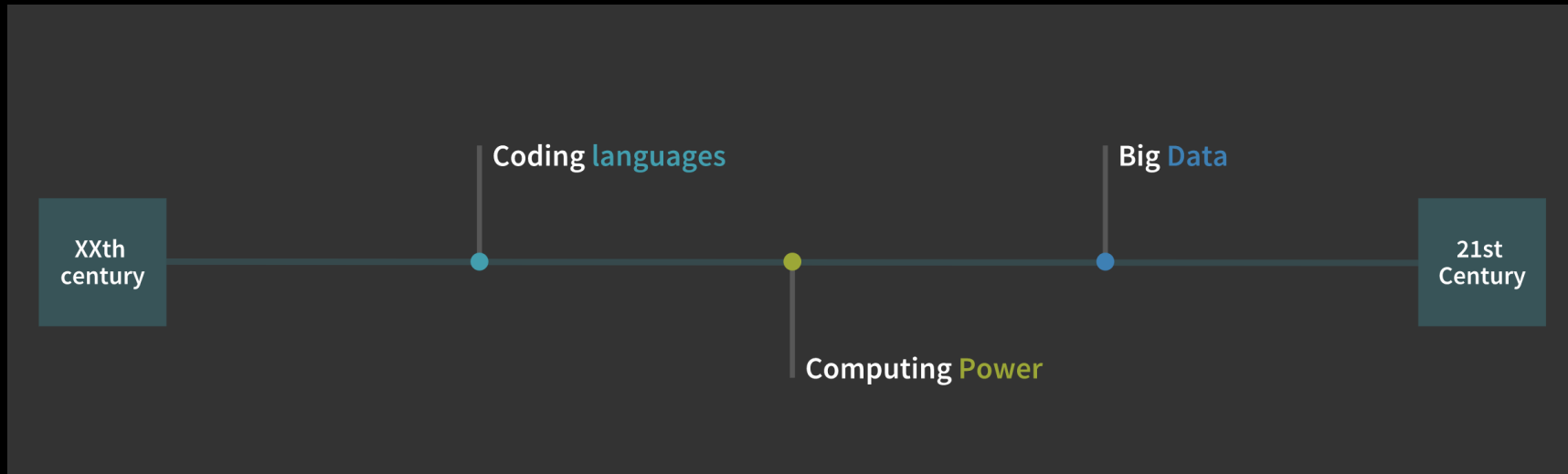
Improving supply chain with machine learning

DHL's research predicting that AI will enable back-office automation, predictive operations, intelligent logistics assets, and new customer experience model

AI connects relevant internal and external data for **highly accurate demand forecasting**

Material flow **routes and volumes are adjusted automatically** based on real-time data such as weather information

Better forecasting accuracy **enables lower inventory levels** across the supply chain

Expected benefit
Up to 50% reduction in forecasting error

In addition
• Up to 65% reduction in lost sales due to product unavailability
• Up to 50% reduction in inventory

1. The Artificial Intelligence Revolution

The A.I. revolution

Coding languages

Big Data

XXth century

Computing Power

21st Century

The A.I. revolution

… to Society 5.0

- The era of data is upon us. It is proliferating at an unprecedented pace, reflecting every aspect of our lives and circulating from satellites in space through the phones in our pockets.
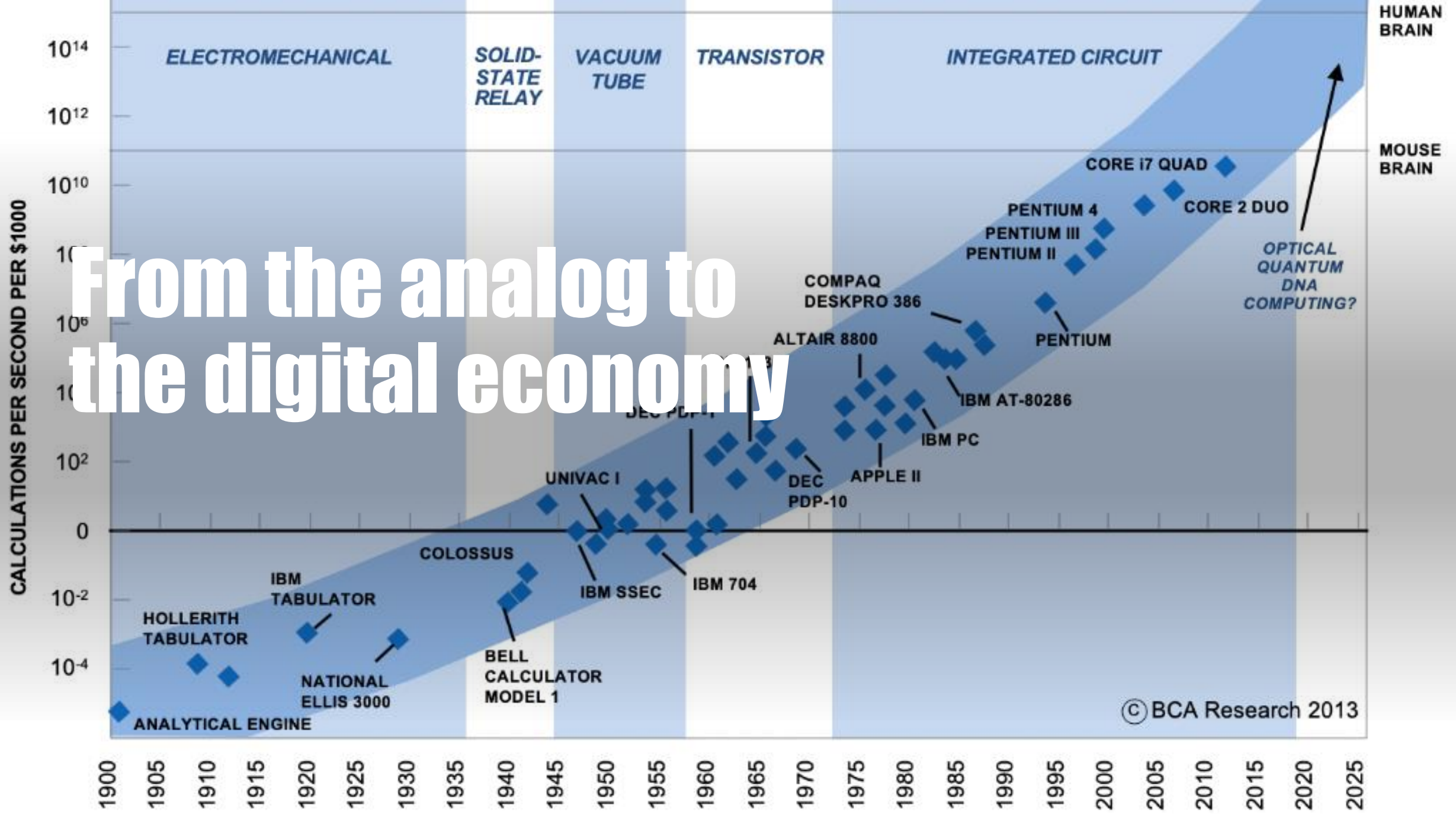
2. IR 4.0 and its impact on the global economy

Architectural revolution

- architectural innovation for companies
- architectural innovation for governments (Government 4.0)
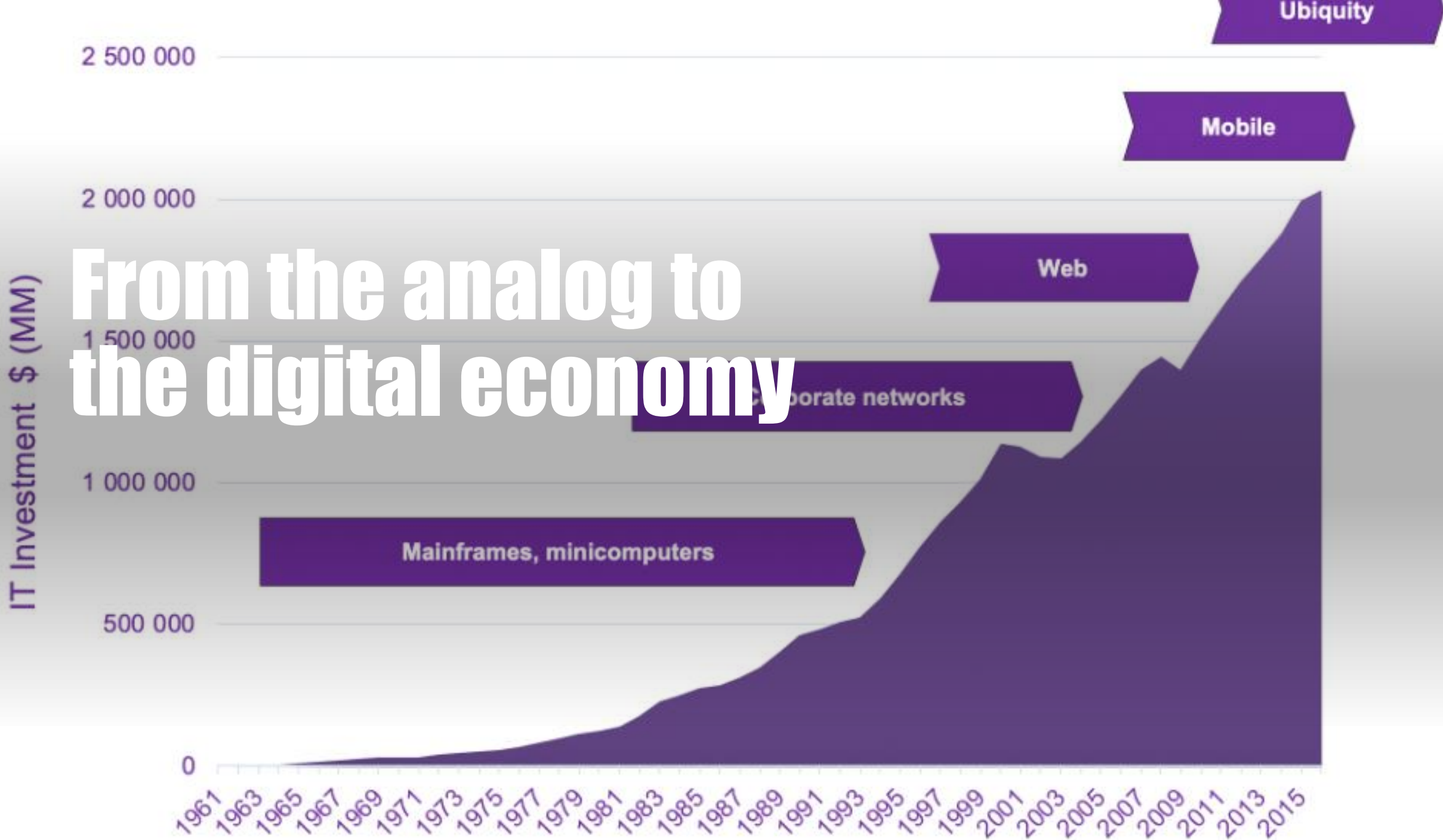
From the analog to the digital economy

Calculations per second per $1000 chart showing the exponential growth of computing power from 1900 to 2025, across eras: ELECTROMECHANICAL, SOLID-STATE RELAY, VACUUM TUBE, TRANSISTOR, and INTEGRATED CIRCUIT. Reference lines for MOUSE BRAIN and HUMAN BRAIN. Data points include ANALYTICAL ENGINE, HOLLERITH TABULATOR, IBM TABULATOR, NATIONAL ELLIS 3000, BELL CALCULATOR MODEL 1, COLOSSUS, IBM SSEC, UNIVAC I, IBM 704, DEC PDP-1, DEC PDP-10, ALTAIR 8800, APPLE II, IBM PC, IBM AT-80286, COMPAQ DESKPRO 386, PENTIUM, PENTIUM II, PENTIUM III, PENTIUM 4, CORE 2 DUO, CORE i7 QUAD, and OPTICAL QUANTUM DNA COMPUTING?

SOURCE: RAY KURZWEIL, "THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY", P.67, *THE VIKING PRESS*, 2006.

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From the analog to the digital economy

From the digital economy to the platform economy

PC	Web	Mobile	Ubiquity
• Corporate networks • Tools, applications • [obscured] • [obscured] EU	• Broad adoption • Static content • PCs, browsers • [obscured]	• Scale • Dynamic • Mobile • Emerging cloud	• Consumer IoT • Industrial IoT • Cloud • Emerging VR, AR, blockchain

P[obscured] segments	[obscured] platforms	Ecosystems reach across industries	Hub economy
• [obscured] begins • Product pricing/financing • License-based approach • Direct monetization of customer	• [obscured] scales • Early multisided markets • Localized networks within industries	• Platforms begin to connect industries • Indirect monetization of customer • Value capture starts to tip	• Platforms at scale in every sector • Combine digital and analog value creation • Integrate old and new assets • Value capture highly concentrated toward few hub firms

IBM   **Microsoft**   YAHOO!   Google   Alphabet   amazon

From the digital economy to the platform economy

- Does the story end here?
- What comes after the platform economy?

It's
a GIG
WORLD OUT
THERE

The Platform Economy

IF YOU'VE EVER
RENTED AN AIRBNB
ROOM OR CALLED
FOR AN UBER
DRIVER—you're
among the millions of
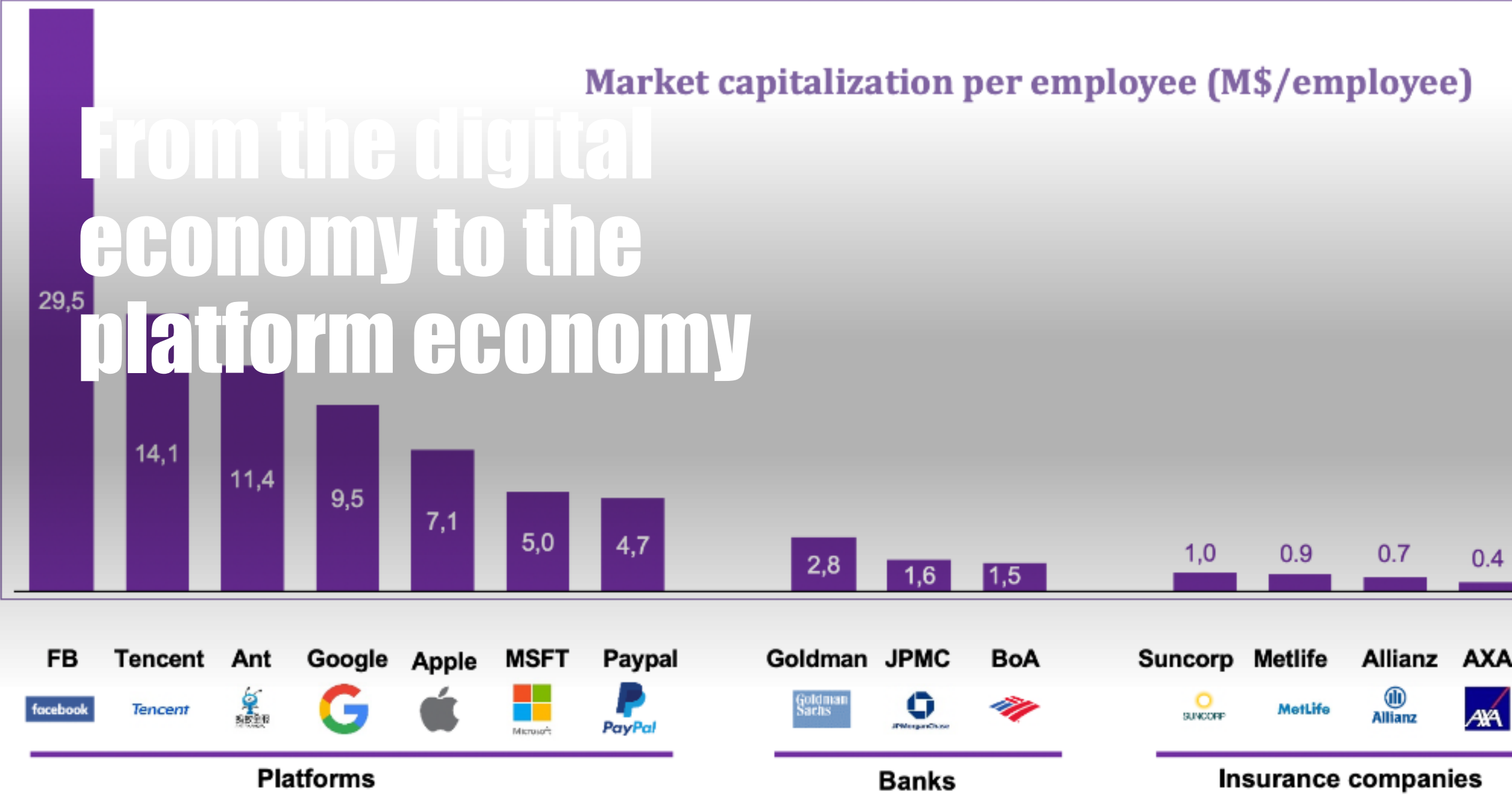Americans engaging in
the ever growing "gig"

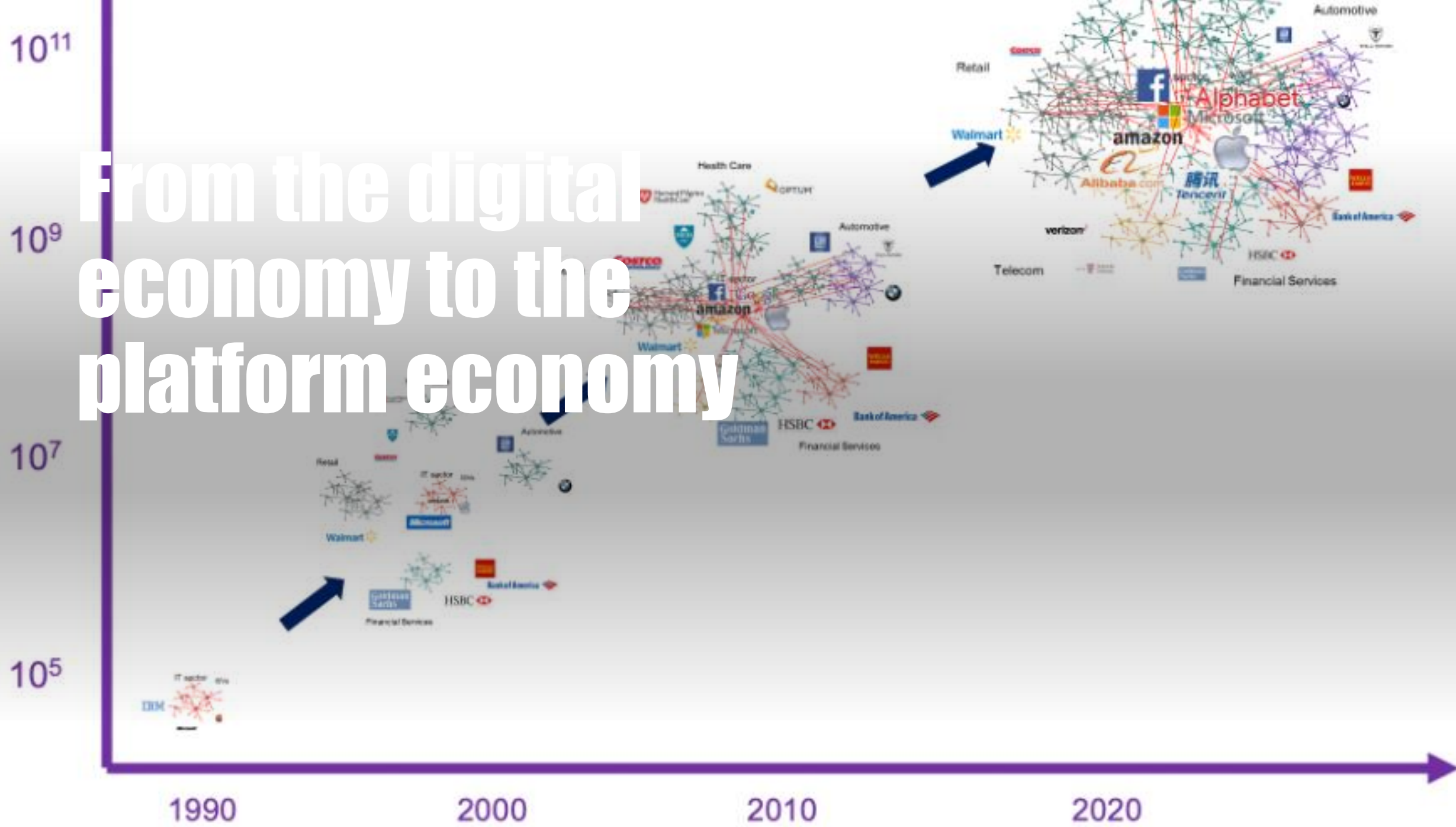WORK IT!

From the digital economy to the platform economy

- The notion of Keystone Player (Iansiti and Levien, 2004)
- Economies of scale + economies of scope + network effects + data network effects + … = the new monopoly power?

Market capitalization per employee (M$/employee)

From the digital economy to the platform economy

Platforms							Banks			Insurance companies			
FB	Tencent	Ant	Google	Apple	MSFT	Paypal	Goldman	JPMC	BoA	Suncorp	Metlife	Allianz	AXA
29,5	14,1	11,4	9,5	7,1	5,0	4,7	2,8	1,6	1,5	1,0	0.9	0.7	0.4

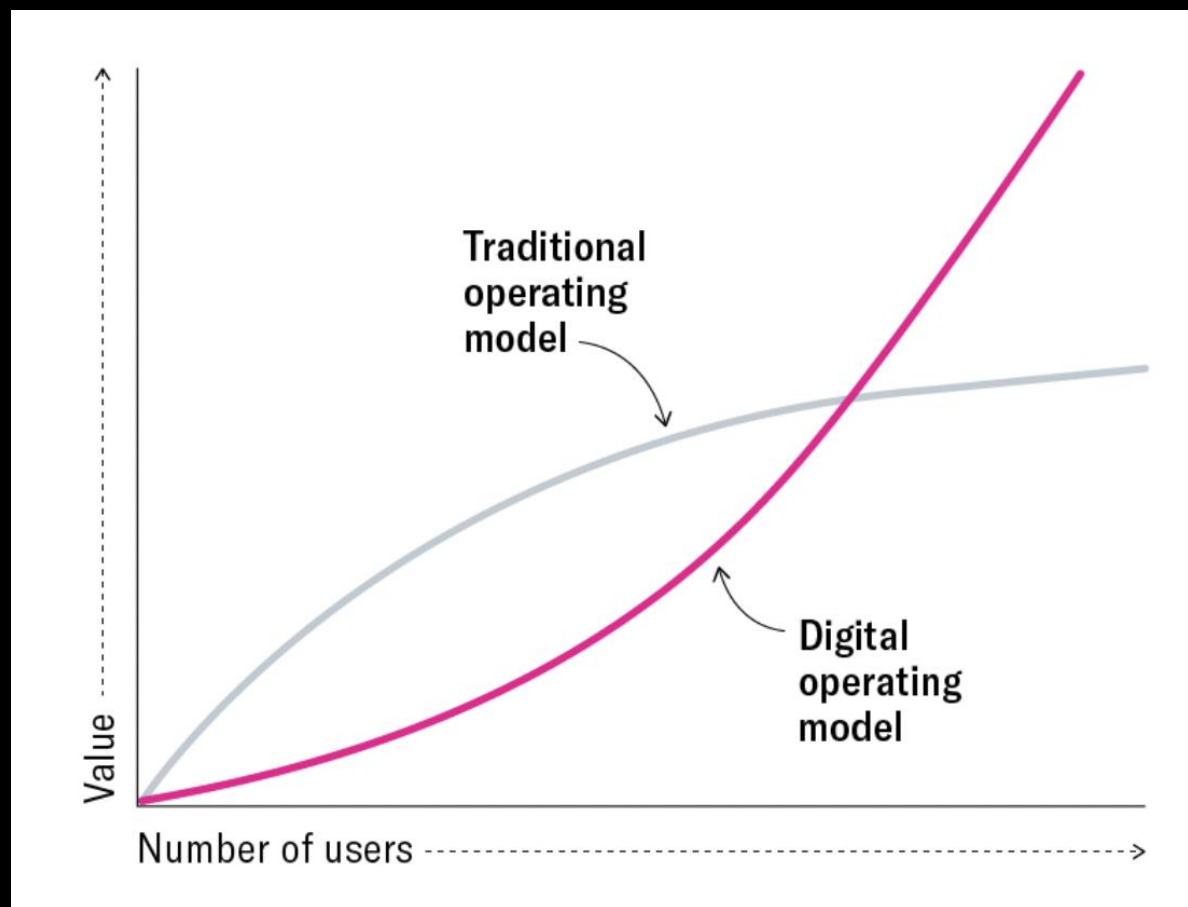From the digital economy to the platform economy

From the digital economy to the platform economy

From rupture to collision

In grey: similar companies with diminishing returns to scale

In pink: key players / Digital Natives with increasing returns to scale

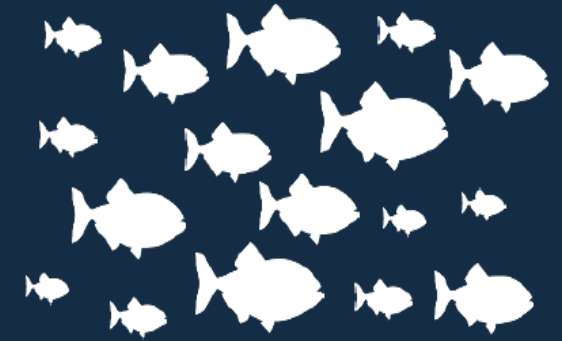# Platform economics in nutshell

Digital
White Sharks

- At the top of the food chain -

Digital
Swordfish

- Big, fast, rarely get eaten -

Digital
Piranhas

- Small but aggressive for prey -

statista

From the digital economy to the platform economy

From rupture to collision
- The question of the digital natives: the A.I. factories.
- The question of network effects and data network effects

Why Google is going to sell pizzas

Google Express, Uber Eats, Domino Pizzas, etc.

- Improvement of existing business models
- Development of new business models

Conclusion

- A.I. and data: how to become a 21st-century manager

  "AI is not going to replace managers but managers that use AI will replace those that do not,"

  Rob Thomas, senior vice president of IBM's cloud and data platform