

# Welcome to 'AI and Everything Else'

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# AI and Everything Else

**Benedict Evans**

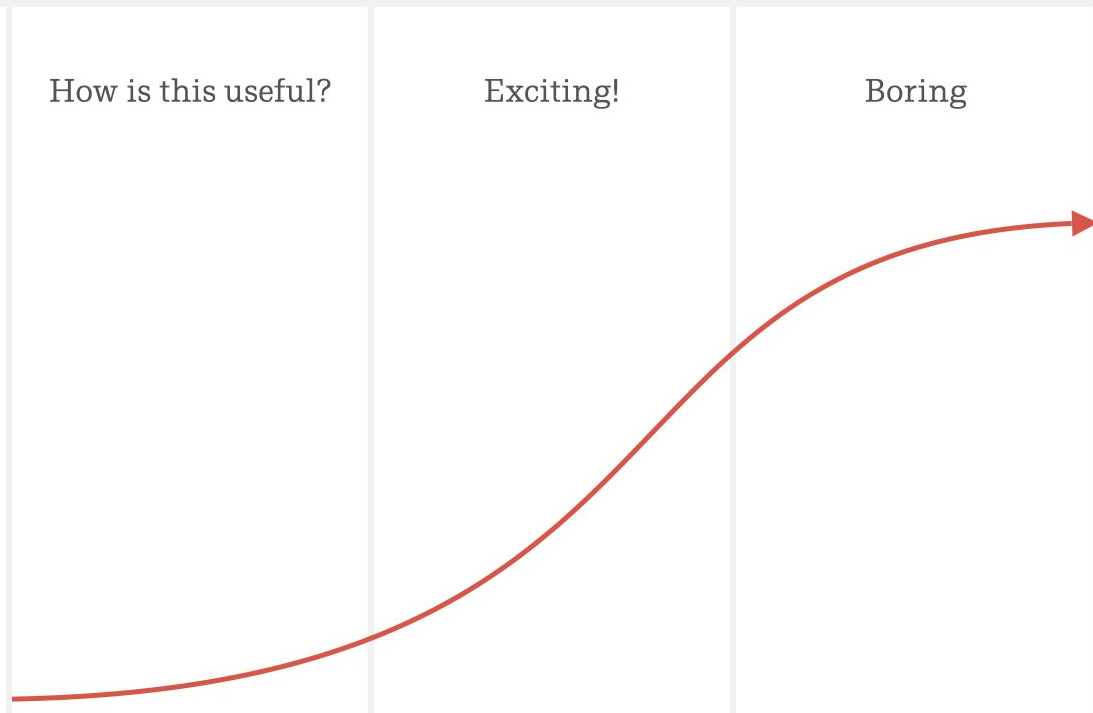
November 2023

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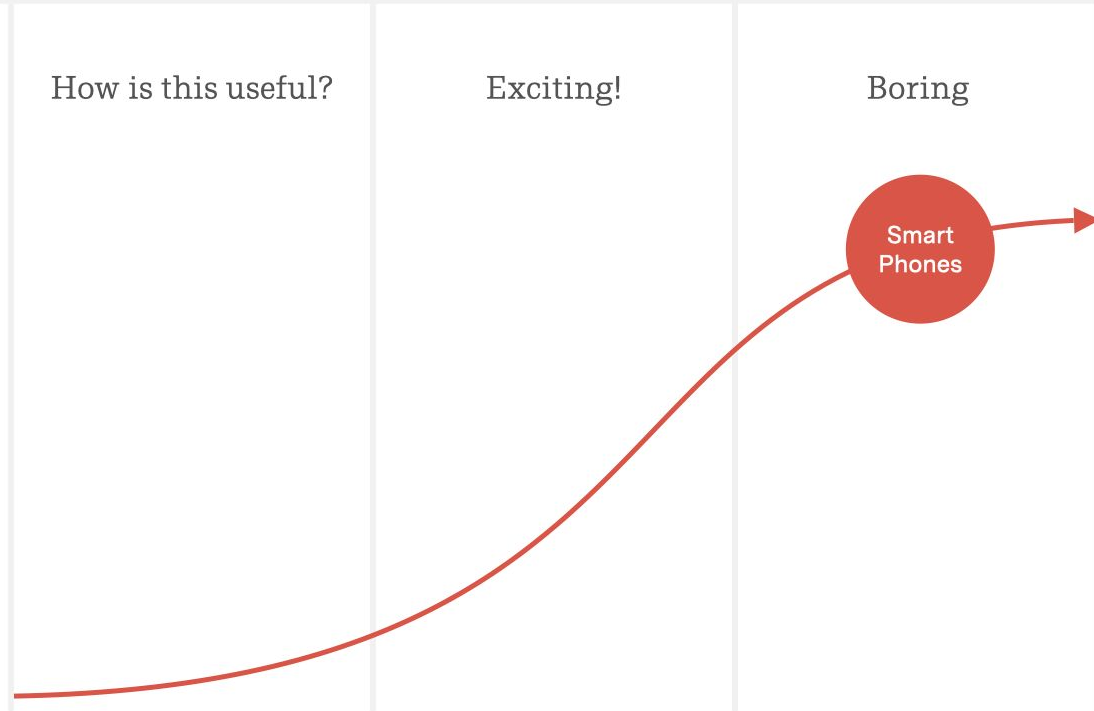
# New technologies come in S Curves

New tech generally goes from stupid to exciting to boring



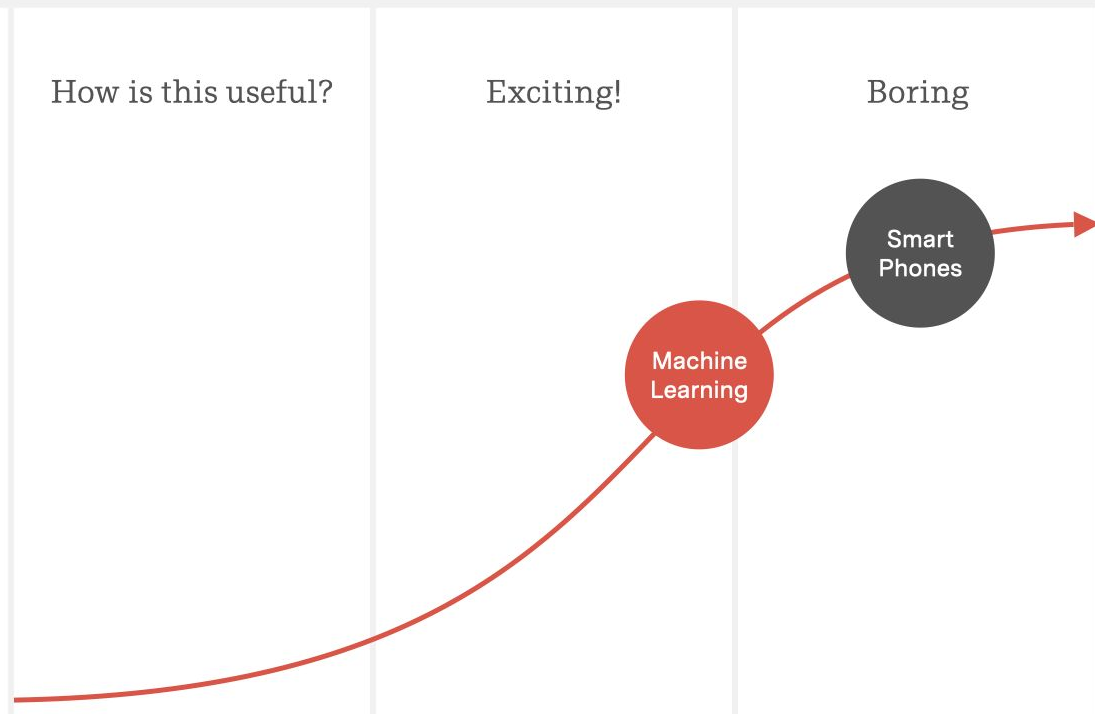
# New technologies come in S Curves

Smartphones are mature, which means they're amazing and boring



# New technologies come in S Curves

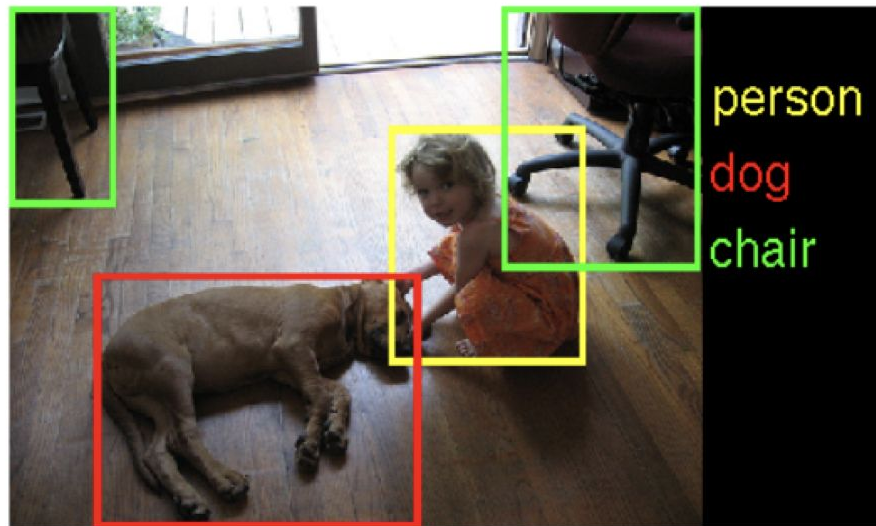
And after ten years, machine learning is well on the way to 'boring'



# 2013: Machine learning 1.0

“That’s clever, but so what?”

How is this useful?



Cool! (But, so what?)



# “How is machine learning useful?”

What was the right level of abstraction?

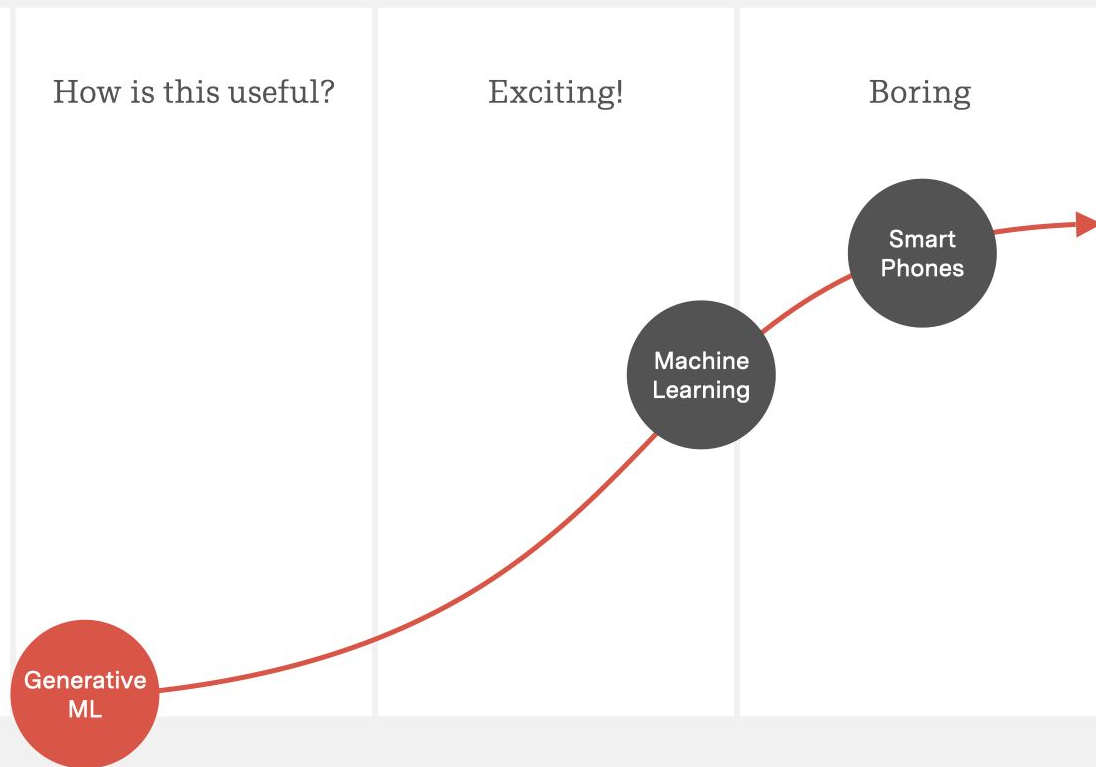




“AI is anything that doesn’t work yet”

# A new wave of machine learning

And after ten years, machine learning is well on the way to 'boring'



## 2023: machine learning 2.0

“two cute kittens standing on a laptop, close-up, shot on Fujifilm Pro 400h”

“That’s clever, but so what?”

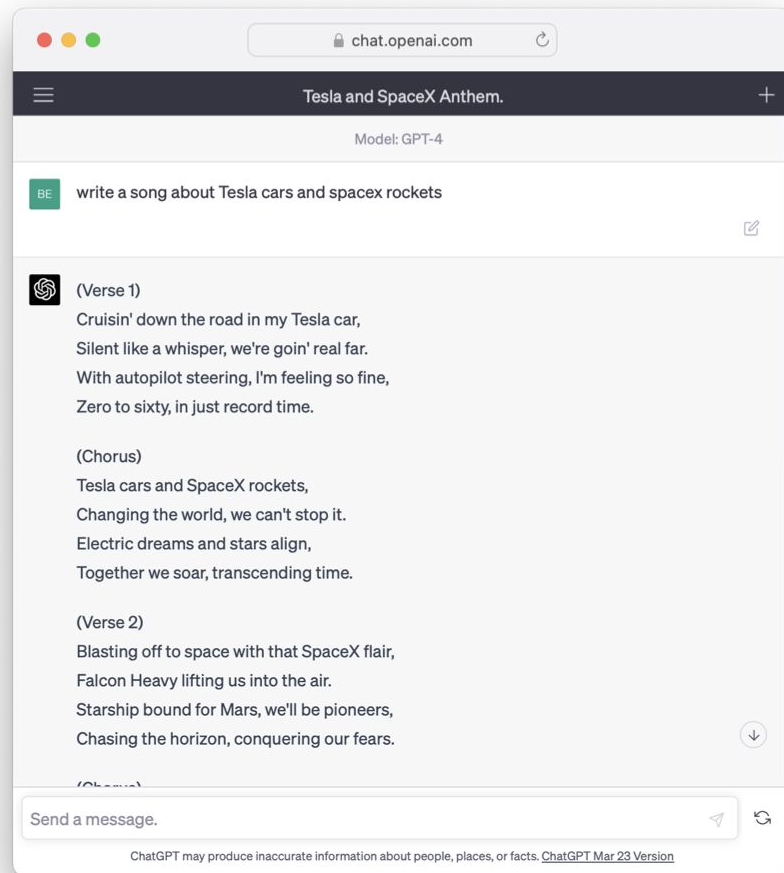
How is this useful?



# The cool demo

“write a song about Tesla cars and spacex rockets”

How is this useful?

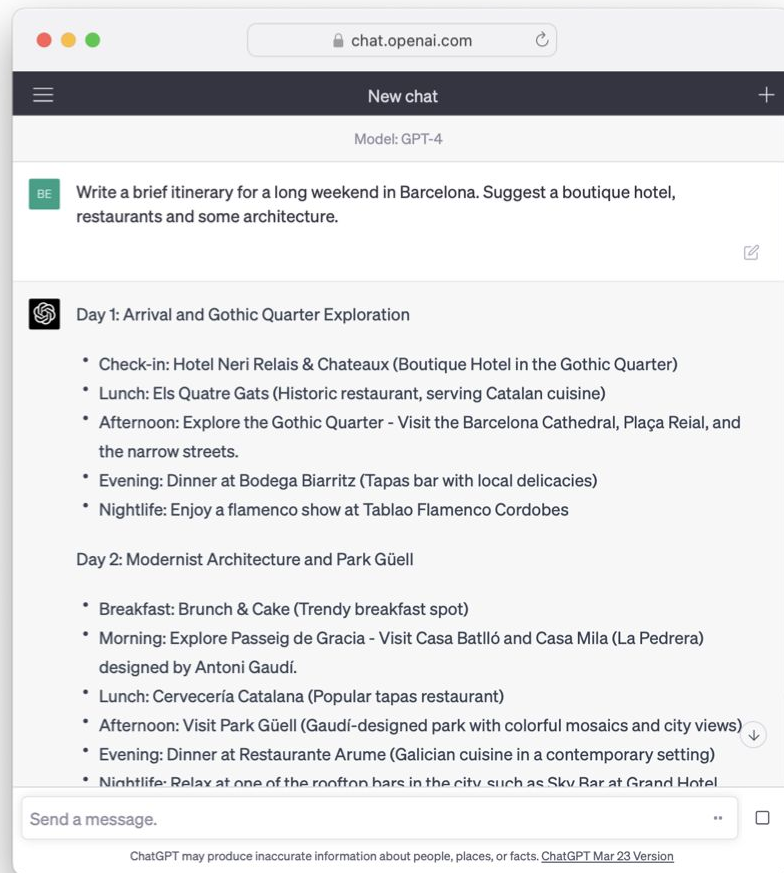


# Generative search

What does this do to search?

The web?

Everything else?



# Generative product?

“print puff sleeve a-line dress, red and white small print pattern, female model”

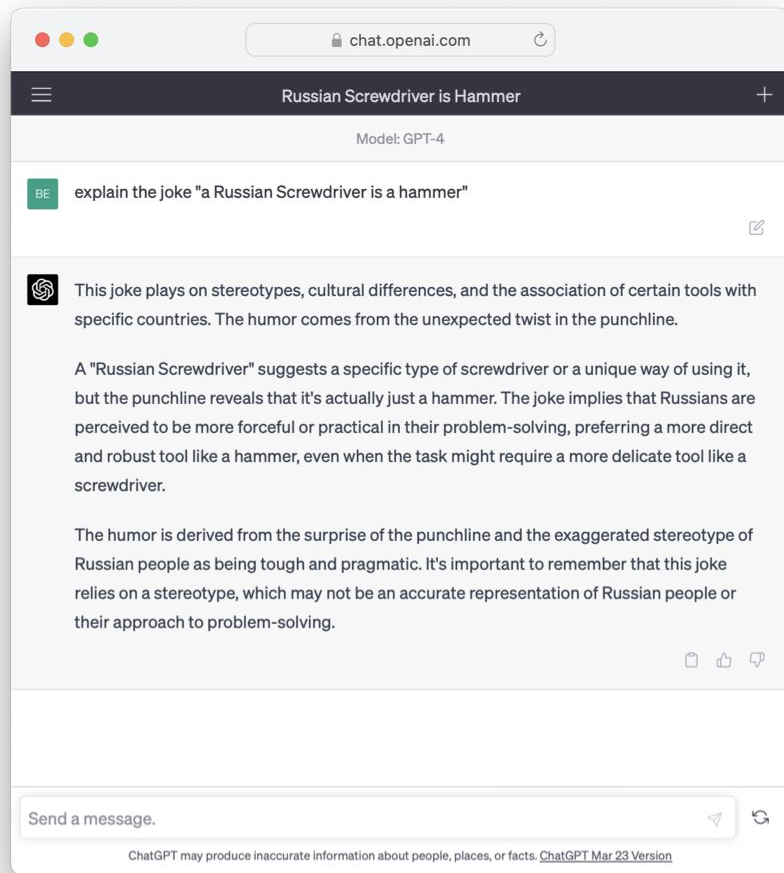
Three of these images are created by Midjourney - one is a Shein product shot

So when can Shein create the products in response to searches in the app?



# Wait, is this still a demo?

How far does 'pattern prediction' lead to reasoning?



100m ChatGPT users in 6 months!

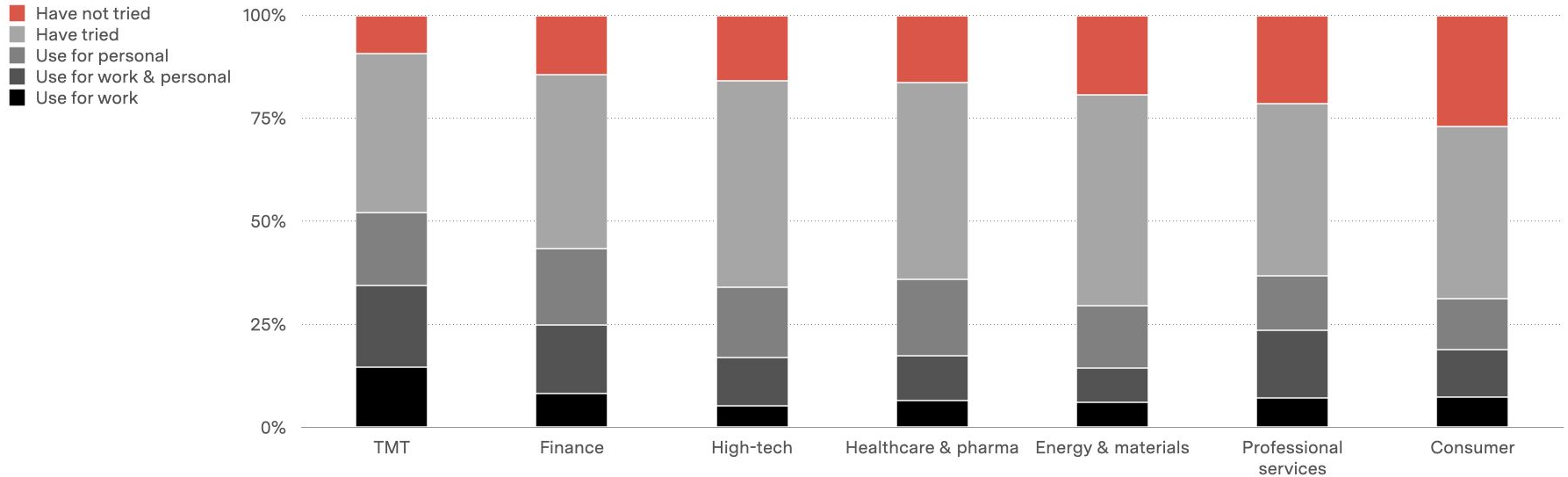
OpenAI has \$1bn revenue!!



# Everyone has tried it

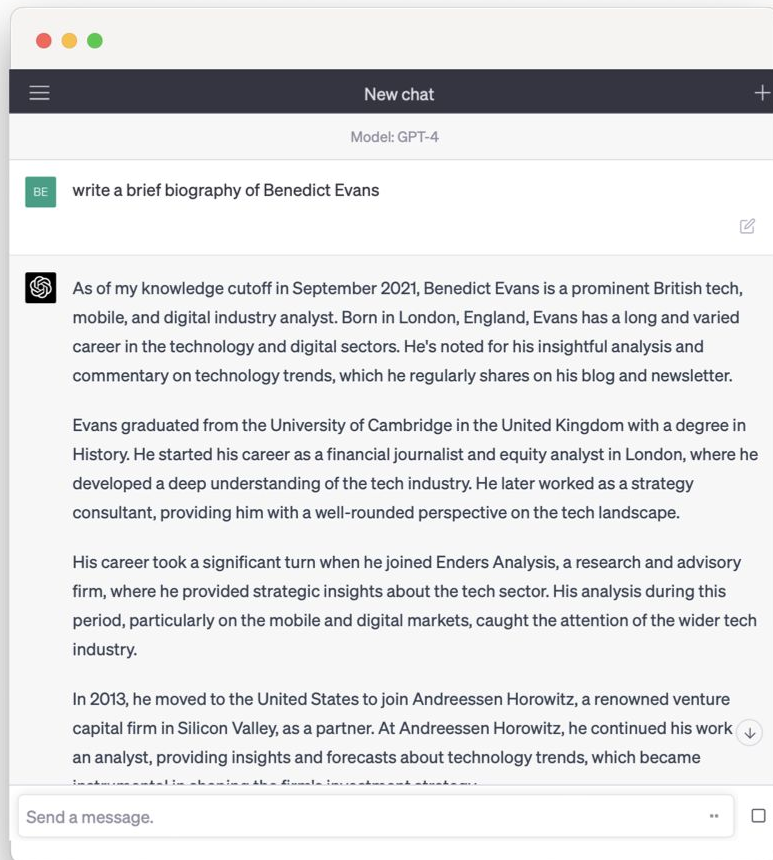
In just six months, vast majority of surveyed execs have tried ChatGPT - far fewer are using it

Corporate management exposure to generative AI, April 2023



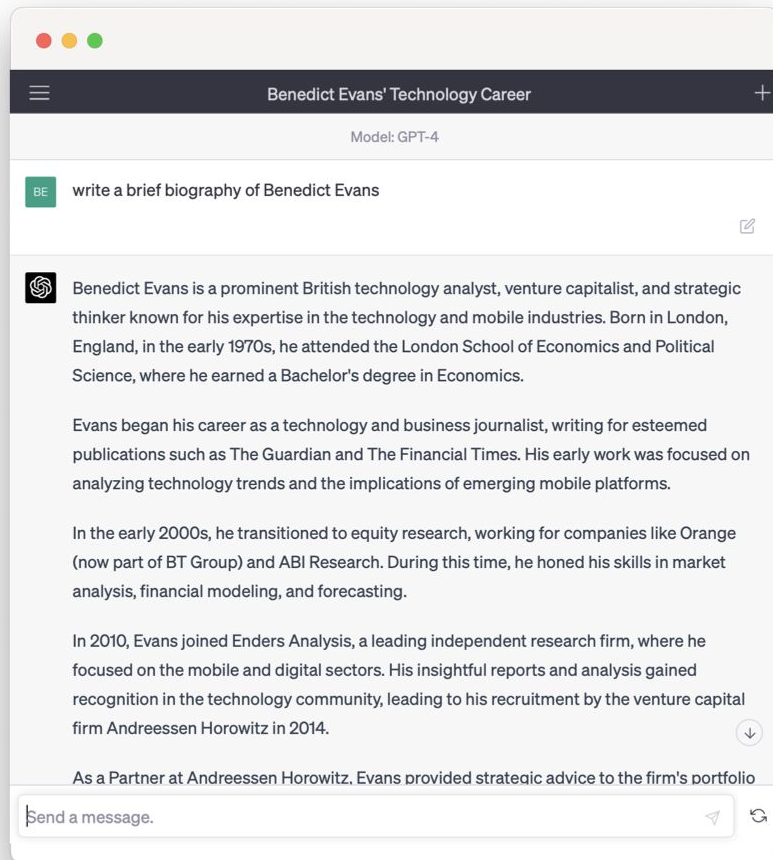
# Who is Benedict Evans?

This looks like a good biography of me



# However...

This also looks like a good biography of me

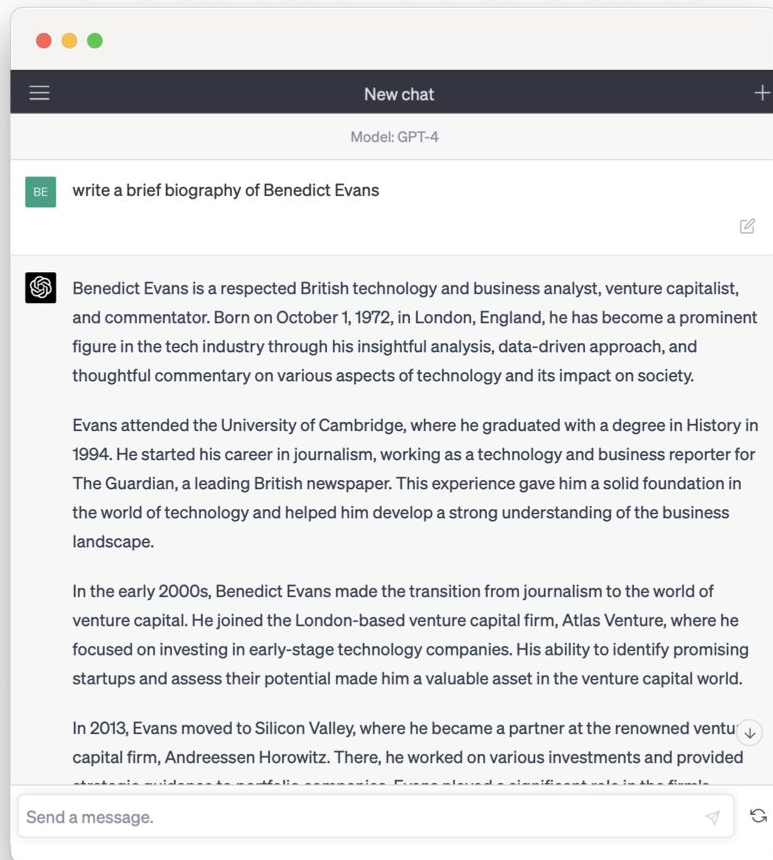


# However...

These all *look* like biographies of someone *like* me

This is not 'lying'

It's not answering the question - it's matching a pattern



# This paper does not exist

What is an answer **likely** to **look like**? Well...

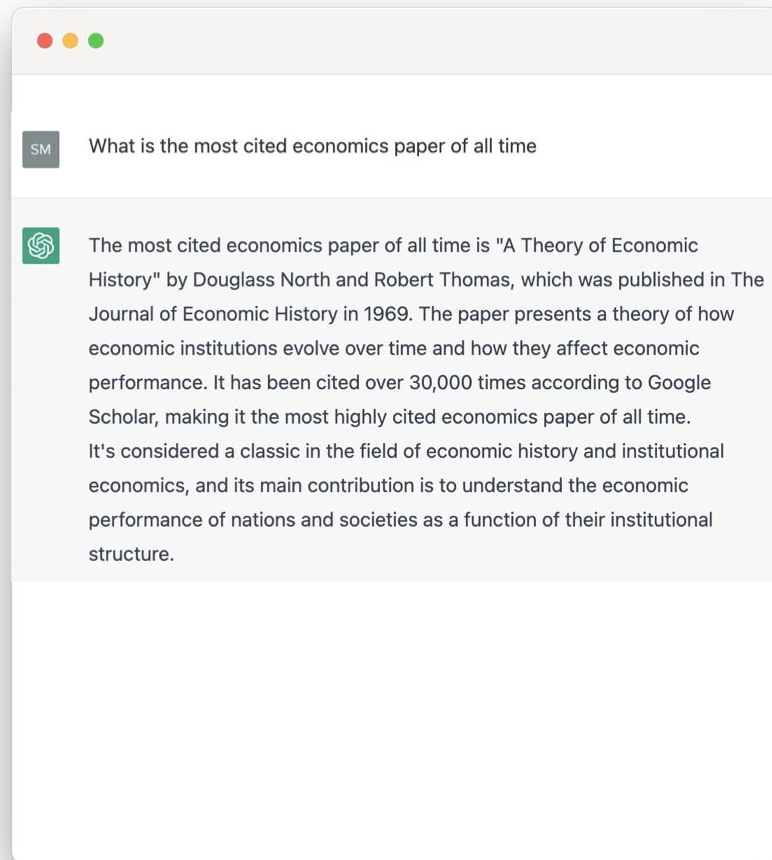
**Economics history** papers have the most citations

**Douglass North** is one of the most highly cited authors

Economics papers most commonly have **two co-authors**

North's most cited work with a co-author was "The rise of the western world: A new economic history", with **Robert Thomas**

Douglass North's most-cited co-authored paper was published in **The Journal of Economic History**



# This very cool...

The perspective, optics and lighting are perfect...



# This very cool...

But where's the door?

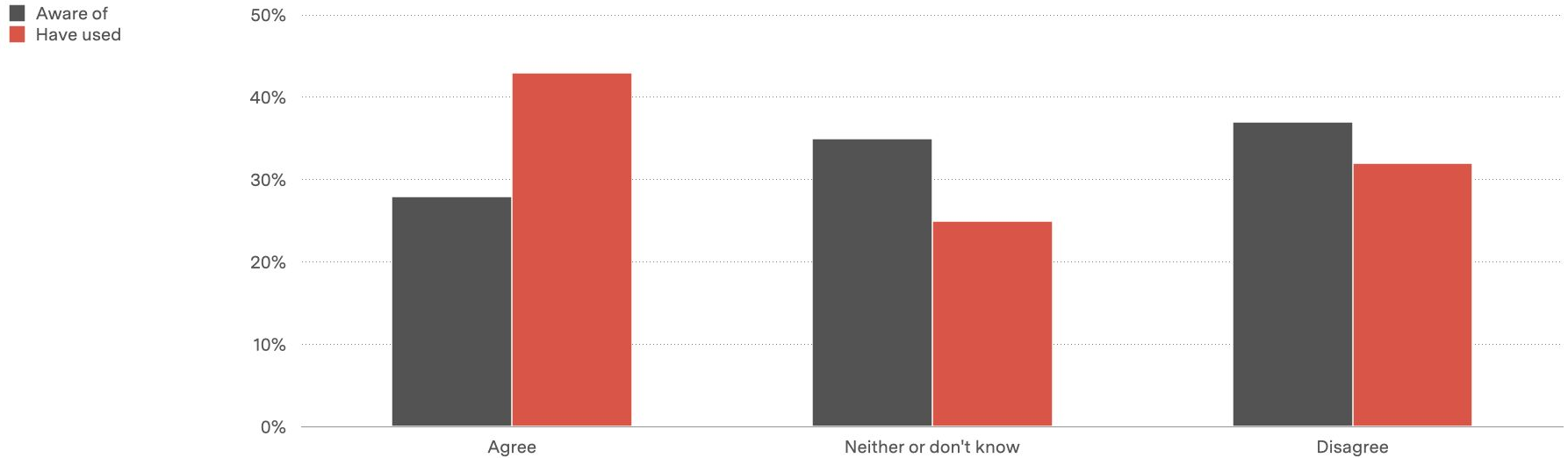
And why are there two steering wheels?



# A little exposure can be misleading

Generative ML results always *look* correct, but that might not mean they *are* correct

“Generative AI always produces actually accurate answers” (UK, June 2023)





Answer this question

~~Answer this question~~

What sort of text is in the training data that seems likely to be related to questions that look like this?

# So what is this?

How do we understand what these systems are doing?

Not a database

Not Napster

Not predictable

Bad at things computers  
are good at

Probabilistic

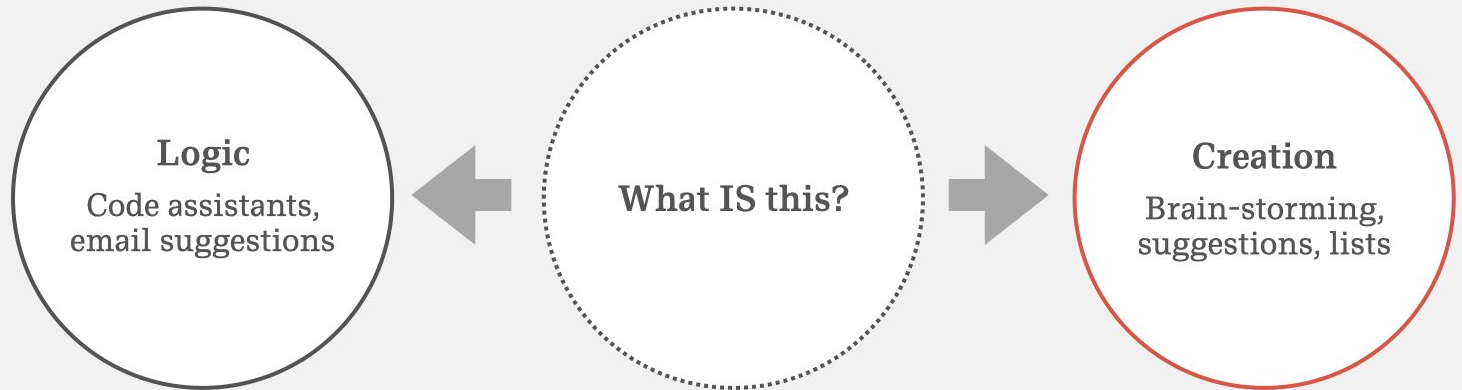
Unpredictable

Trained on everything  
(but half-remembers it)

Good at things computers  
are bad at

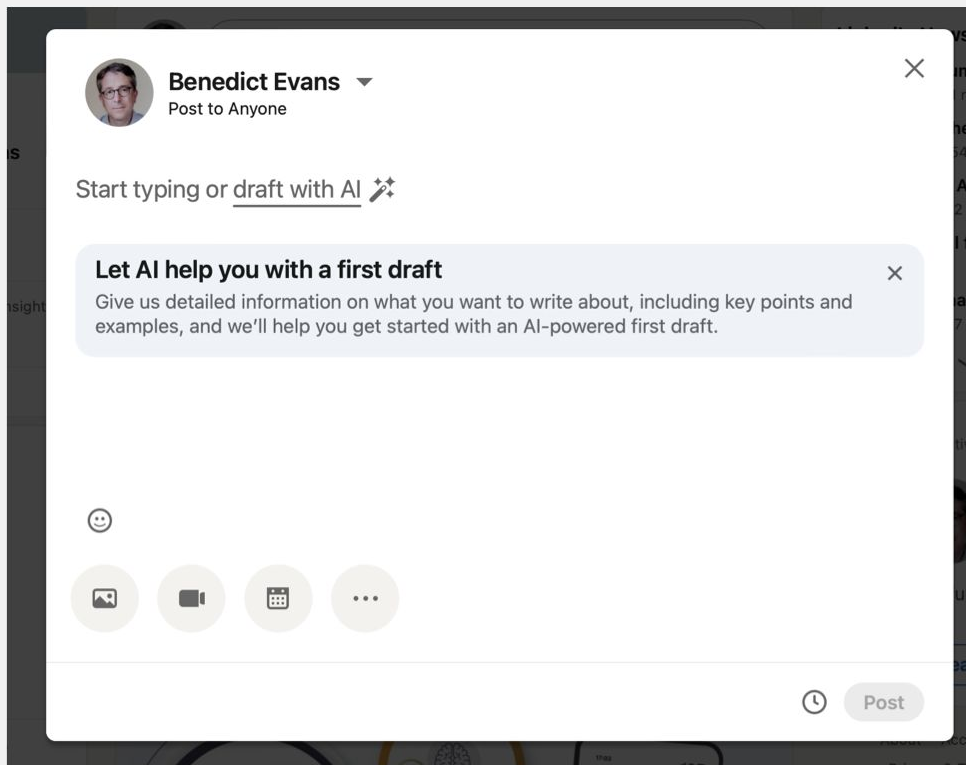
# Some early application

How do we work out what to do with this?



“AI gives you infinite interns”

“Every text box on the internet will get an LLM”



# Platforms rush to roll out

“Every single team at Amazon is exploring generative AI” - Amazon CEO



ideogram.ai

ideogram: Helping people become more creative.

Describe what you want to see

Generate home me

shoe social media post, fashion

mohanboot 9 minutes 1 ❤️

logo combine letter 'D' and dragon

Matthew McConaughey and his son Levi, photo

solportais 8 minutes 1 ❤️

A bowling player holds a bowling guide book with the title text "How to bowl with alcohol" in his hands, product...

mrsourcedesign 8 minutes 1 ❤️

a movie poster by disney pixar, with visible prominent text in full view that spells "funny electric chair", a wooden...

UltroneX 1 day 113 ❤️

"Coffee & kindness" - A coffee cup with a smiling face and a heart-shaped steam rising from it, typography, poster,...

notanaccepter 6 minutes 1 ❤️

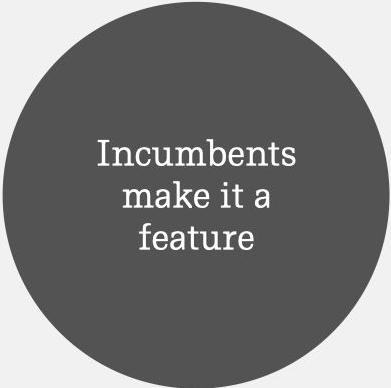
T-shirt Logo. "Just a man who loves cats" write all around the logo. Muscular man, with eyeglasses, light goatee, tattoos all...

claviddm 13 minutes 3 ❤️



# Absorbing a platform shift

Disruption versus absorption



Incumbents  
make it a  
feature



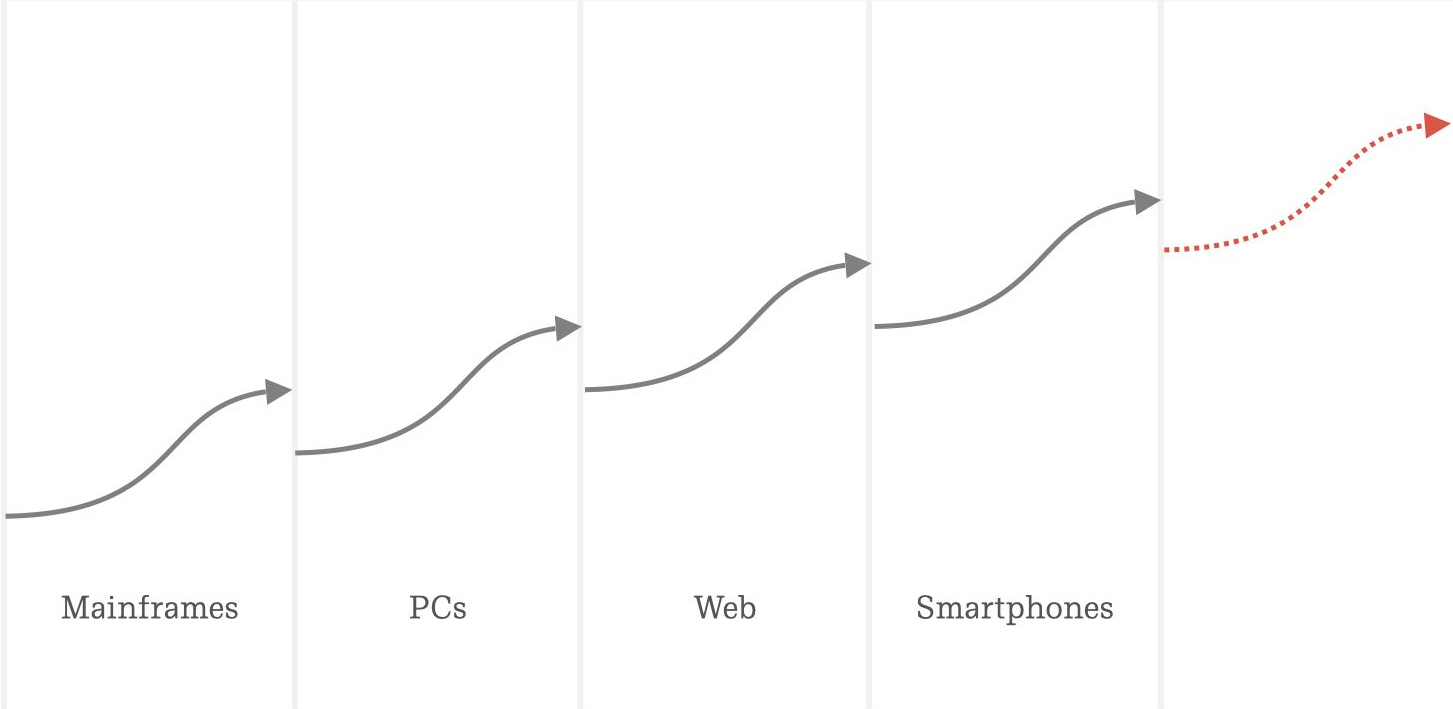
Startups use it  
to unbundle



Sometimes, you  
change the  
nature of the  
market

# Platform shifts

And in software - SQL, open source, cloud... and machine learning



# How do platform shifts happen?

How do new technologies reset the industry?



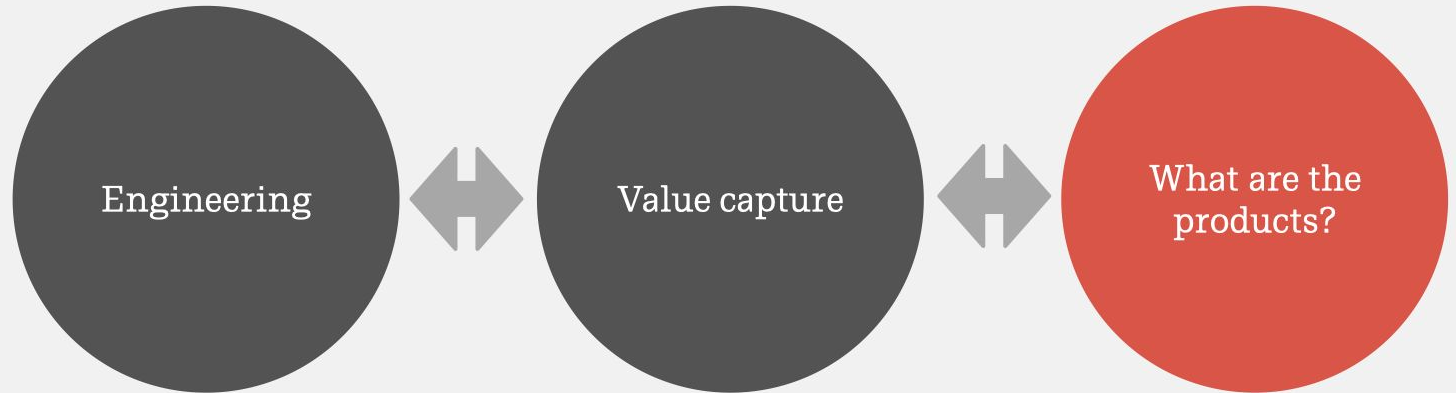
Engineering

Value capture

What are the  
products?

# How do platform shifts happen?

How do new technologies reset the industry?

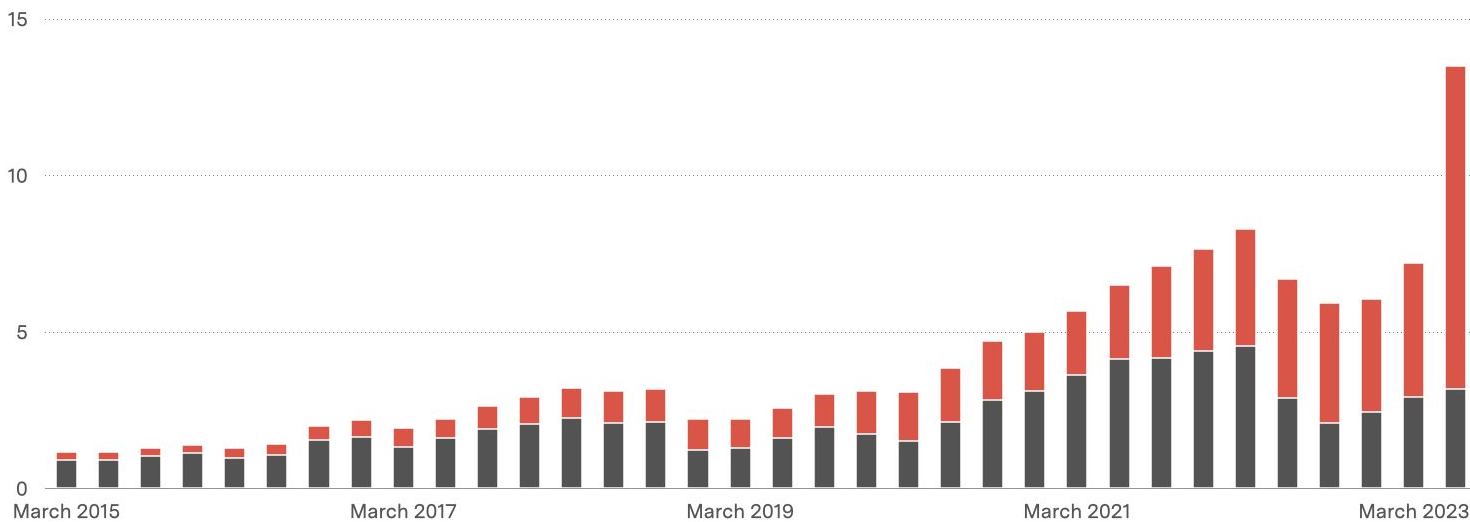


# Engineering questions

The gold rush for GPU compute capacity

Nvidia quarterly revenue by segment (\$bn)

■ Data centre  
■ Gaming & other

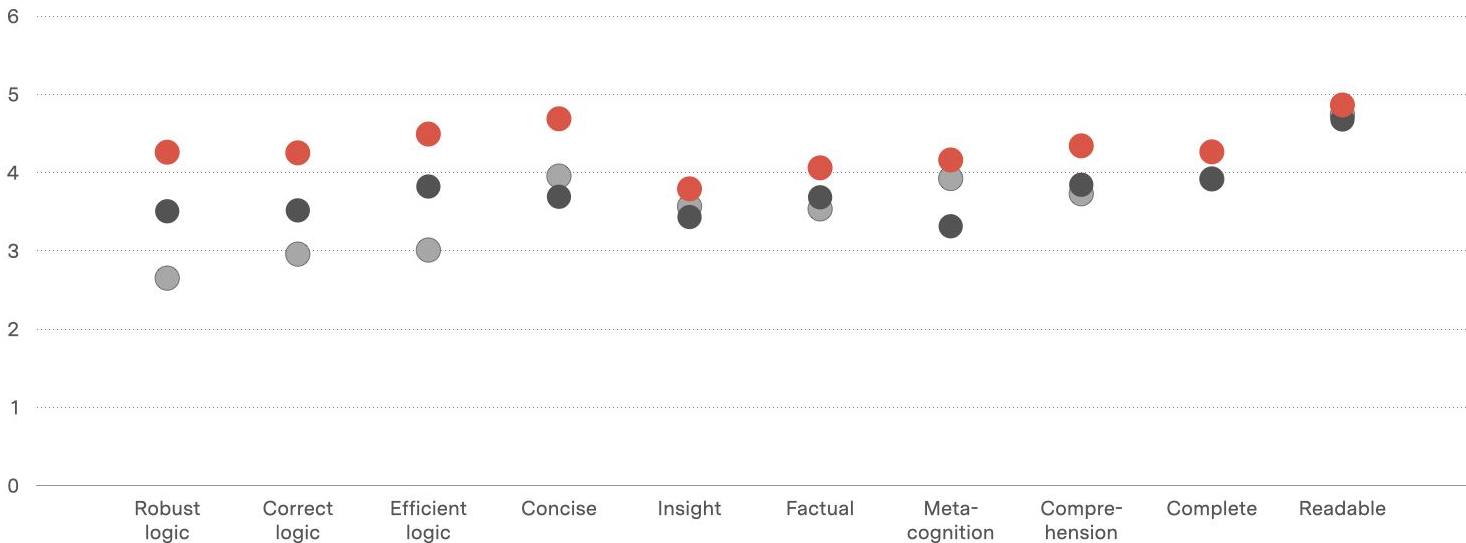


# Value capture questions

A few giant and expensive models, or many open source?

Sample LLM benchmarks, August 2023

- GPT4
- Bard (Google)
- Llama2 70 (Meta)



We shape our tools, and then  
they shape us



**150 Extra Engineers**

An IBM Electronic Calculator speeds through thousands of intricate computations so quickly that on many complex problems it's just like having 150 EXTRA Engineers.

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INTERNATIONAL BUSINESS MACHINES

“Software is eating the world”

Marc Andreessen, 2013



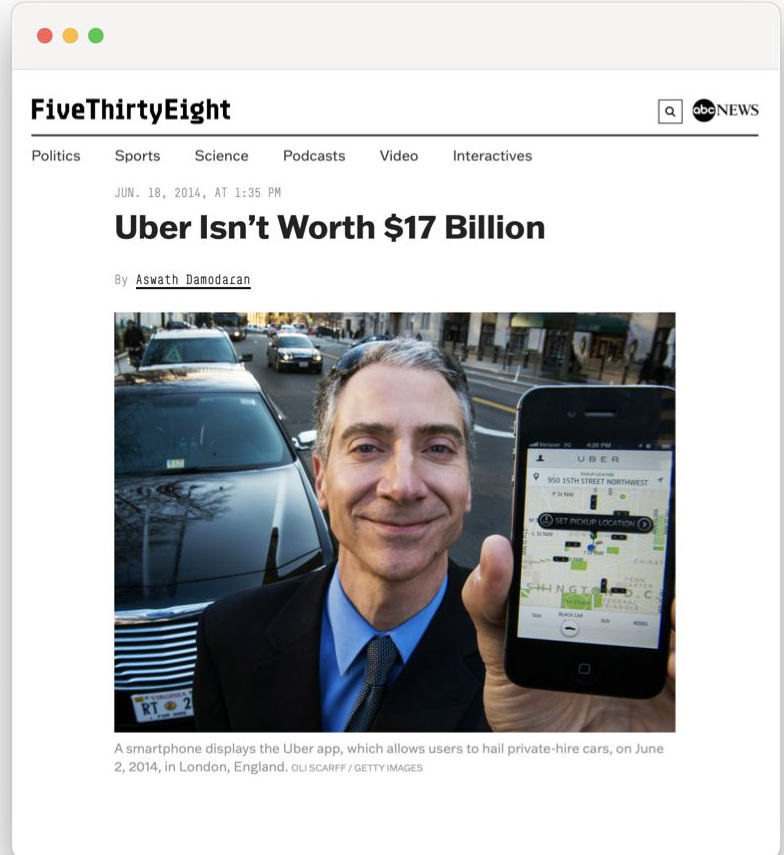
# “Uber isn’t worth \$17bn...”

2014: “the global taxi market is \$100bn and Uber will only get 10%”

2022: Uber gross ride bookings: \$60bn, total gross bookings: \$120bn

Current market cap: \$90bn

Are you entering a market or changing a market?



The image shows a screenshot of a news article from FiveThirtyEight, dated June 18, 2014. The article is titled "Uber Isn't Worth \$17 Billion" and is written by Aswath Damodaran. The main image shows a man in a suit holding a smartphone displaying the Uber app interface. The app screen shows a pickup location of "150 15TH STREET NORTHWEST" and a "SET PICKUP LOCATION" button. The article caption below the image reads: "A smartphone displays the Uber app, which allows users to hail private-hire cars, on June 2, 2014, in London, England. OLI SCARFF / GETTY IMAGES".


FiveThirtyEight abcNEWS

Politics Sports Science Podcasts Video Interactives

JUN. 18, 2014, AT 1:35 PM

## Uber Isn't Worth \$17 Billion

By [Aswath Damodaran](#)



A smartphone displays the Uber app, which allows users to hail private-hire cars, on June 2, 2014, in London, England. OLI SCARFF / GETTY IMAGES

# Computers? Automation? AI?

Electromechanical adding machines, 1960



# “Externalities”

“A Street photograph made by Cindy Sherman using a Cheap point and shoot camera using Digital film of man and woman sharing an icecream cone with Practical lighting”

Rights

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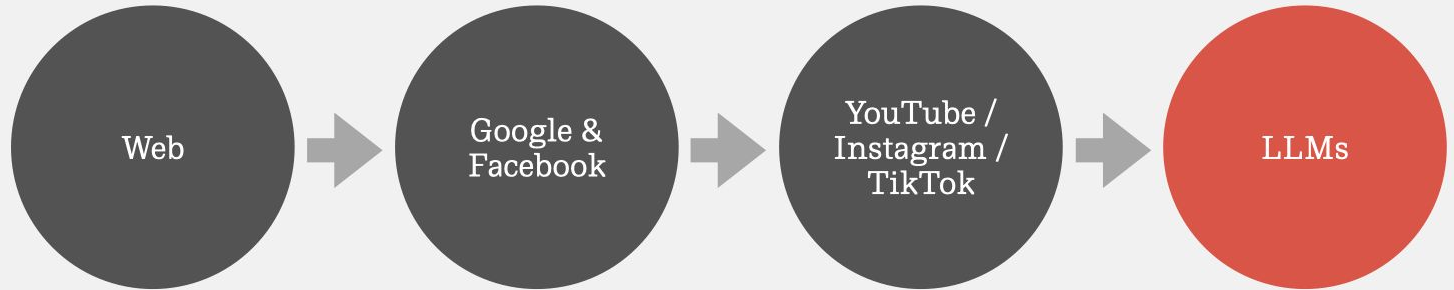
Trust

Attribution

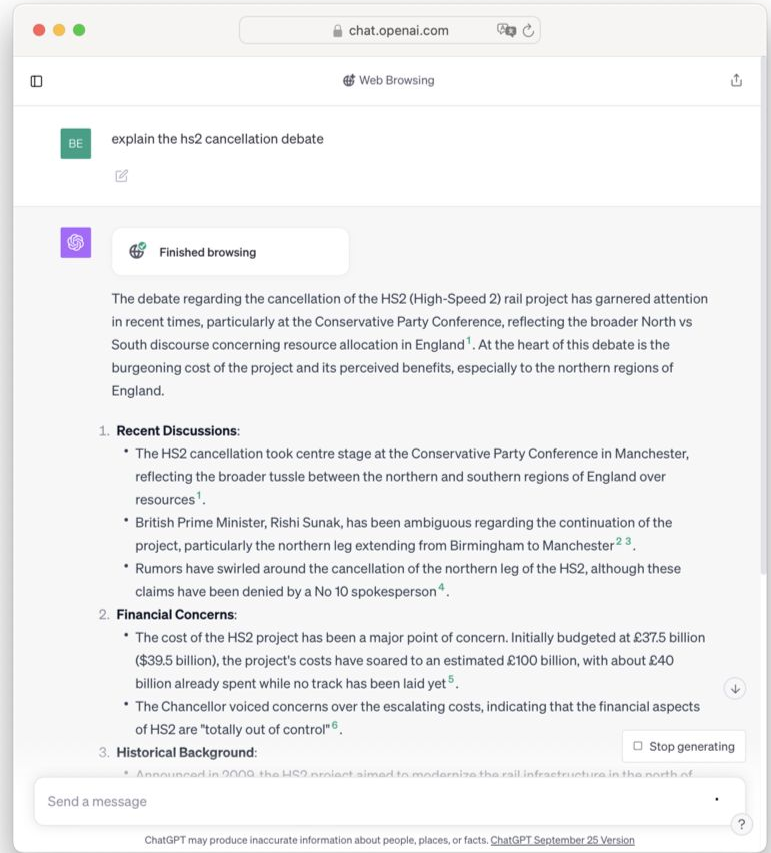


# The end of links?

From discovery to aggregation to synthesis

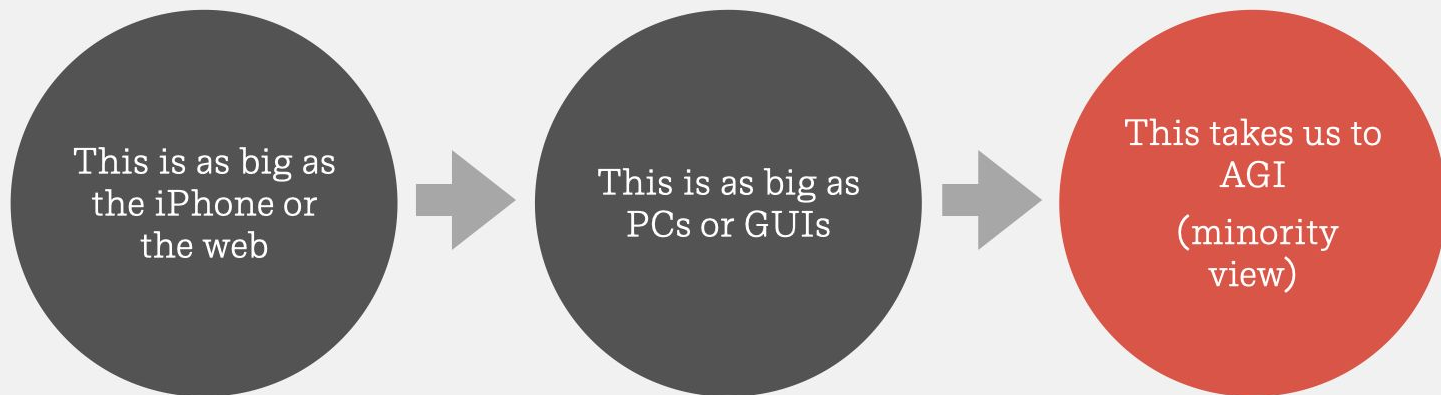


“Tell me the news”



# A platform shift, but what kind?

Silicon Valley is still trying to work out what to think about this



# Zooming out

# Vision versus deployment

What's already big, what's being built, and what comes next?

## Ideas from 2000

“Maybe people will buy things online”

## Ideas from 2010

SaaS, automation, collaboration...

## Ideas for 2030

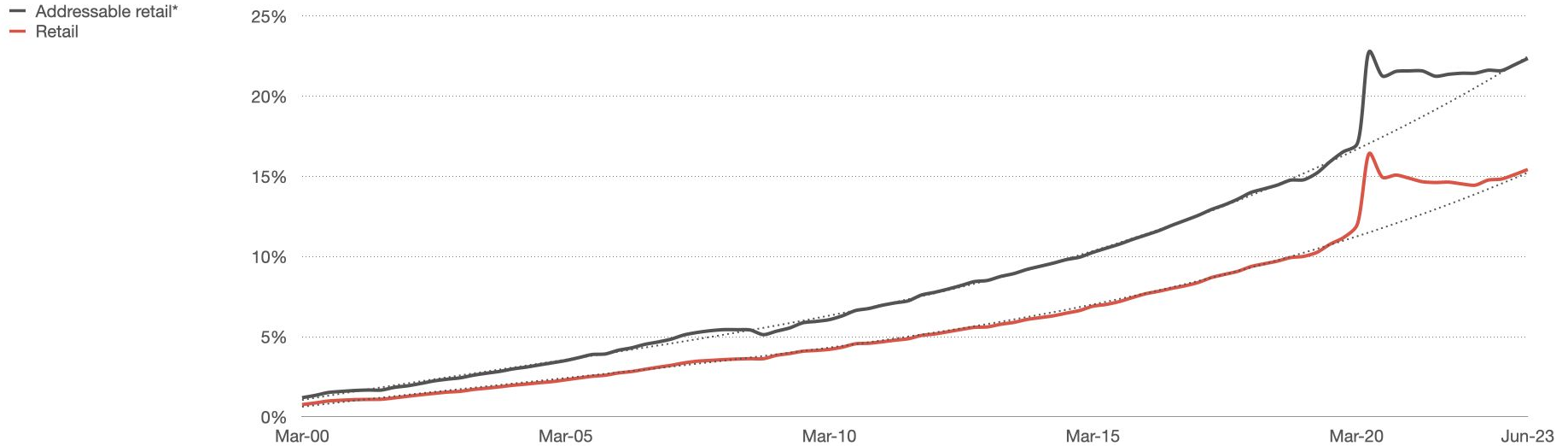
Crypto! Metaverse!  
Generative AI



# “Back to the trend line”

But a trend line at 15-20%

Ecommerce as % US retail

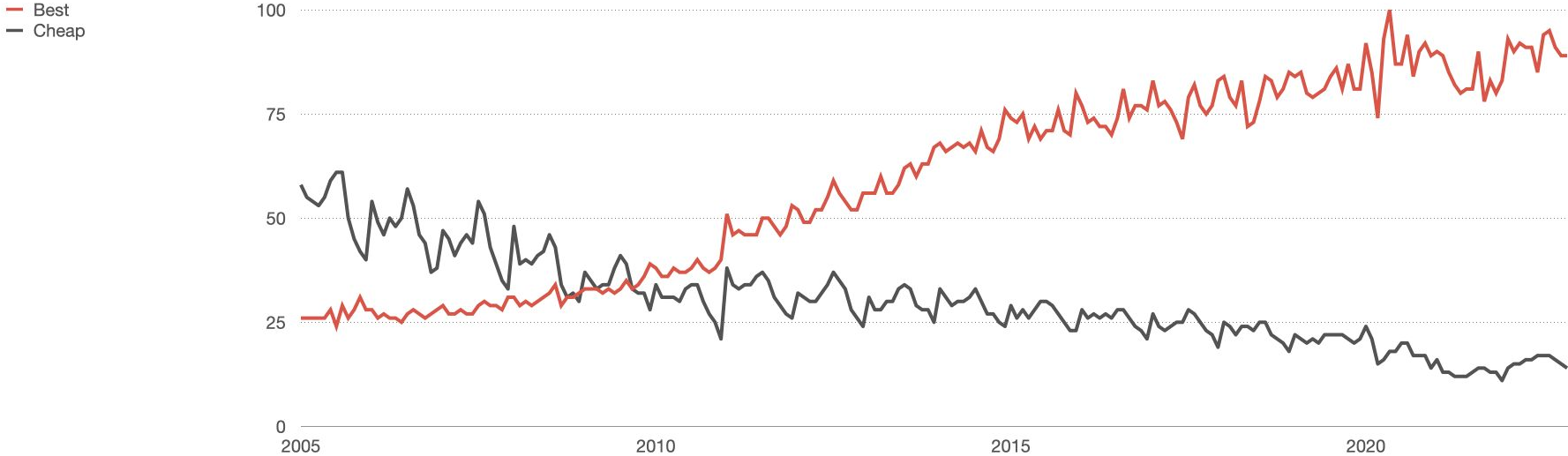


Source: US Census. Seasonally adjusted  
\* Excluding cars, car parts & fuel

# The internet moves up the funnel

From price comparison to discovery and recommendation

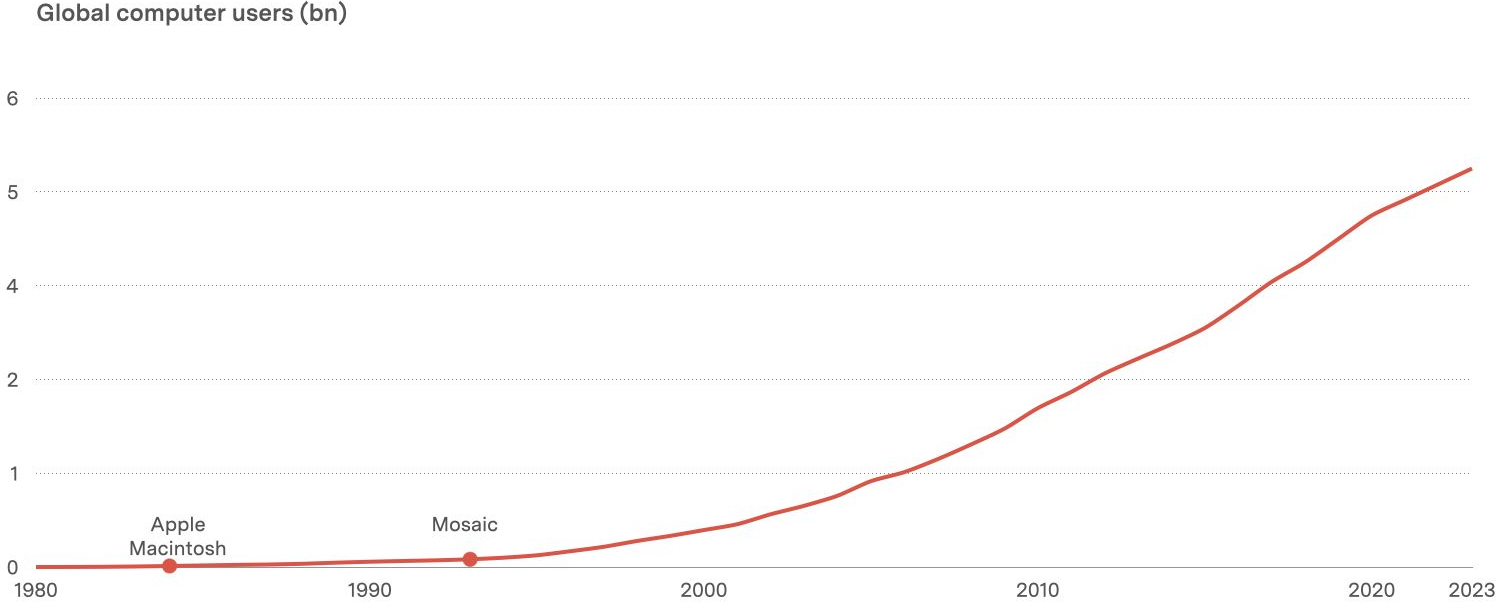
UK search interest



Source: Google Trends

# From exciting to universal

There were perhaps 100m PCs on Earth in 1993 - now 5bn people are online

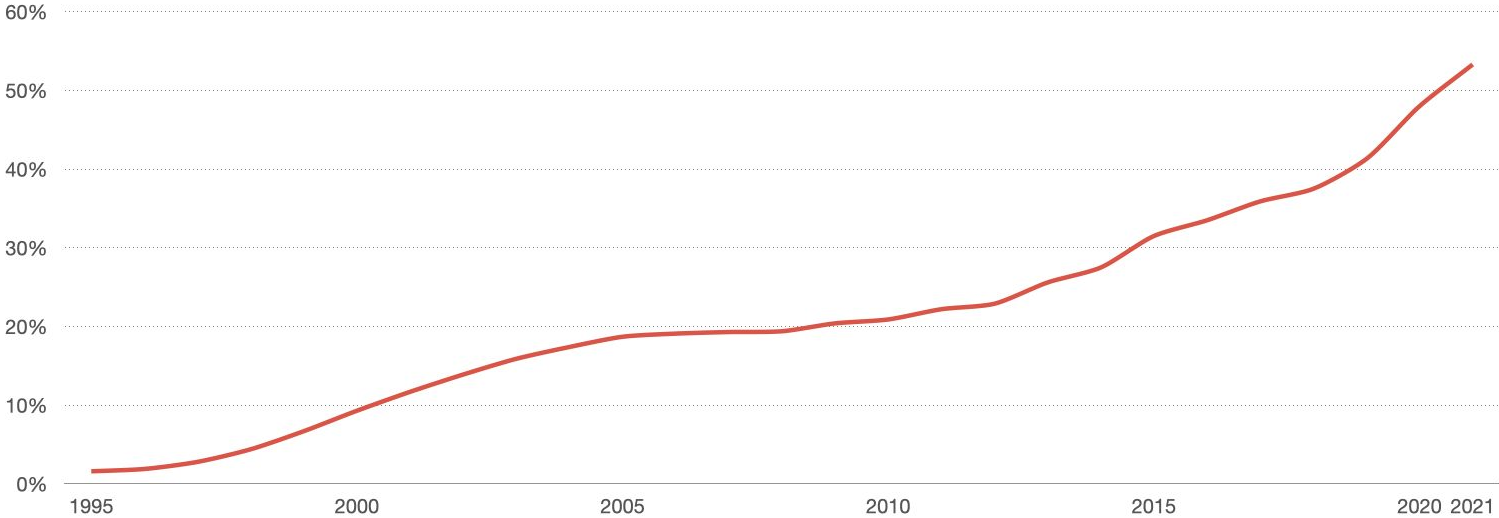


Source: Morgan Stanley, Gartner, ITU, Apple, Google, CNNIC, Benedict Evans

# The new normal

Over half of new relationships in the USA begin online

US heterosexual couples who met online, by year of meeting



Source: Stanford/GfK

# How do you touch your customers?

Rent, advertising and pricing were all separate budgets - now they merge into one



“There are two ways to make money.  
You can bundle, or you can unbundle”

Jim Barksdale



TOPSHOP

TOPMAN

TOPSHOP



# Topshop to Ikea

Ikea takes over the old Top Shop flagship in Oxford Circus

Is this logistics, retailing, marketing, advertising...?

Source: Benedict Evans





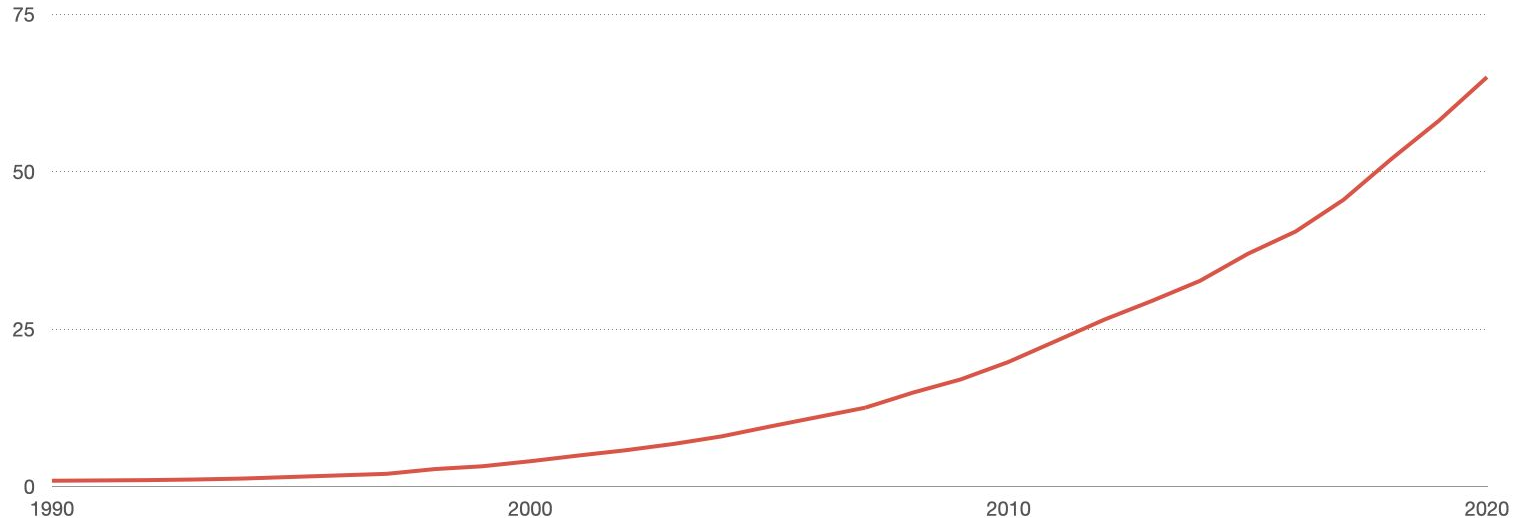




# The future takes a long time

Mainframes are still out there, decades after the rest of tech moved on

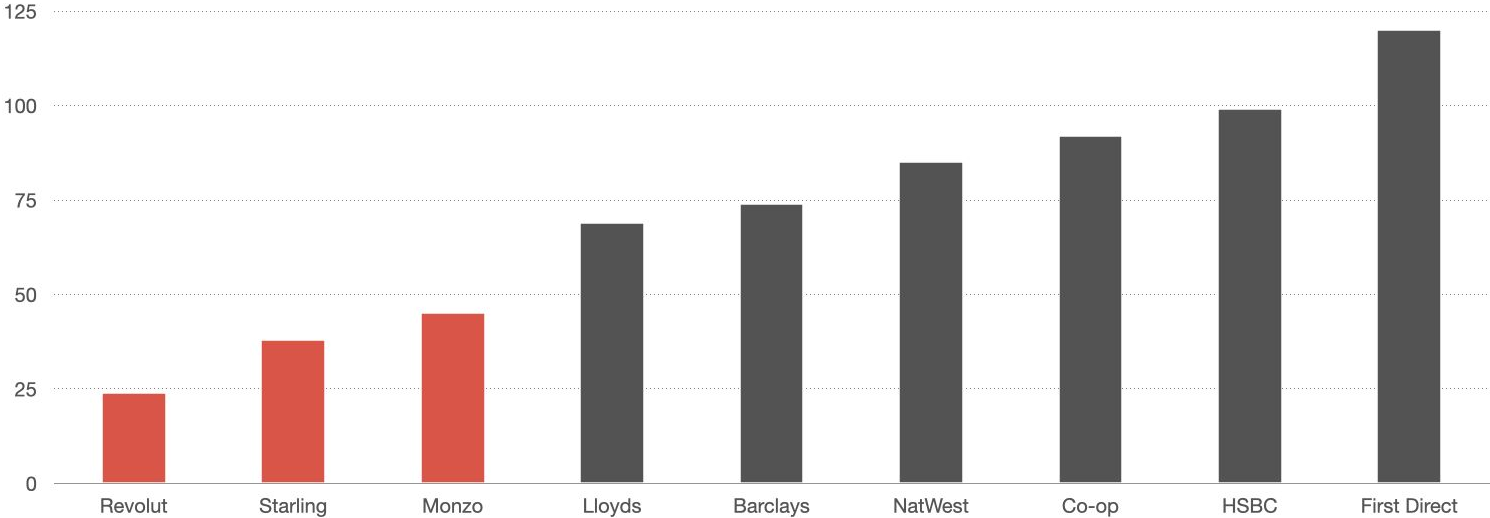
IBM Mainframe installed computing capacity (million MIPS)



# There's 'digital' and then there's good digital

Consumer expect much better UX (and can be harder for incumbents to meet that)

Clicks to open a new UK bank account online



What kinds of questions matter?

Tech questions? Or retail / marketing /  
apparel / TV / CPG questions?

# The last time this happened

First 50 years: what's a car? What's a car company?

Second 50 years: what happens when everyone has a car?

What new kinds of company and business are created?



# Thank you

**Benedict Evans**

November 2023

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Q **AND** A