

# The New Gatekeepers

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# The New Gatekeepers

Tech trends for 2023

## **The end of free money**

What does the macro shift do to tech?

## **The New Gatekeepers**

How do we remake commerce?

## **Dreams for the future**

The hype cycle turns, and now Generative ML is everything

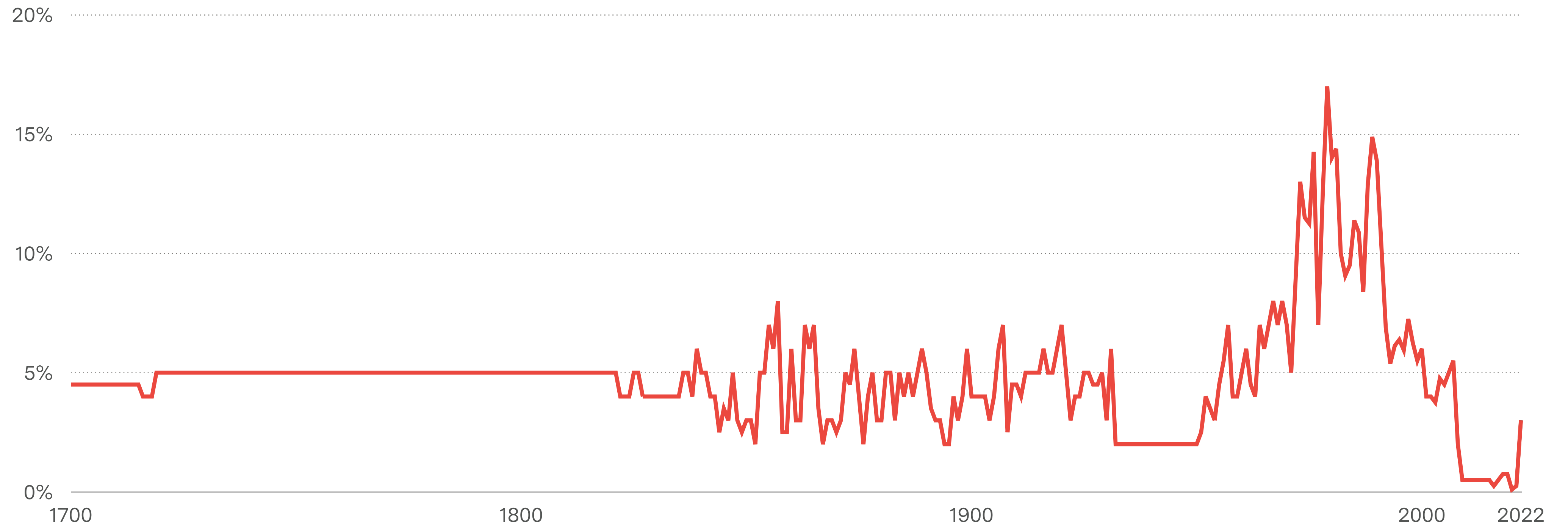
# The End of Free Money

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# The end of free money

This is not a macro-economic presentation, but macro matters to tech for the first time in a decade

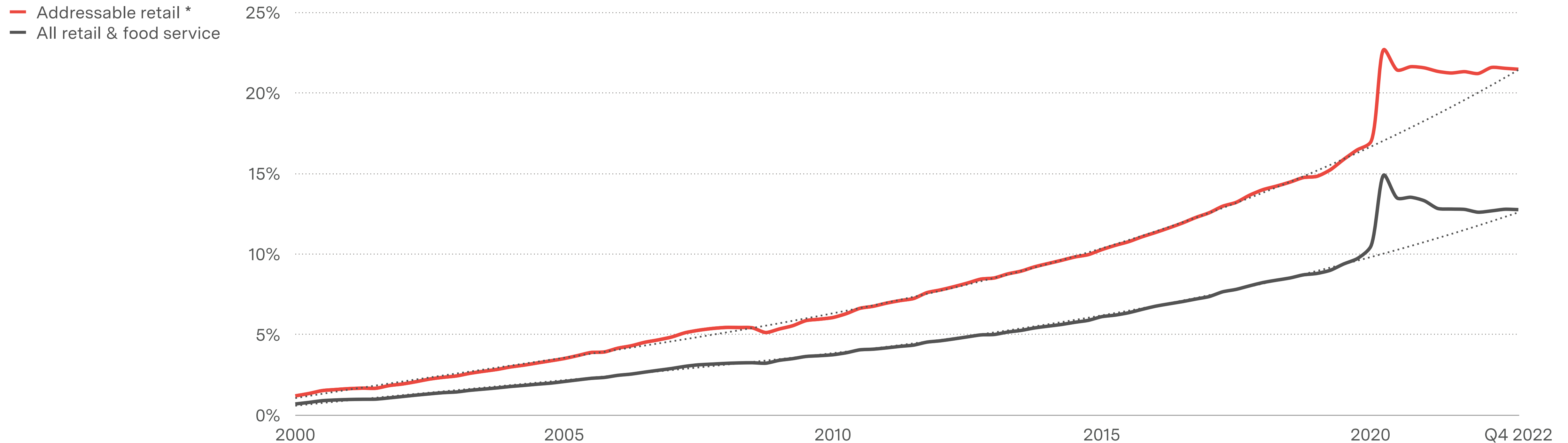
Bank of England interest rates



# Ecommerce goes back to the trend line

Penetration grew by a third in the pandemic, and now it slows down - a bit

Ecommerce as % of US retail revenue

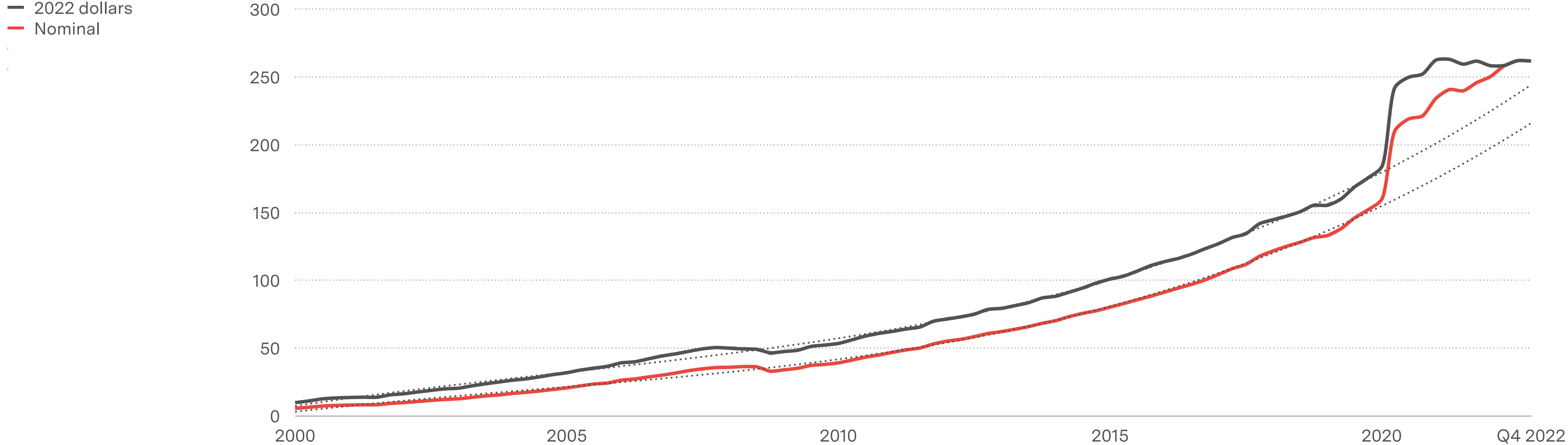


Source: US Census. Seasonally adjusted  
\* Excludes cars, car parts, fuel, bars & restaurants

# Ecommerce goes back to the trend line?

Which trend line? Which penetration? What about inflation?

US ecommerce revenue (\$bn)

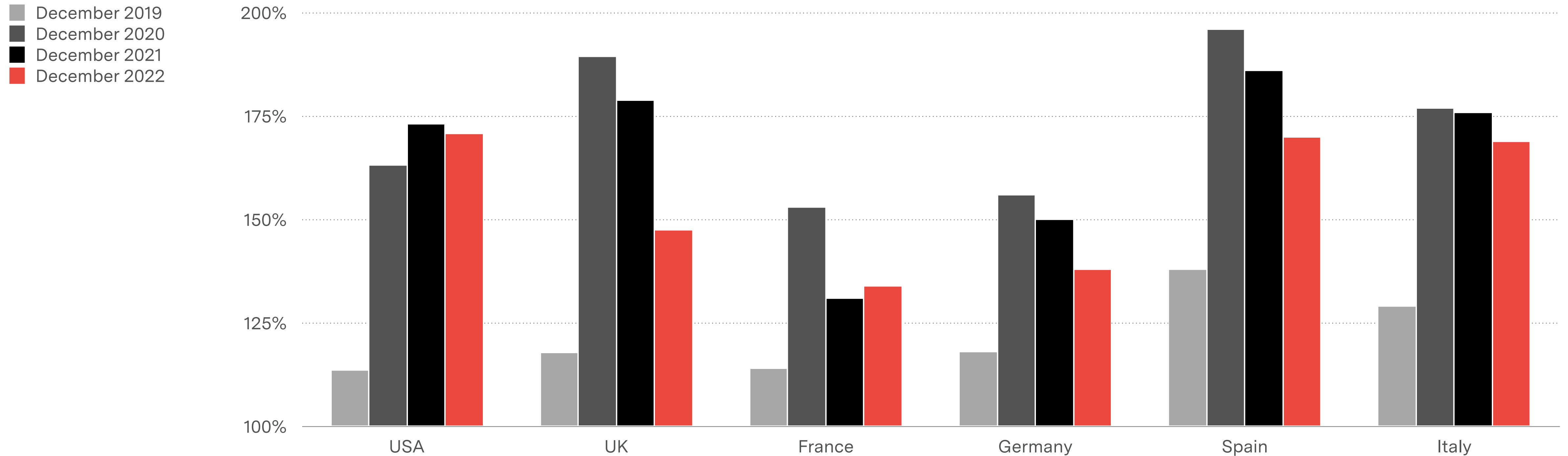


Source: US Census, BLS. Seasonally adjusted

# 25-50% growth pulled forward

Most major markets saw several years of future ecommerce growth compressed into the pandemic

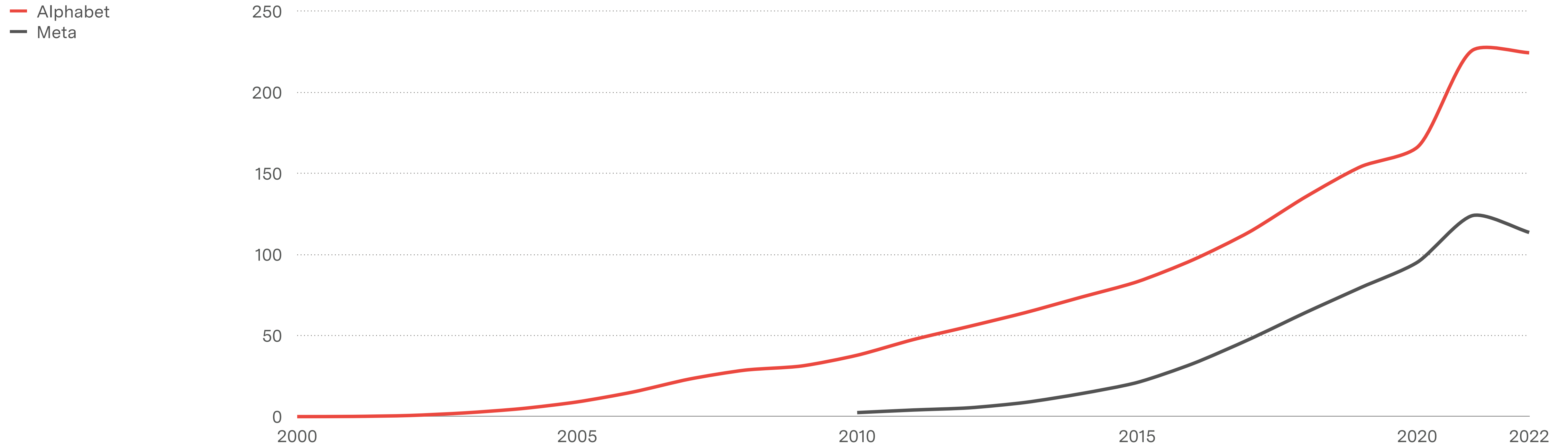
Ecommerce sales relative to December 2018, real terms



# Ad revenue slows for the giants

The end of 20% annual revenue growth?

Advertising revenue (\$bn, 2022 dollars)

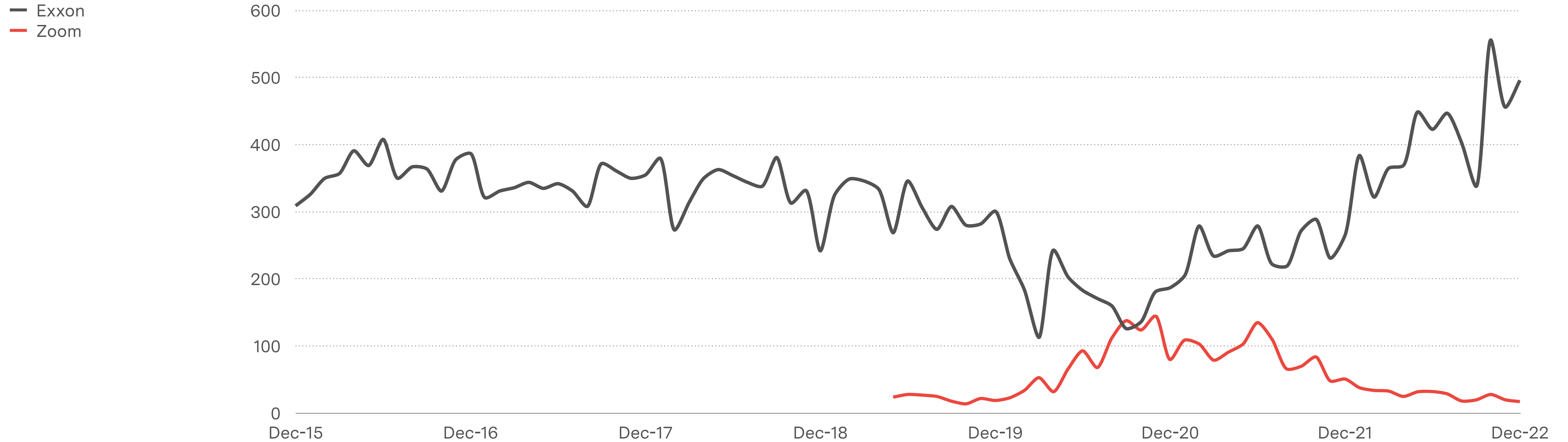




# The Covid rotation... rotates

And a lot of exuberant valuations fade away

Market capitalisation (\$bn)

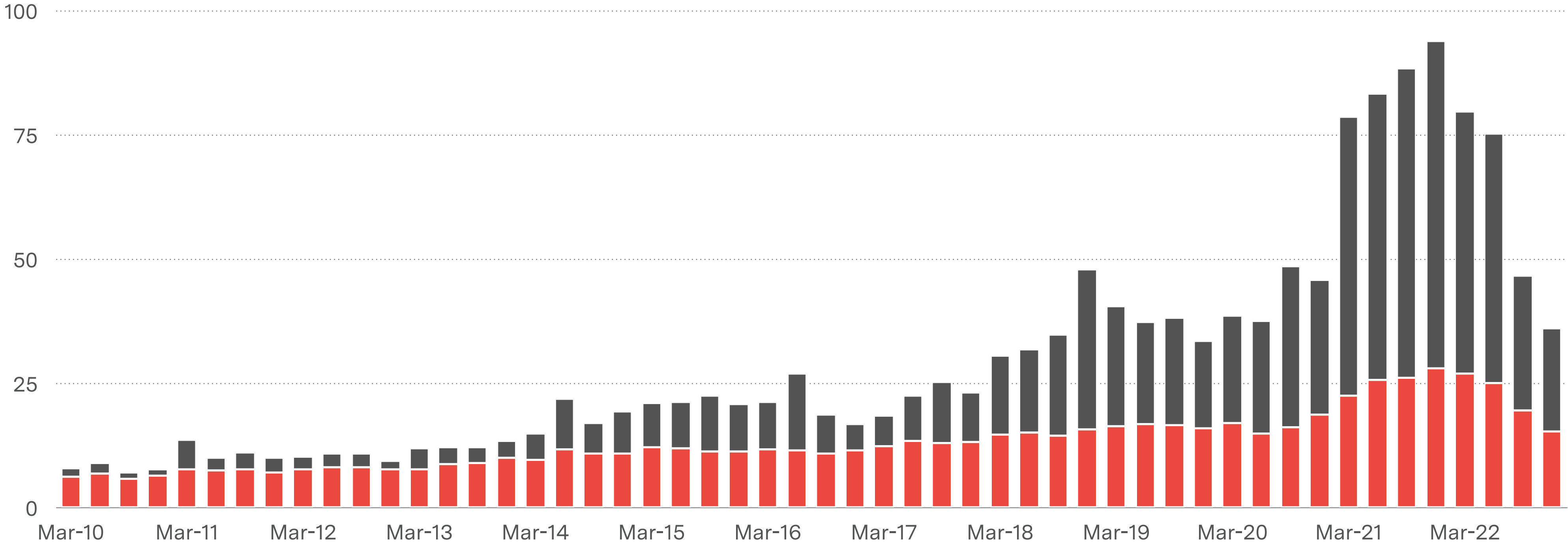


# Flow-through to venture

Venture investment surged dramatically in the pandemic. Now...

US venture investment (\$bn)

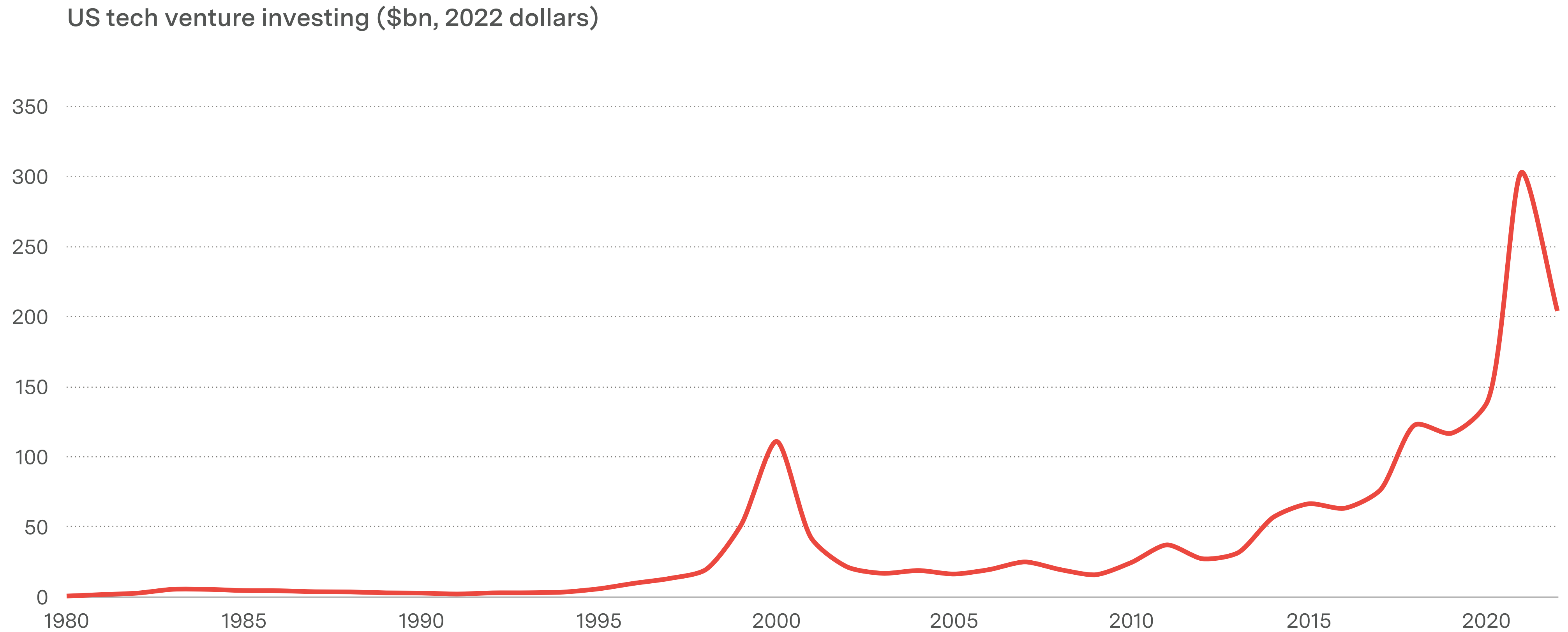
- Rounds for >\$50m
- Rounds for <\$50m



Source: NVCA

# Back to the trend line?

But based on reality rather than promise...



Source: Capital IQ, Jay Ritter, University of Florida, NVCA, a16z, BLS



The end of  
free money

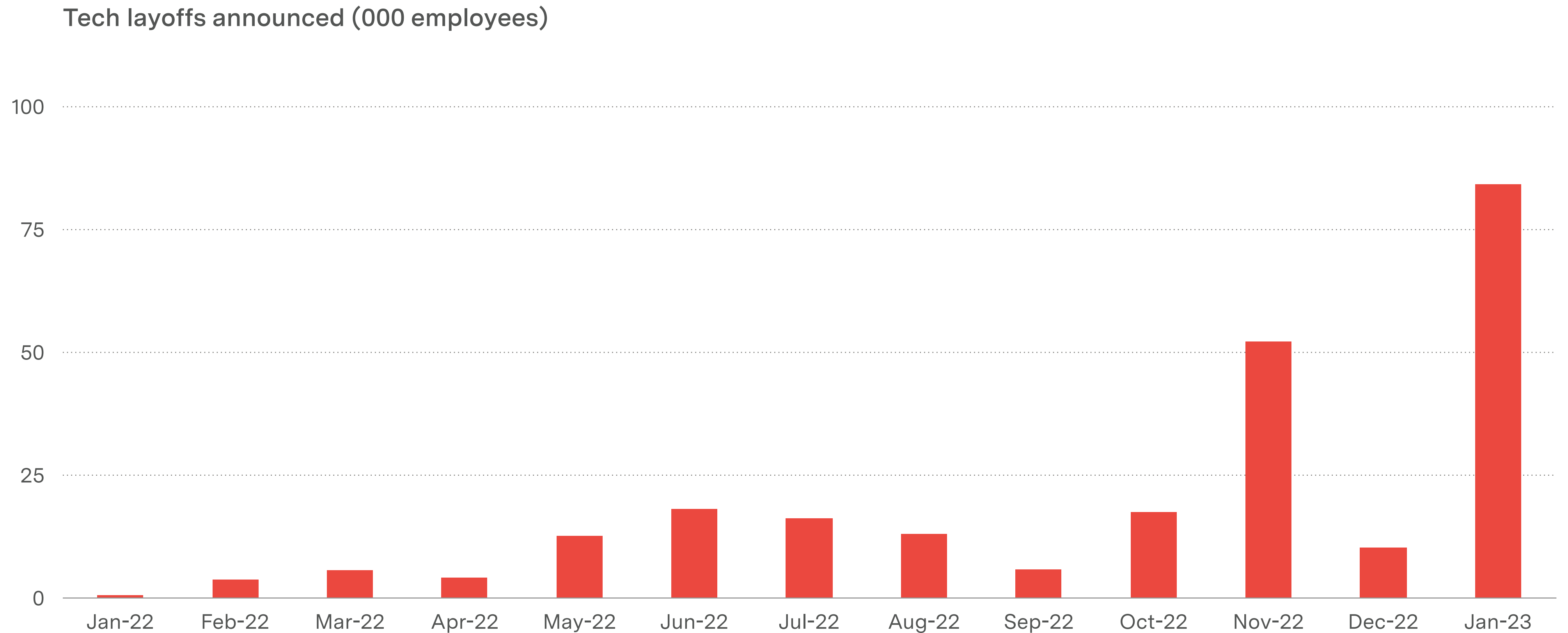


Source: @njashanmal



# And all of this brings layoffs

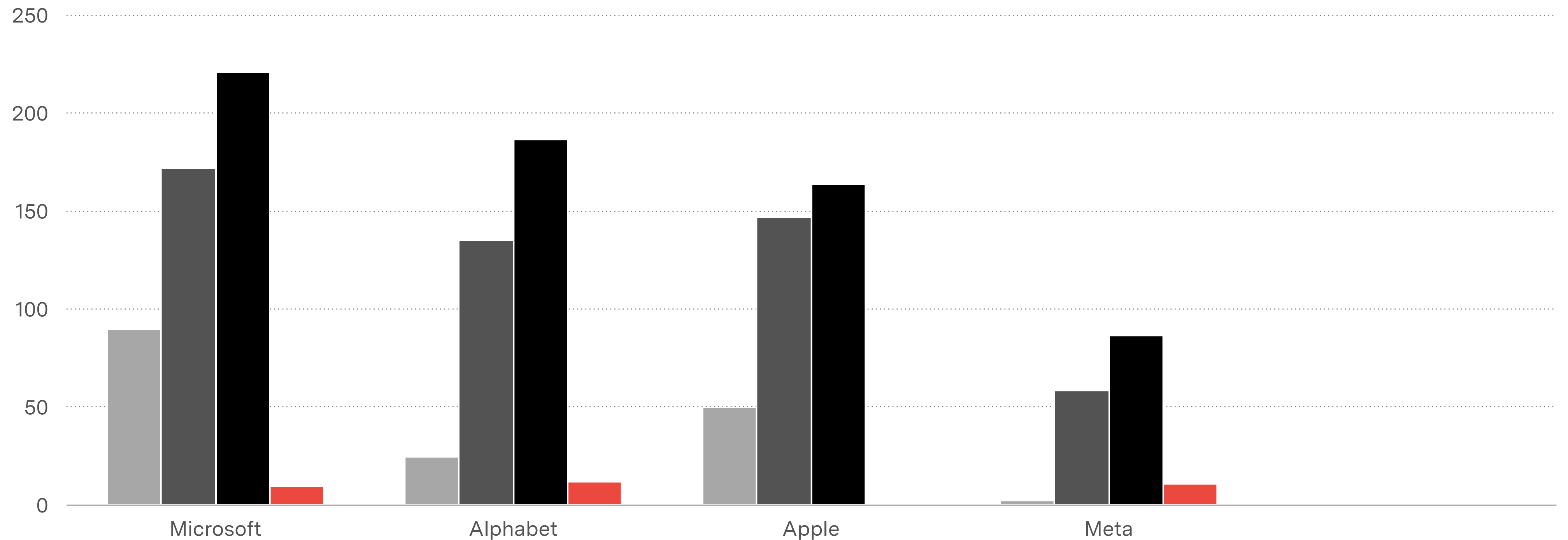
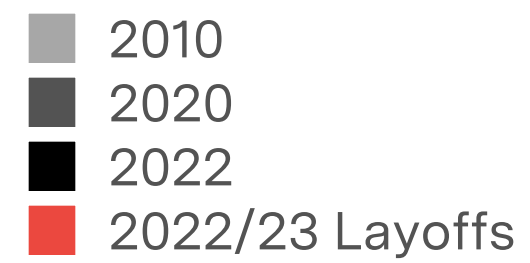
At least 250k tech layoffs were announced in the last 12 months - 85k in January



# Some perspective, though

Meta laid off 11,000 people in November 2022, but had hired over 15,000 since January

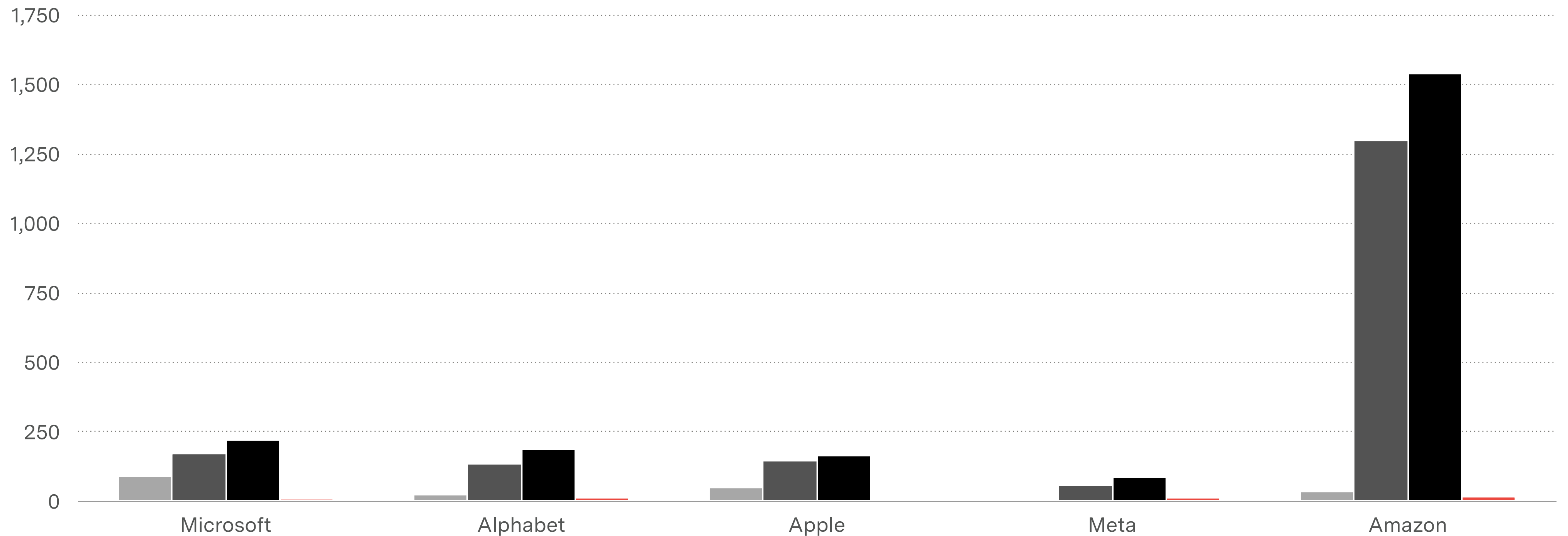
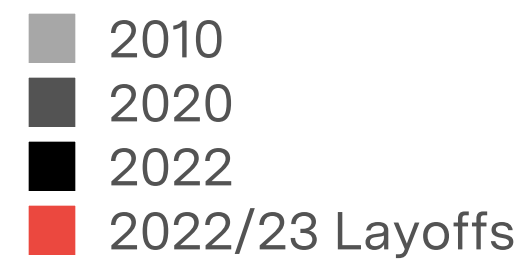
Employees (000)



# Some perspective

Tech companies have hired at huge scale in the last decade

Employees (000)



# Glass half-empty, glass half-full

How optimistic do you want to feel?

## Half-empty

Over-investment and loss of discipline in the last 24 months

Uncertain macro-economic outlook

(Uncertain geo-political outlook)

## Half-full

5bn people have a smartphone now

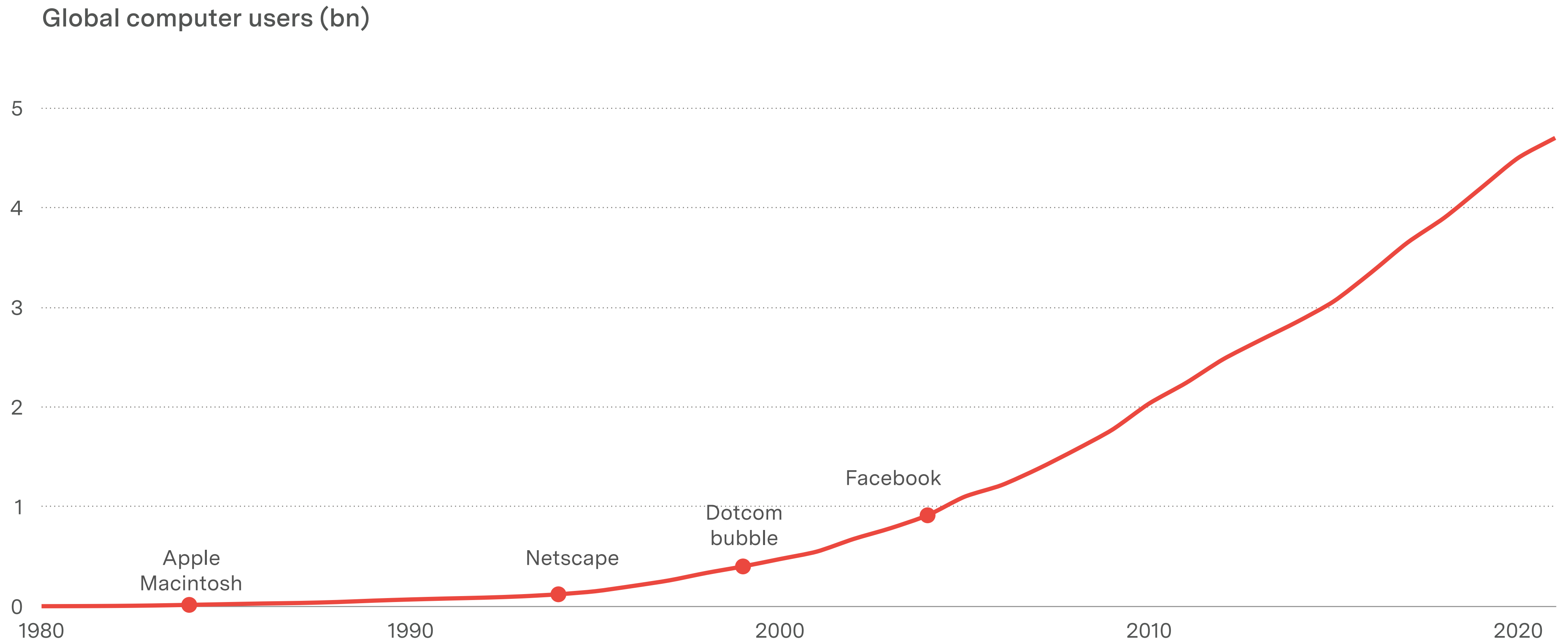
The pandemic broke every offline habit

Every market and value chain is being remade around the internet



# The real trend line

From exciting to universal



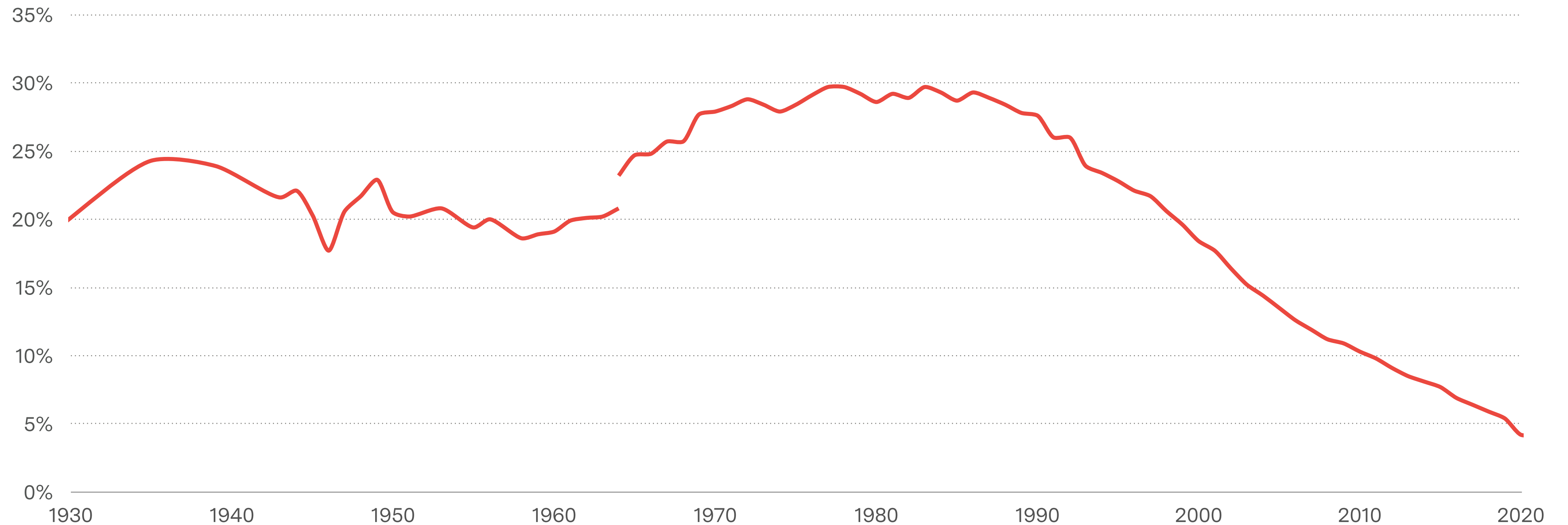
# The New Gatekeepers

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# The decline of old gatekeepers

Department stores dominated retail for a century. Now they've almost disappeared

Department store share of US addressable retail revenue\*



Source: US Census, ARTS. Definition change in 1964

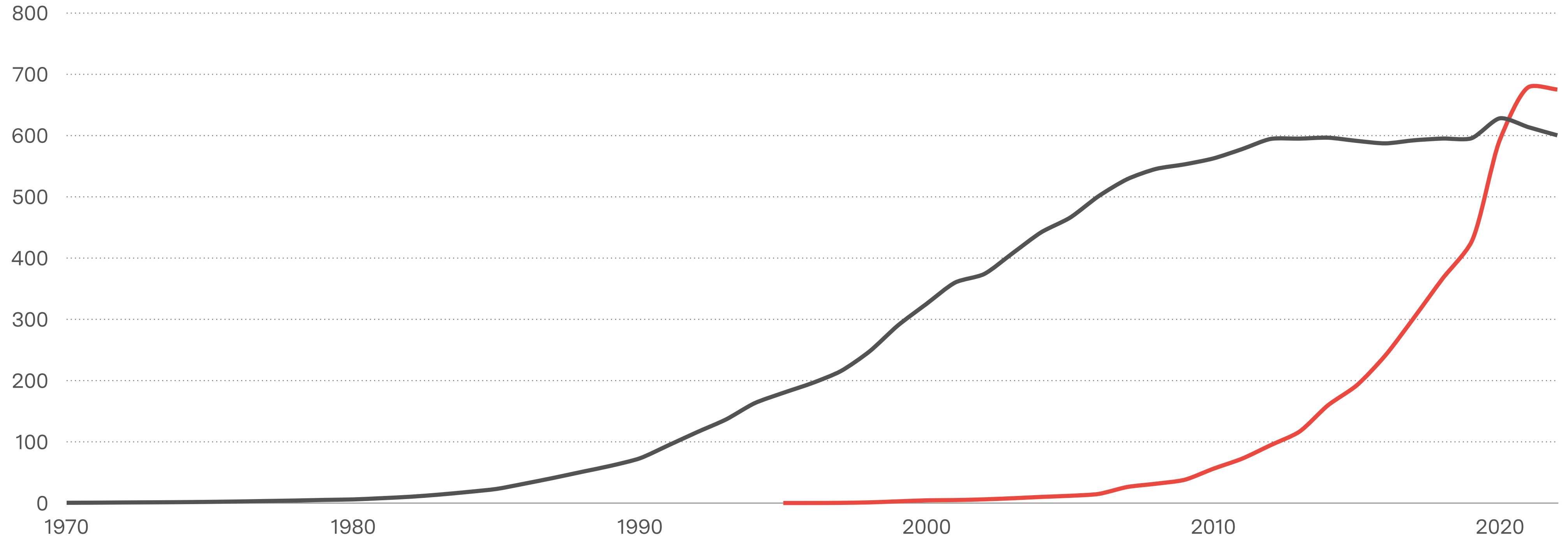
\*Excluding automotive, building materials, gasoline, grocery, food service

# And the rise of new ones

On a GMV basis, Amazon has now overtaken Walmart's revenue

Retail revenue (\$bn, 2022 dollars)

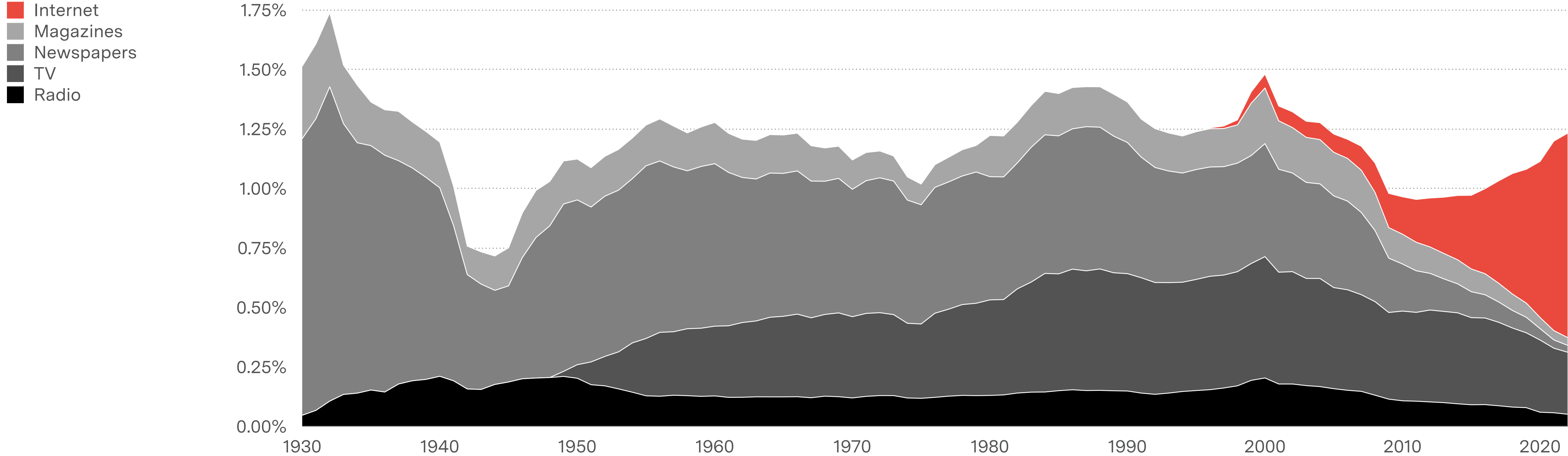
— Walmart  
— Amazon GMV



# Software eats advertising

Digital broke up the old markets - then, a decade later, it found new models

Advertising as % of US GDP



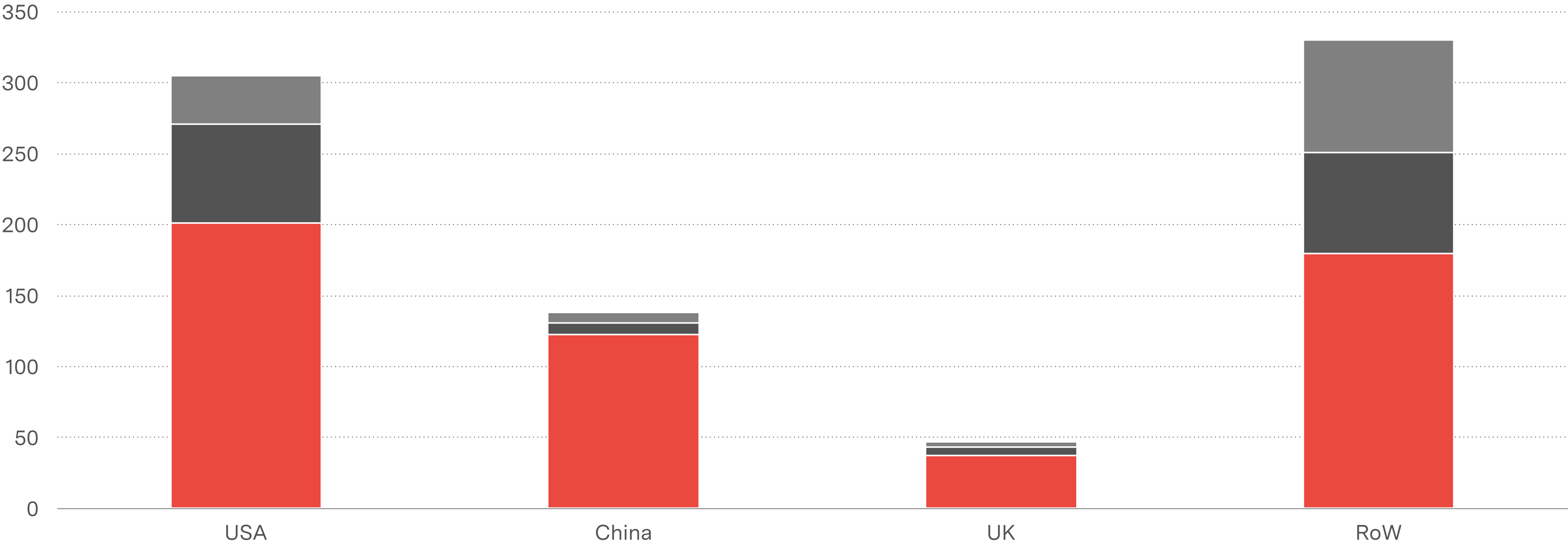
Source: Coen, McCann, Zenith, BEA

# Software eats advertising

A \$700bn industry turns over

2022 ad revenue (\$bn)

- All other\*
- TV
- Digital pure-play

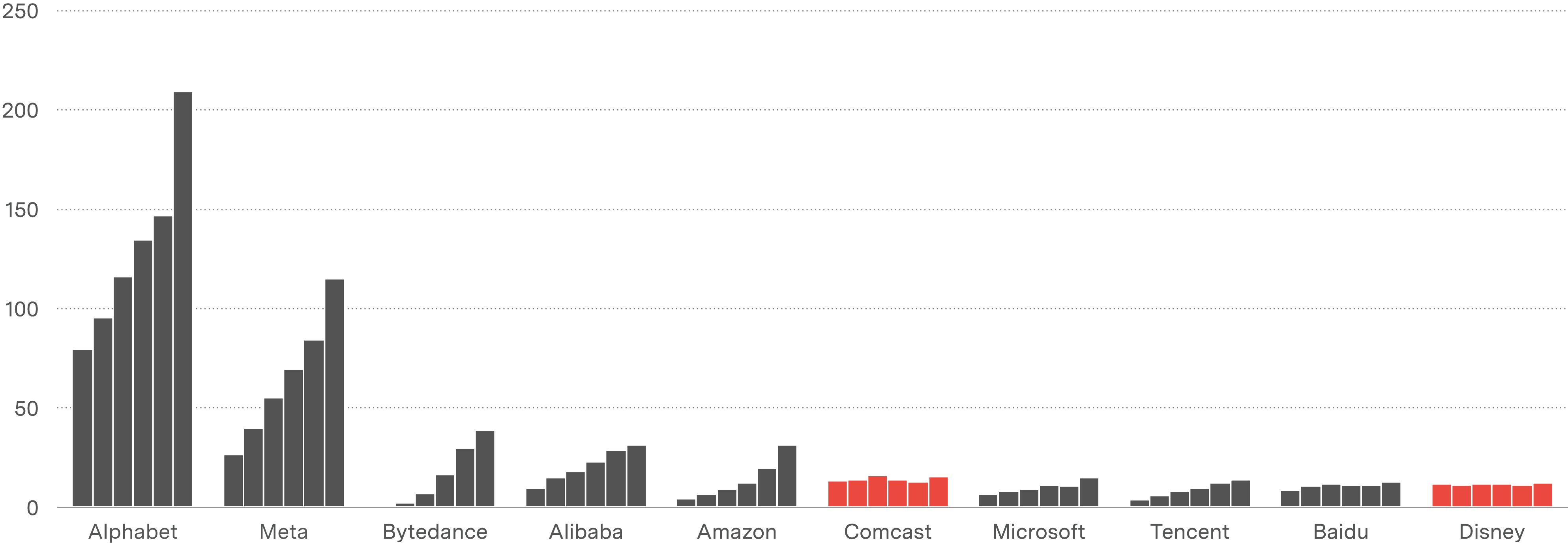


Source: GroupM  
\* Print, OoH, radio and cinema

# Global channels, global winners

Moving from local to global markets means moving from local to global winners

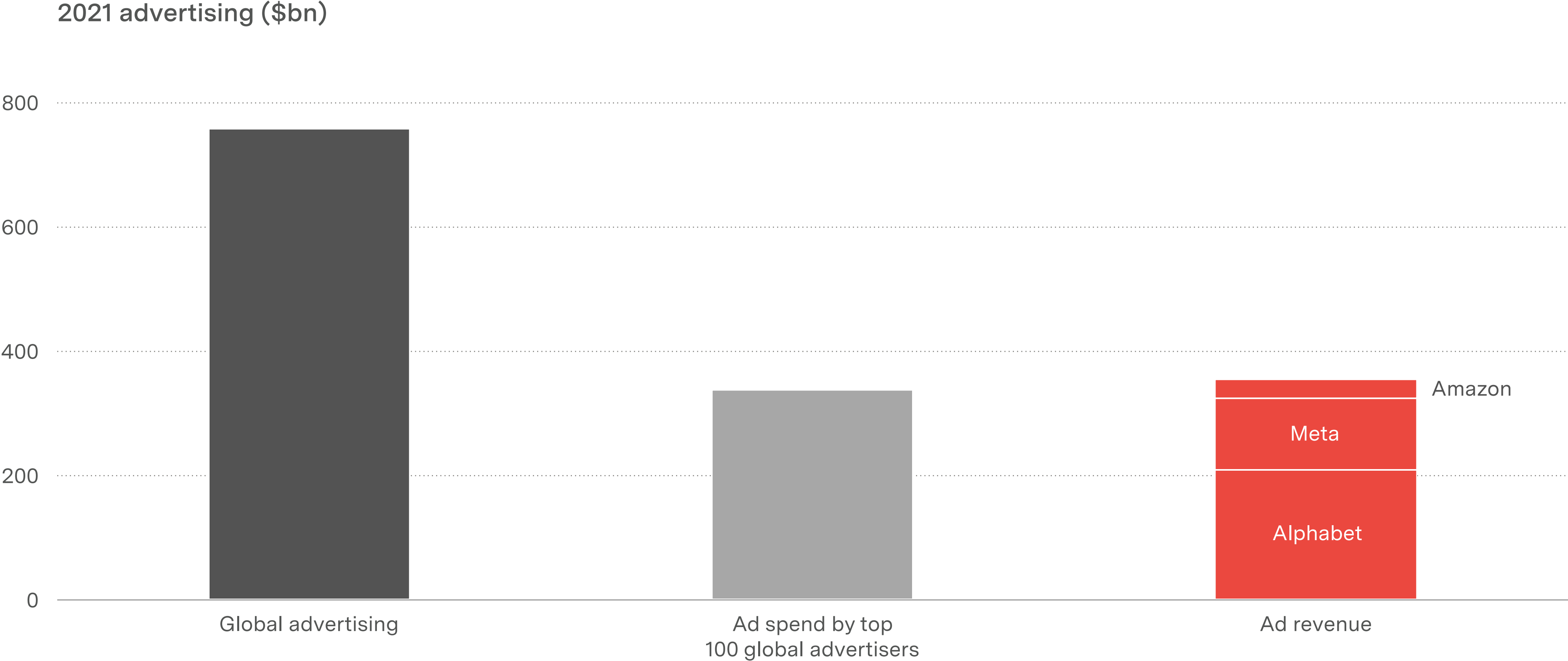
Top 10 global media owners by ad revenue, 2016-2021 (\$bn)



Source: GroupM, companies

# Concentration

Moving from local to global markets means moving from local to global winners



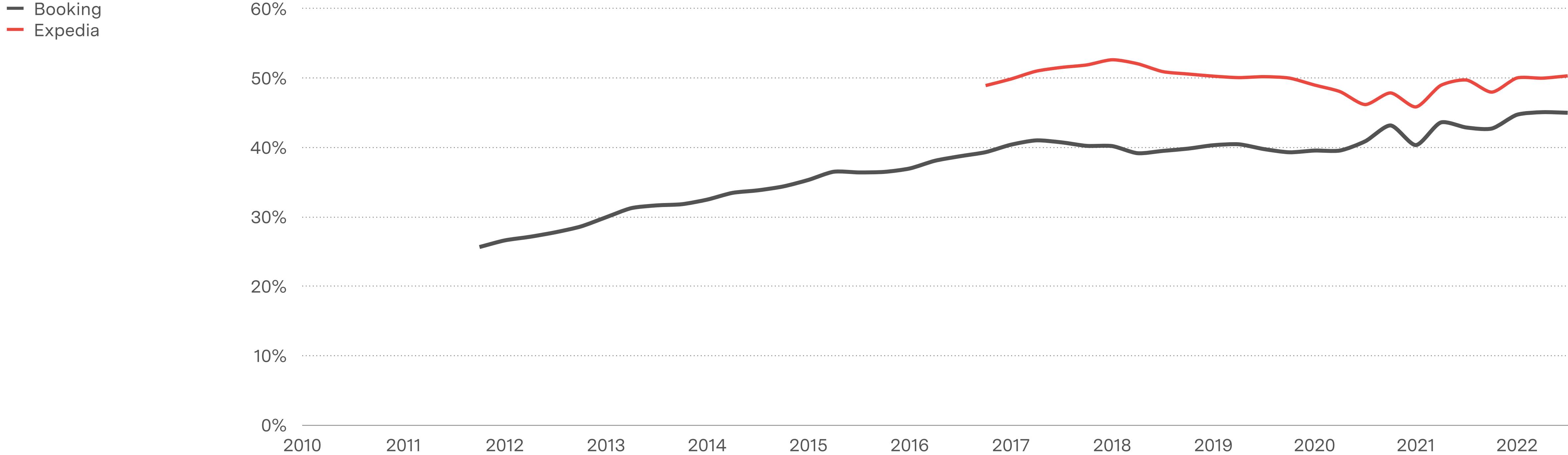
Source: GroupM, AdAge, companies



# Concentration

Booking and Expedia paid \$13bn for reach in the last 12 months

Sales & Marketing as % revenue (TTM)



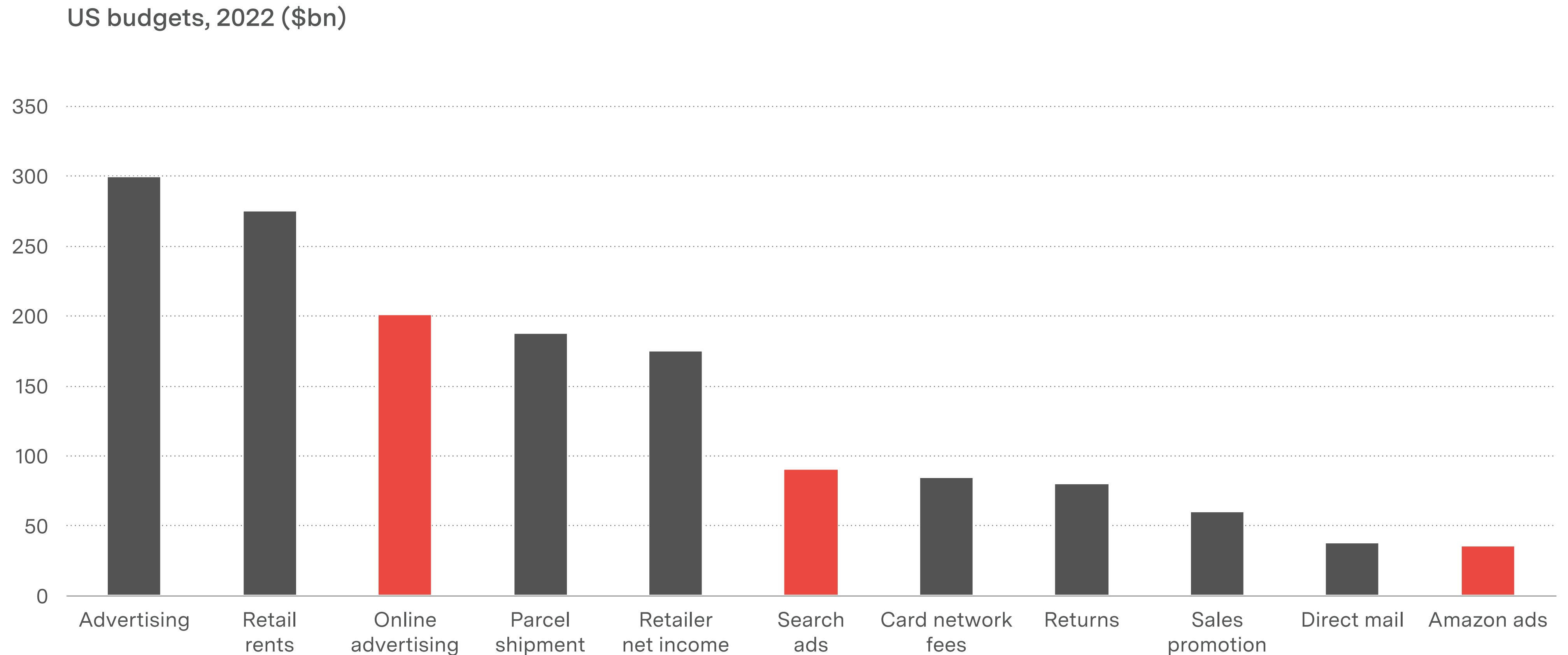
# How do you reach your customers?

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



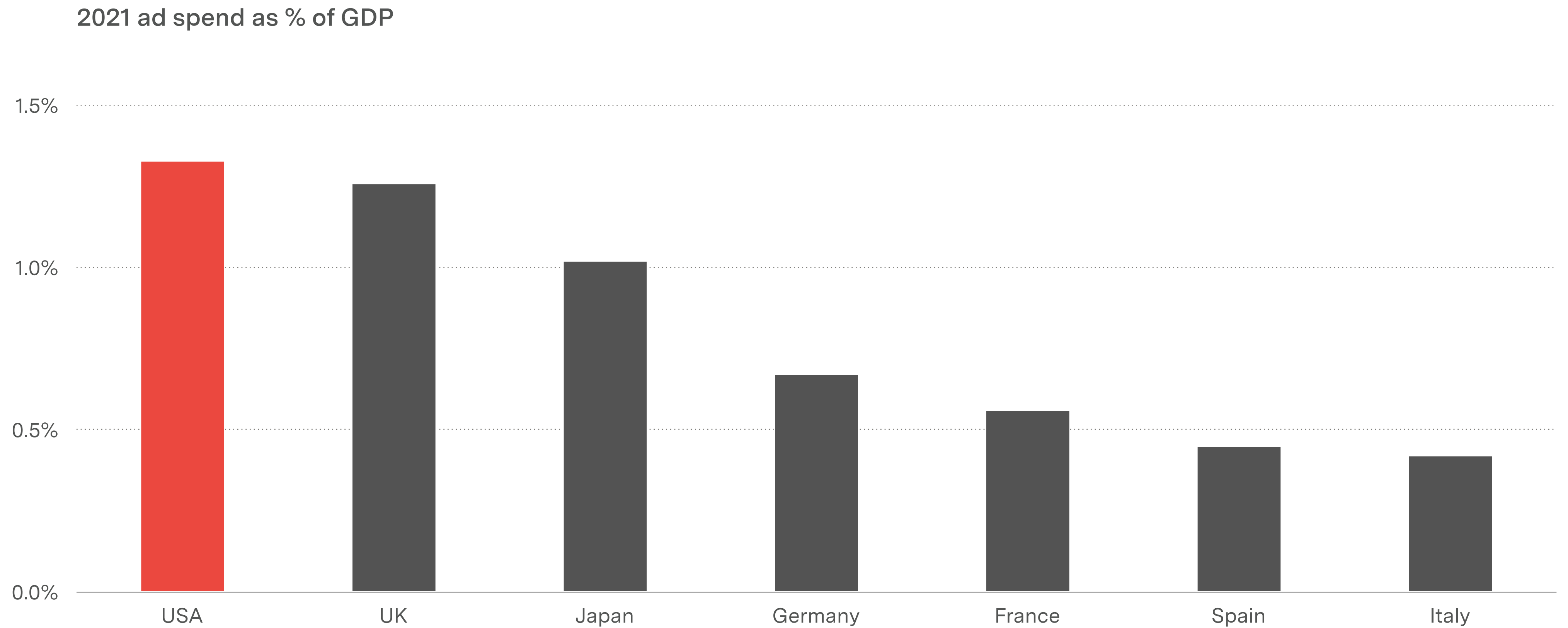
# How do you reach your customers?

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



# What's the right ad budget?

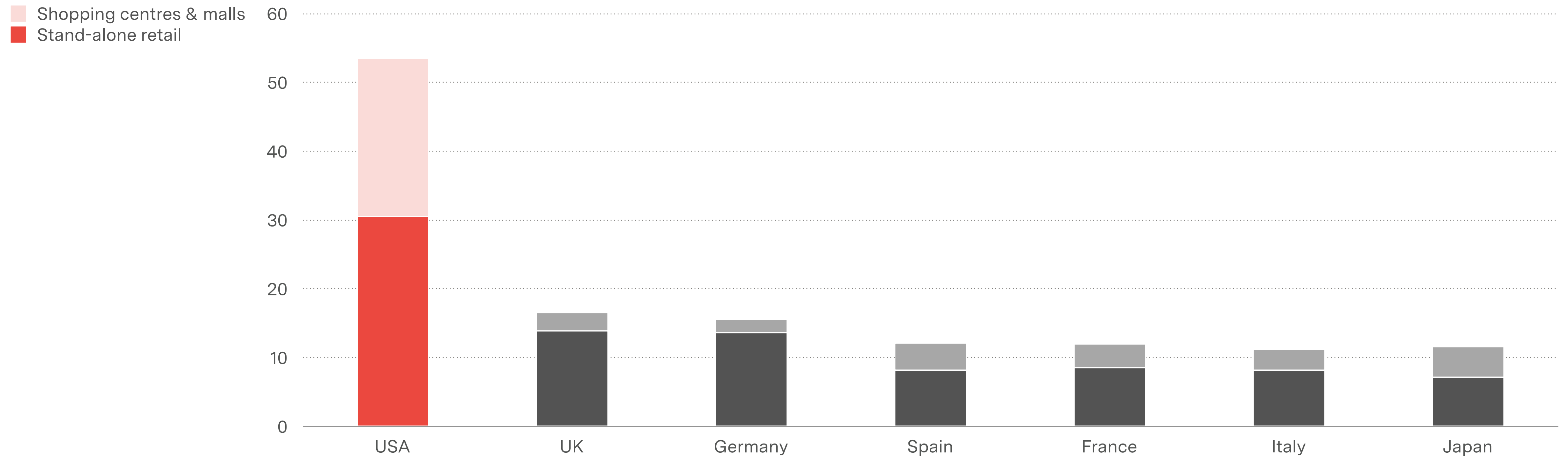
Where else could this budget be going?



# How much retail space do you need?

Where else could this budget be going?

Retail square feet per capita, 2021

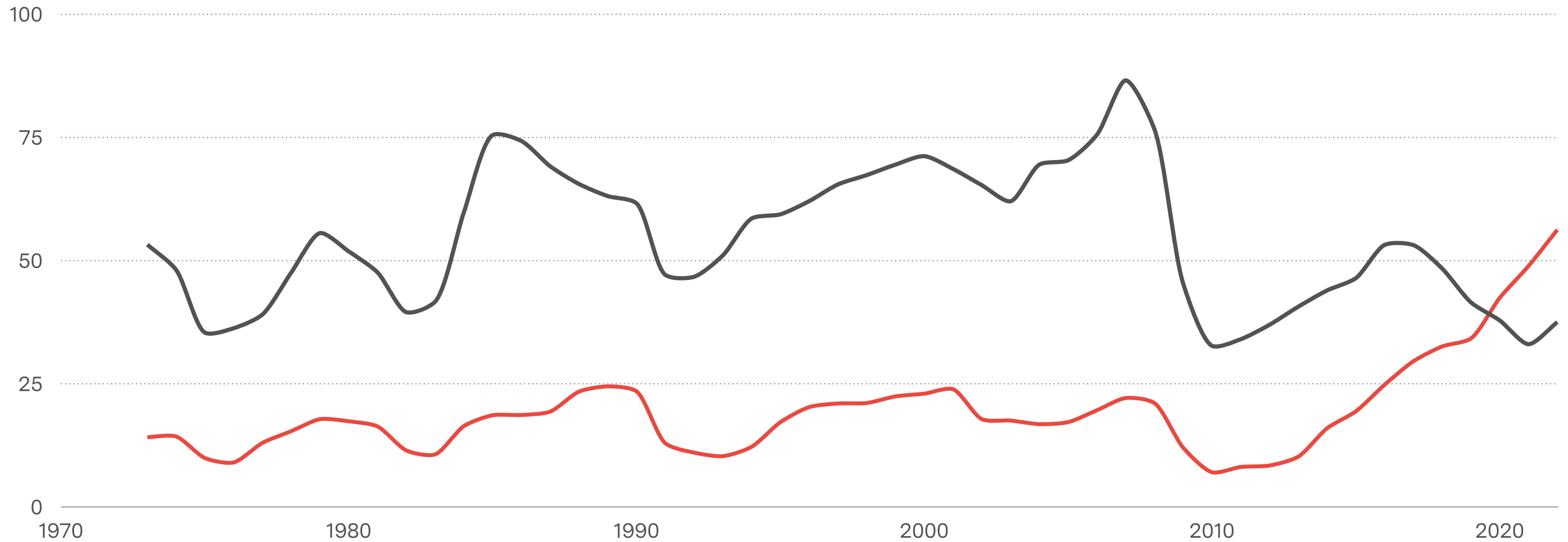


# Retail versus logistics

The US had over-invested in retail space - now the trend reverses

Annual US construction spending (\$bn, 2022 dollars)

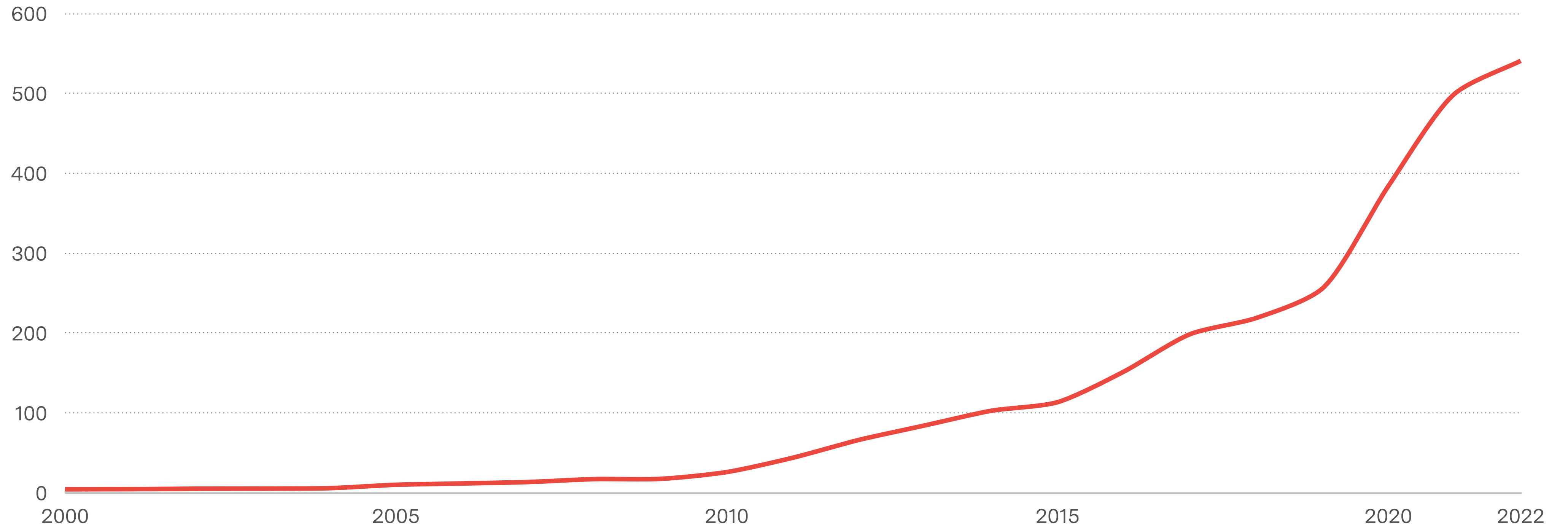
— Retail & food service  
— Warehouses



# Amazon doubled its warehouse space since 2019

... And is now pulling back, slowing down and subletting

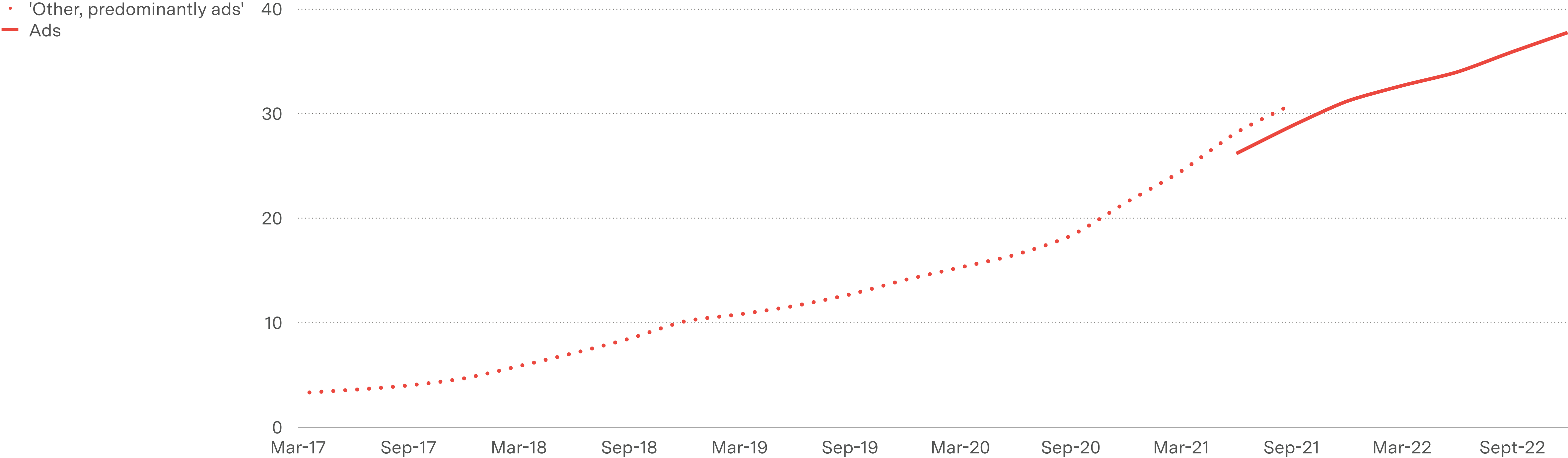
Amazon fulfilment centre space (m square feet)



# Retail as media

'Merchant media' - Amazon had \$38bn of ad revenue in 2022

Amazon advertising, TTM (\$bn)



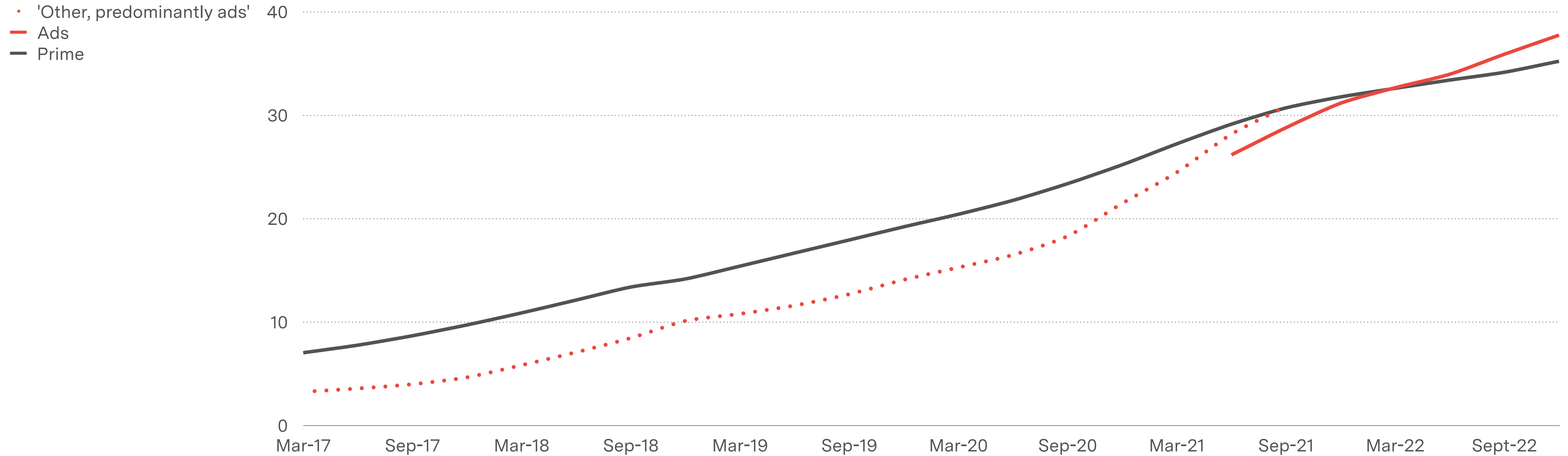
Source: Amazon



# Ads > Prime

Amazon's ad business overtook Amazon Prime revenue in 2022

Amazon revenue, TTM (\$bn)

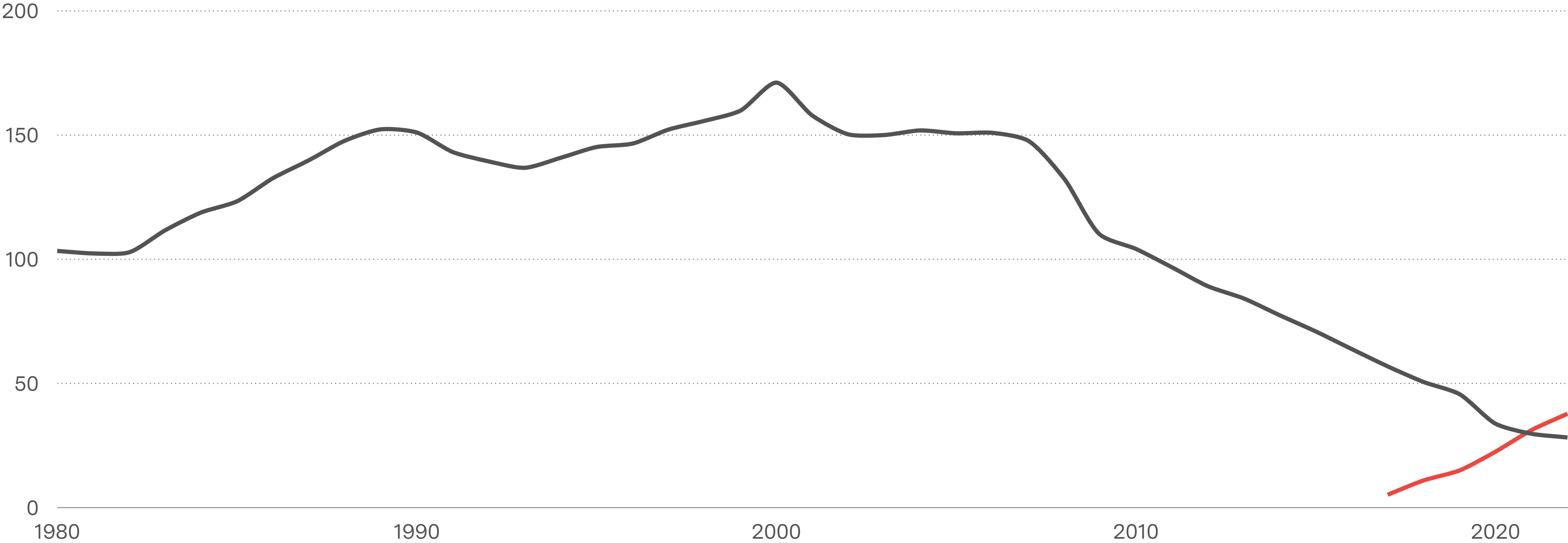


# Old and new gatekeepers

New ad models overtake old ones

Global advertising revenue (\$bn, 2022 dollars)

— Newspapers  
— Amazon



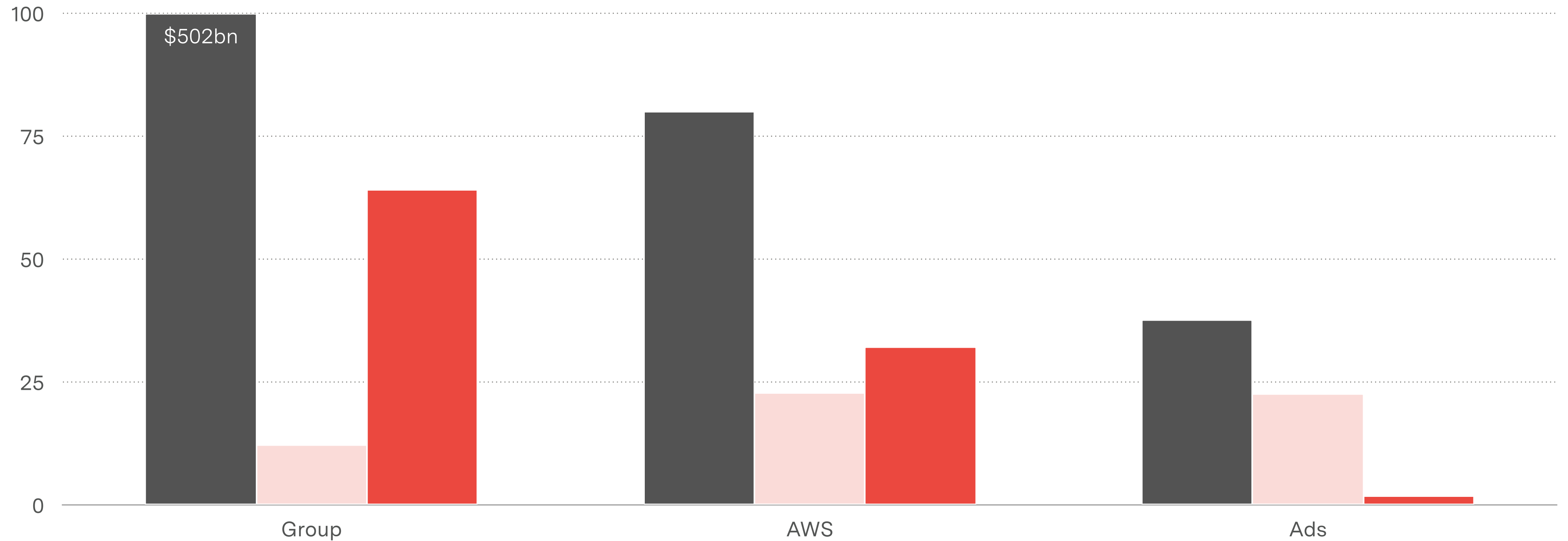
Source: Amazon, Zenith, BLS

# Ads > AWS?

When they work, ads have much higher margins than infrastructure (let alone retail)

Amazon segments, 2022 (\$bn)

■ Net sales  
■ Operating income \*  
■ Capex \*\*



Source: Amazon, Benedict Evans

\* Amazon reports Group & AWS; assume 60% operating margin for ads, matching Google ads minus TAC

\*\* Amazon reports approx. 50% of capex going to AWS; assume incremental capex to serve ads is minimal

“I can’t remember a business with the margin structure of the advertising business here at Walmart (and having 30% growth for the quarter was nice)”

Doug McMillon, Walmart CEO

# New channel, new gold rush

First party data, inventory, and very attractive margins

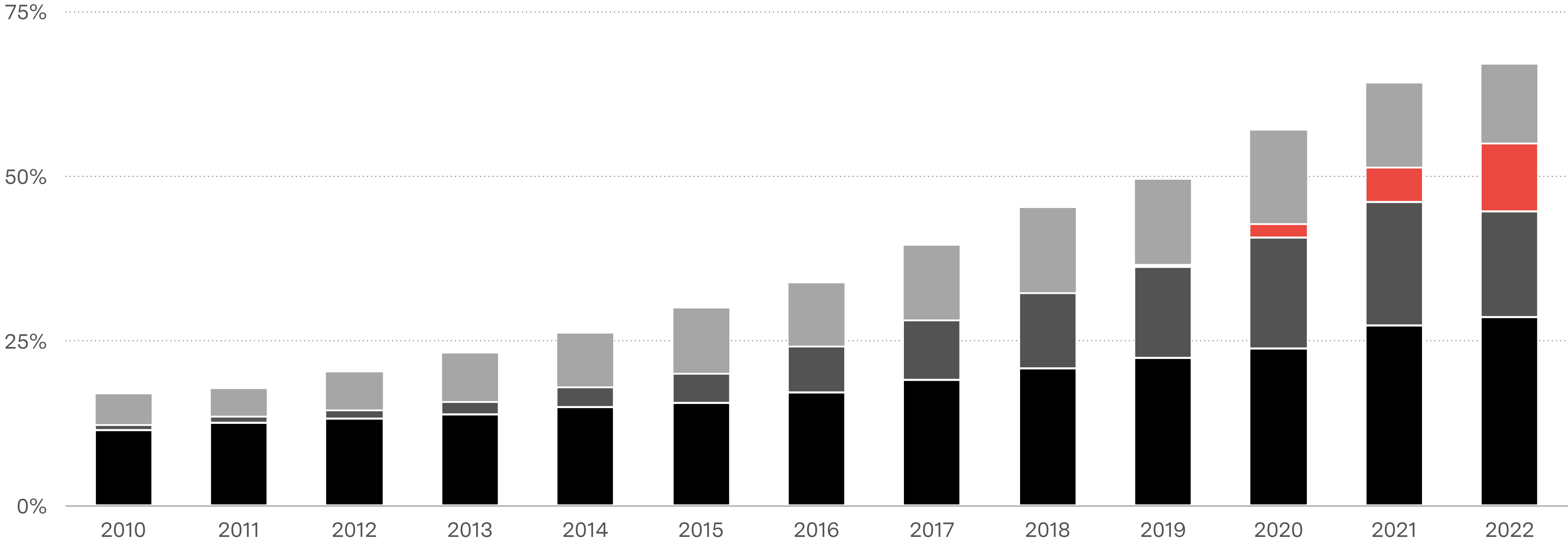


# Retail media

Retail media may have taken 10% share in 2022

Share of US advertising spending

- Other digital
- Retail
- Social
- Search



# Advertising? Marketing? Price discrimination?

There are lots of different terms to describe the ancient practice of ‘brands paying retailers’

One estimate is that trade dollars comprise about 7.5 percent of U.S. retailers’ revenues—about two times retailers’ pre-tax income.<sup>49</sup>

According to one source, “Retailers are hooked on the heroin of this promotional money, and even the few who say they need to wean themselves from these payments know it is a difficult and arduous process. Manufacturers would love to find a way to reduce these payments...but, on the other hand, they’re used to a system that allows them to virtually buy real estate in the store.”<sup>52</sup>

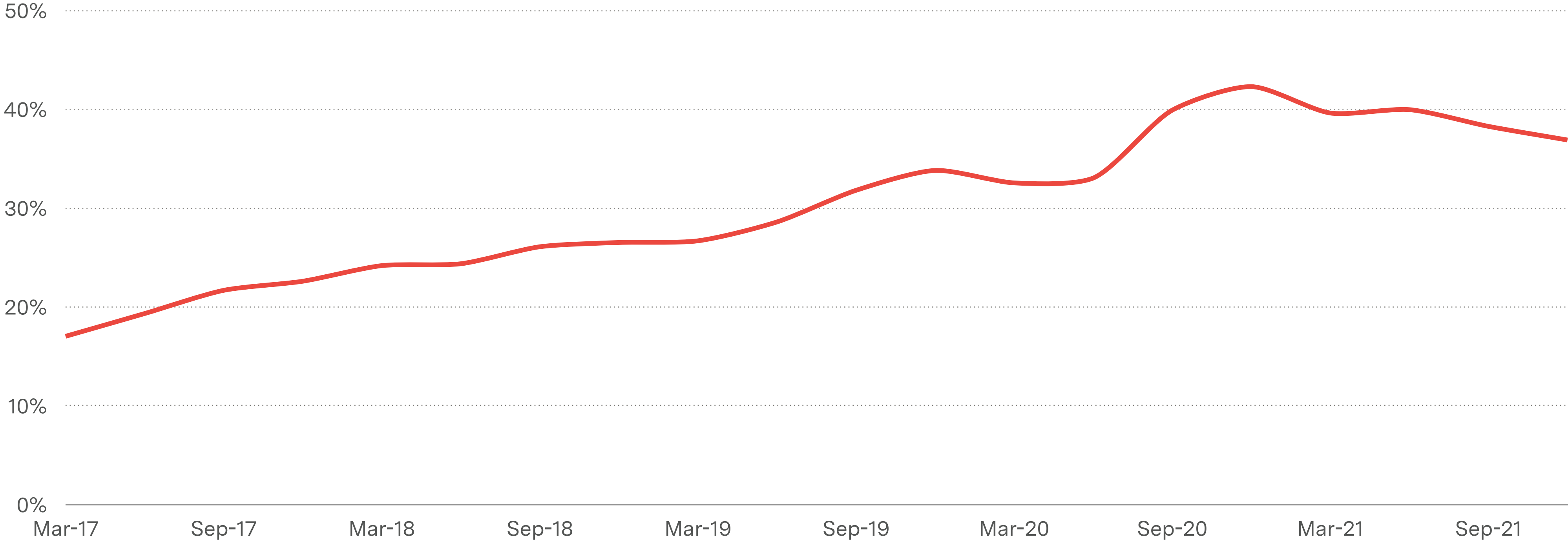


Amazon ads:  
7.5% of 2022  
retail  
revenue

# Chinese suppliers going direct on Amazon

Chinese manufacturers bypass US retailers and brands and go direct to the consumer

Share of Amazon Marketplace Top Sellers based in China



Source: MarketplacePulse

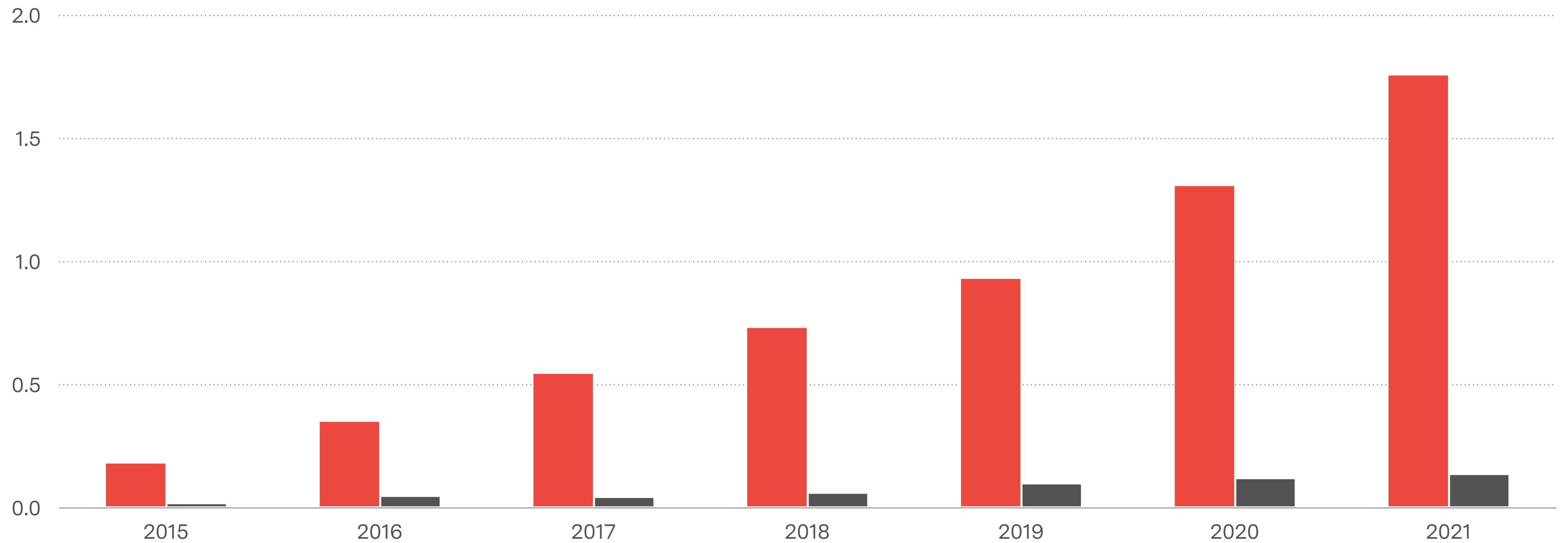


# Building brands on Amazon

Anker, based in Shenzhen, has built a \$2bn phone accessory business on Amazon Marketplace

Anker Innovations financials (\$bn)

■ Revenue  
■ Net income

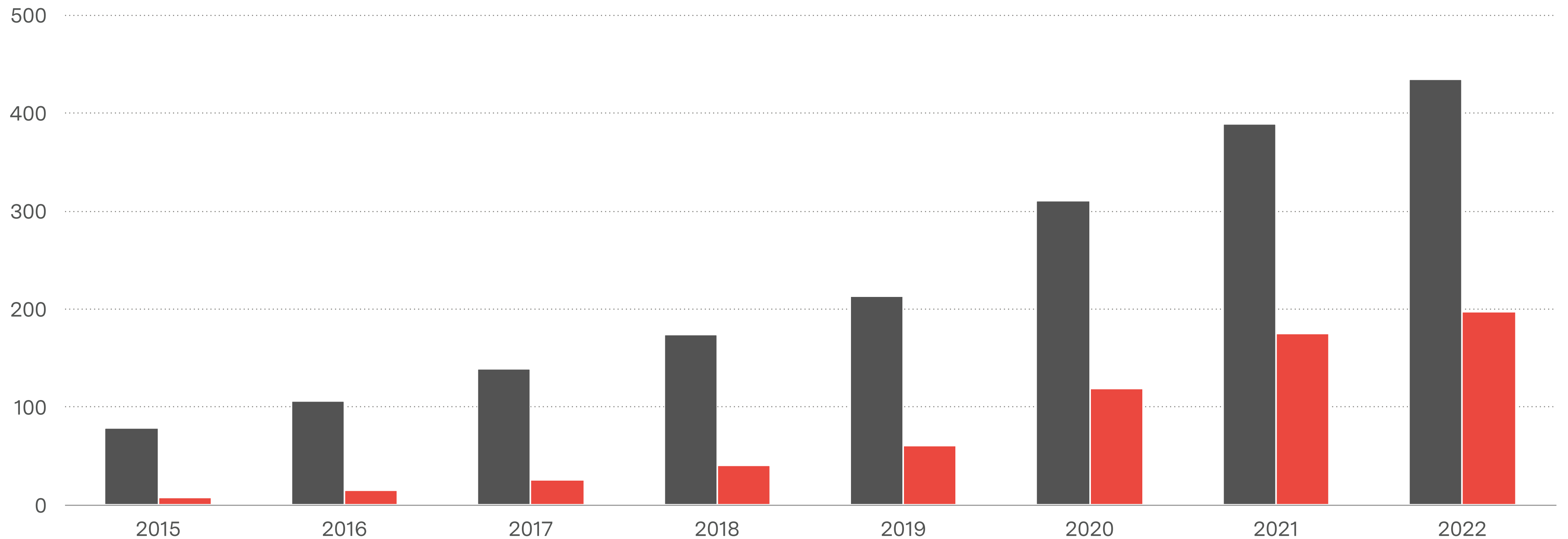


# Unbundling Amazon

Shopify powered \$200bn of sales in 2022 - 45% the size of Amazon Marketplace

Retail GMV (\$bn)

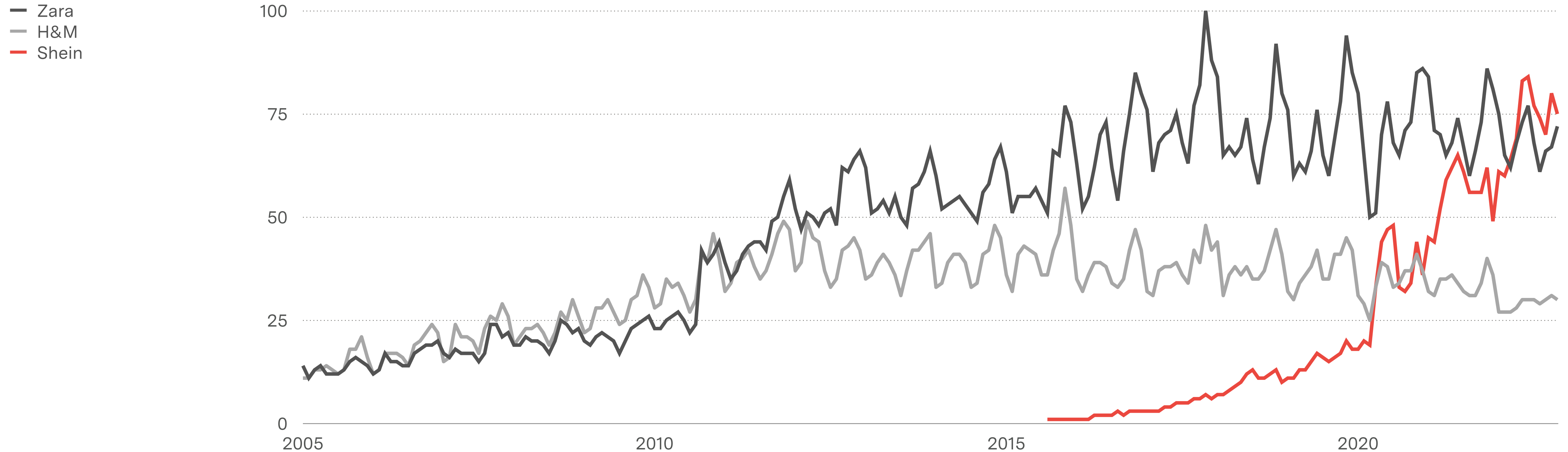
■ Amazon Marketplace  
■ Shopify



# New channels, new winners

A Chinese smartphone-only fast fashion brand overtakes the market leaders?

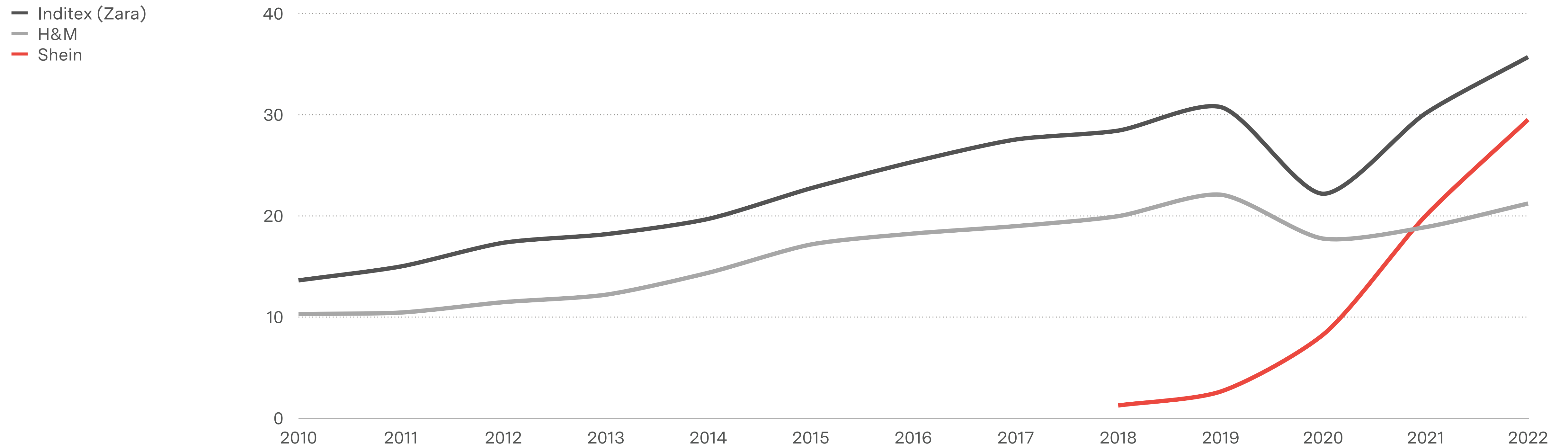
Worldwide relative search interest



# Shein goes direct

A new bundle and a new channel build a new global fast fashion business

Global retail revenue (\$bn)



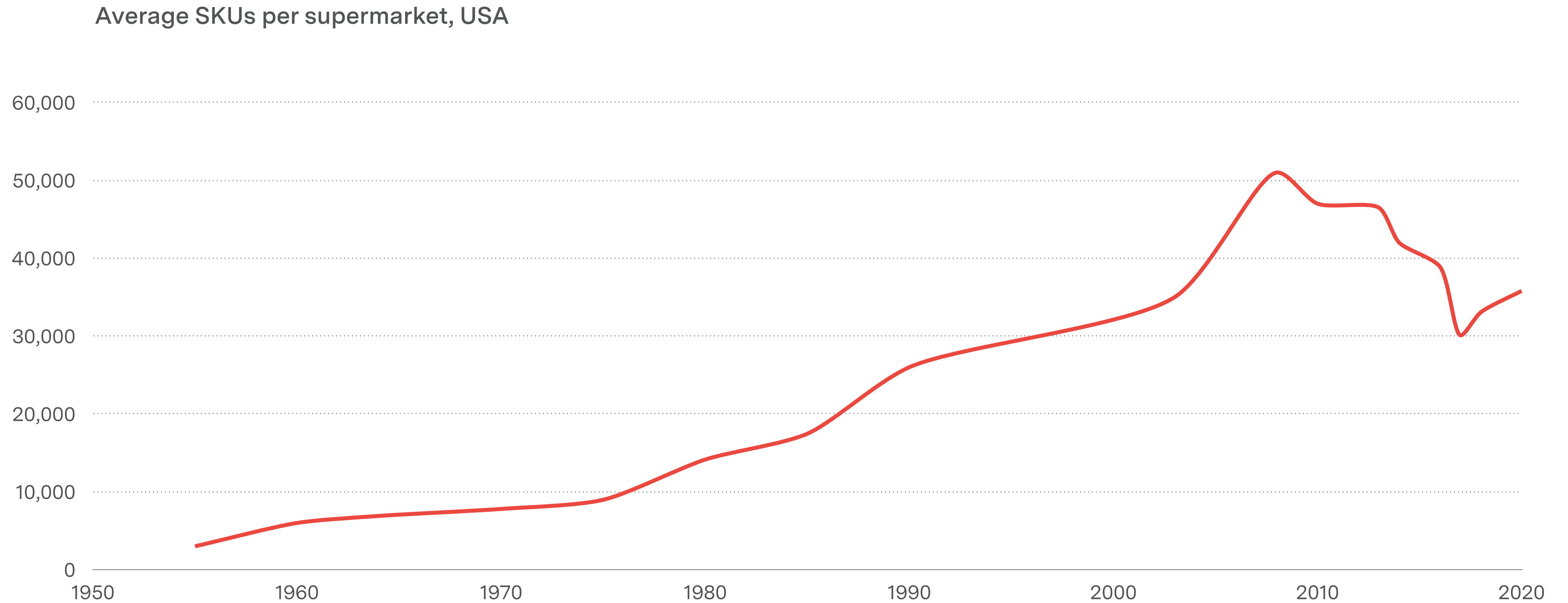
# What does internet-native fast fashion mean?

New channels + new tech = new SKUs



# New channels + new tech = new SKUs

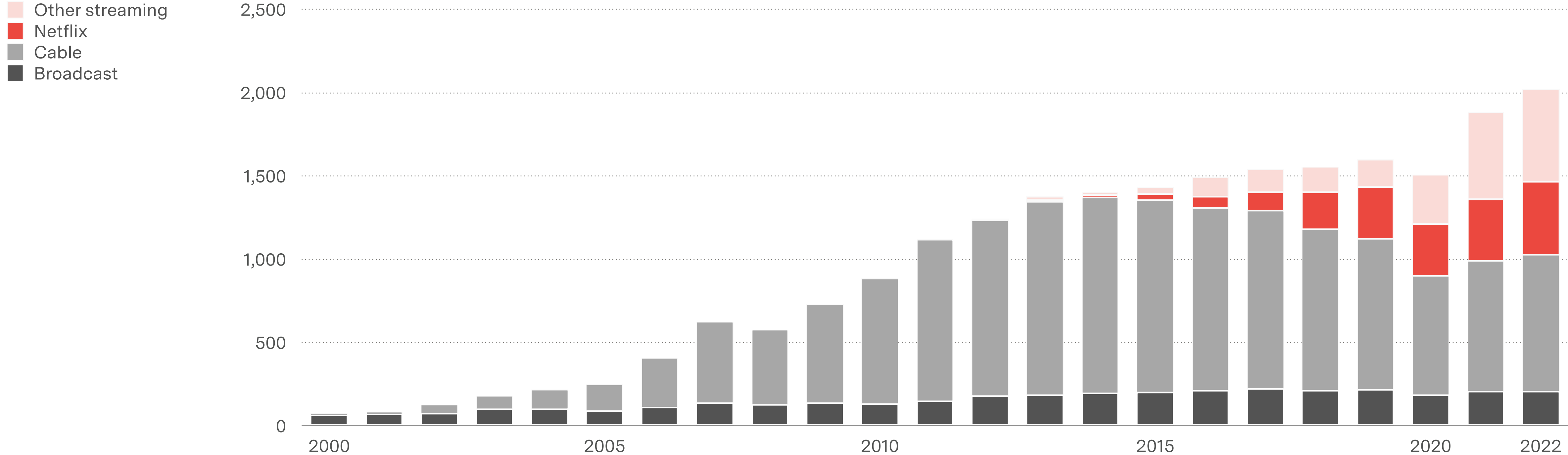
In the 1970s and 80s, UPCs, barcodes and computers let retailers manage vastly more SKUs



# New channels + new tech = new SKUs

Cable unlocked channel slots, and then streaming unlocked time slots

### New US original TV series



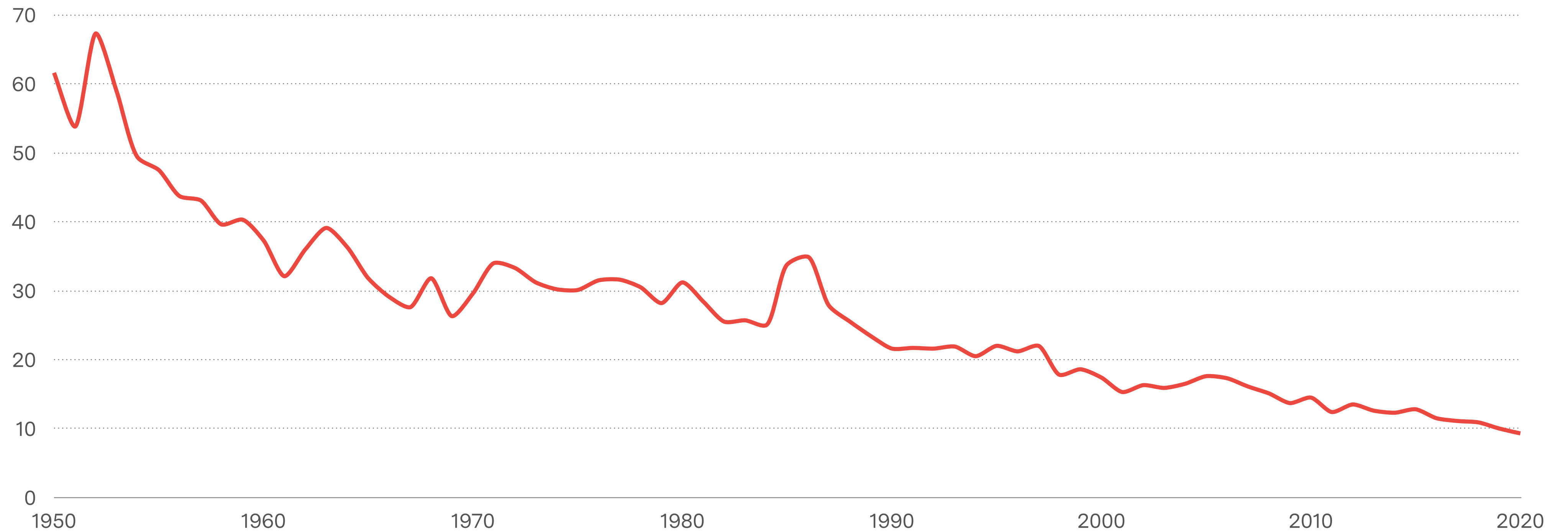
Source: Luminate



# Fragmentation

(So how do you know what to watch?)

Nielsen rating for top-rated US TV show by year (% of TV households viewing)

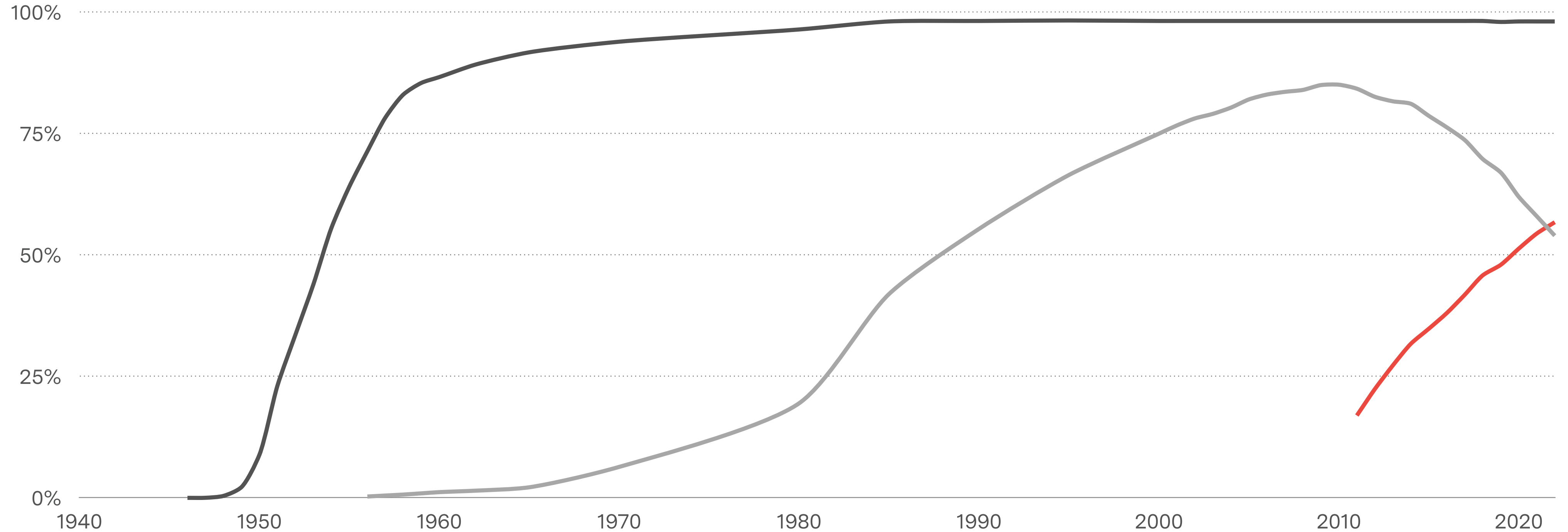


# TV unbundles...

US pay TV penetration is down a third from the peak

US TV household penetration

- TV
- Pay TV
- Netflix streaming

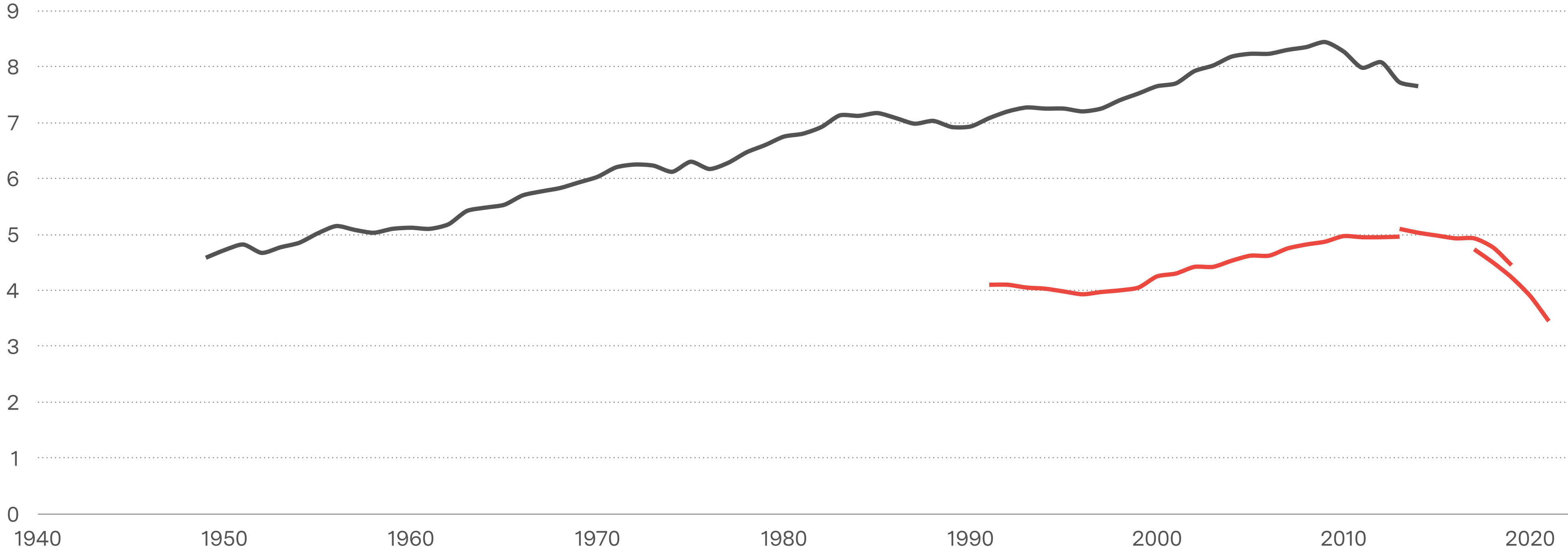


# Gradually, then suddenly...

US linear TV viewing is down by a third since 2015

US TV Live+DVR hours per day

— Households  
— Individuals \*



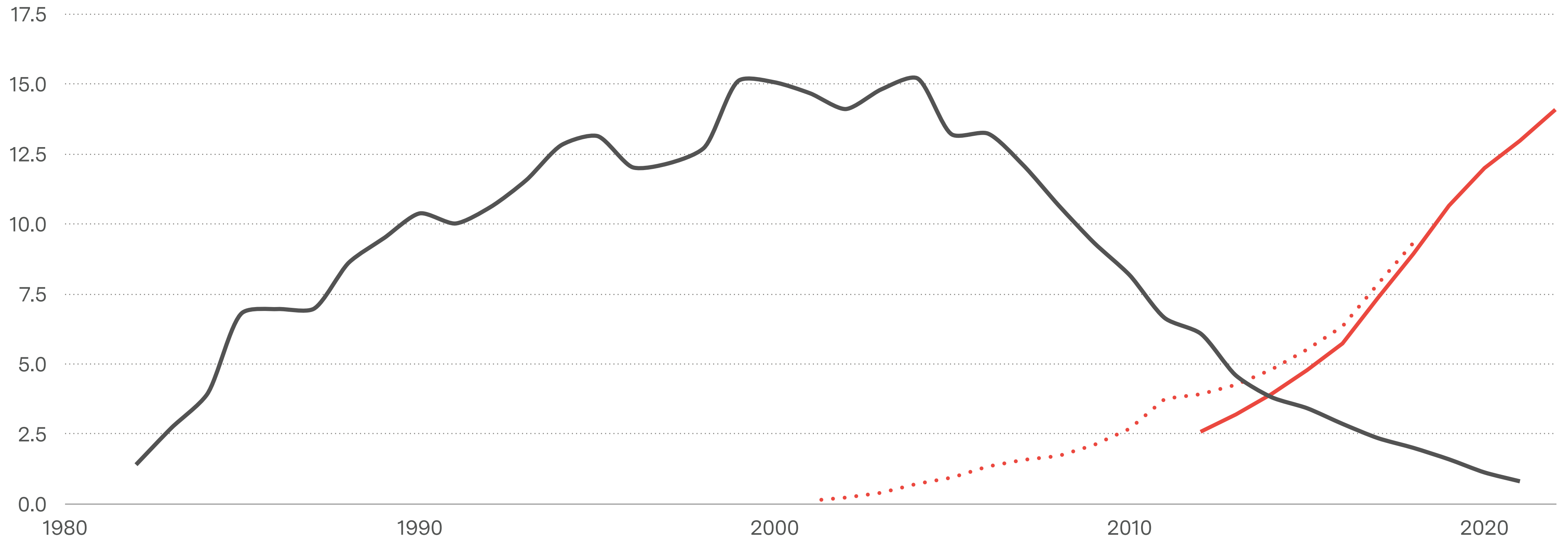
Source: Nielsen  
\*Multiple definition and methodology changes

# Streaming > schlepping

Blockbuster's peak market cap: \$5bn

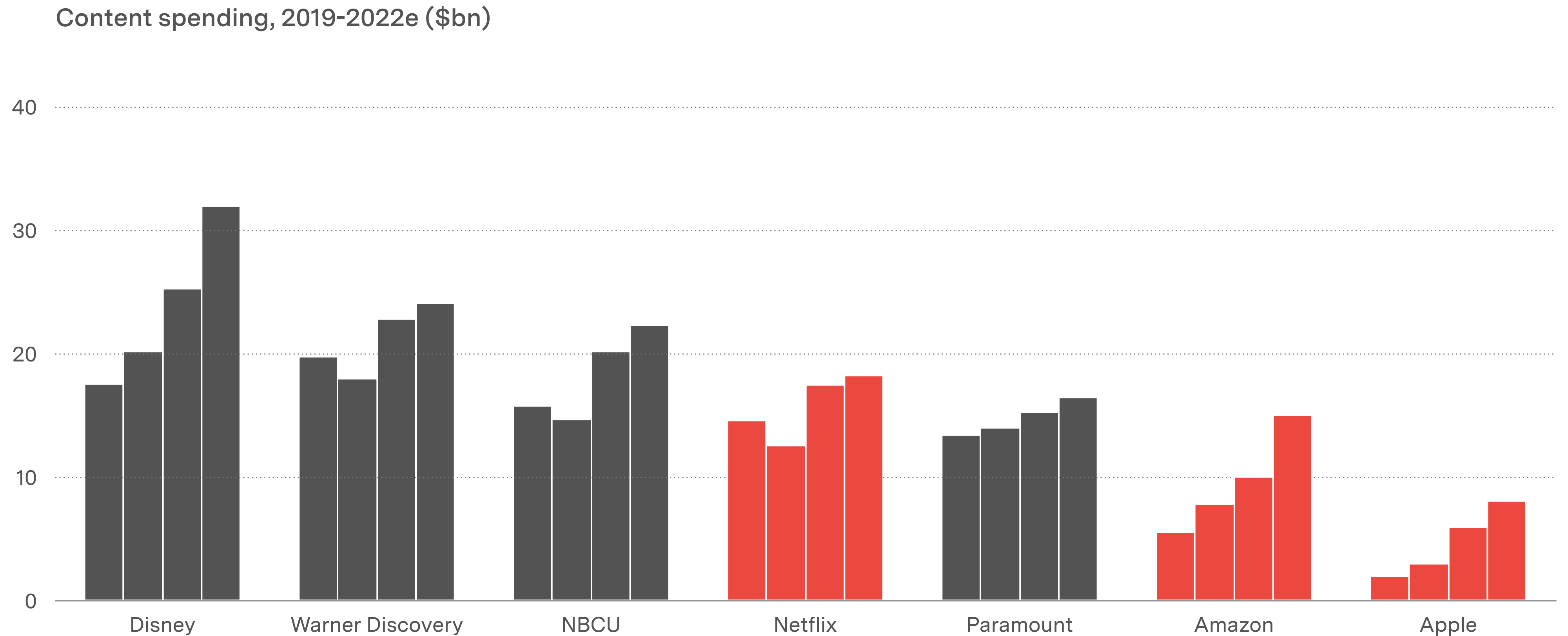
US home video revenue (\$bn, 2022 dollars)

- Tape & disc rental
- Netflix total
- Netflix streaming



# Land grabs are expensive

New entrants matching legacy content producers

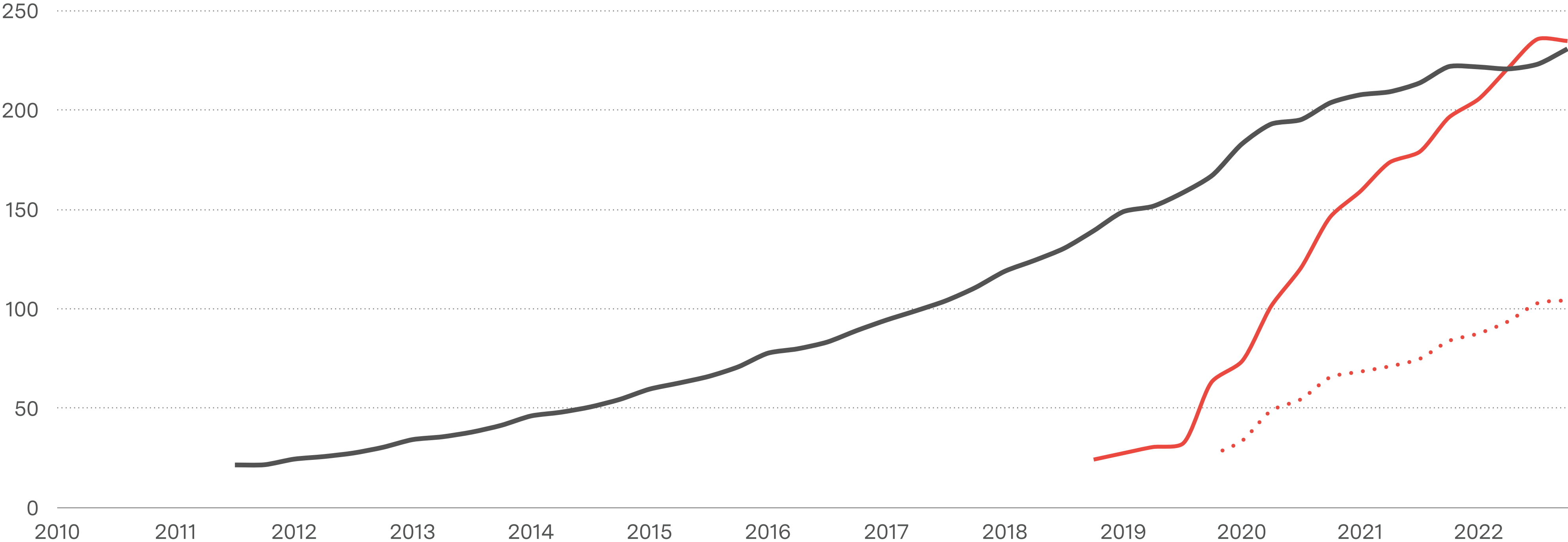


# Content is king - for content businesses

Remember when people said legacy media companies could never learn software?

Streaming subscribers (m)

- Netflix
- Disney
- Core Disney+



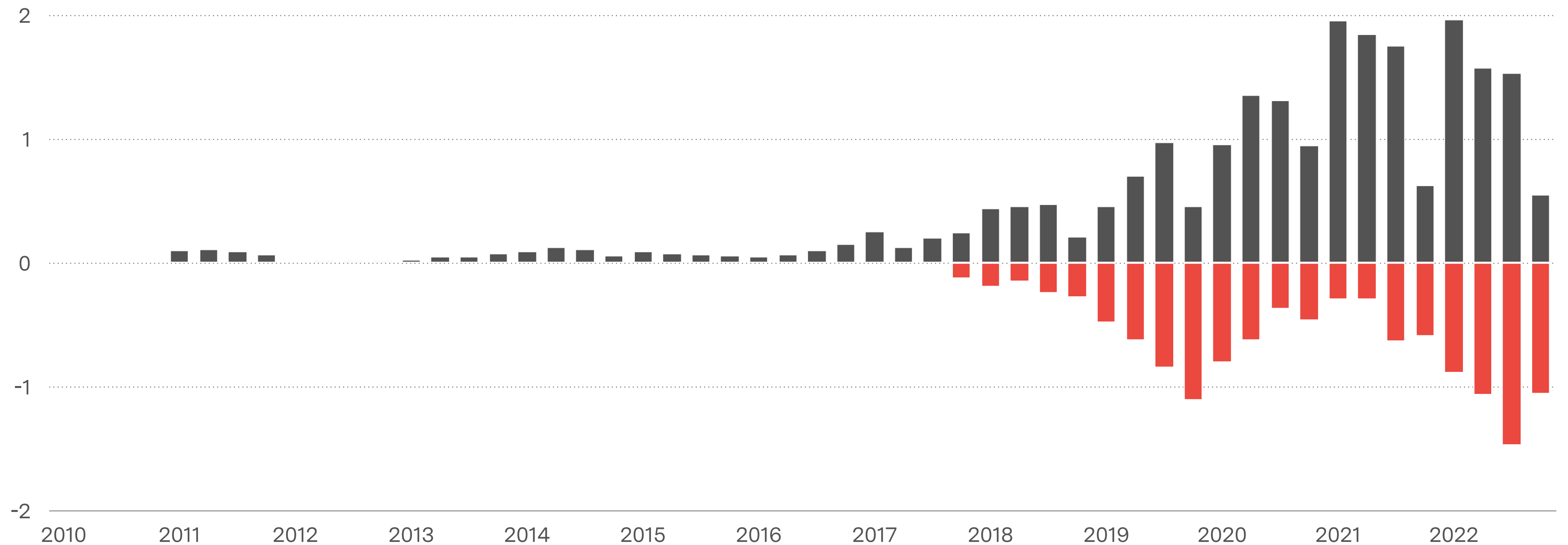
Source: Netflix, Disney  
'Core' excludes Hotstar, ESPN and Hulu

# The 'innovator's dilemma' costs real money

Moving away from a mature business model and creating a new one is very expensive

Operating income (\$bn)

■ Netflix  
■ Disney D2C video

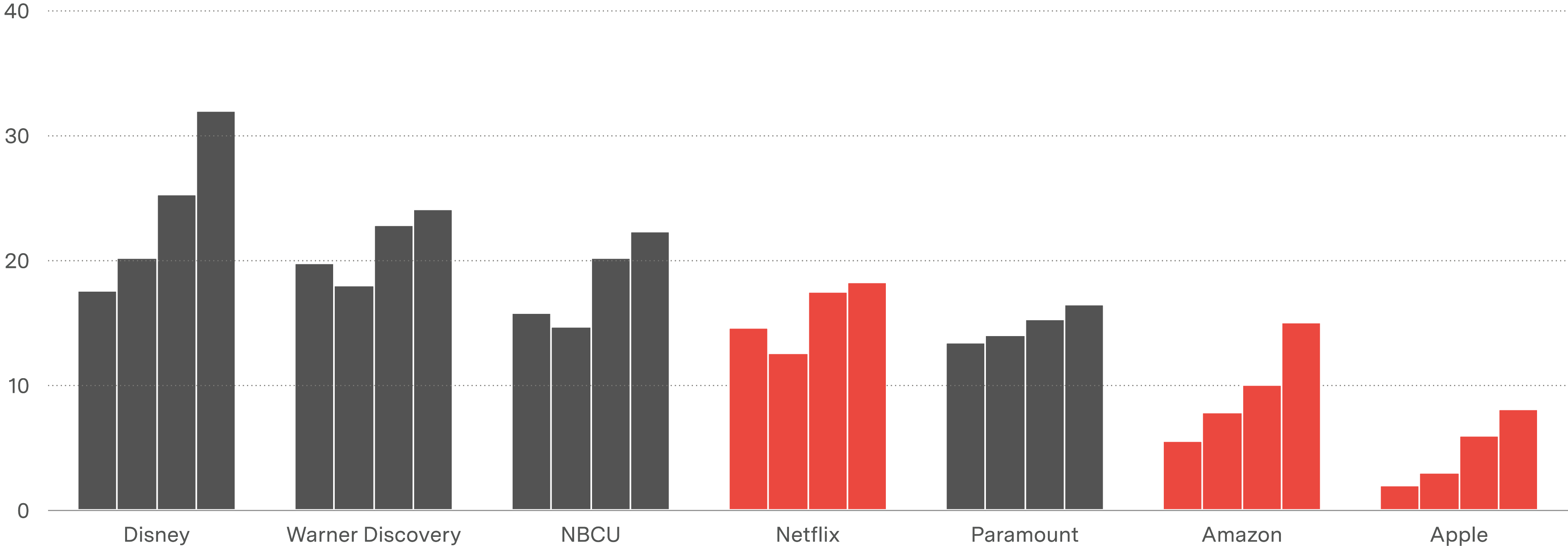




# Something missing, though?

New entrants matching legacy content producers - all new entrants

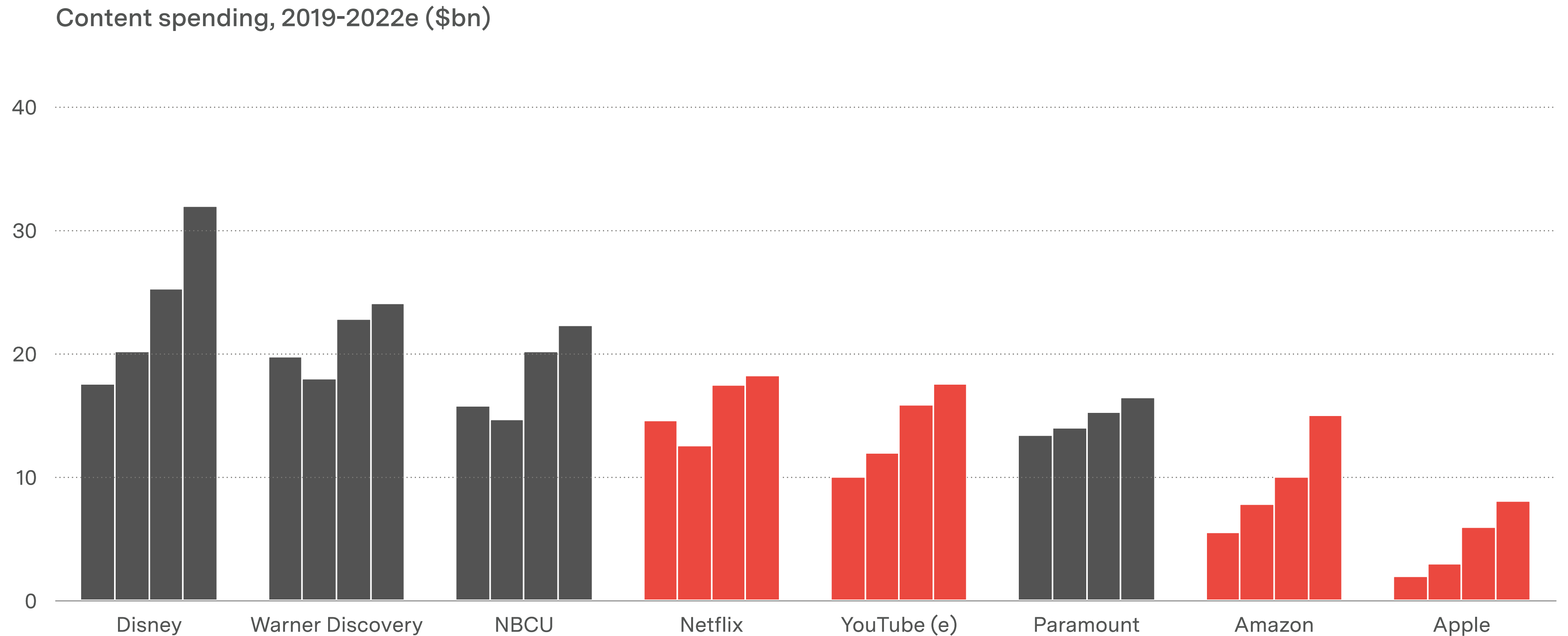
Content spending, 2019-2022e (\$bn)



Source: Variety

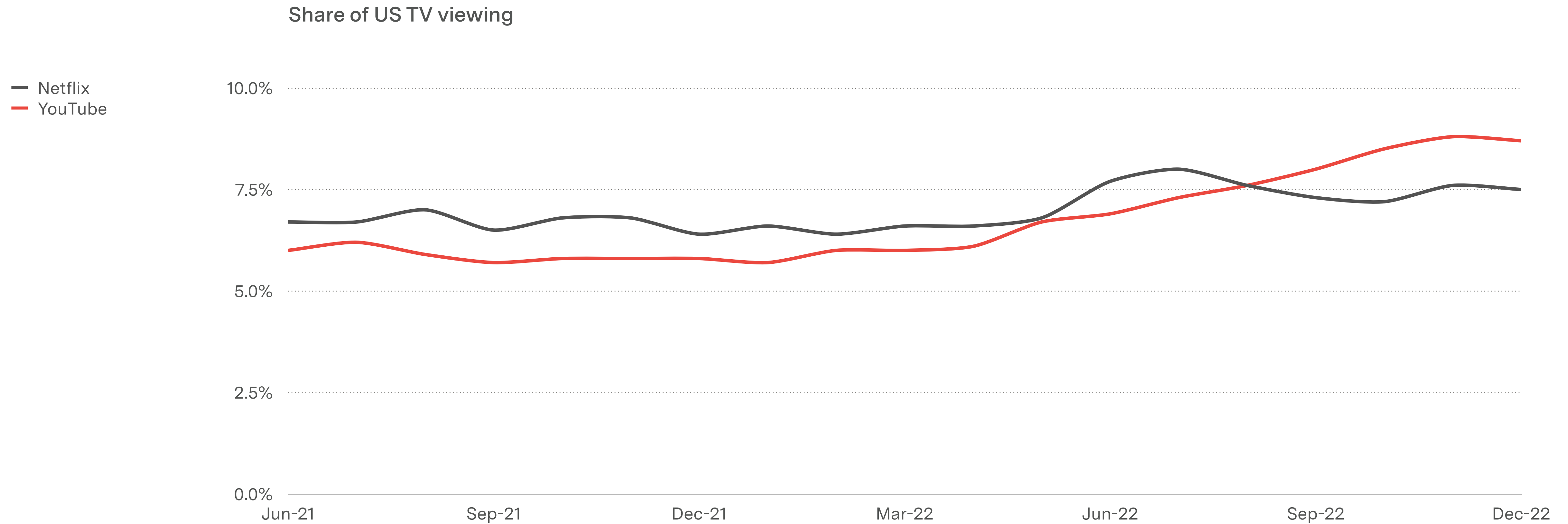
# What is 'TV' anyway?

YouTube creator payouts are almost certainly comparable to TV production budgets



# What is 'TV' anyway?

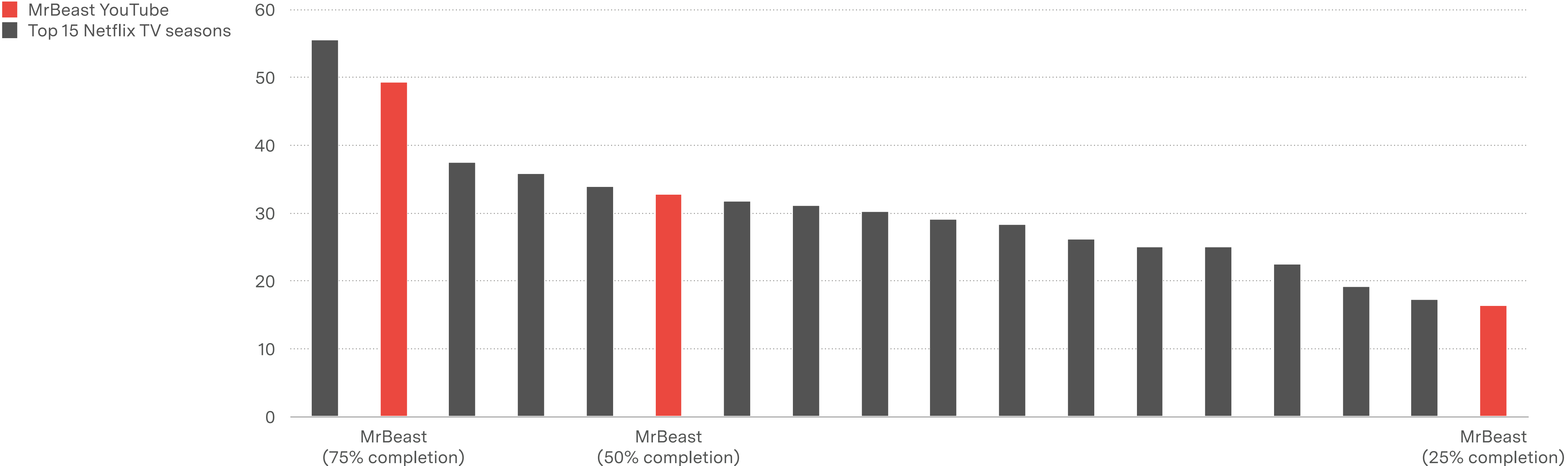
Nielsen estimates that YouTube and Netflix have equivalent viewing in the USA



# What is a TV show?

MrBeast probably has comparable total viewing time to a top 10 Netflix show

Global 7-day hours of viewing, January 2023 (m)

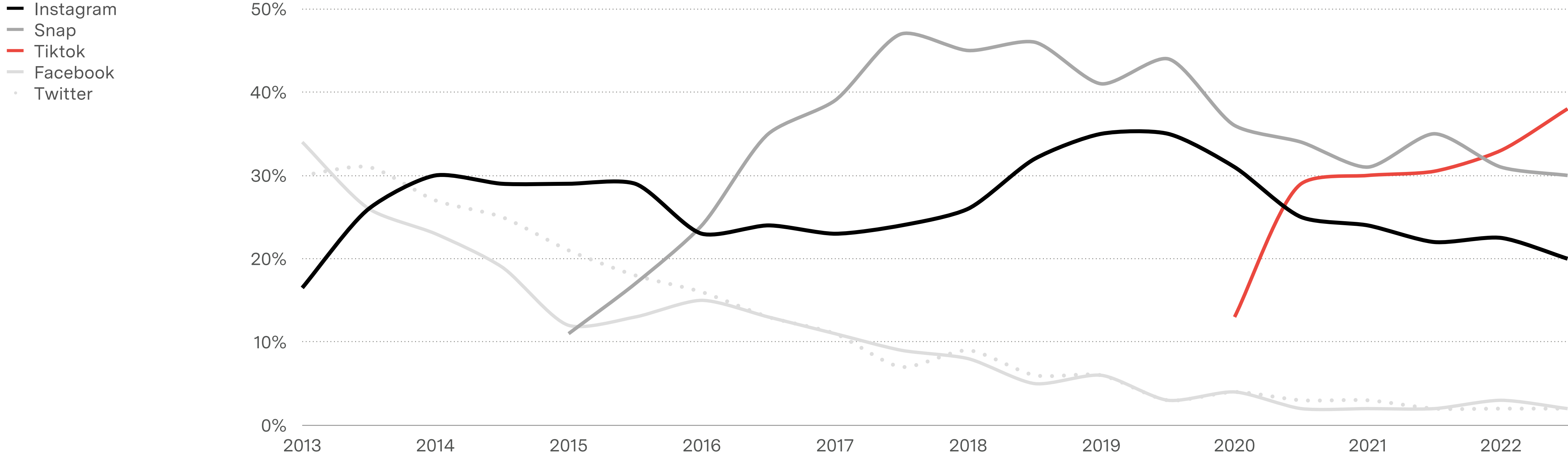


Source: Netflix, YouTube, Benedict Evans  
Netflix reports hours for show seasons but not for entire shows  
YouTube reports views for MrBeast: presume 75%, 50% and 25% completion for average video length

# What is 'TV' anyway?

Is TikTok 'social' or 'video'? Does it matter?

US teenagers' favourite social network



“Software is eating the world”

Marc Andreessen, 2011

# But where does that happen?

Where does software eat the world, and where does it just get absorbed?





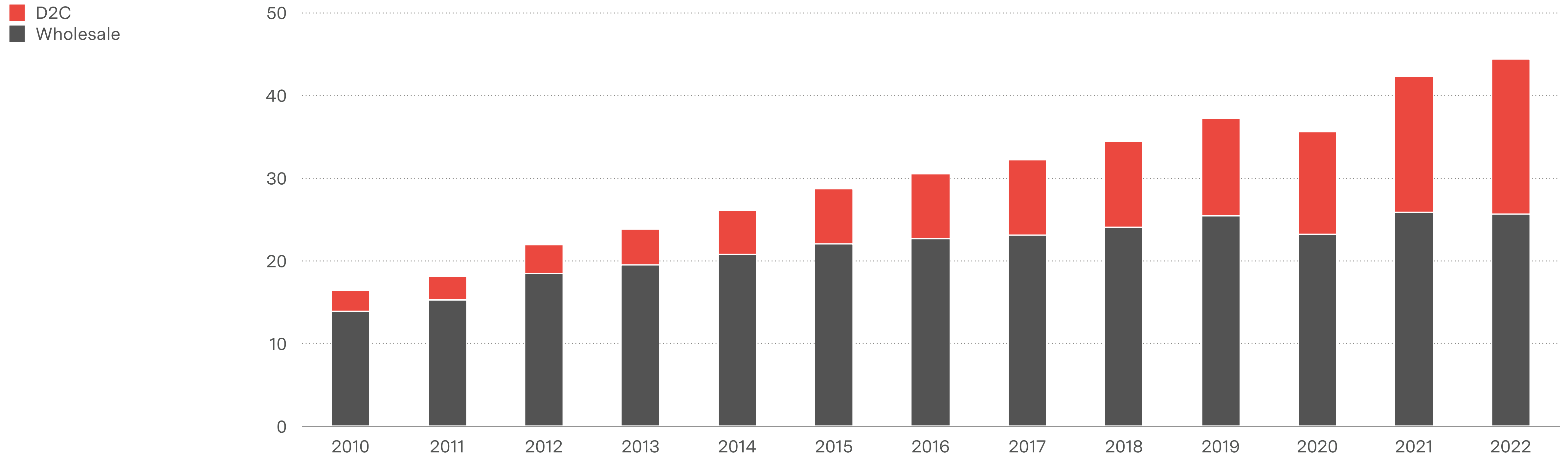
“There are two ways to make money.  
You can bundle, or you can unbundle”

Jim Barksdale

# What's the right bundle?

Nike's own channel is now 40% of sales and all of the growth

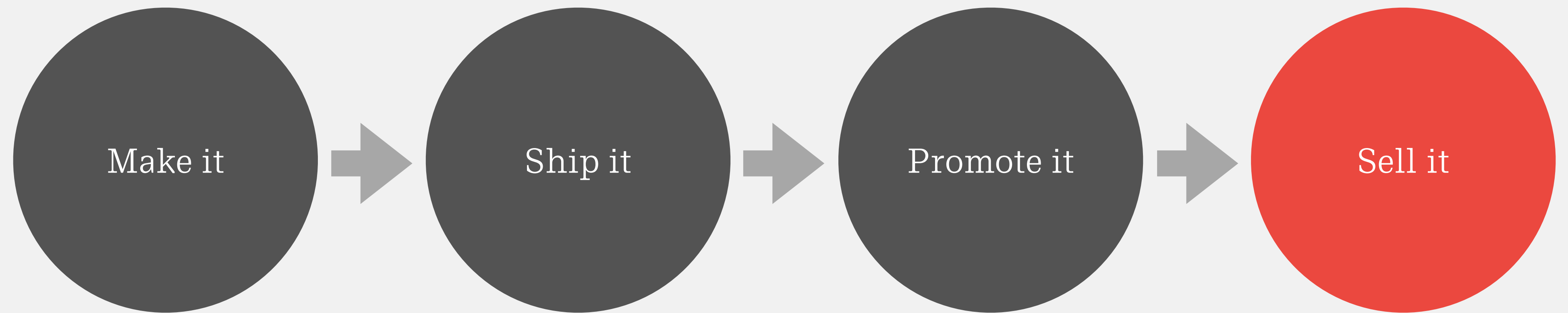
Nike revenue\* (\$bn)



Source: Nike. \* Nike brand only. NB: May year end

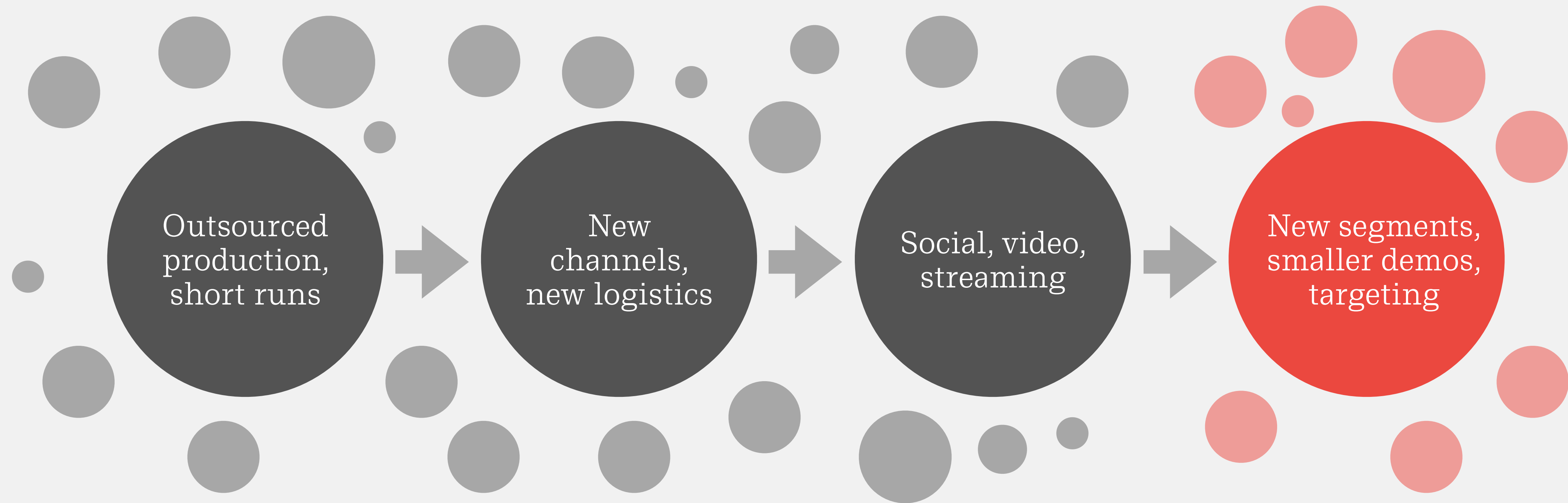
# The big brand bundle

Scale, efficiency and optimisation



# The big brand bundle... unbundled

Now all the advantages of scale are in question



# Old and new gatekeepers

What kind of gatekeeping are we talking about?

Sears stocked 200k items



Amazon lists at least 300m items and has 2m seller accounts

2,000 new TV series made in the US in 2022



3.7m daily uploads to YouTube

In 1994 98% of US city newspapers were local monopolies



Well... the internet

# A market reset

If all the old filters and gatekeepers go away, what opportunities does that create?



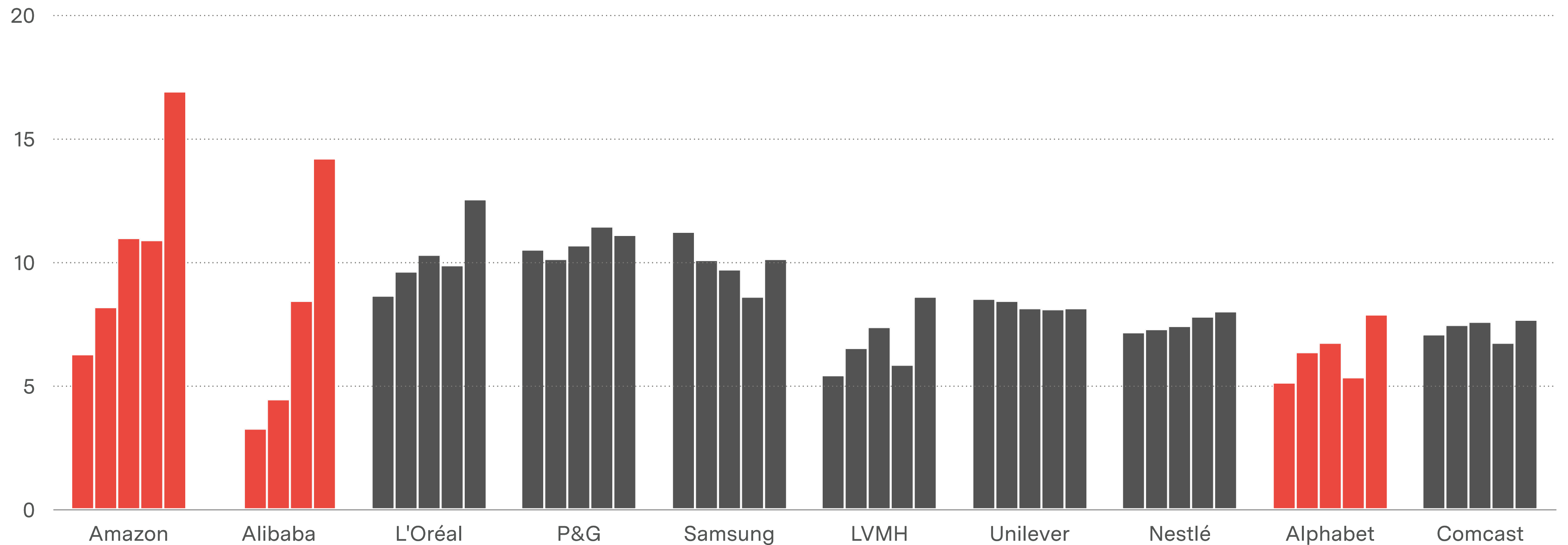
“Advertising is the price you pay for having an unremarkable product or service”

Jeff Bezos, 2009

# Amazon is the world's largest advertiser

“Advertising is the price you pay for having an unremarkable product or service” - Jeff Bezos, 2009

10 largest global advertising budgets, 2017-2021 (\$bn)



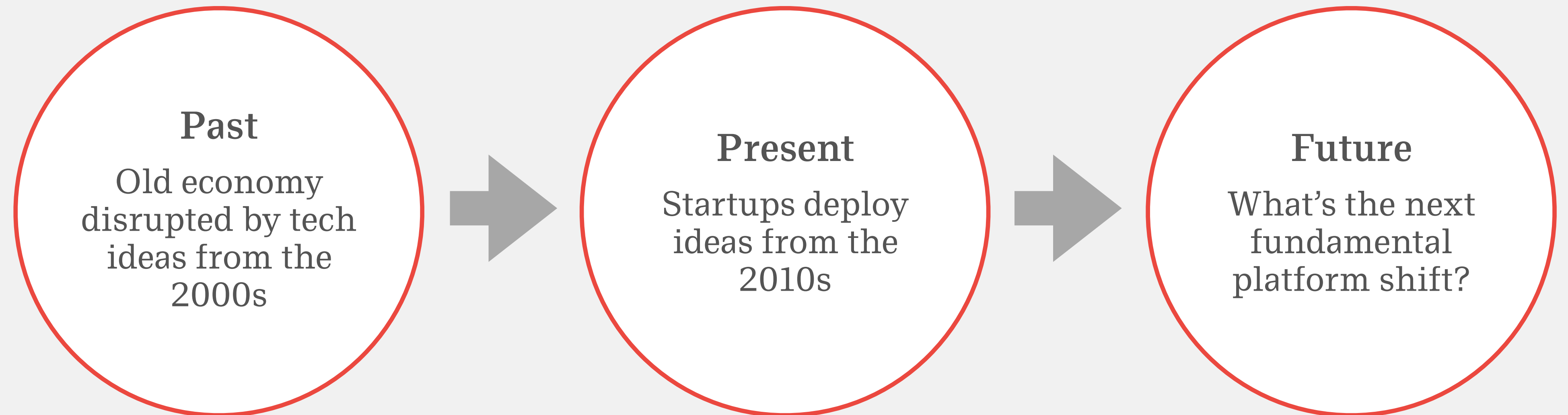


# Dreams for the Future

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# Three steps to the future

“The future is here, but it’s unevenly distributed” - William Gibson

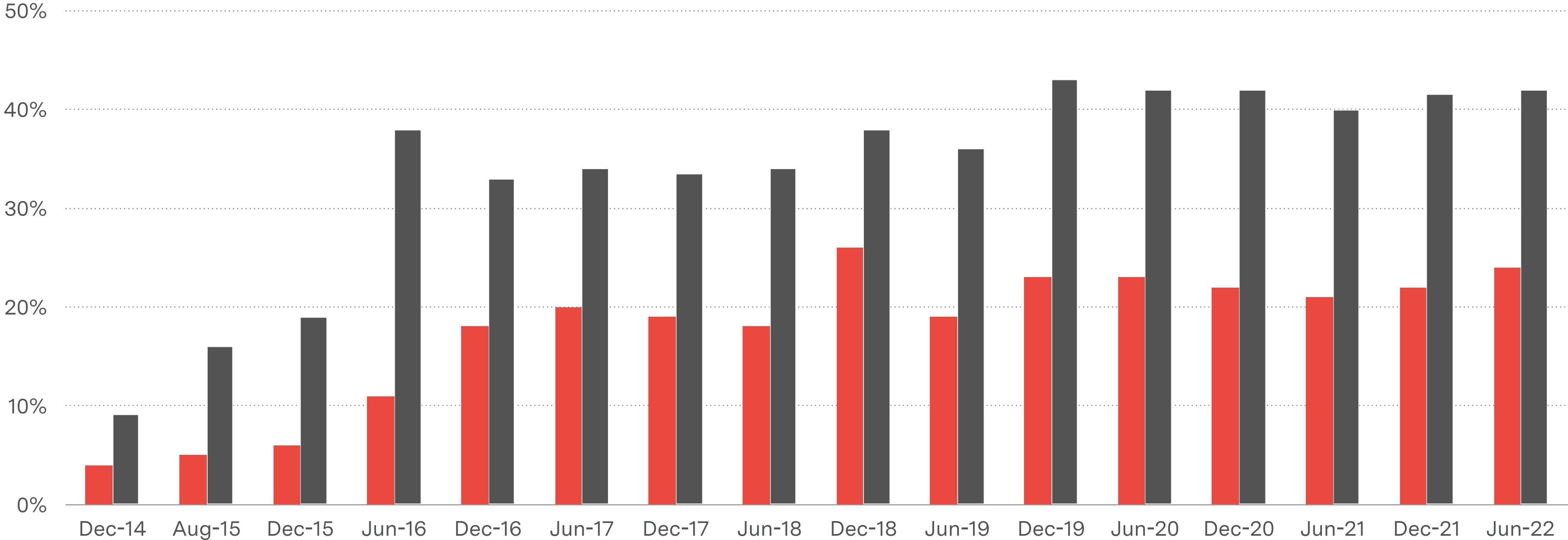


# (And there's plenty more deployment to do)

Startups deploy ideas from the 2010s

## Enterprise workloads in public cloud

■ Today  
■ Expected in 3 years



# The future - 2022 versus 2023

The hype cycle turns

“Metaverse is the new Internet and the new smartphone”



“Will Apple get us out of the VR winter?”

“Crypto / Web3 is the next way to build software companies”



“... after we spend another 5 years building plumbing and infrastructure”

“AI is boring now”

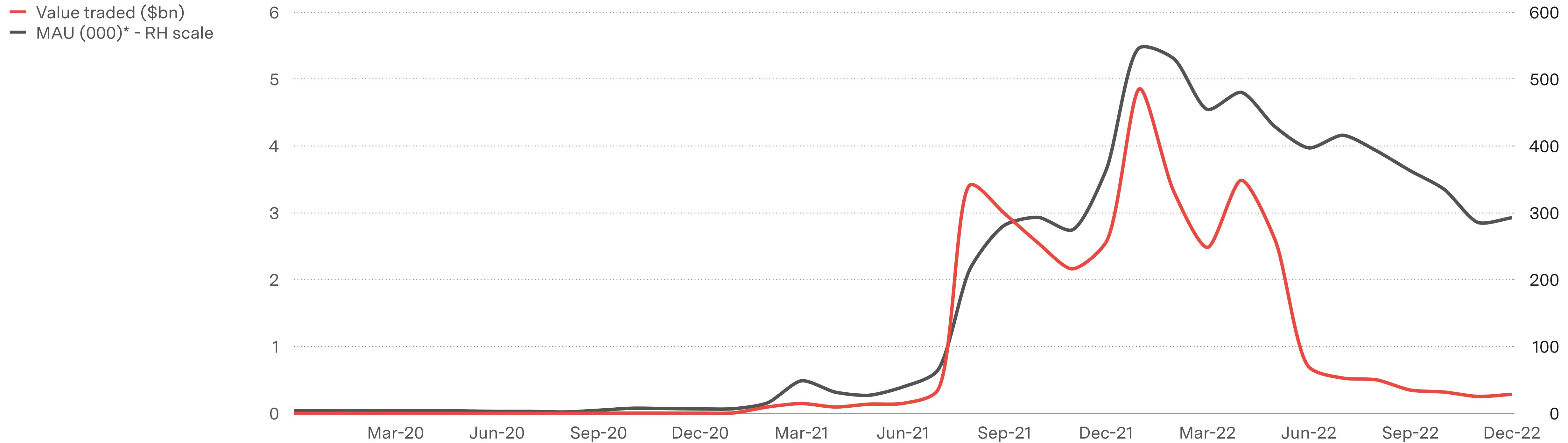


“AI will change everything about everything”

# 'Speculation as a feature' can work both ways

Jump start the network effect by rewarding early-adopters - but are they users or speculators?

OpenSea NFT trading

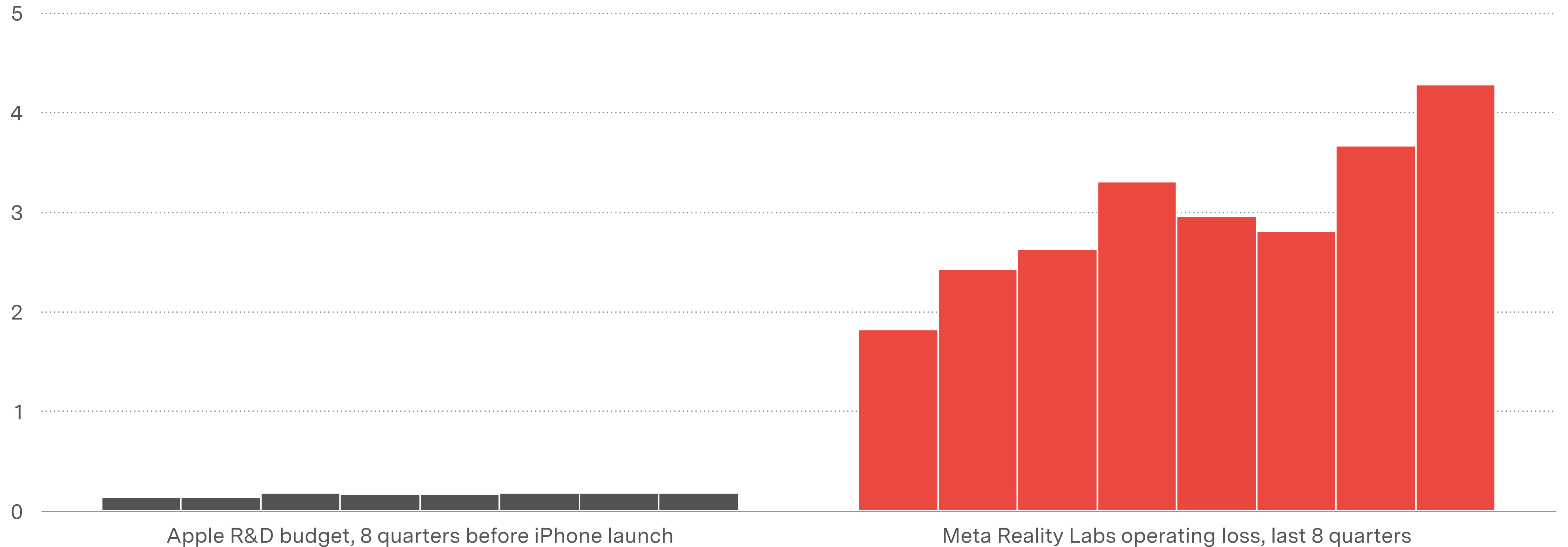


Source: dune.xzy @rchen  
\* Accounts trading at least once in the month

# “Wait, how much money, Mark?”

Meta spent \$14bn on ‘metaverse’ in the last 12 months and is years from a consumer launch

Quarterly budgets (\$bn, 2022 dollars)



# But what are the questions that matter?

Nothing that's happened in the last 12 months gives us answers either way

## Can blockchains be software?

'DeFi' - can you build financial applications with a blockchain?  
(This is what imploded in 2022)

Can you build actual consumer-scale applications on a blockchain?  
Could it be 'web 3'?

## Is xR the next smartphone?

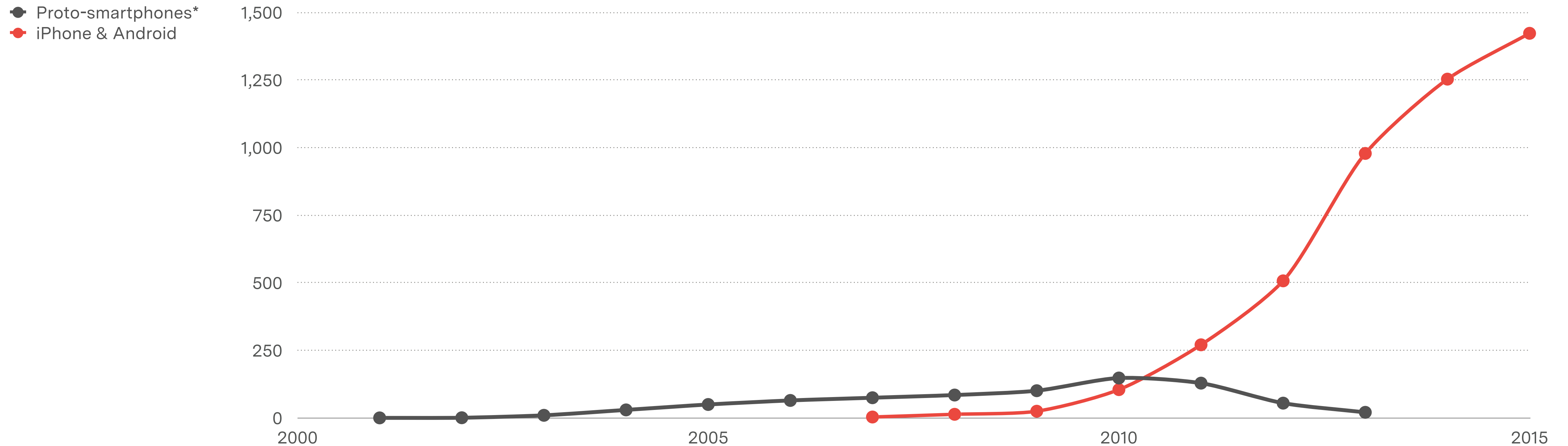
The hardware will get better...

But will we care, or is this just a subset of games consoles?

# Remember - the future can take a long time

And sometimes the early leaders disappear when it works

Smartphone unit sales (m)

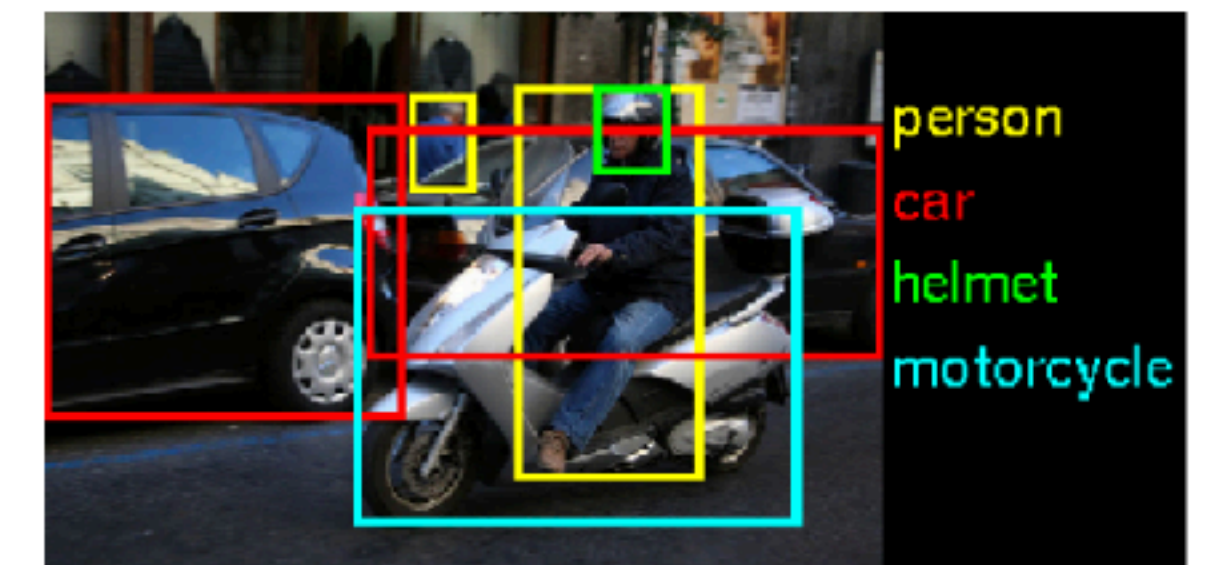
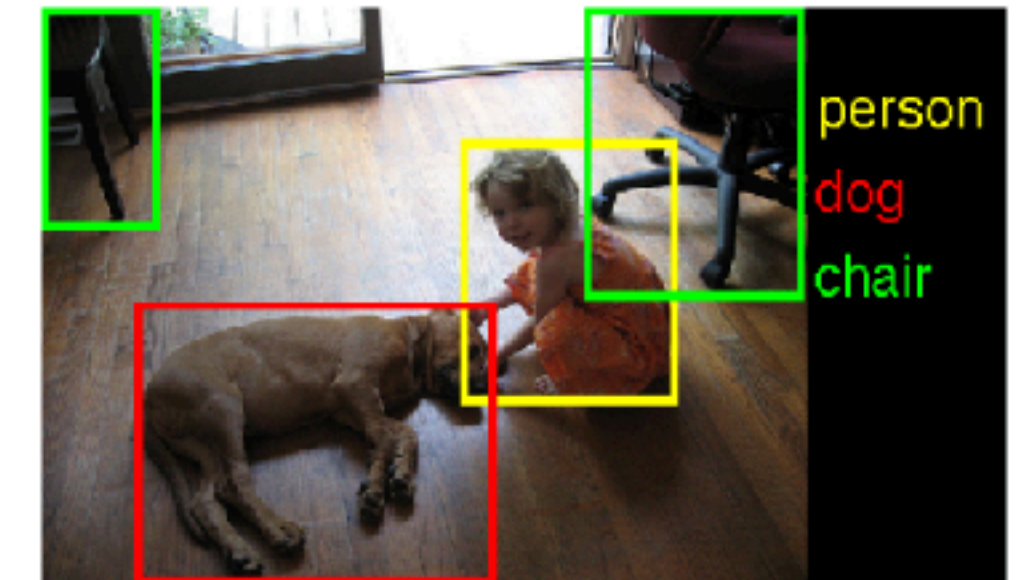
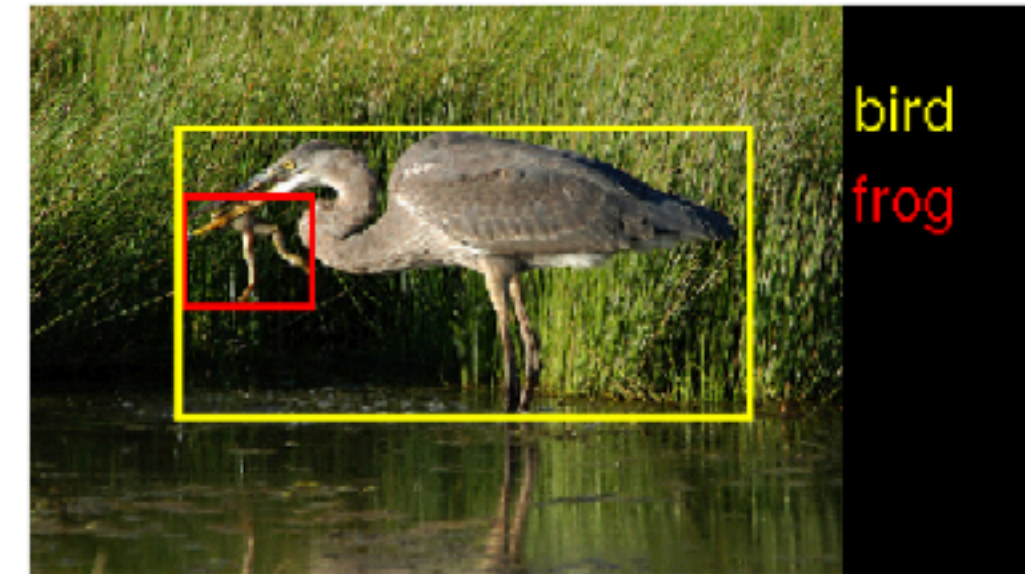




Meanwhile...

# Imagenet, 2013

“That’s clever, but so what?”



# Machine learning spread from 'cool demo' to everything

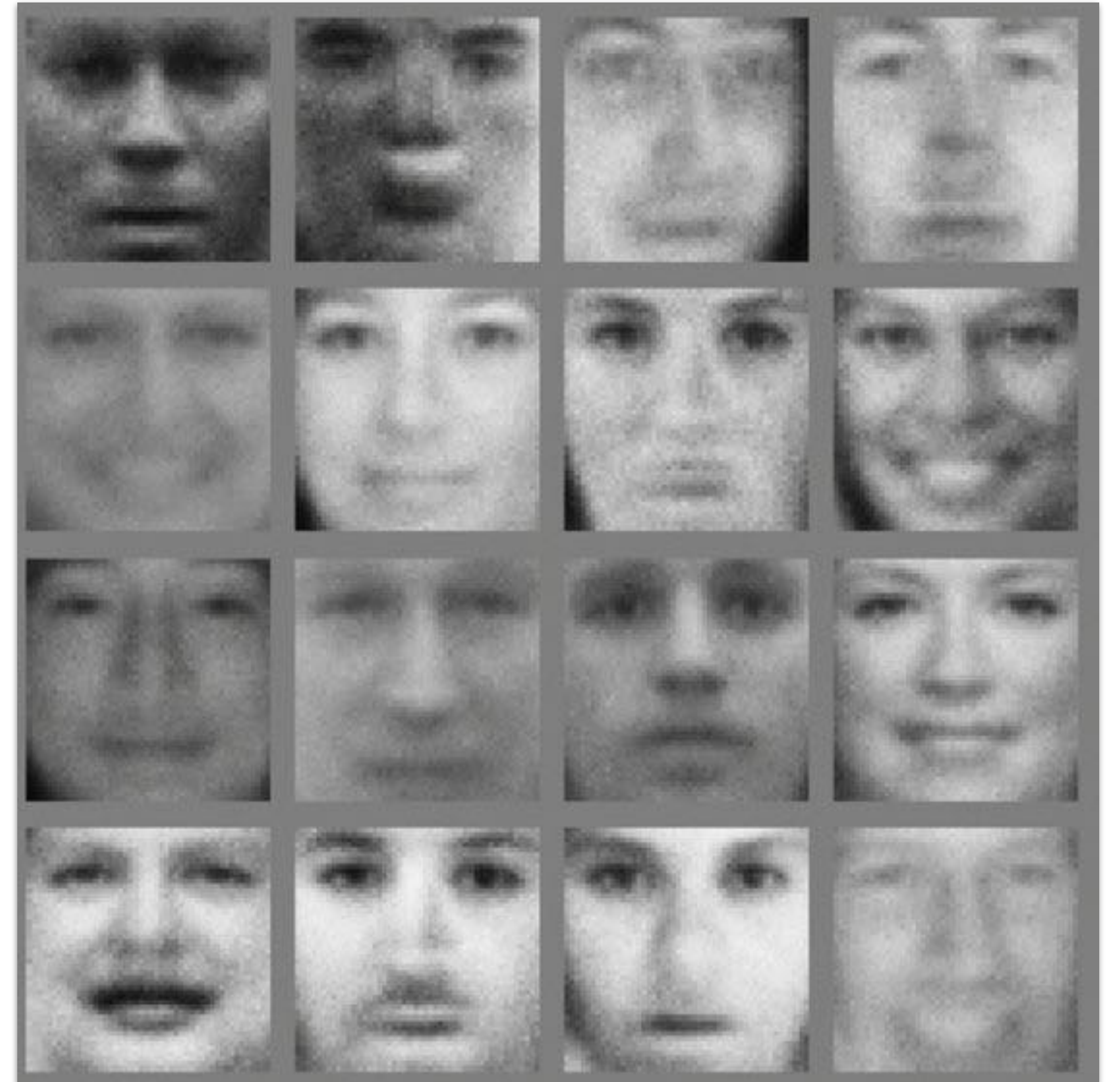
How do you generalise from the cool demo? What's the right level of abstraction to understand this?





# Now, the same moment with generative networks

“That’s clever, but so what?”





# The cool demo

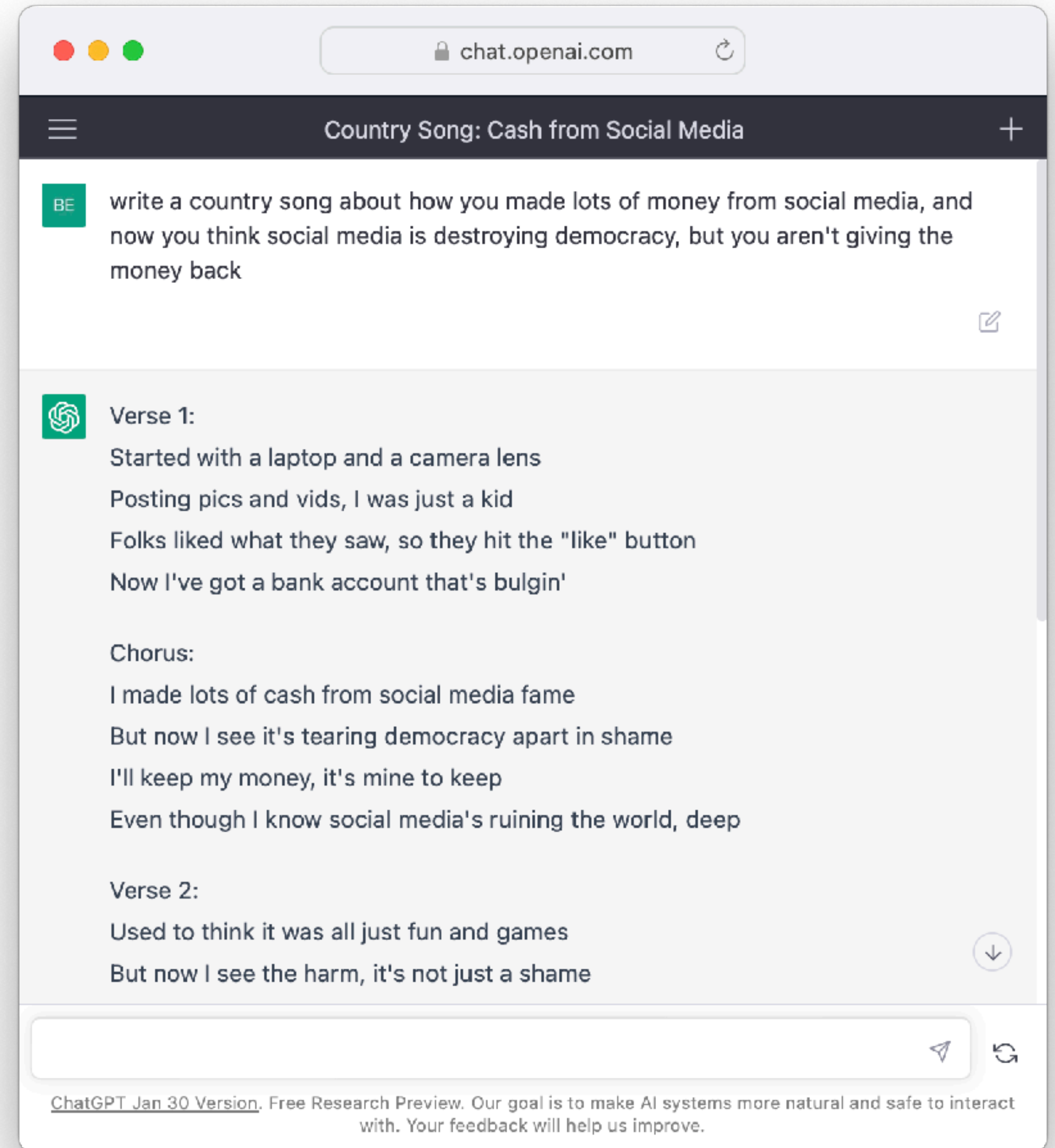
“film still, portrait of an old man, wrinkles, dignified look, grey silver hair, peculiar nose, wise, eternal wisdom and beauty, incredible lighting and camera work, depth of field, bokeh, screenshot from a hollywood movie”





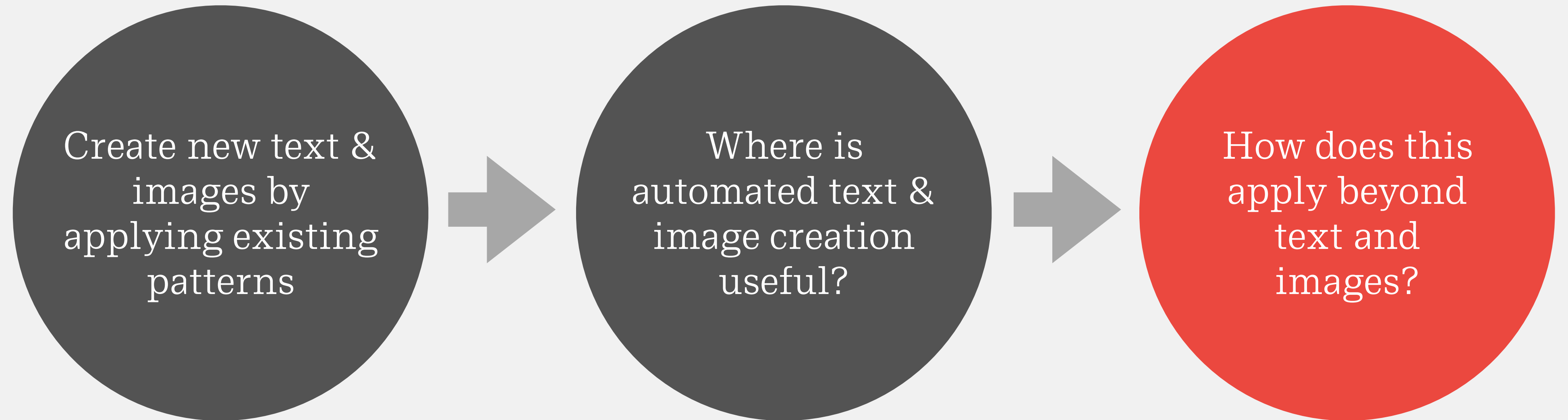
# The cool demo

ChatGPT shows the potential...



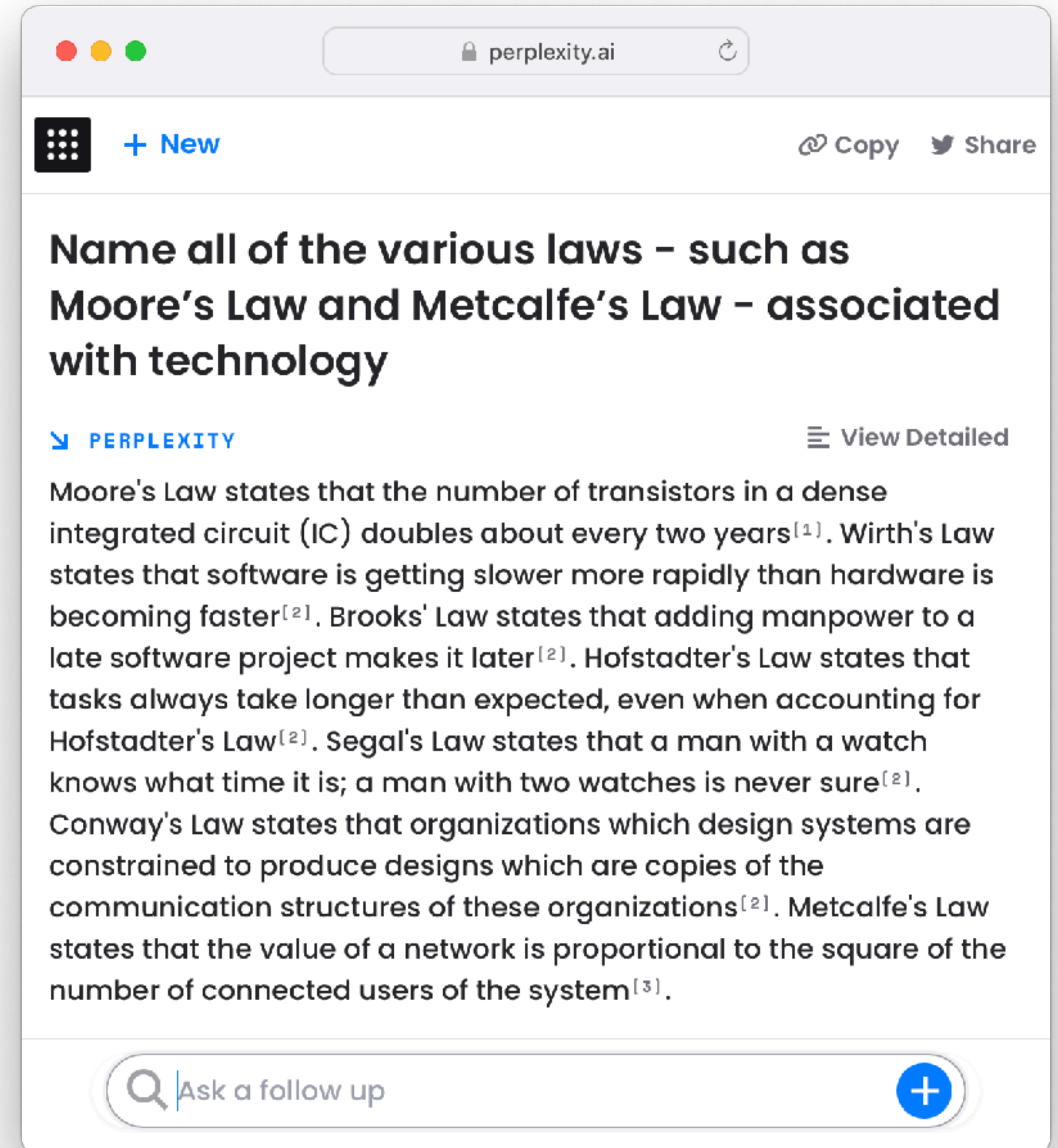
# So how does this generalise?

What's the right level of abstraction to understand this?



# Generative search?

How many more search queries could be served as answers?  
Where do the ads go? How are they sold?





# Generative search?

“sundar pichai as a boxer at the beginning of a match, moody lighting, cinematic”





# Generative UI design?

“screenshots of a UI for a smartphone guide to sushi”





# Generative product?

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

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

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





# Re-cast a movie?

“burt reynolds as han solo at the controls of the millennium falcon”

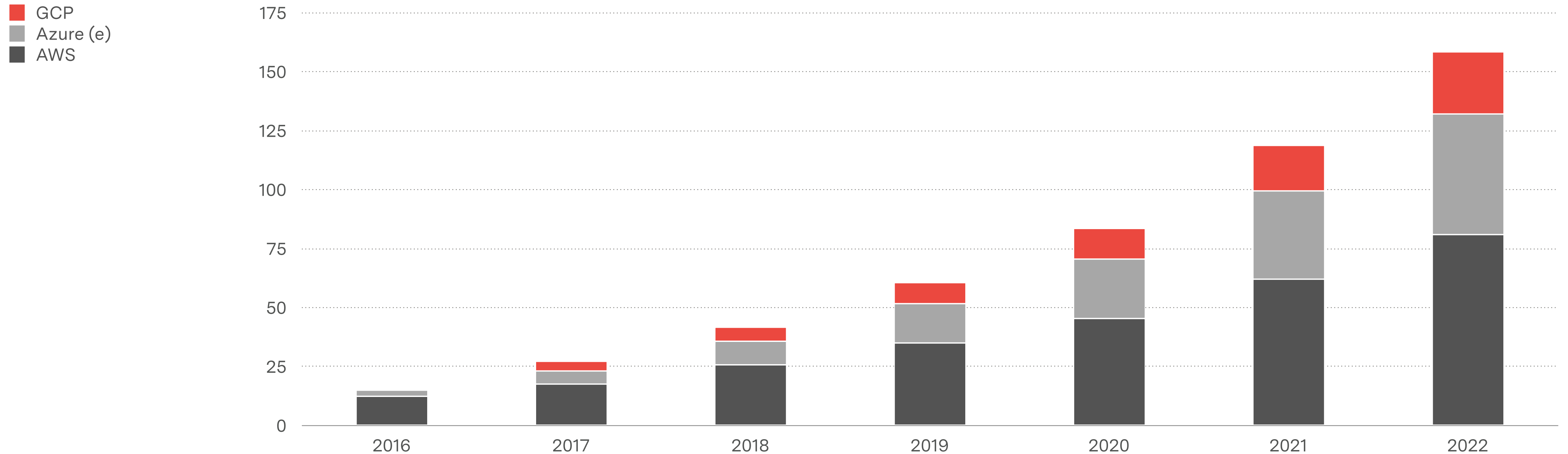




# (And how much Moore's Law will this need?)

ML and now Generative ML unlock step changes in demand for raw computing capacity

'Hyper-scaler' cloud revenue (\$bn)



# Three views of generative AI

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

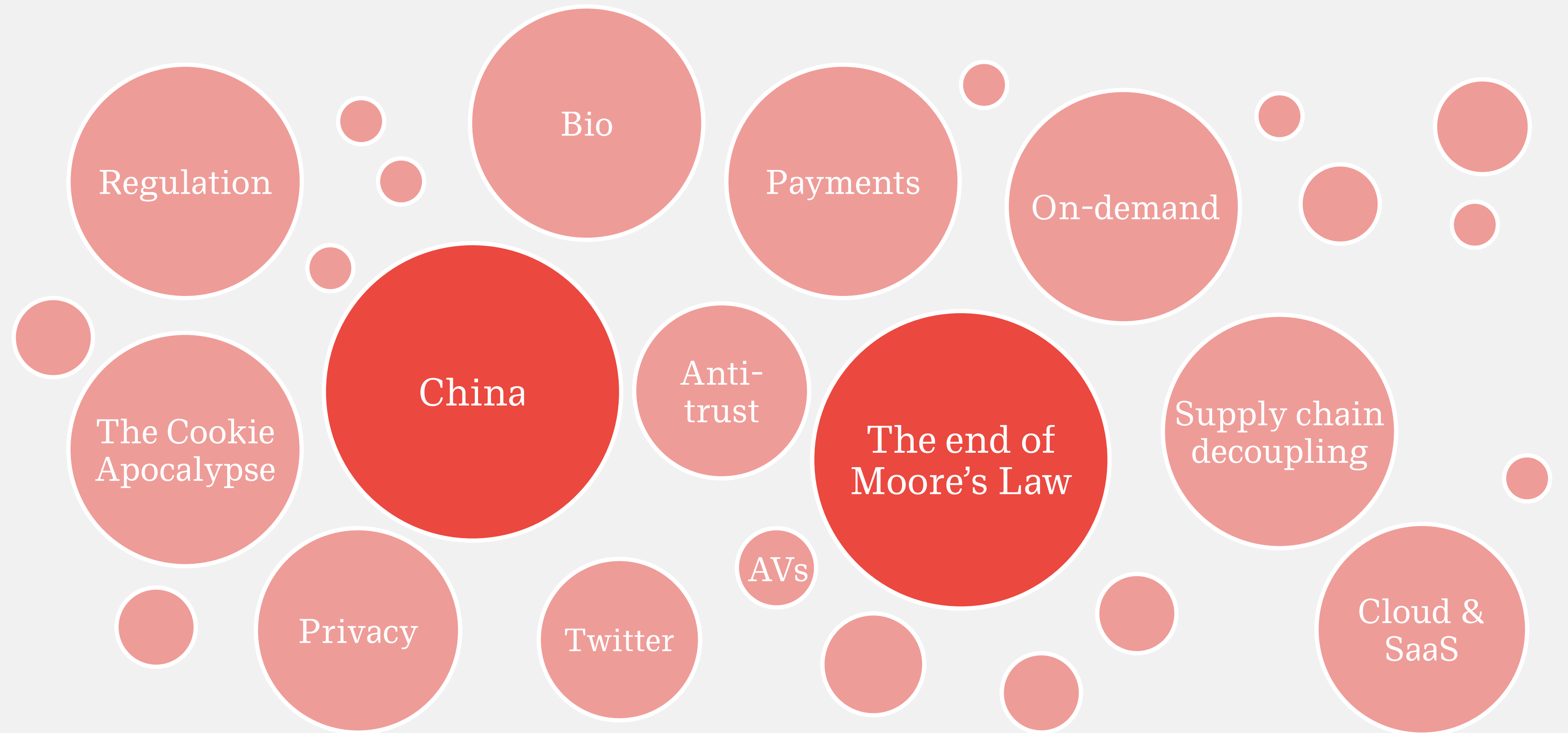


# Conclusion

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# The things I didn't mention

How many different things are happening in tech?



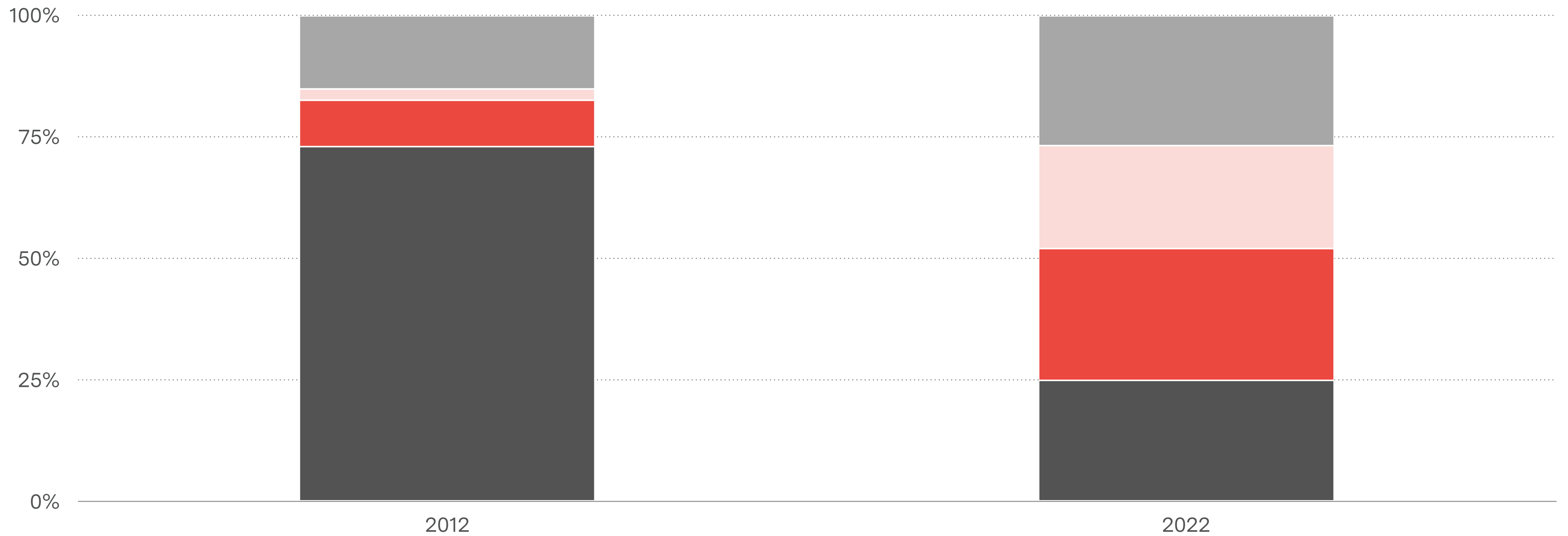


# The end of the American internet

India and China are now almost half of global mobile traffic

Mobile data traffic

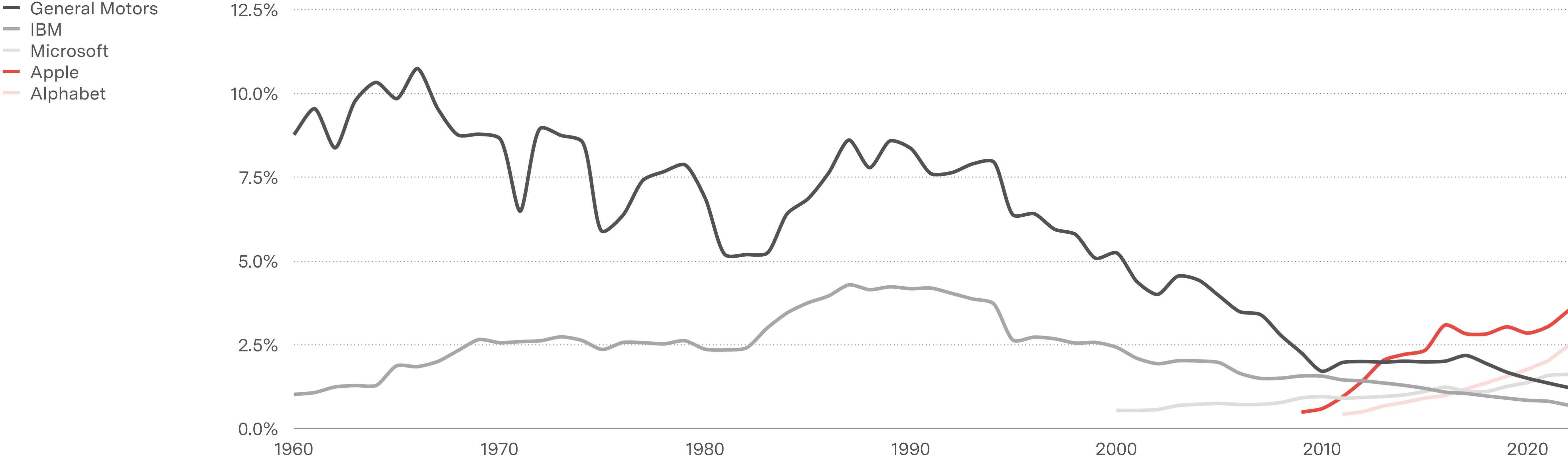
- RoW
- India
- China
- Europe, NA, SK & JP



# Old and new 'big tech'

What does scale mean, exactly?

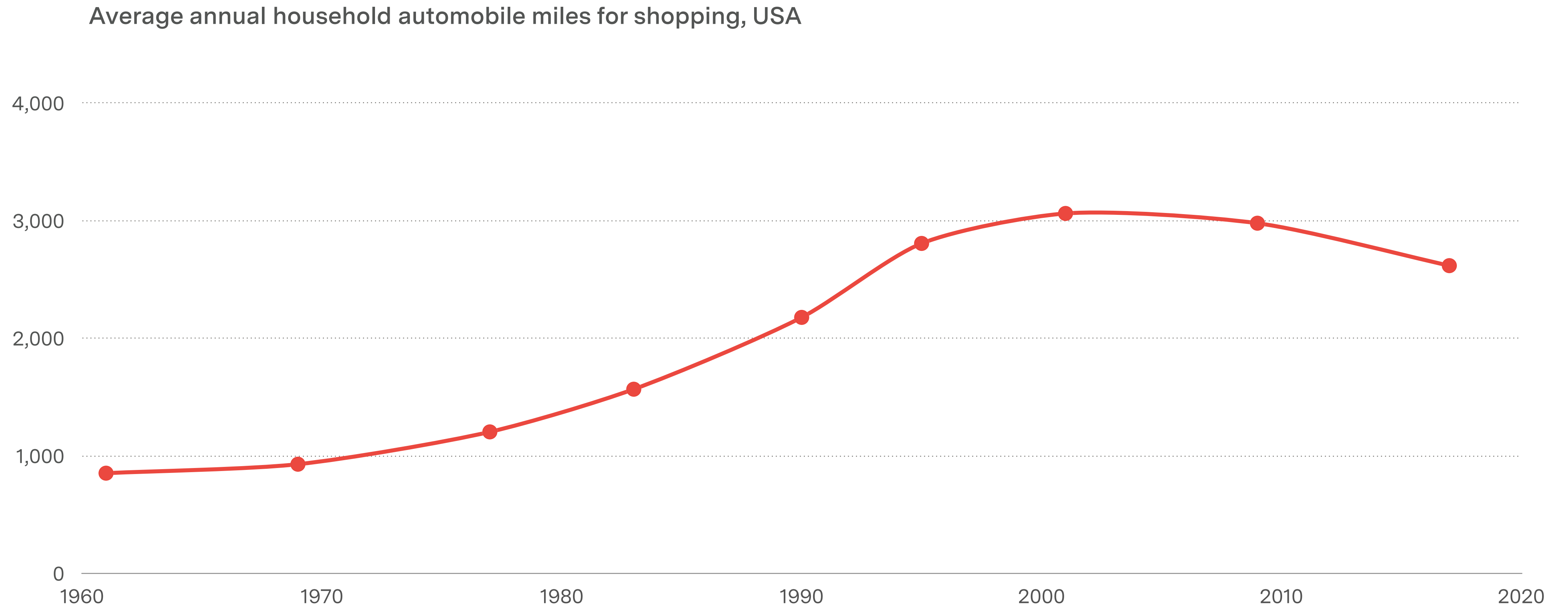
Share of Fortune 100 revenue



Source: Fortune

# From car-commerce to e-commerce

When new technologies change retail



Source: US Department of Transport

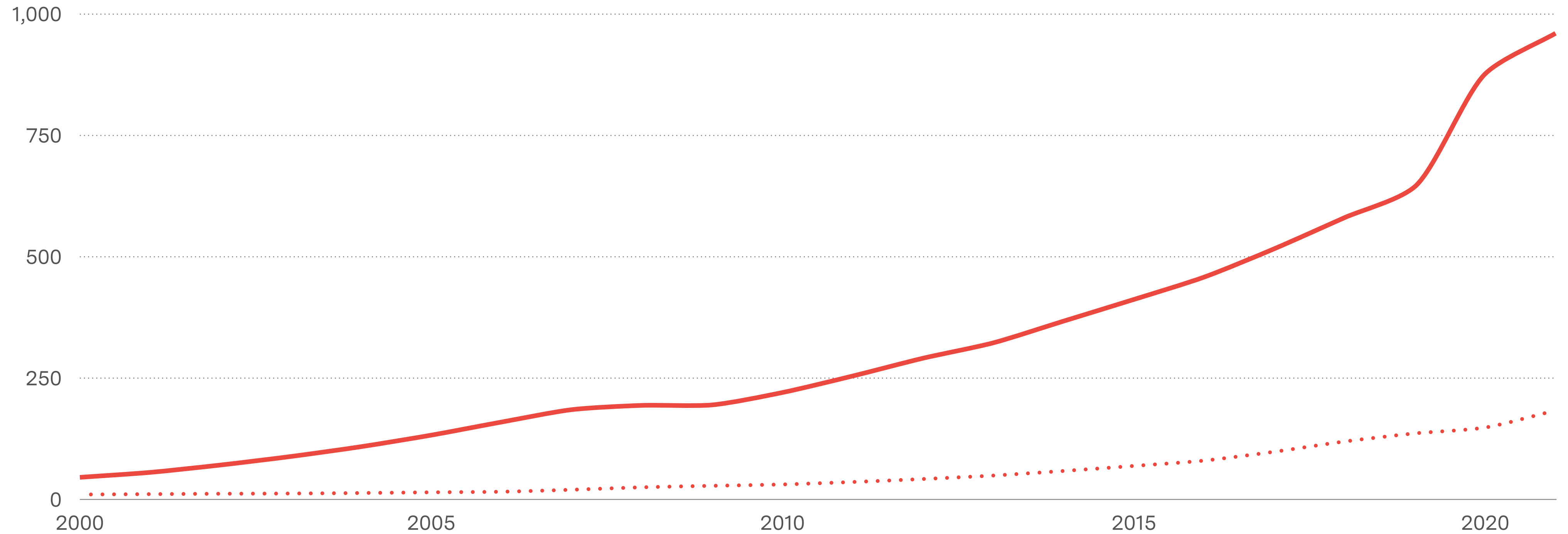
Benedict Evans -- February 2023

# What's the job to be done?

We can talk about ecommerce and advertising...

Annual US revenue (\$bn, 2022 dollars)

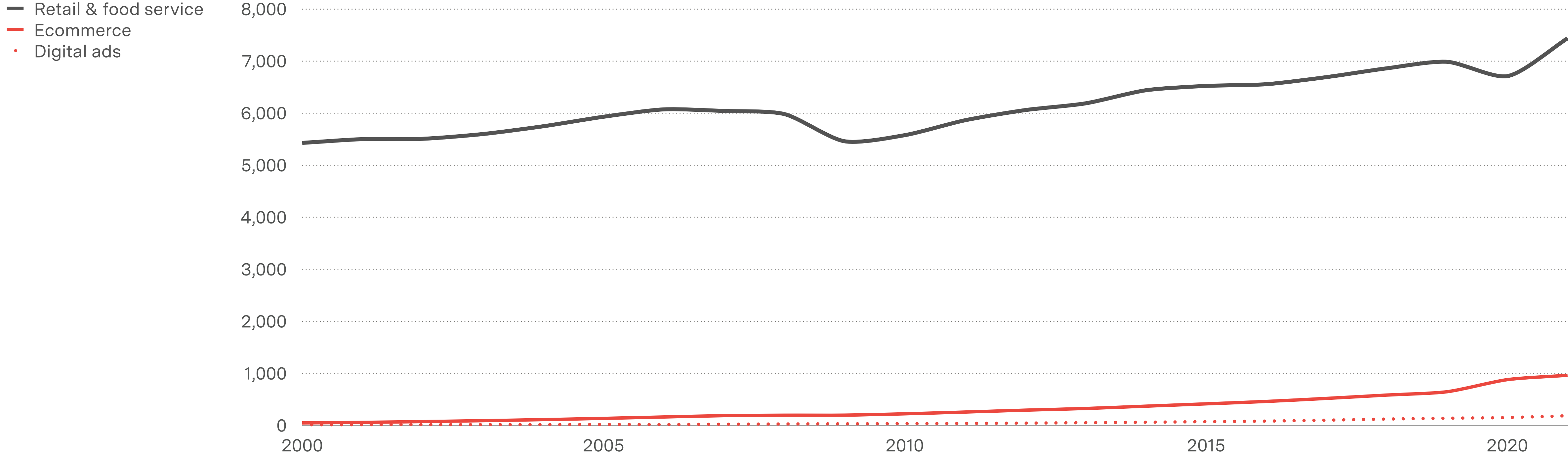
— Ecommerce  
• Digital ads



# But what's the job to be done?

But really...

Annual US revenue (\$bn, 2022 dollars)

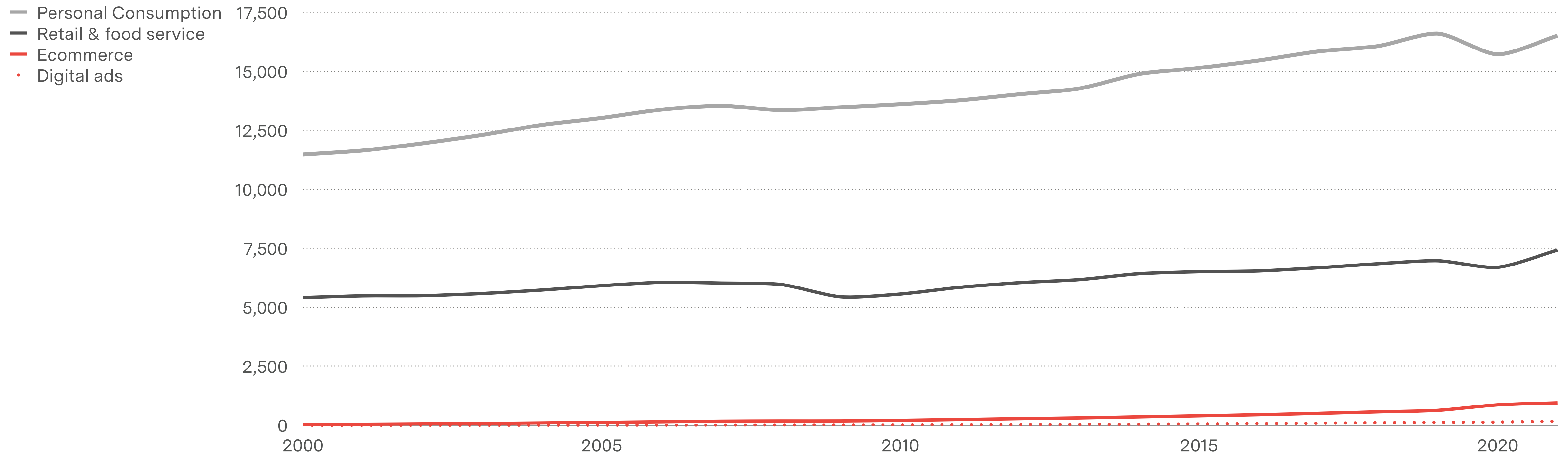


Source: US Census, Zenith, McCann

# But what's the job to be done?

Where should we be looking?

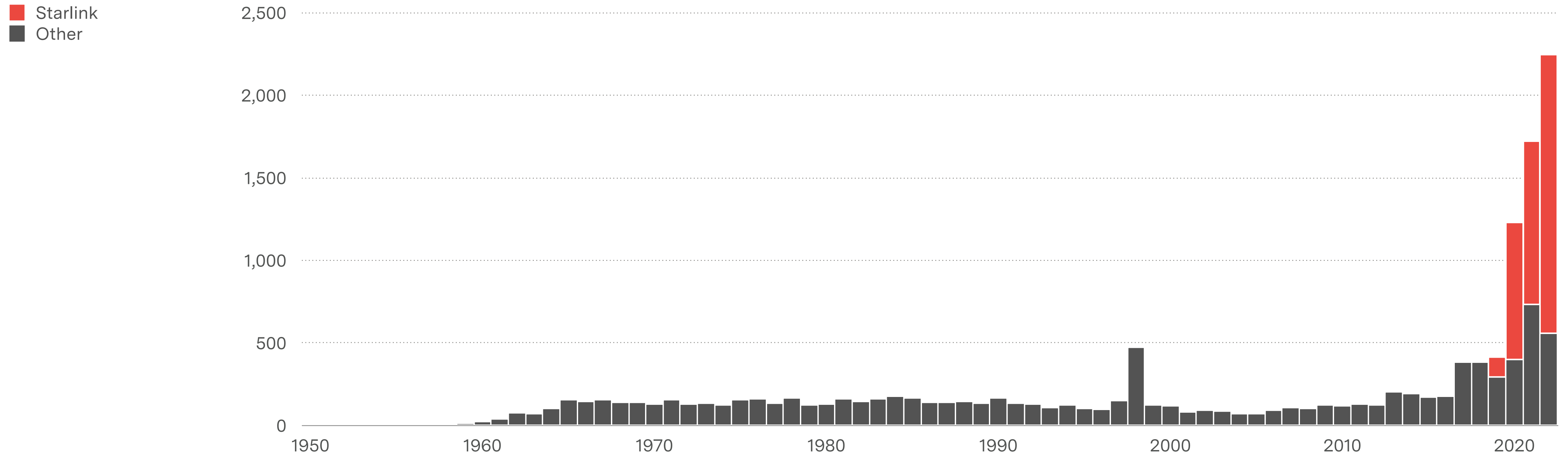
Annual US revenue (\$bn, 2022 dollars)



# And one more reason for optimism

Smartphones are boring now, and internet rates are going up, but tech is still doing new things

Satellites launched



# About

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What matters in tech? What's going on, what might it mean, and what will happen next?

I've spent 20 years analysing mobile, media and technology, and worked in equity research, strategy, consulting and venture capital. I'm now an independent analyst. Mostly, that means trying to work out what questions to ask.

I write essays about things I'm trying to understand, and a weekly newsletter with 175,000 subscribers, and give presentations pulling together these ideas.

For more, see [www.ben-evans.com](http://www.ben-evans.com)

# Thank you

**Benedict Evans**

February 2023

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