

# The Great Unbundling

**Benedict Evans**

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[www.ben-evans.com](http://www.ben-evans.com)

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# Welcome to 2021

What matters in tech?



COVID  
acceleration

The Great  
Unbundling

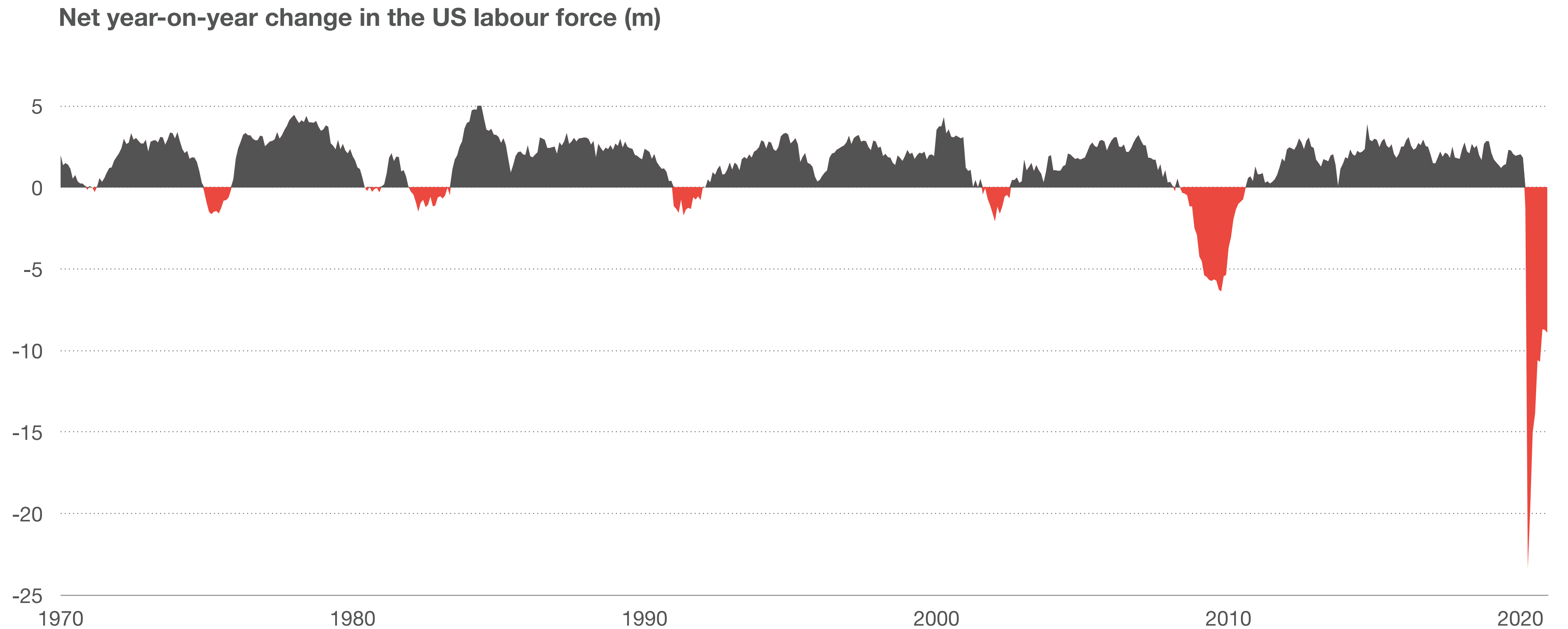
Harder  
problems  
China

Tech becomes  
a regulated  
industry

# COVID acceleration

# Shock

In the USA, employment fell over 20m, and is still down 9m from 2019



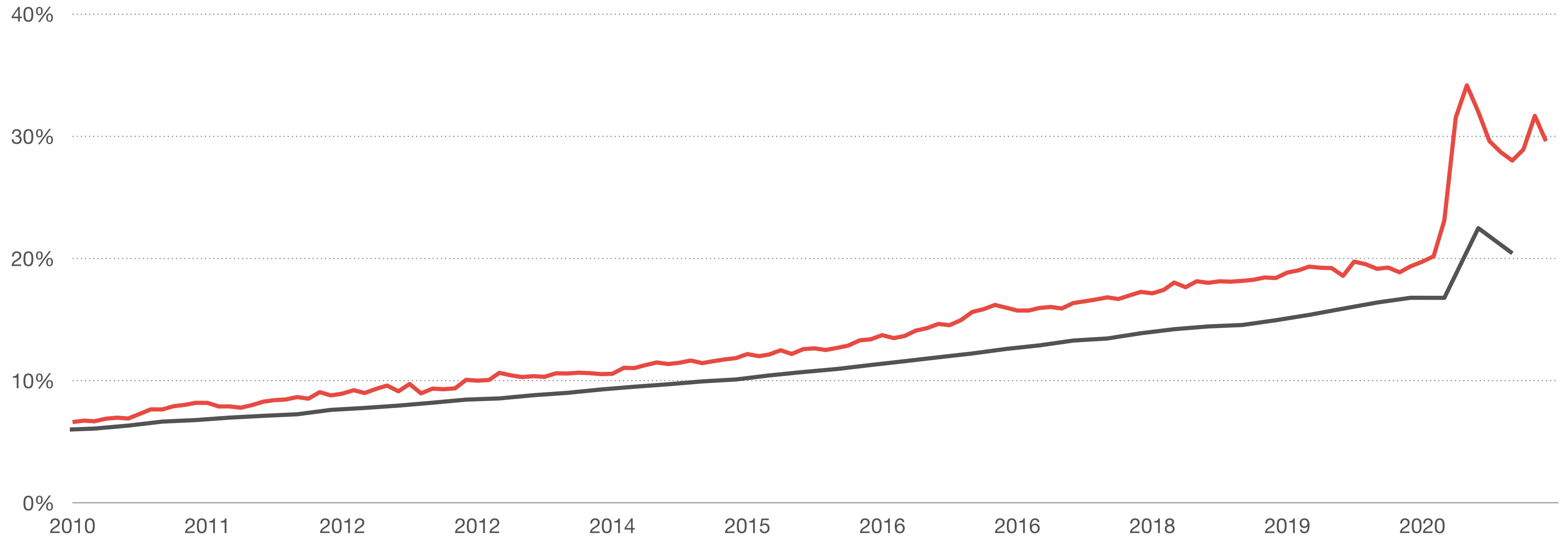


# Ecommerce steps forward 5-10 years

Lockdown has pulled forward a huge amount of future adoption

Ecommerce as a share of addressable retail\*

— UK (monthly)  
— USA (quarterly)



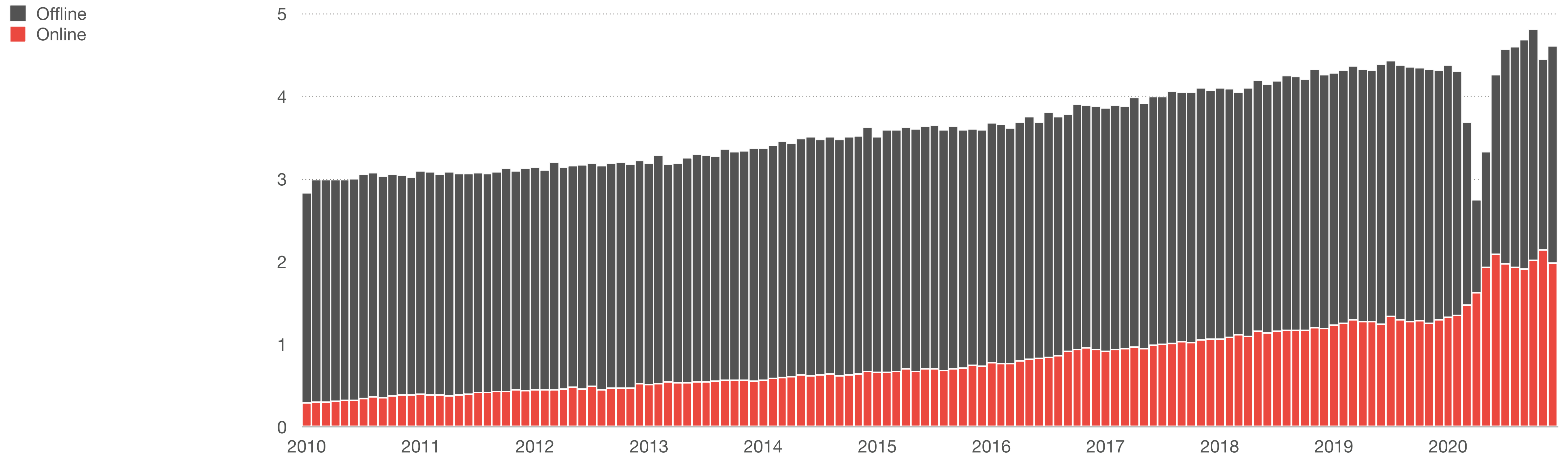
Source: ONS, US Census

\* Excluding cars, car parts, fuel, bars & restaurants. Seasonally adjusted

# The ecommerce reset

UK ecommerce is now 40% of retail revenue, excluding grocery (which needs a different supply chain)

UK retail sales\* excluding grocery (average weekly by month, £bn)



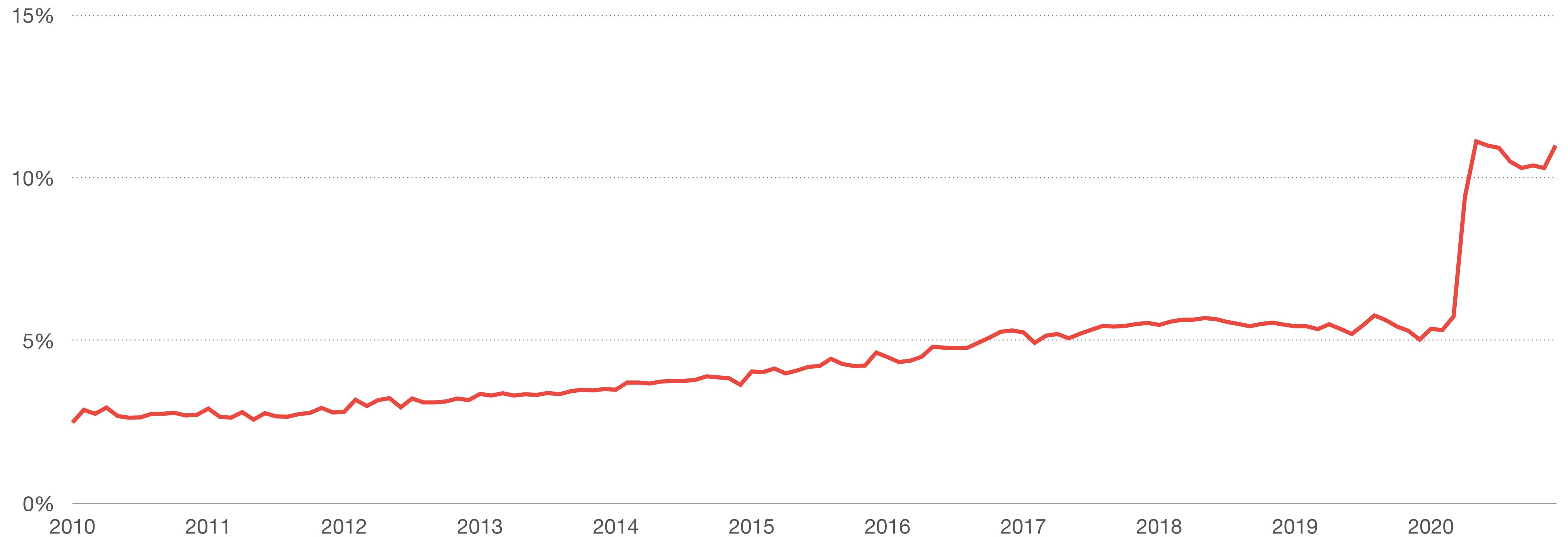
Source: ONS

\* Excluding cars, car parts, fuel, bars & restaurants. Seasonally adjusted

# Online grocery sales have doubled

Forced adoption, forced experiment

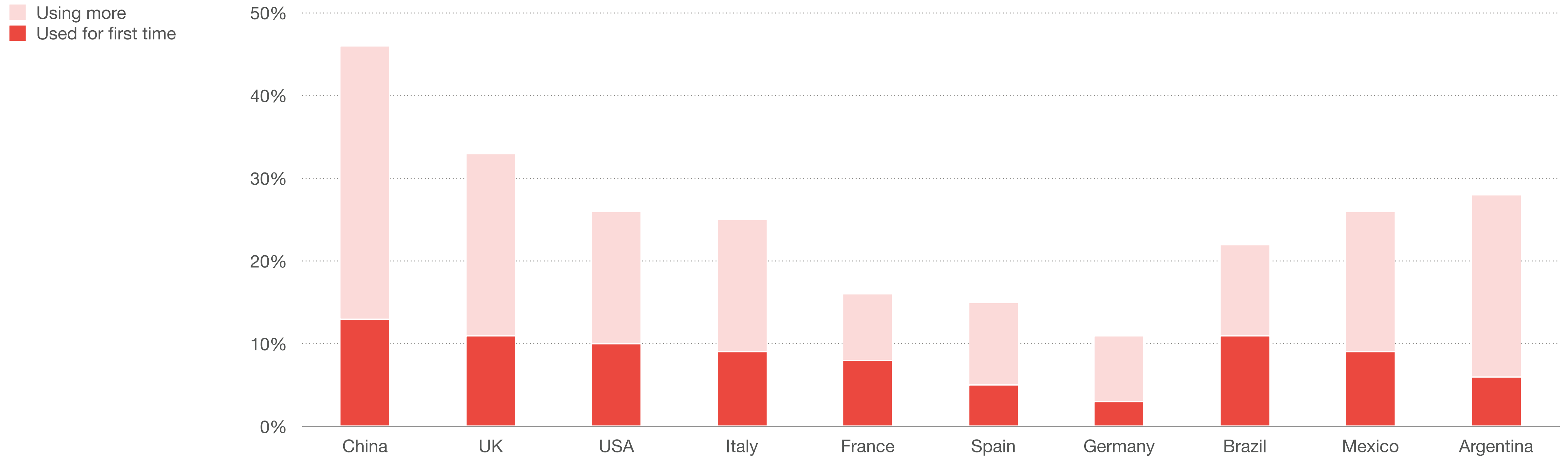
UK online grocery as % total grocery



# Forced experiment, forced adoption

Breaking habits - everyone is forced to try things for the first time

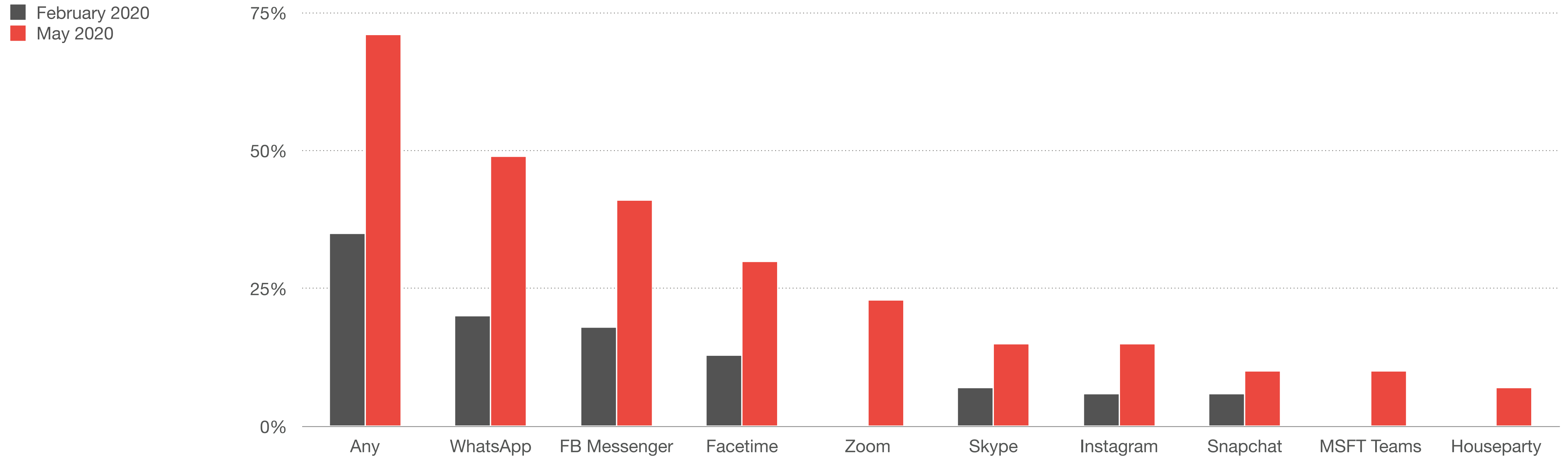
**Growth of grocery delivery during Covid**



# Video broke through

UK video call adoption doubled during lockdown

UK adults making personal video calls at least weekly



# Forced experiment: working from home?

What happens once the novelty wears off? What works better and what get broken?

## **Maximalists**

‘Global distributed  
company’

## **Moderates**

3-4 days a week  
in the office?

## **Questions**

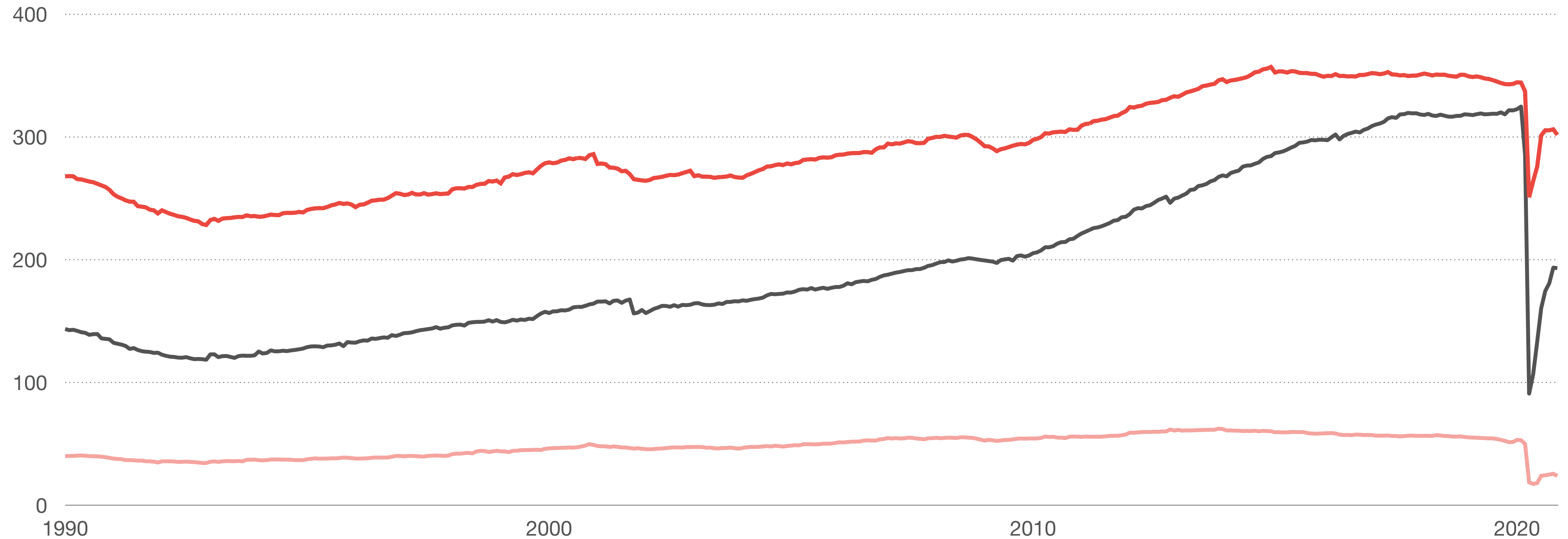
Collaboration?  
Social capital?  
Training?

# What does WFH mean for retail? Office rents?

WFH for a day a week means 20% less footfall. What does that do?

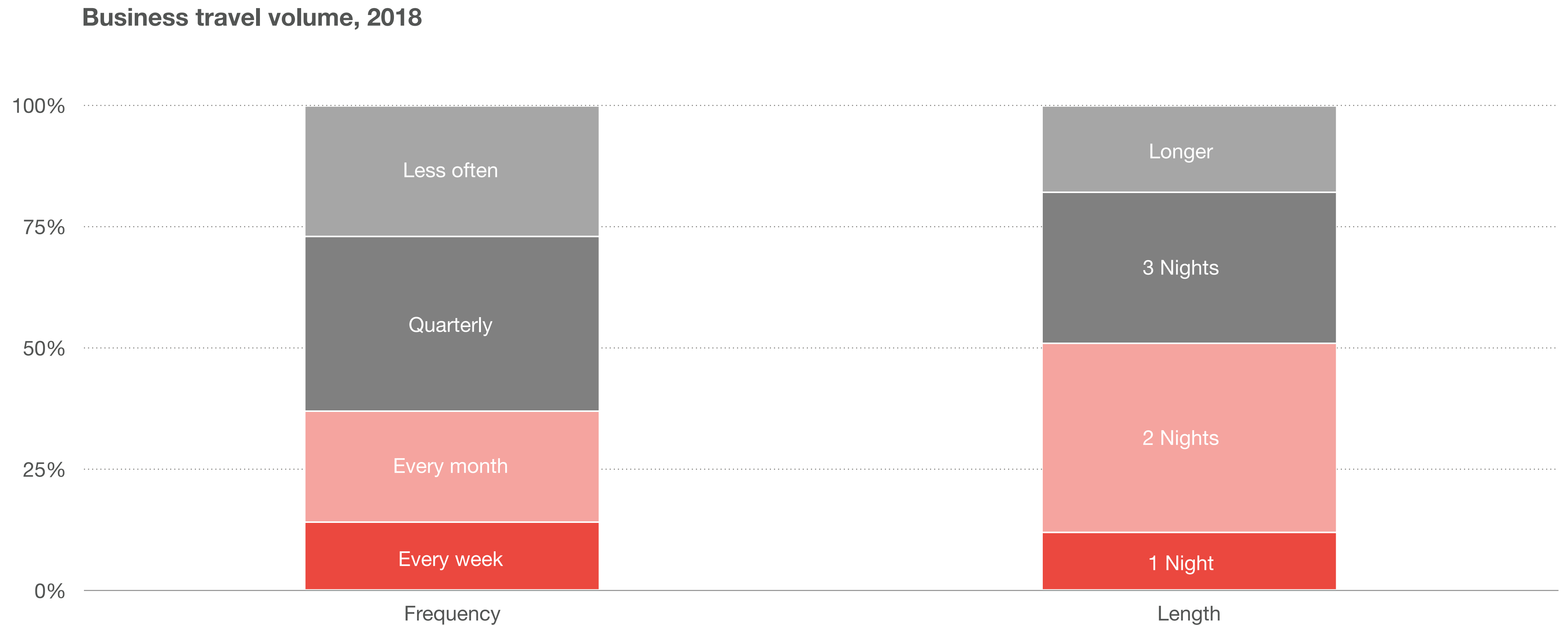
Employment in New York City (000s)

— Retail  
— Restaurants & bars  
— Clothing stores



# How much business travel stays on Zoom?

Short trips for one meeting with someone you know are dead - but what else?





# Cambrian explosion in remote tools

How do collaboration and social capital work remotely? No, not just another video call



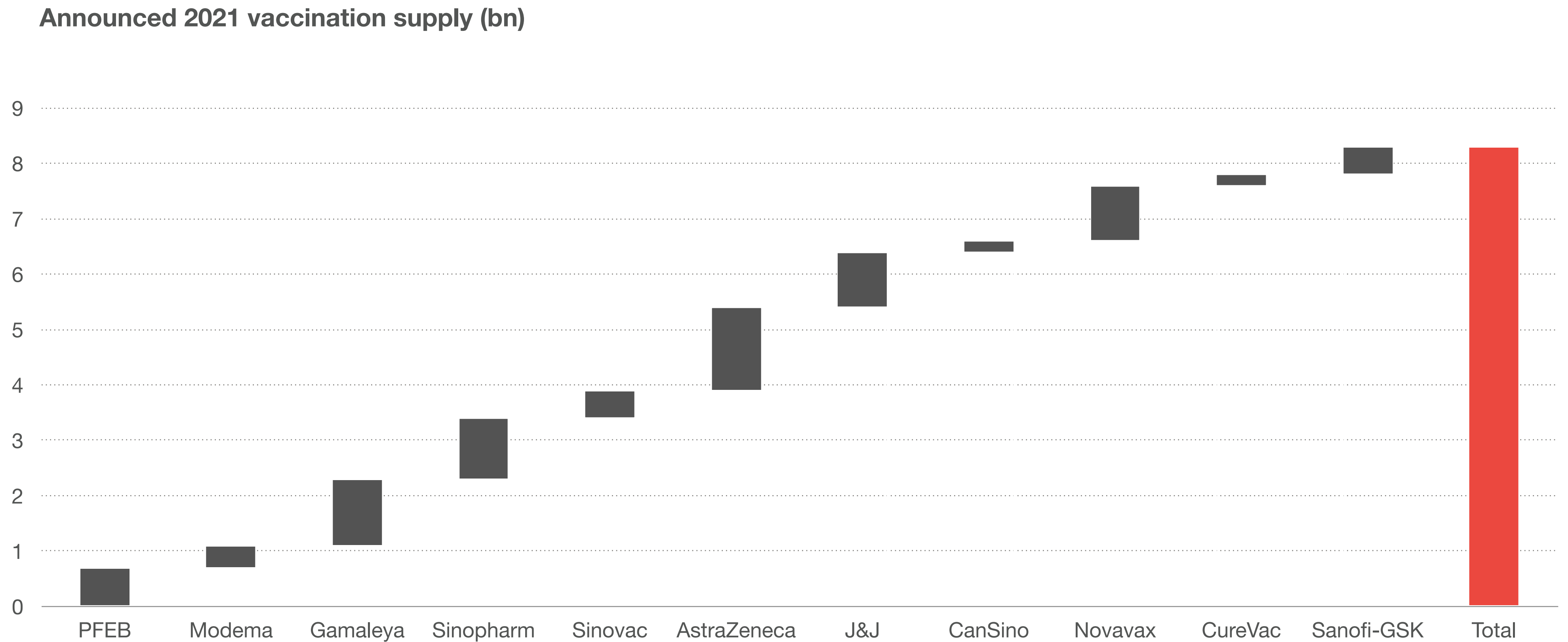
**Zoom**  
\$110bn

**Hopin**  
\$2bn in 18  
months

**And hundreds  
of others**

# Towards an exit...

There is announced supply for 8bn vaccinations in 2021, if they can be administered



# A decade in a year

Towards a 'new normal'



Macro, political,  
social, cultural,  
fiscal shock

Forced  
acceleration,  
forced  
experiment

Broken habits

# The Great Unbundling

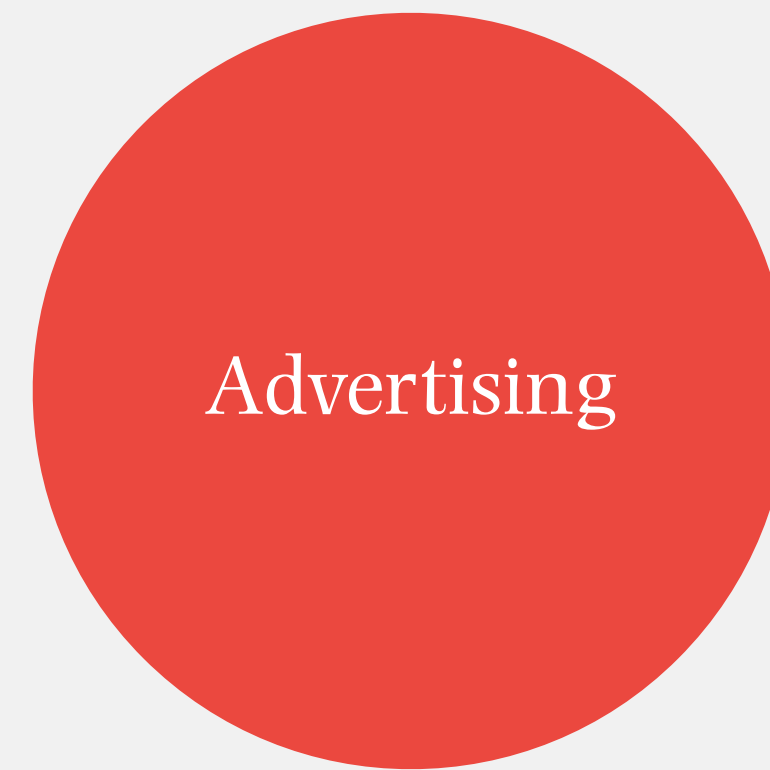
“I’m a terrified dinosaur...

I’ve been living in this cozy world of old brands, big volumes, nothing changing very much, and you could just focus on being very efficient and you’d be okay, and all of a sudden we are being disrupted in all ways”

Jorge Paulo Lemann, Kraft Heinz  
2018

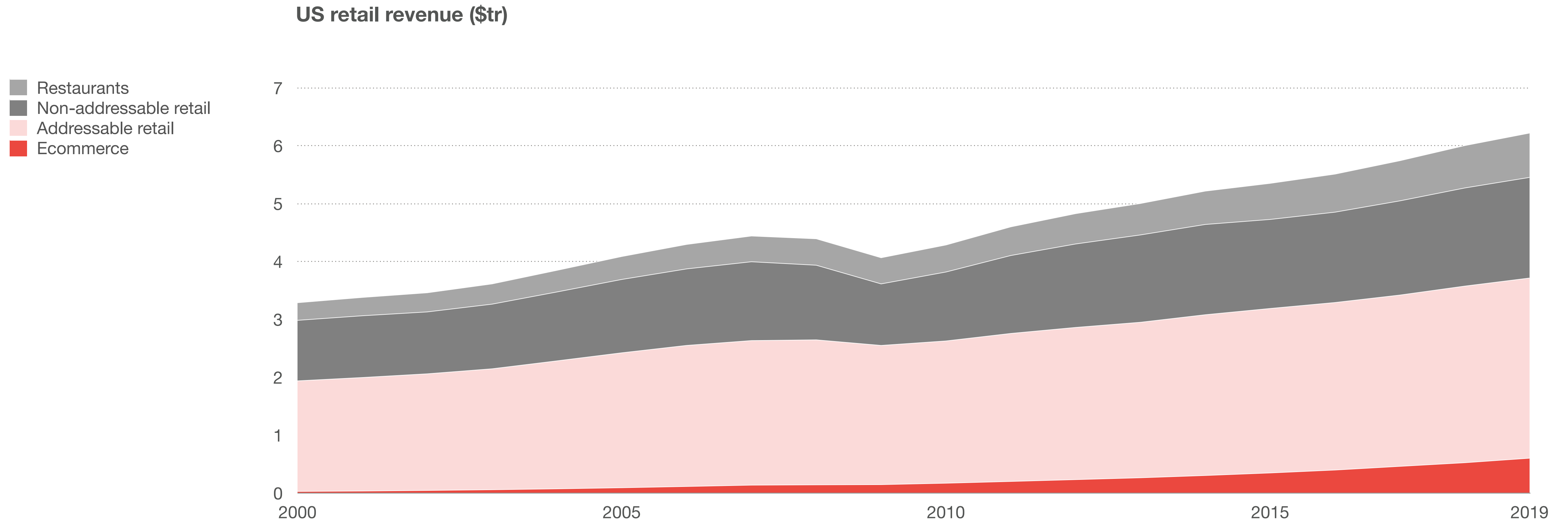
# \$25tr - and nobody knows anything

Every part of the retail and media journey is being unbundled



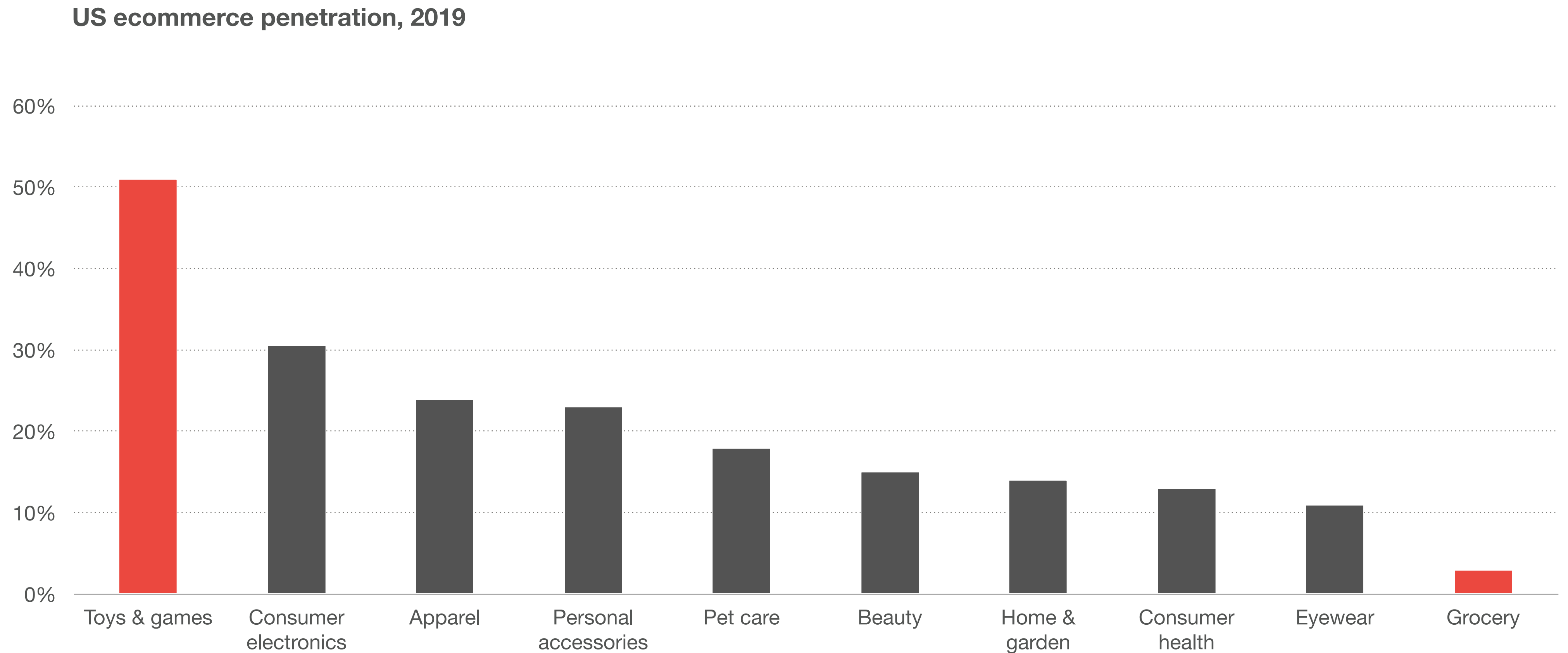
# The traditional view of ecommerce

There's retail, and some of that goes online, and some already has. Simple...



# But is that a useful split?

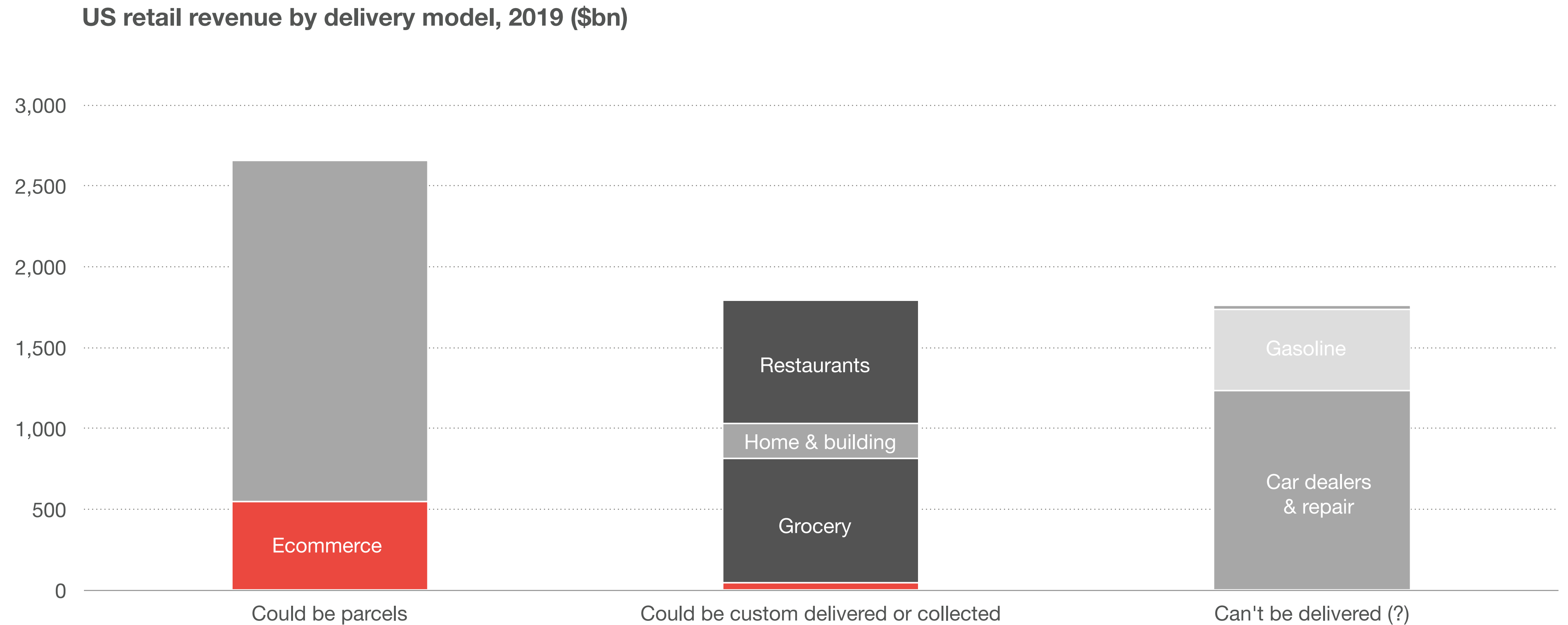
‘Ecommerce’ penetration is spread so widely in different categories that aggregate numbers don’t mean much





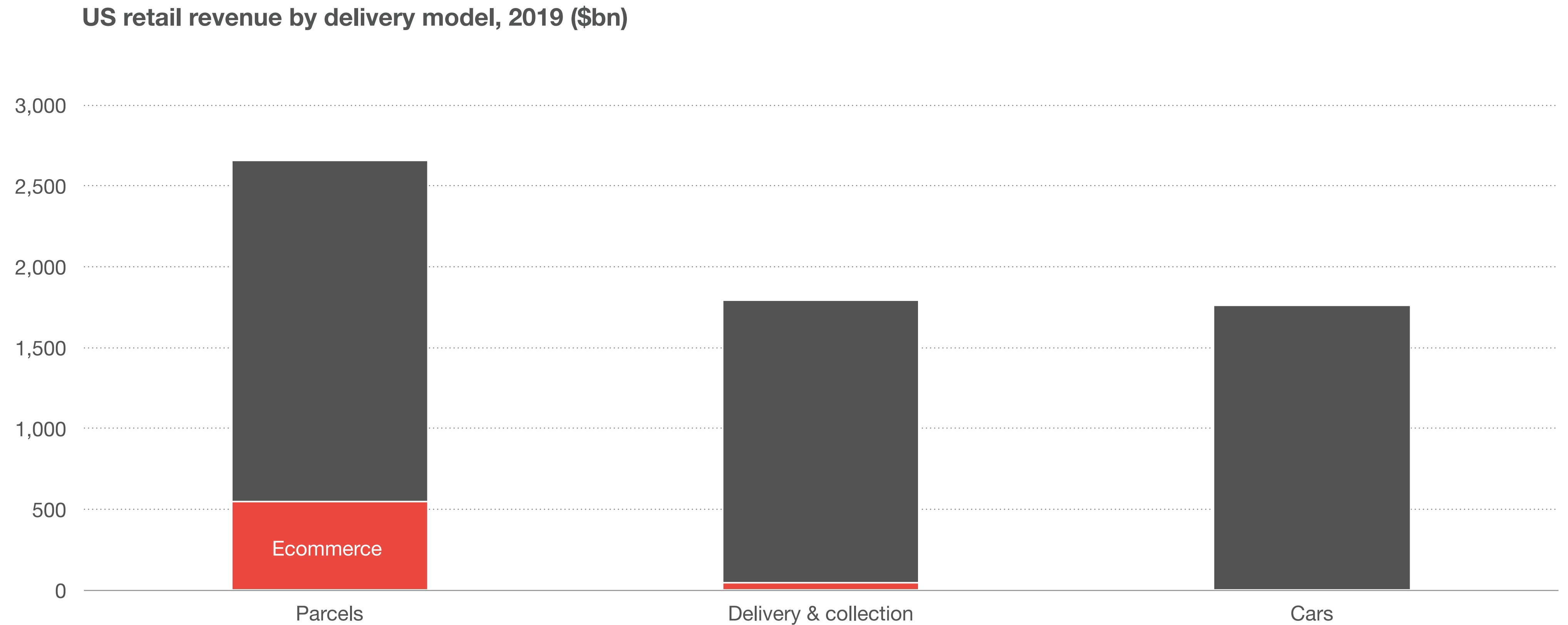
# Much more useful: ecommerce as logistics

Cardboard boxes versus hand delivery, trucks and bikes



# Much more useful: ecommerce as logistics

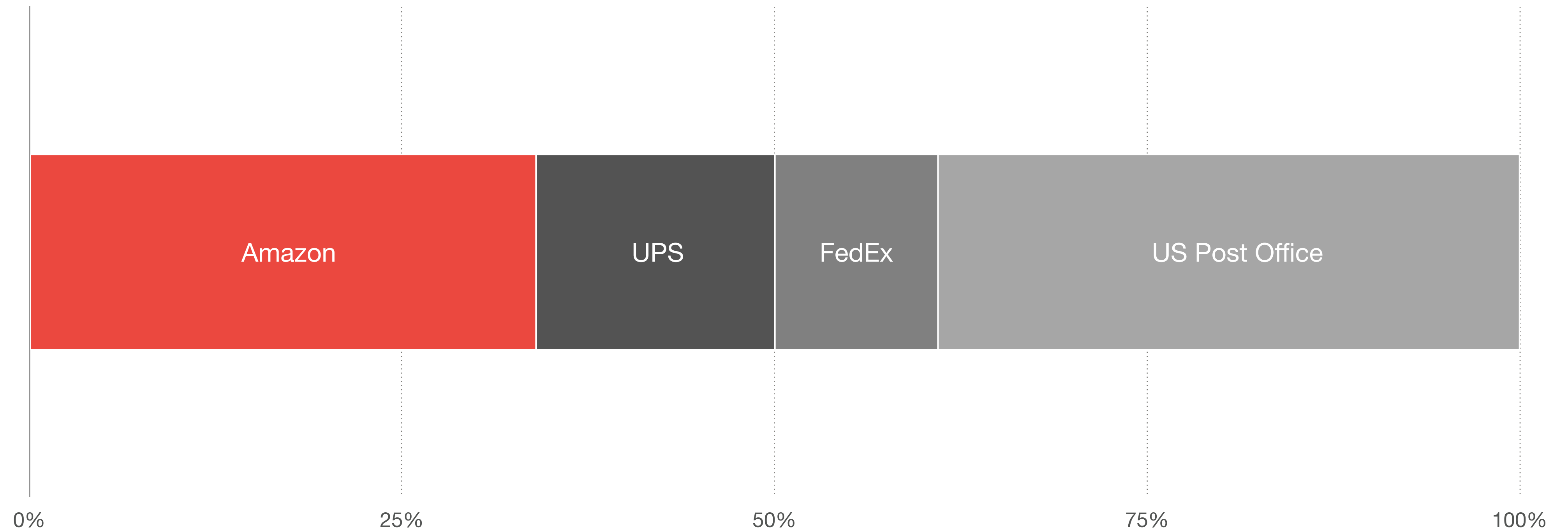
Cardboard boxes versus hand delivery, trucks and bikes



# Parcels: Amazon replaces the post office

A third of all US parcels are now delivered by Amazon's own logistics network

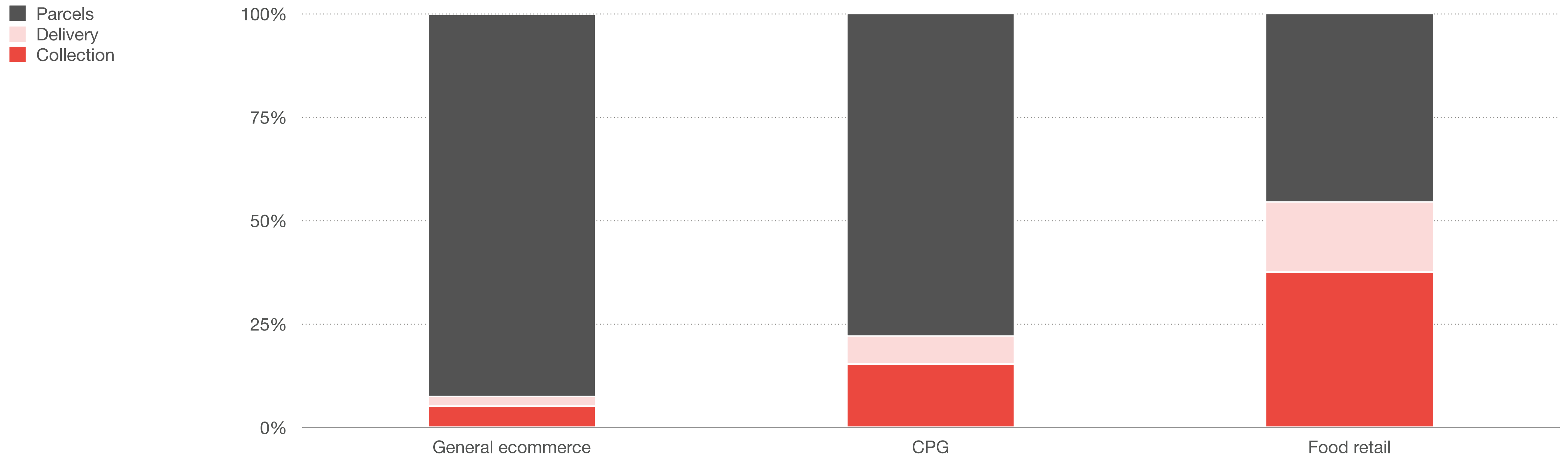
US parcel deliveries, July 2020



# Delivery: how many logistics models?

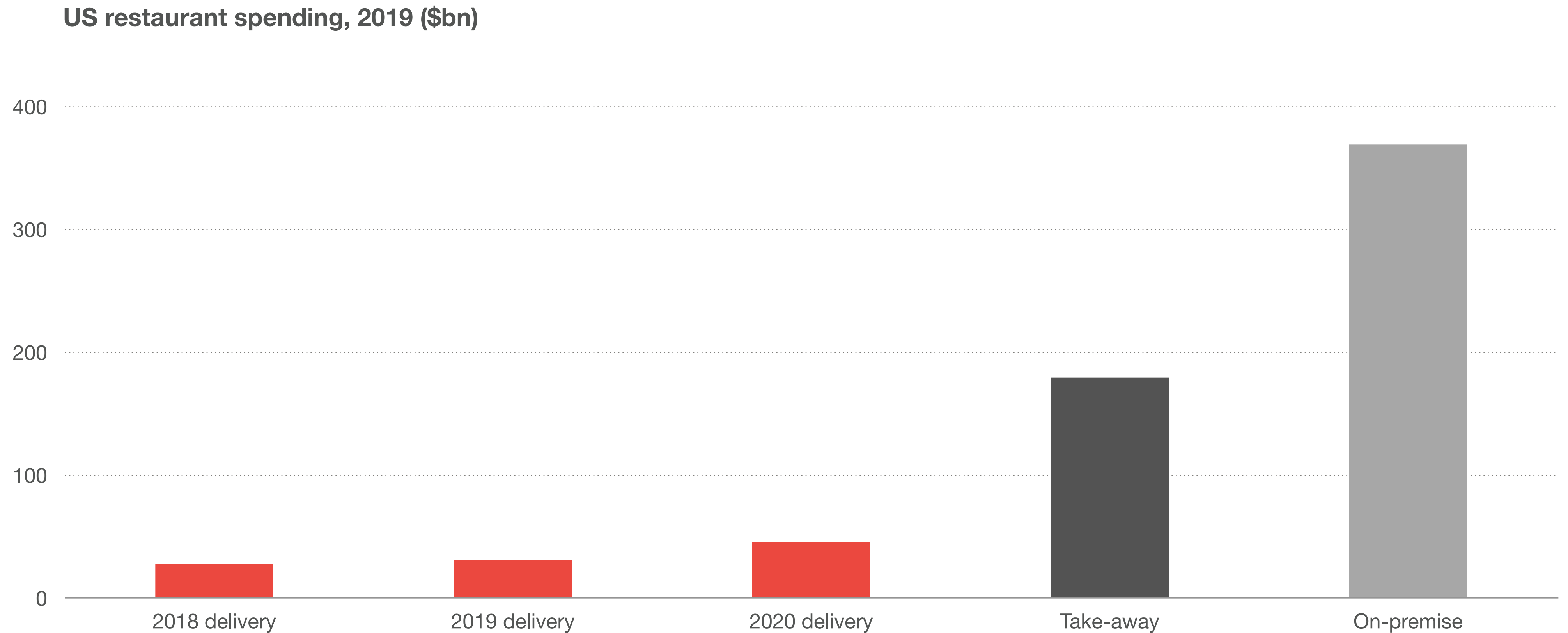
General ecommerce is almost all shipped by parcel, but half of food is collected or delivered

US ecommerce by fulfilment, June 2020



# Restaurants - arbitrage

Delivery cost versus labour and rent efficiency (dark kitchens) - if the density, food model and experience make sense

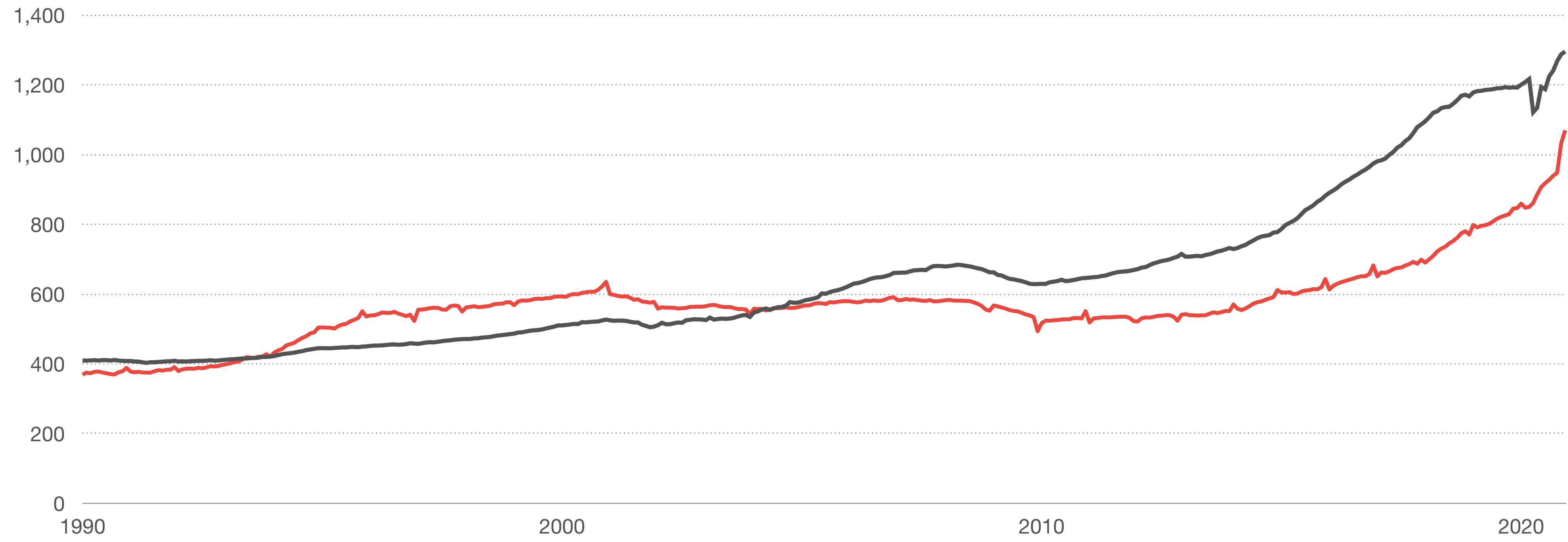


# Delivery employment already has doubled

Rebalancing and unbundling the logistics model - the USA added 225k delivery drivers in 2020

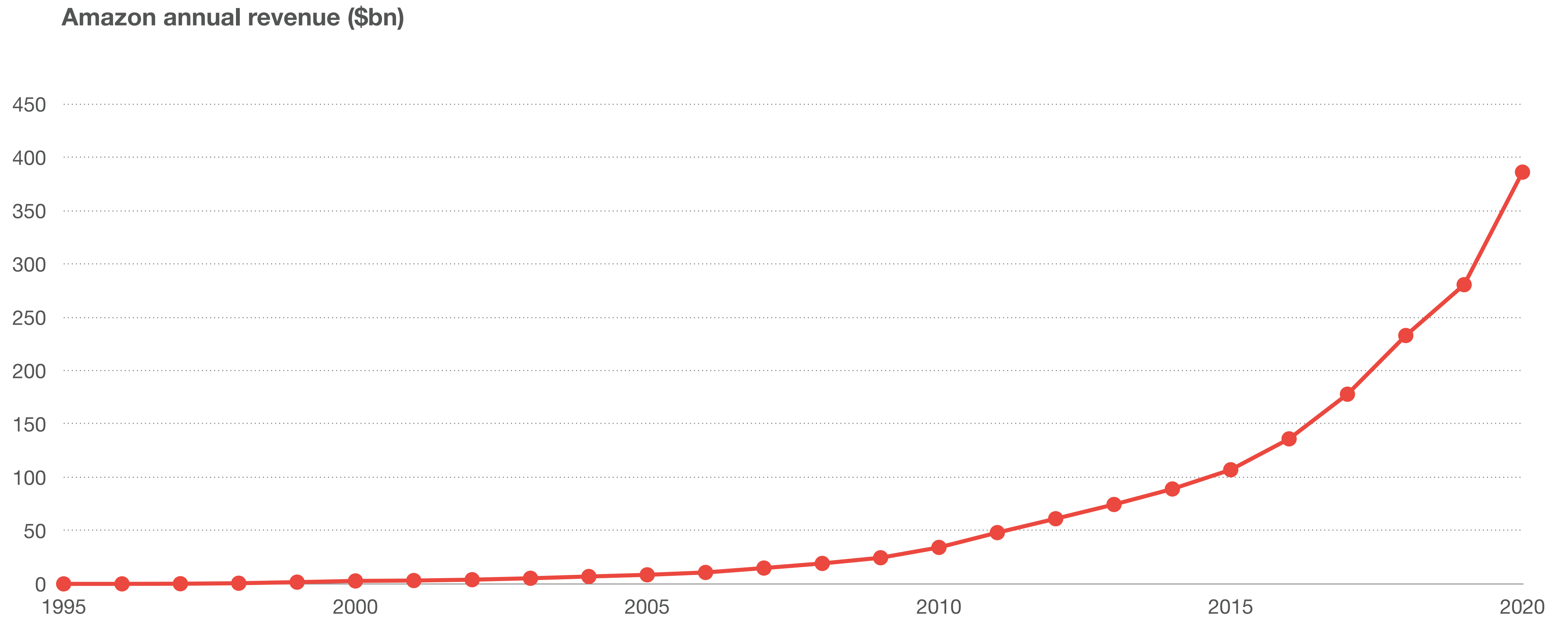
US employment (000)

Warehouses  
Delivery



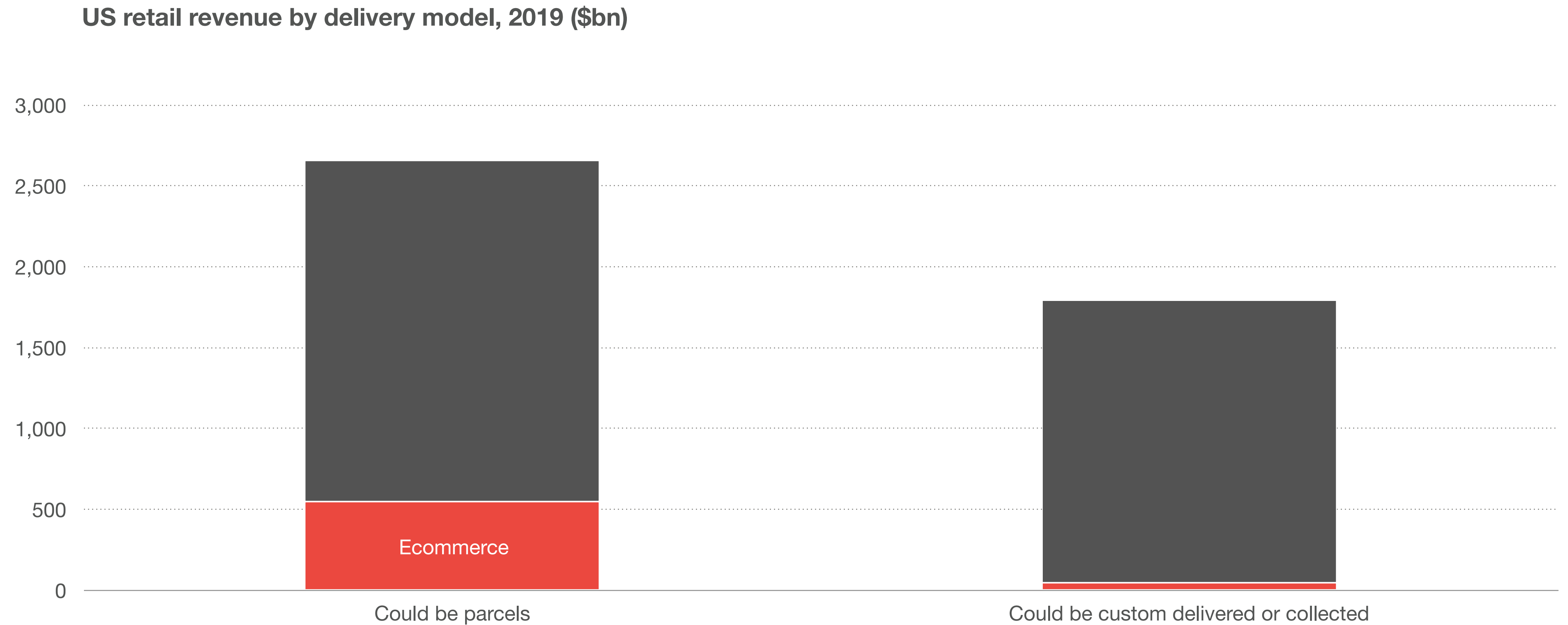
# Oh yes - what about Amazon?

Amazon's revenue grew 37% in 2020



# Ecommerce as logistics

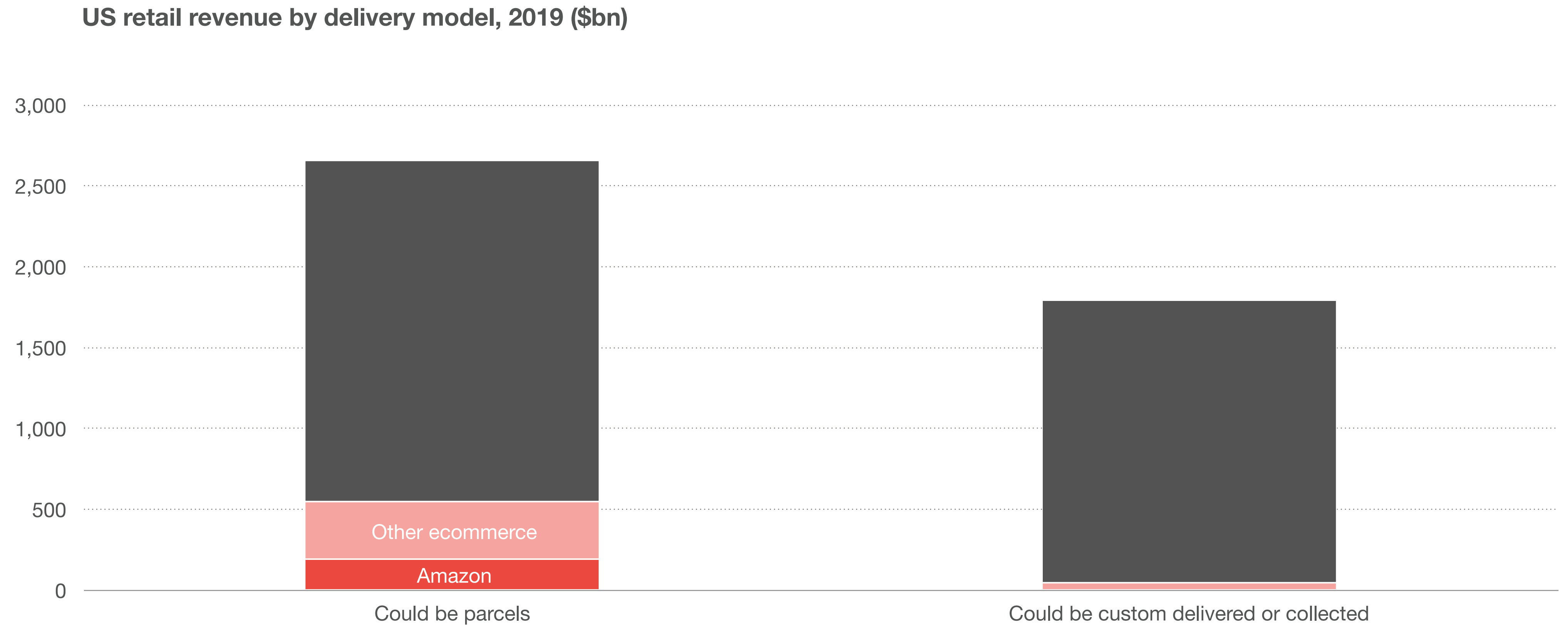
What's Amazon's market?





# Ecommerce as logistics

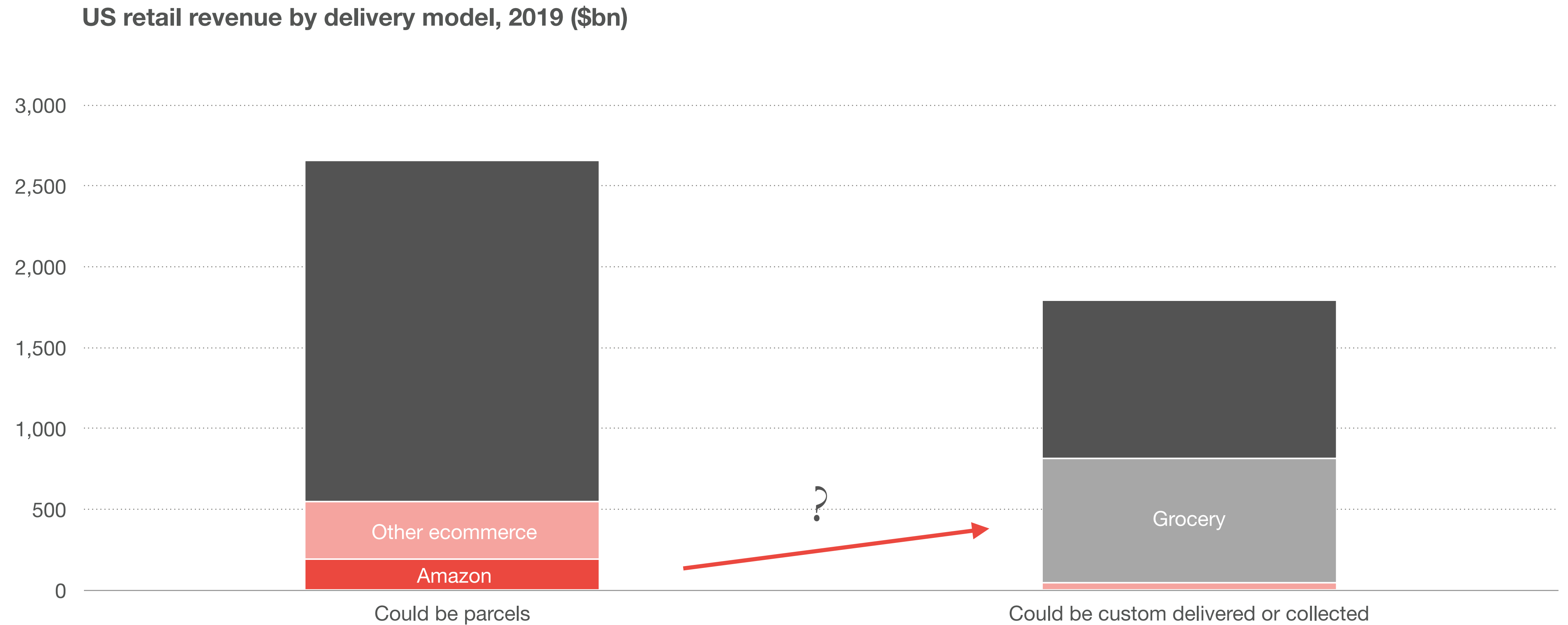
What's Amazon's market?



Source: US Census

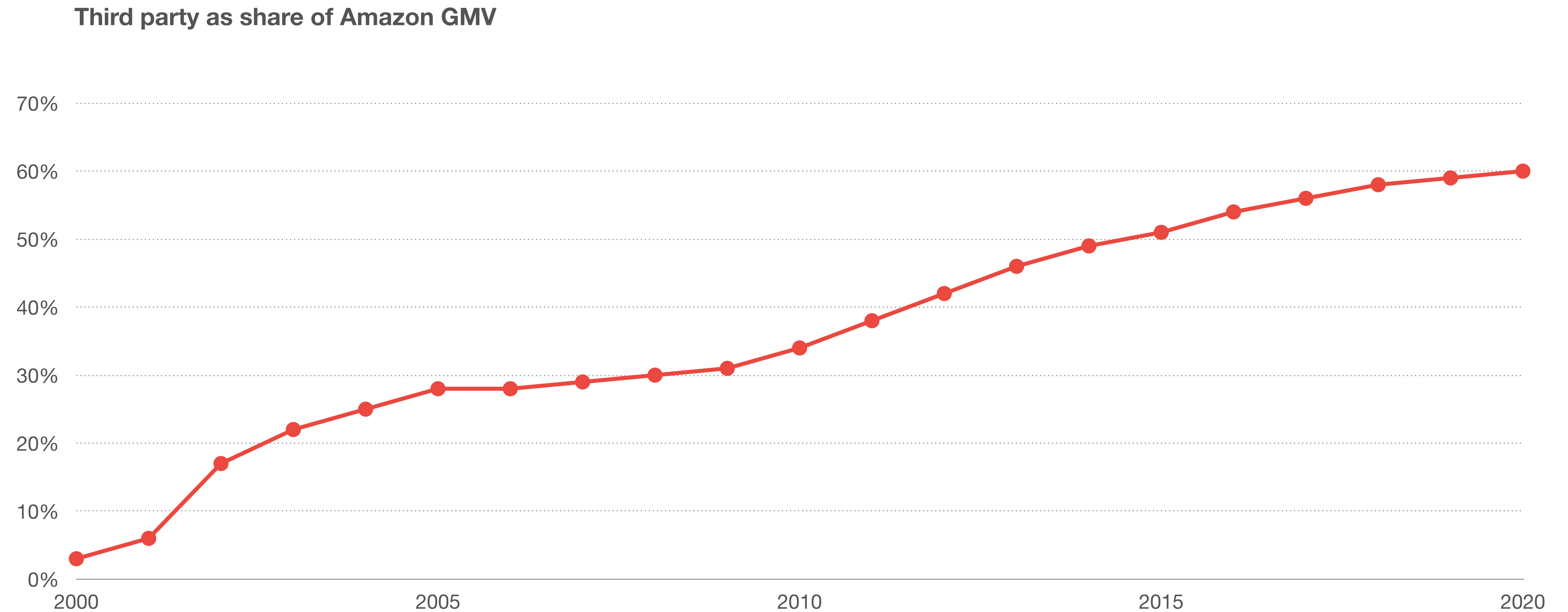
# Ecommerce as logistics

Amazon has 35-40% of US ecommerce, but what's the real market?



# Meanwhile - bundling and unbundling

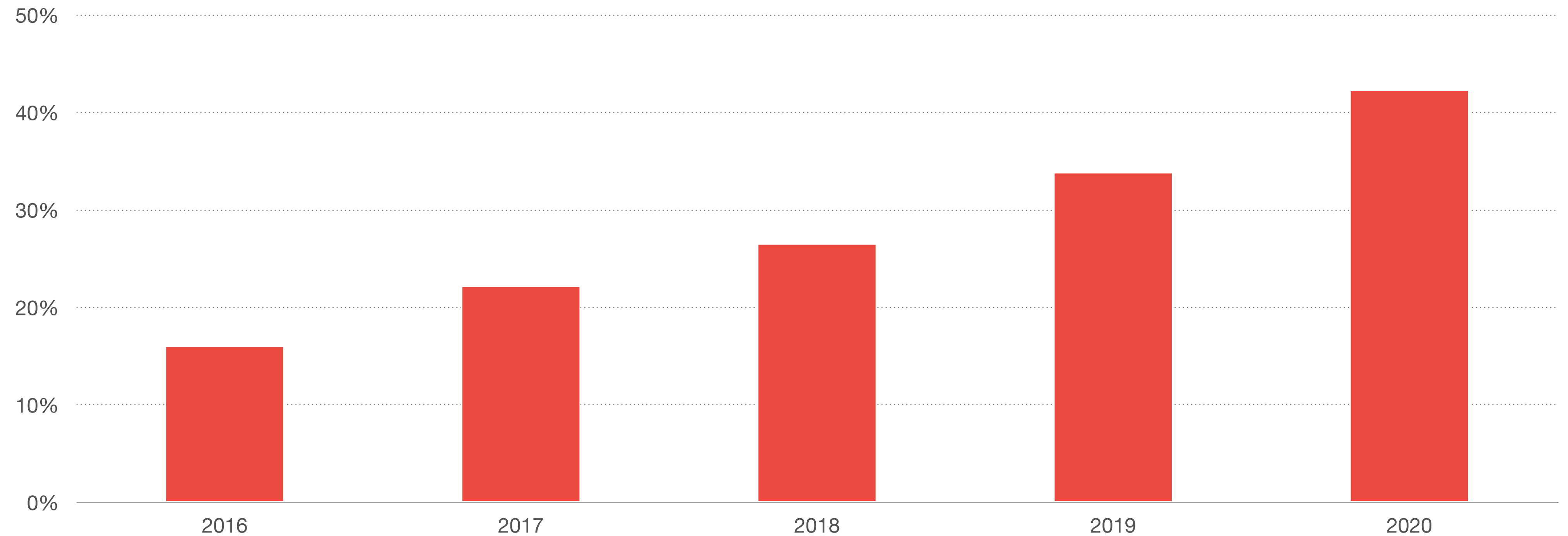
Amazon Marketplace is now ~60% of ecommerce GMV



# Chinese supply chain bundles and unbundles?

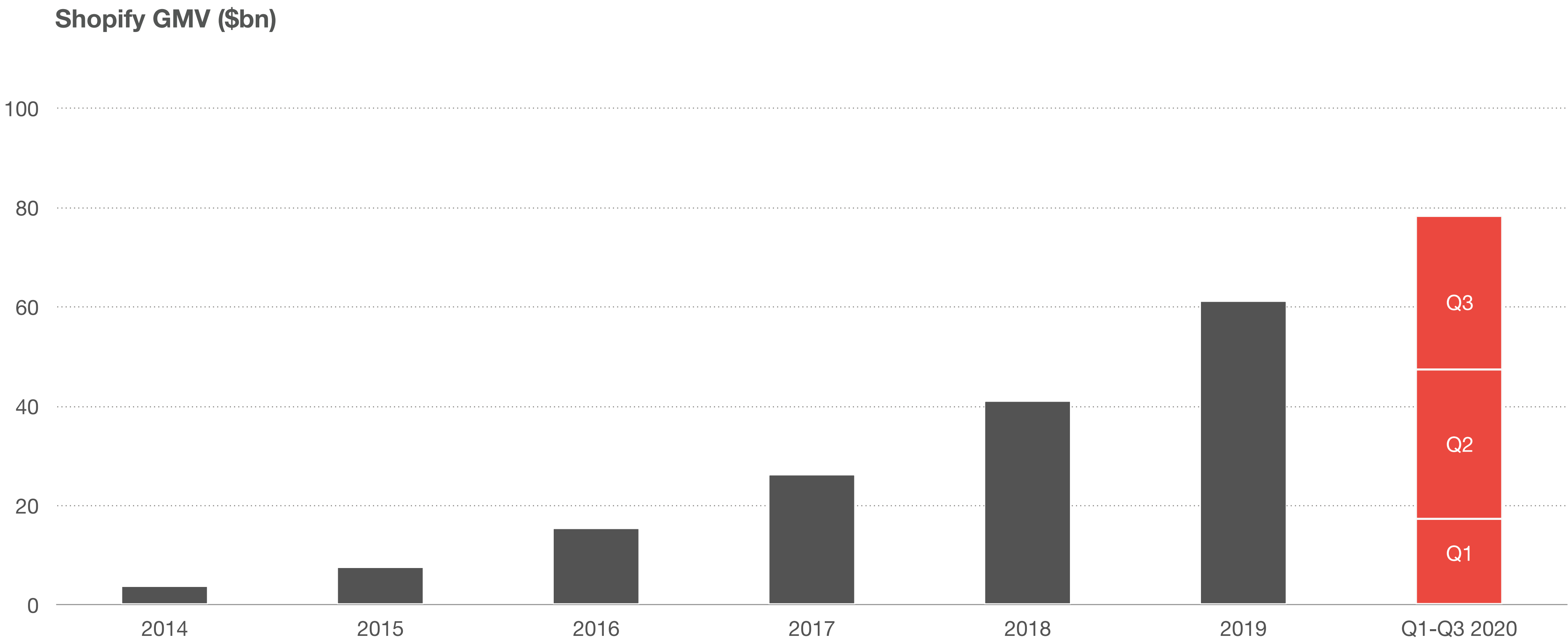
Chinese suppliers use Amazon (and other marketplaces) to go direct to the end customer

**Share of Amazon Top Sellers based in China**



# But who needs Amazon? Shopify goes direct

Shopify has come from nowhere (well, Canada) to over \$100bn of GMV in 2020



Source: Shopify

# Why does Shopify matter?

A software tool that rides a structural shift in the market



“No-one can  
compete with  
Amazon”

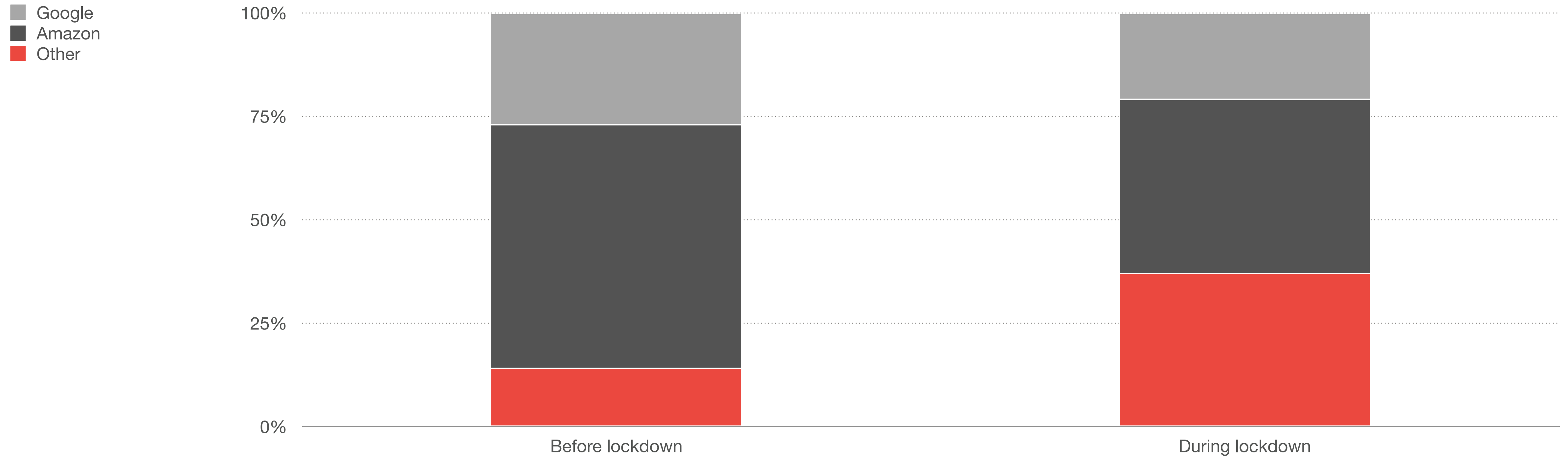
“Wasn’t this  
already solved?”

Brands and  
consumers ready to  
go direct

# Lockdown drives a wider funnel

Consumers are broadening online shopping behaviour

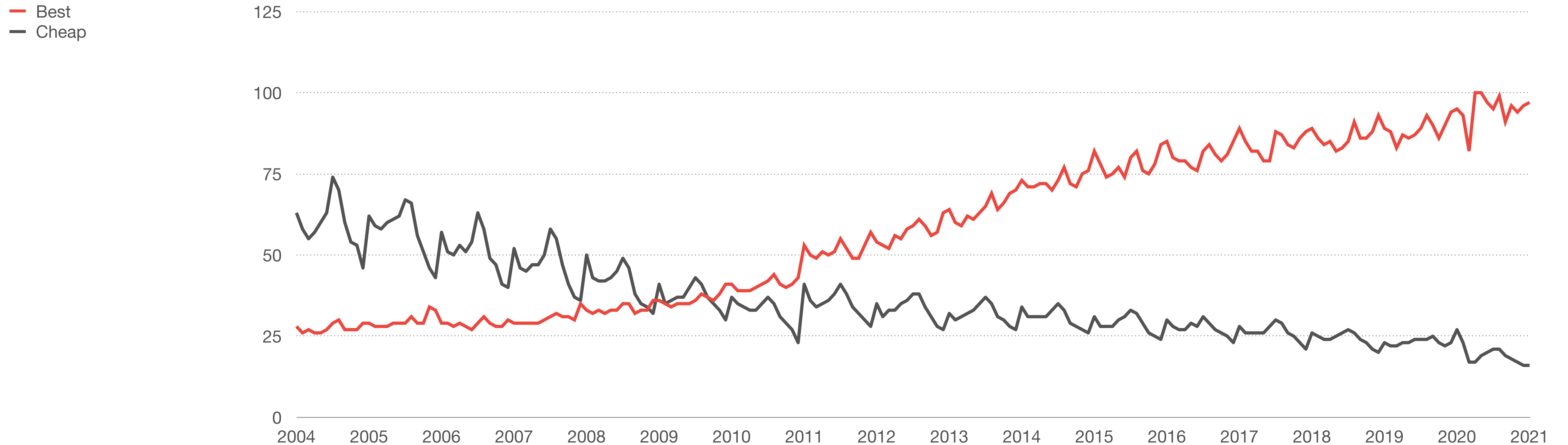
US online product search by channel



# As the internet moves up the funnel

From price comparison to expertise and recommendation

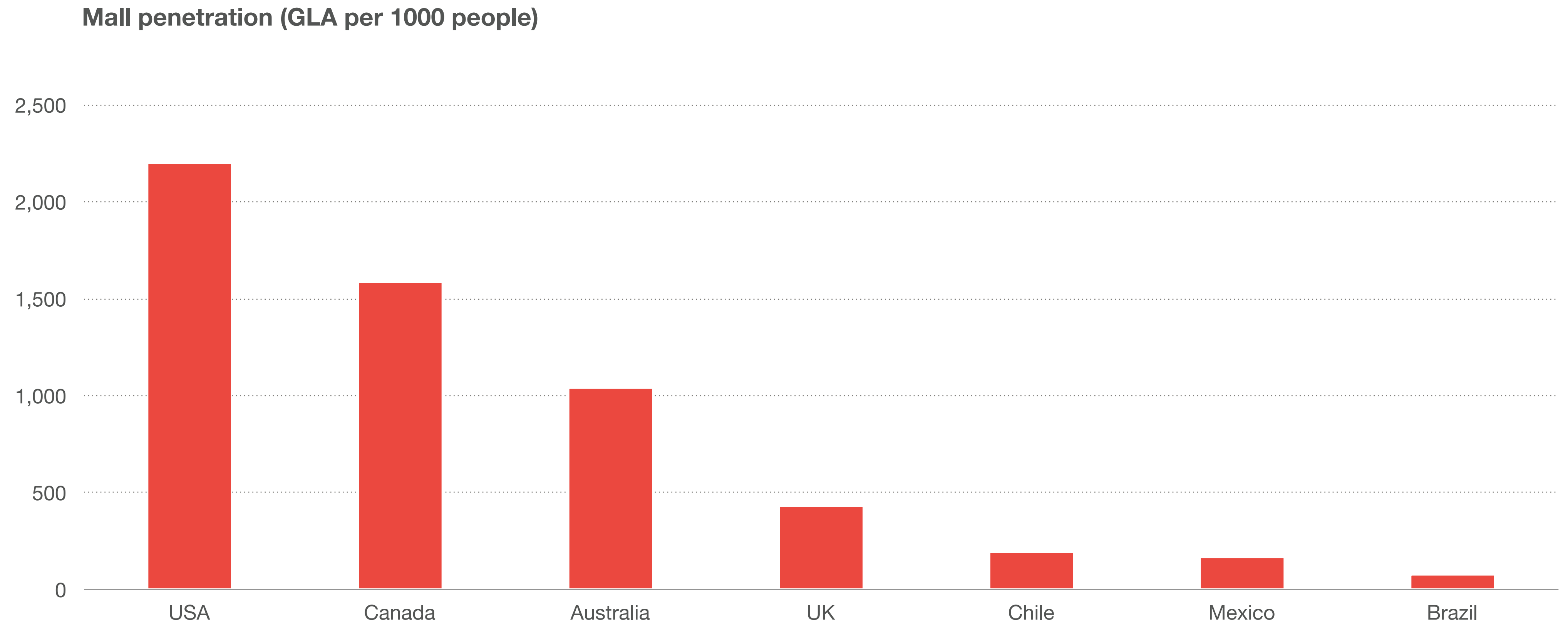
## Relative search interest, UK





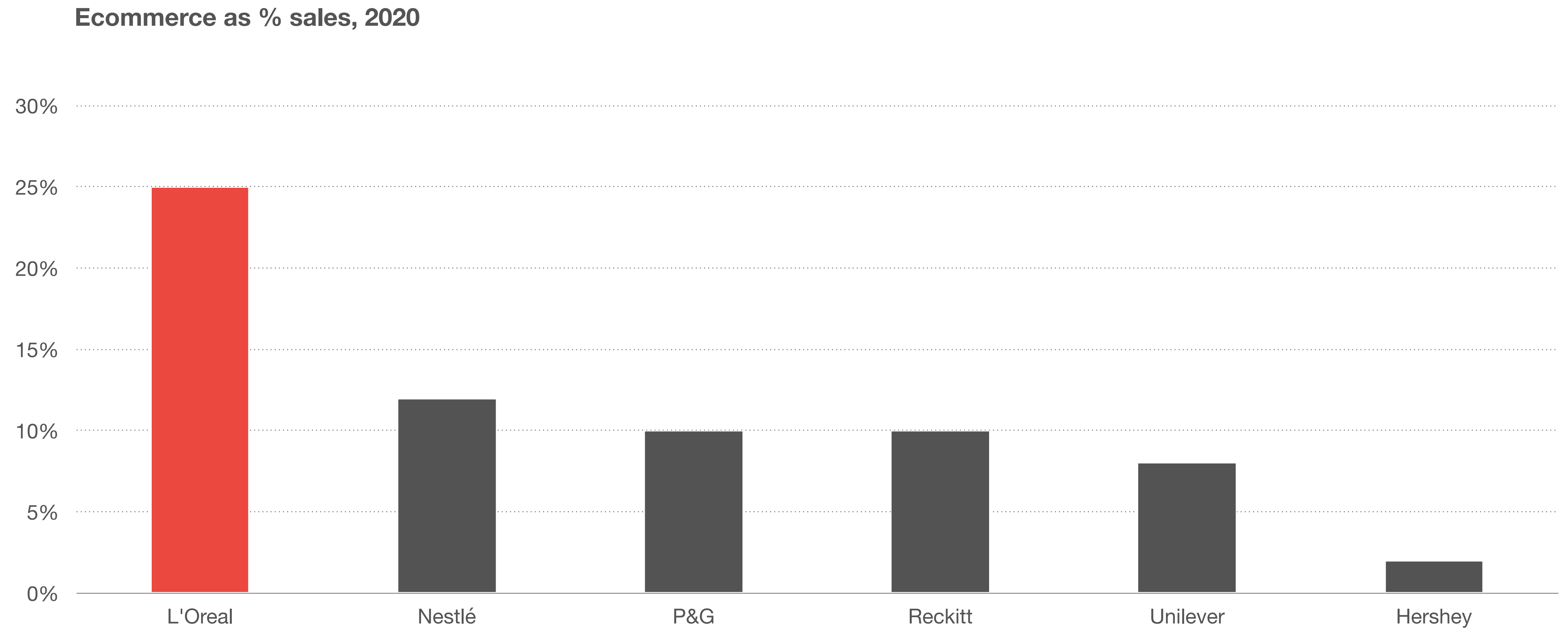
# Accelerate the inevitable

The US is massively over-stored - Latam is massively under-stored



# Brands go digital, or go direct

B2B businesses learning new channels, and learning B2C



Source: Companies

# Nike goes direct

Nike has the brand, product and scale to go direct to its customers



Left Amazon in  
2017 after a 2  
year trial

40% revenue is  
D2C and 22% is  
Nike.com

#1 global fashion  
site with 150m  
uniques

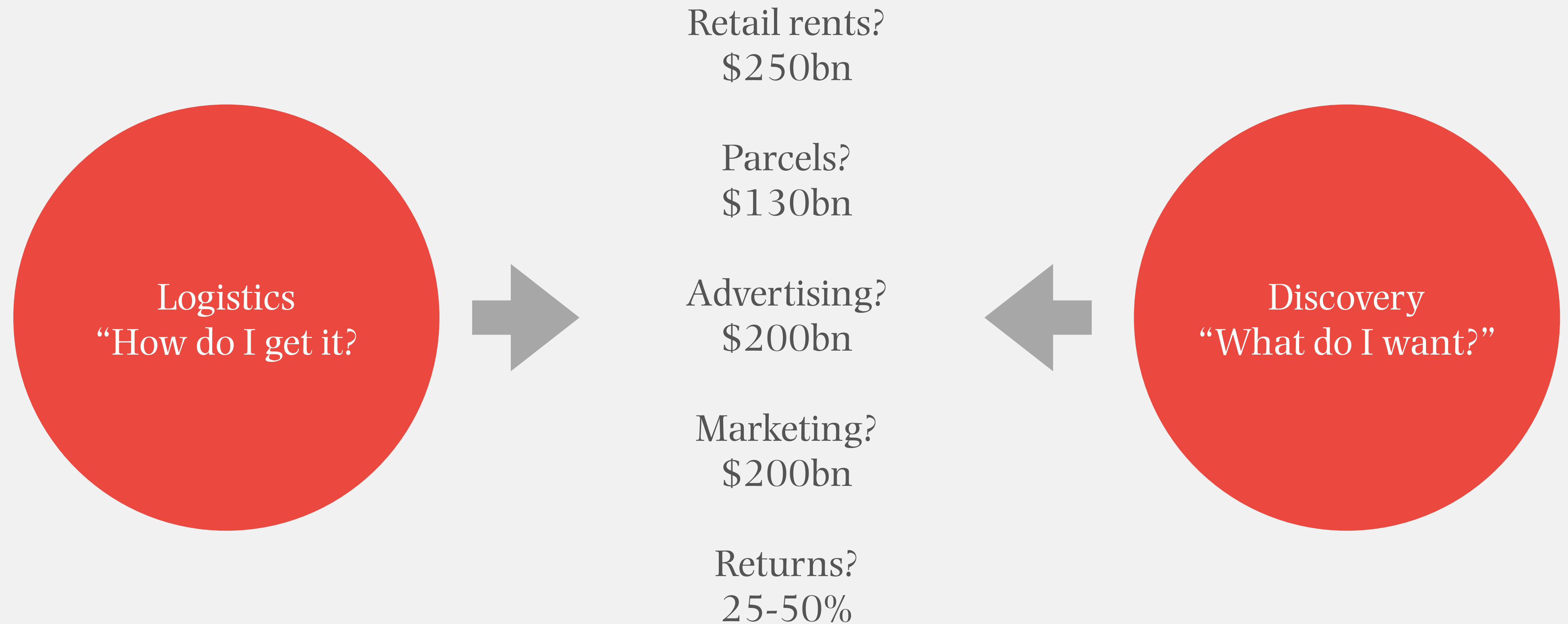
# The ecommerce margin question

Ecommerce changes retail and brand leverage



# How do you reach your customers? Why?

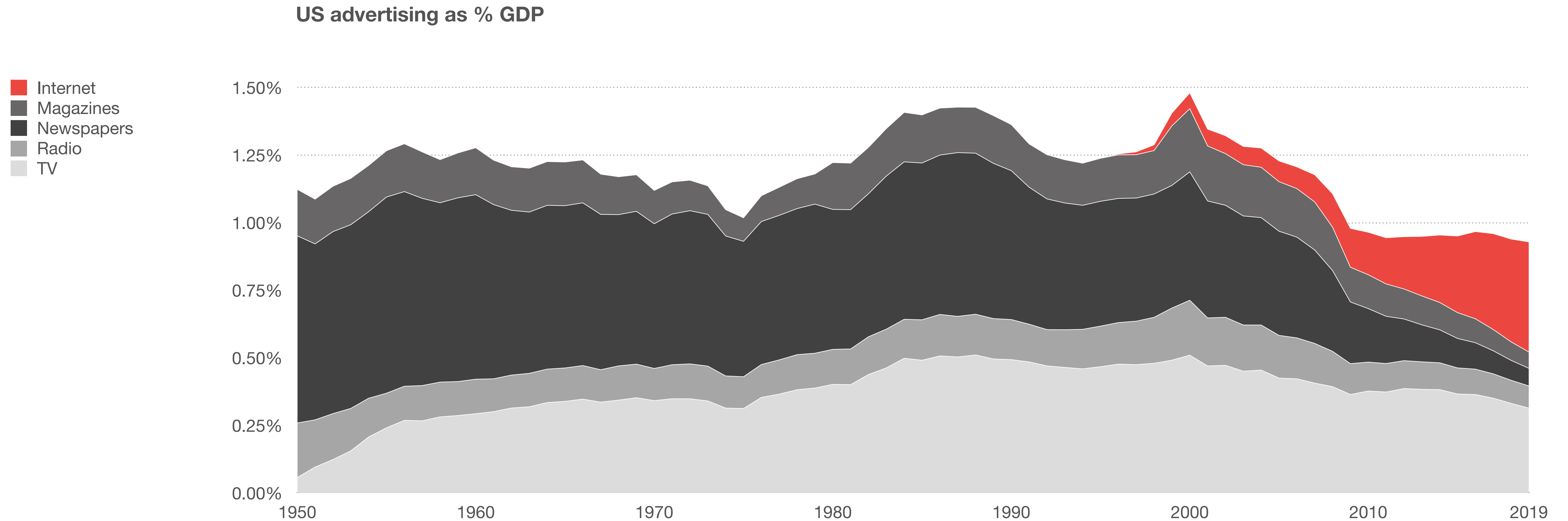
US brands & retailers spend \$7-800bn to reach their customers



# Disrupted retail, meet disrupted advertising

# Reshaping advertising and marketing

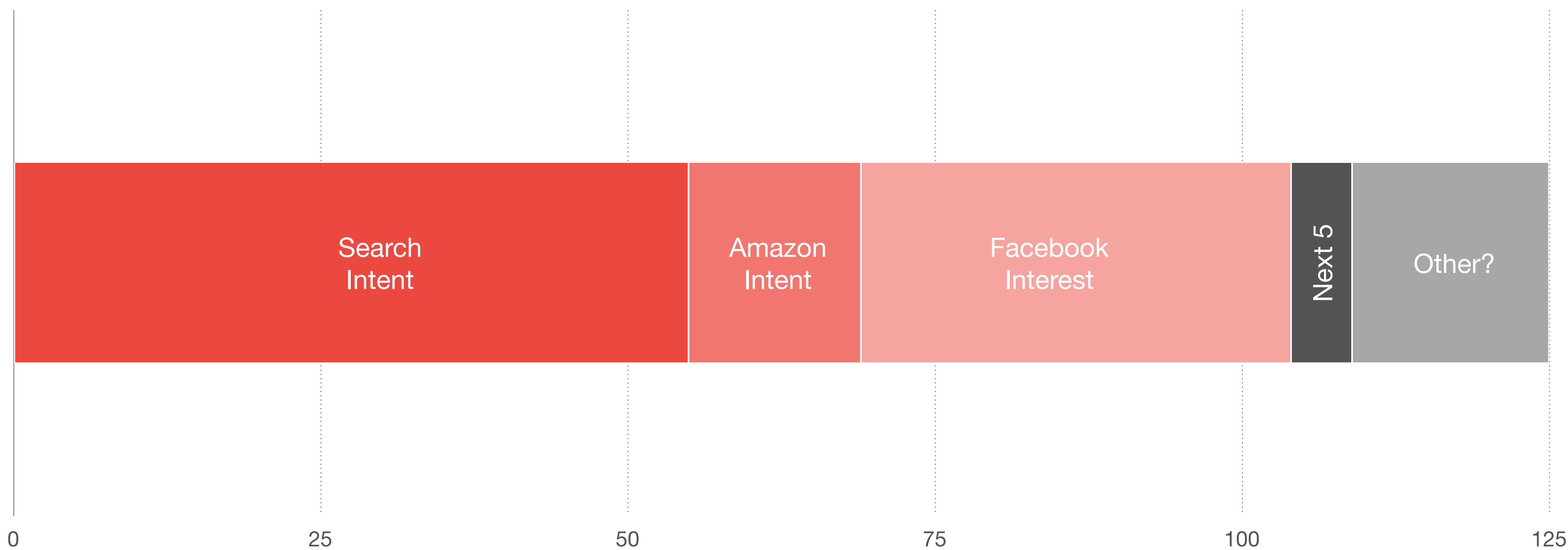
Yes, print and internet - but look at the top line



# Does ‘online advertising’ really exist?

Platforms give efficient proprietary targeting. And then there’s everything else...

US online ad revenue, 2020 (\$bn)

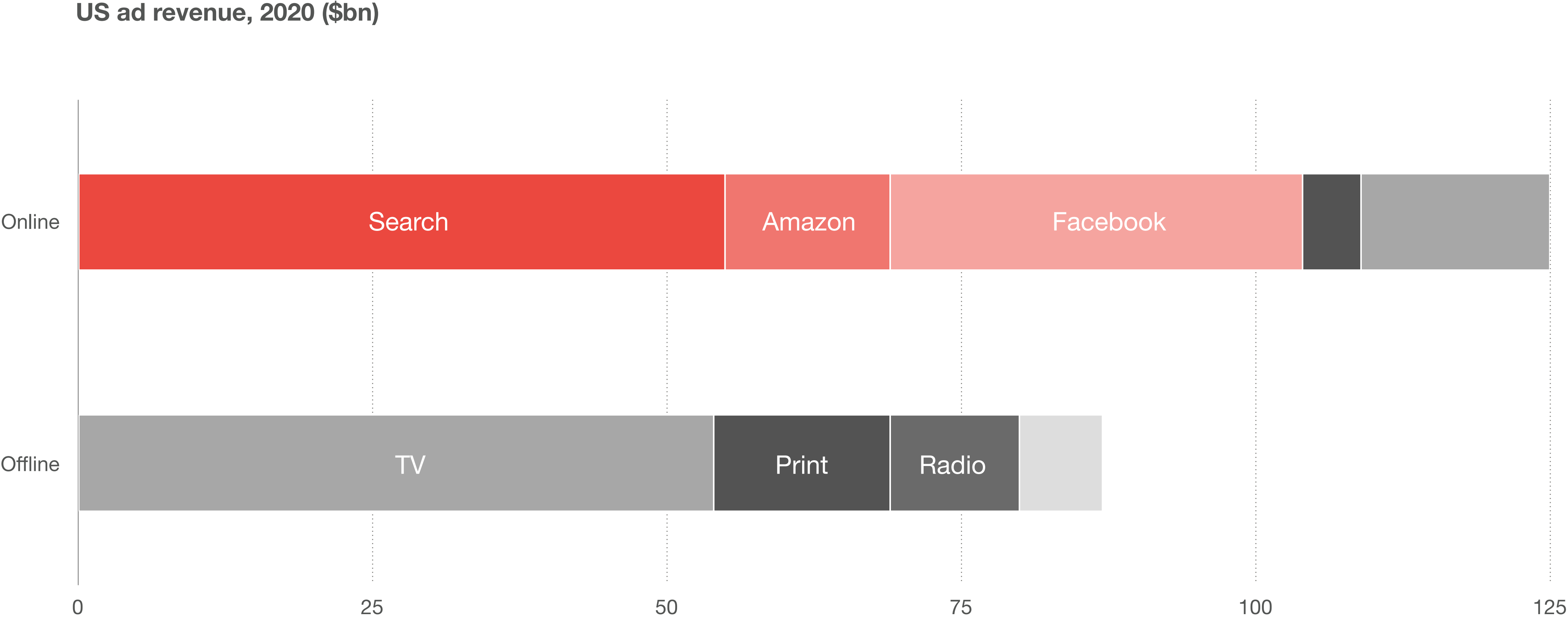


Source: Company data, Zenith, GroupM, @BenedictEvans



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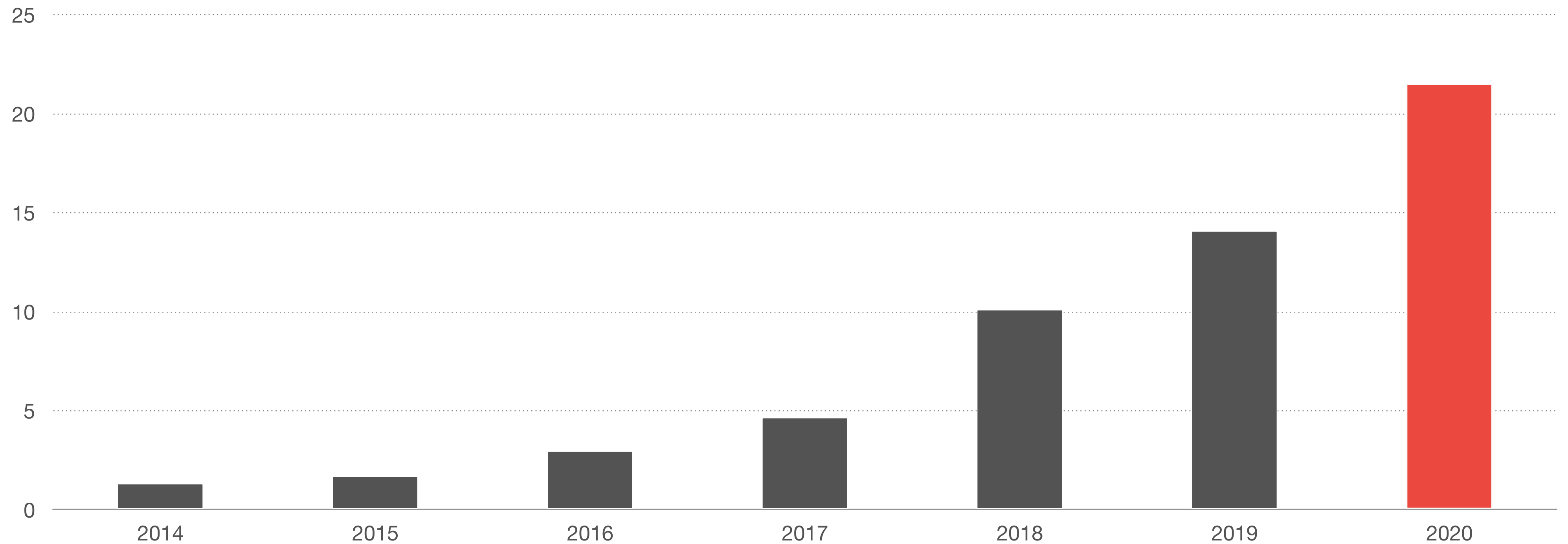


Source: Company data, Zenith, GroupM, @BenedictEvans

# Amazon's sales tax

Amazon has built a \$15bn+ 'search ad' business (retailers just call this marketing)

Amazon 'Advertising & other' revenue (\$bn)





(Yes, these are big questions for ad agencies)

Source: AMC





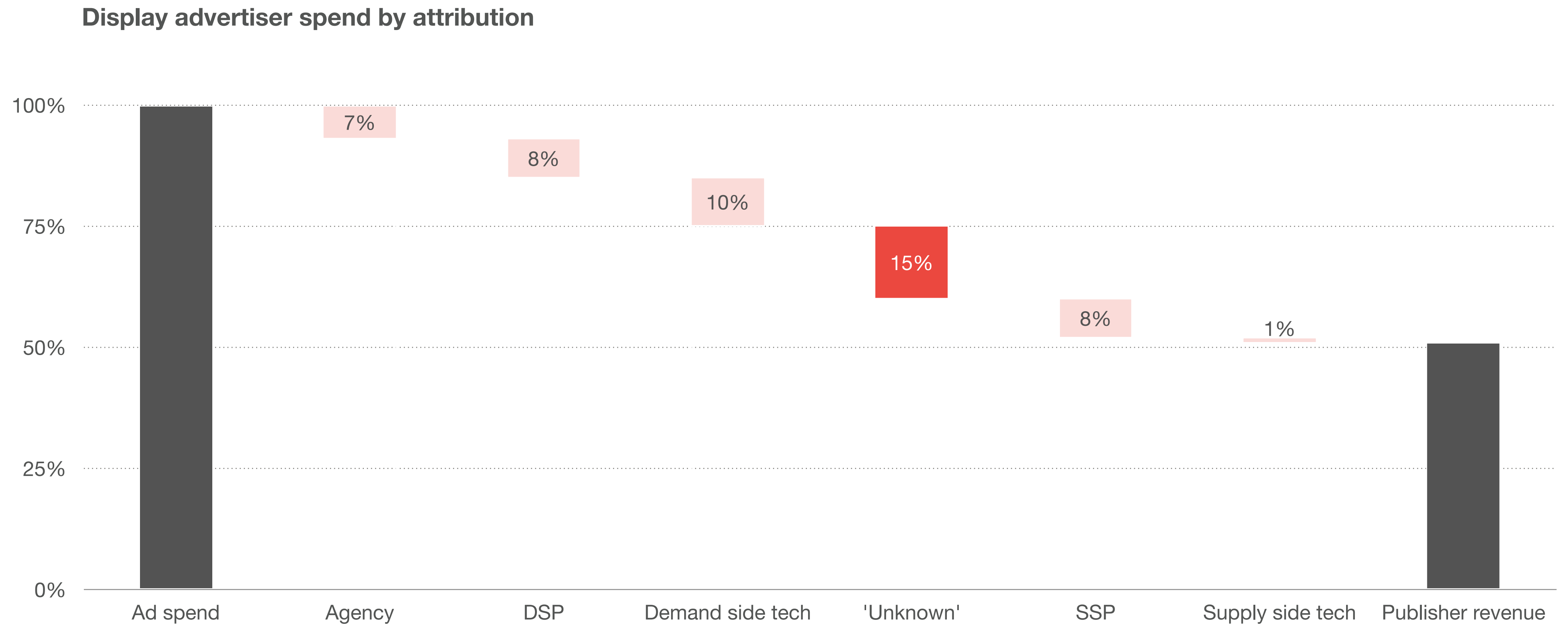
# The 'cookie apocalypse'

The basis of aggregated interest targeting for 20 years is going away, with no clarity on a replacement



# The problem with cookies

No-one would really defend the cookie model today. But...



# A ‘winners take most’ market?

Unclear how advertising will function outside of top sites and platforms

## Platforms

Google/FB/Amazon  
can target  
internally

## Big publishers

1st party data:  
New York Times  
has the scale to  
track internally

## Independents

No cross-site  
aggregation =  
much less money?



# If you even need advertising...

Old: leverage celebrity with endorsements. New: found a company



**Kylie Cosmetics**

\$900m valuation



**Fenty Beauty**

\$600m sales in 15 months



**Tesla**

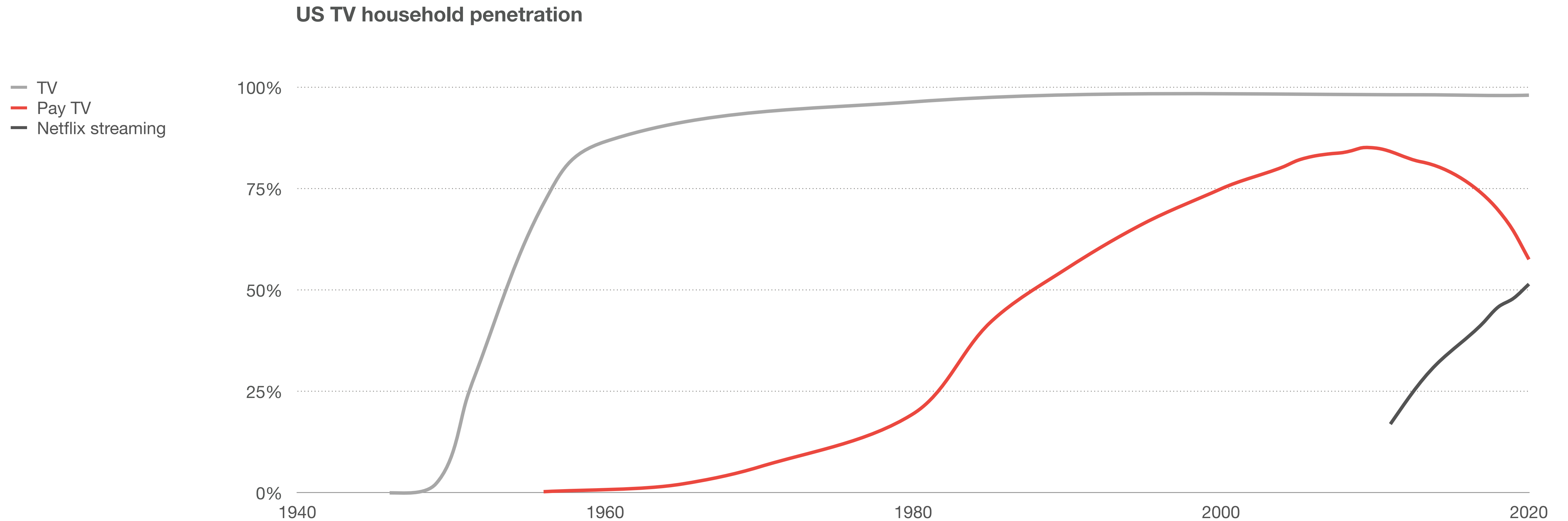
No ad budget, but...

“Well, at least we have TV”



# TV is dead, long live TV

US pay TV penetration is down a third from the peak

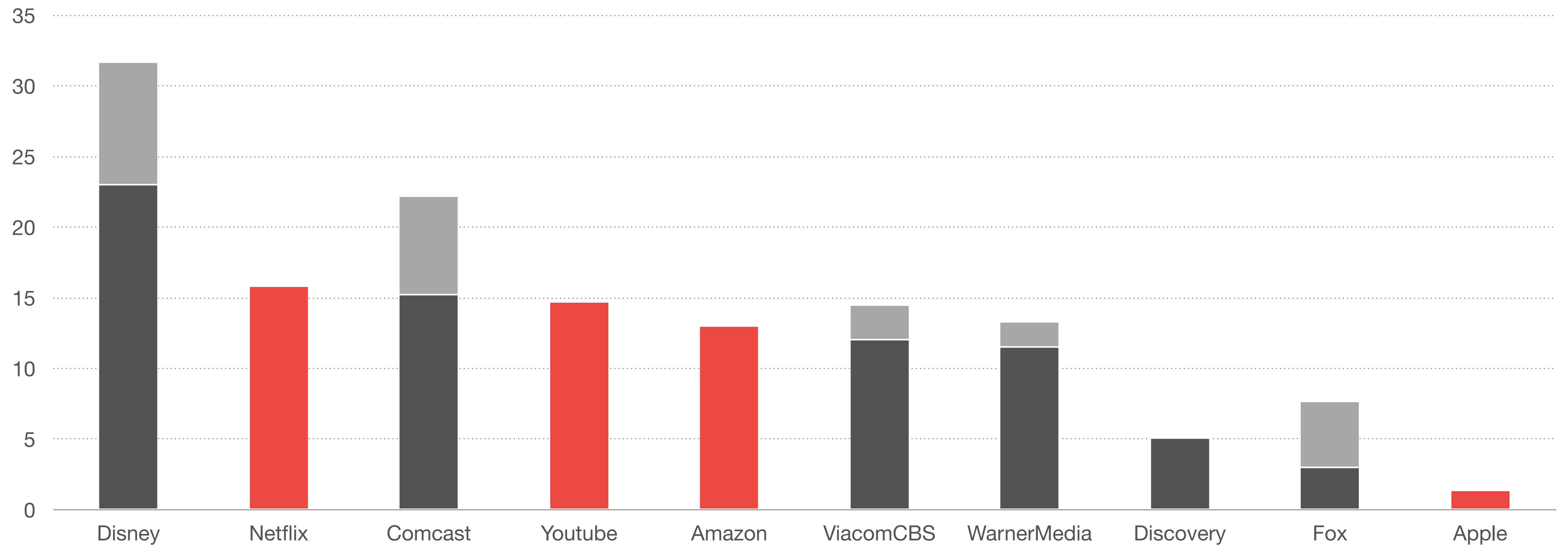


# Show me the money

New entrants outspending most legacy content manufacturers

2021e content budgets (\$bn)

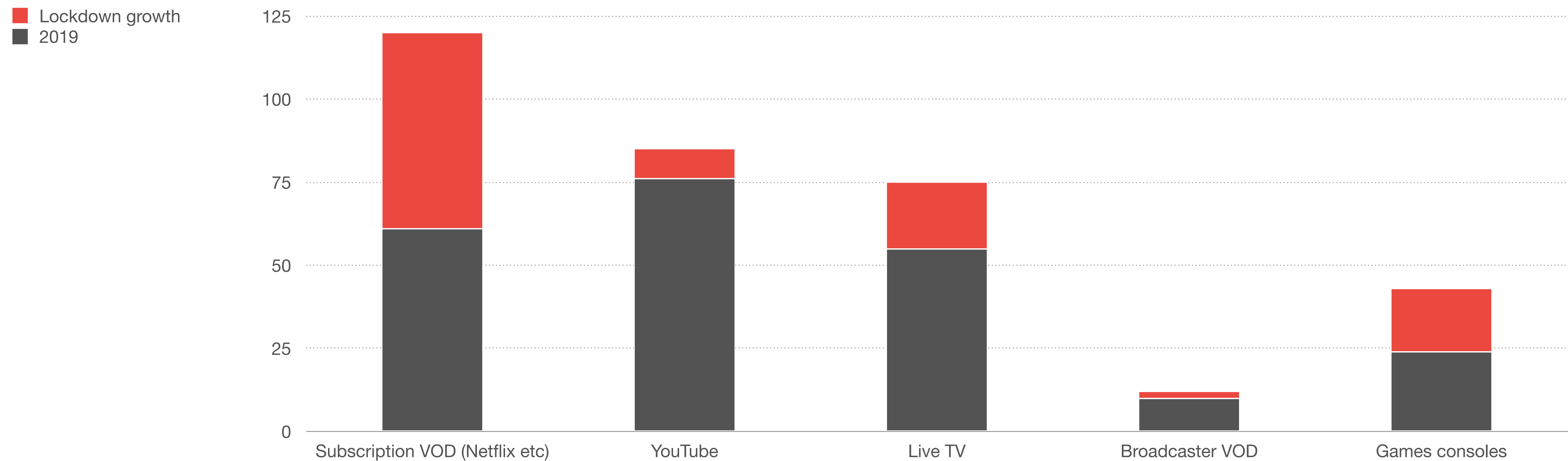
■ Sport  
■ Film & TV



# Lockdown accelerates the change

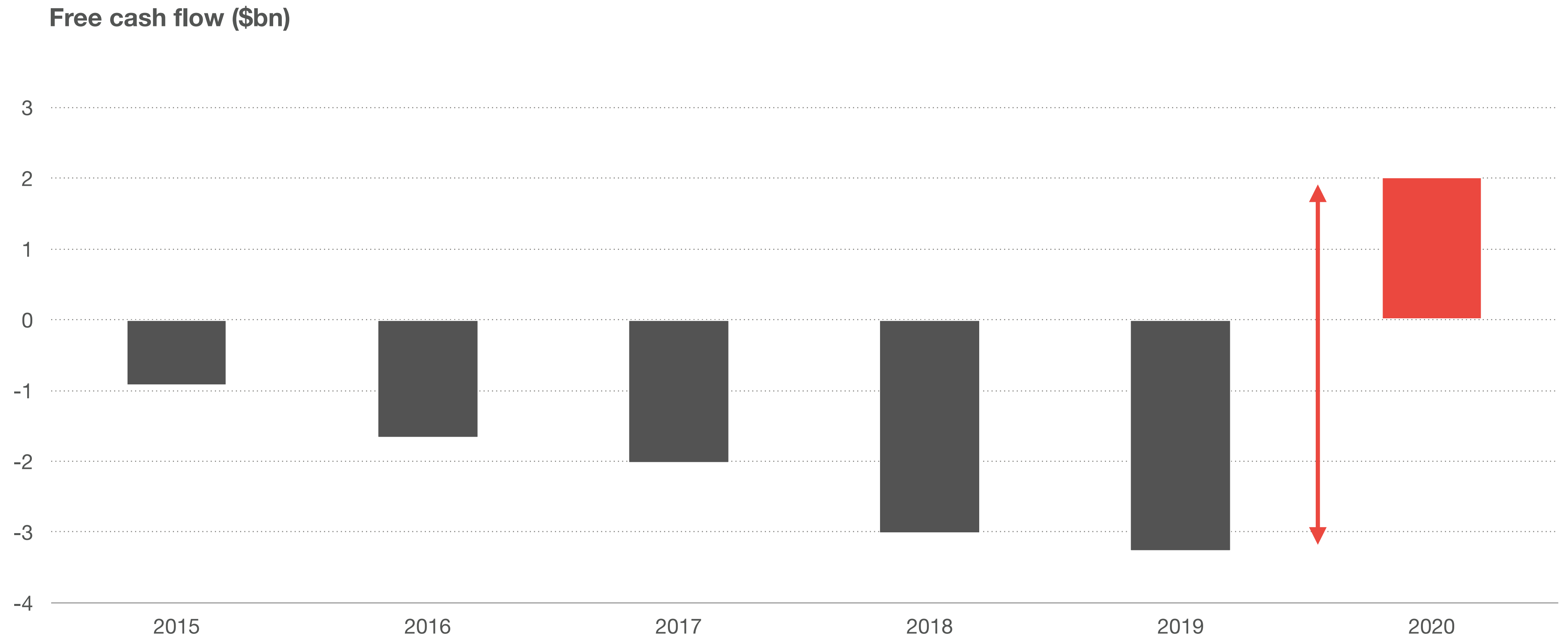
Netflix and YouTube are each bigger than total UK live TV, for 16-24s

UK 16-24s daily video viewing (minutes)



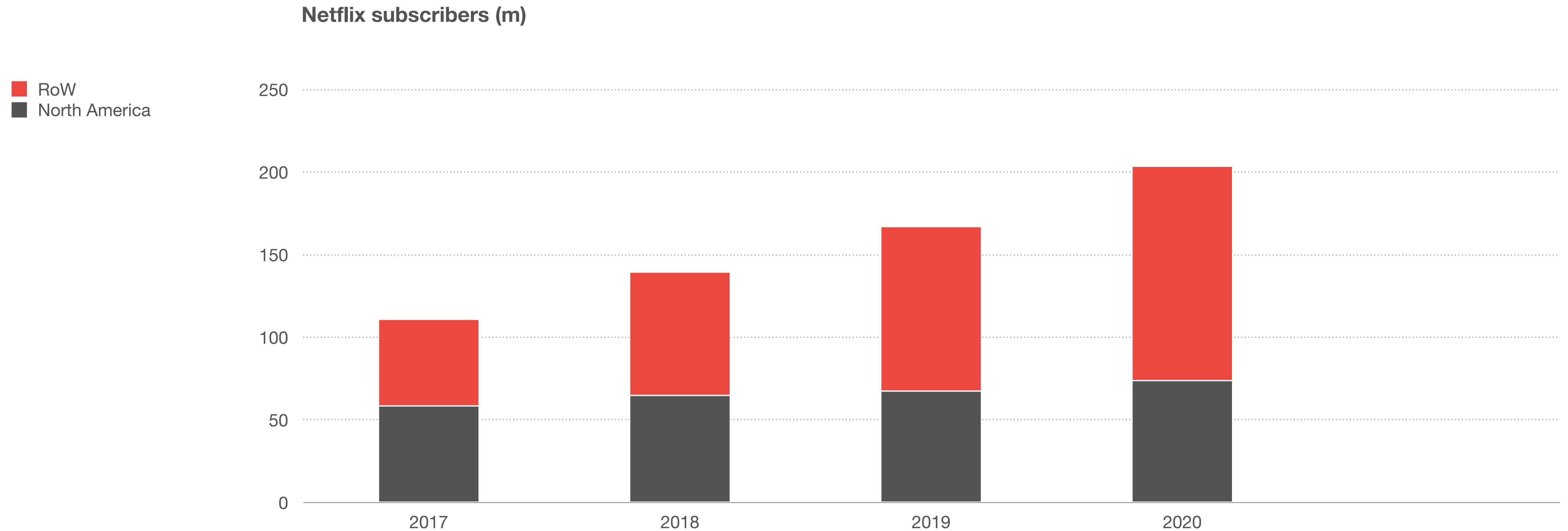
# Netflix - a \$5bn swing

Surge in lockdown subscriptions has taken Netflix to breakeven after years of heavy content investment



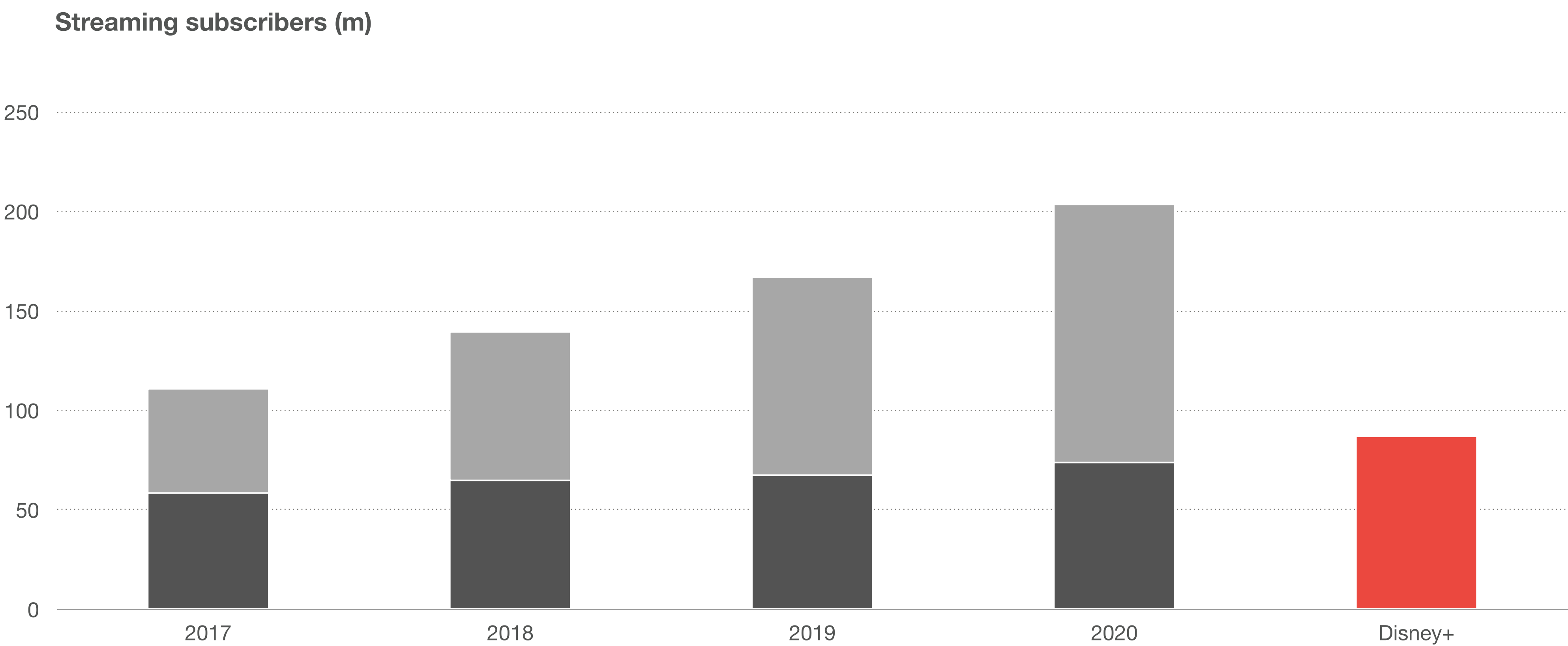
# Netflix breaks 200m subs (mostly outside the USA)

Unbundling the old geographic rights model as well as the cable model



# Disney breaks in

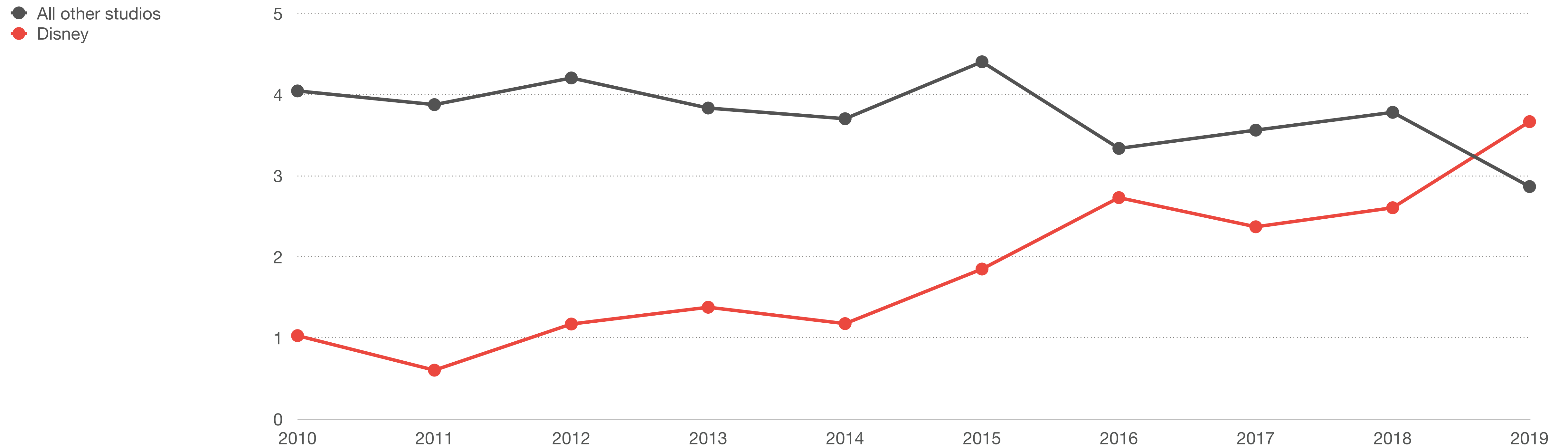
Disney+ signed up close to 90m subscribers in the first year



# (And takes over the movie business)

Disney movies took more than half the revenue from the top 25 releases in 2019

Revenue for top 25 movies at US/Canada box office (\$bn)



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

- Jim Barksdale



# The great unbundling

Everyone wants to go direct. Not all will succeed

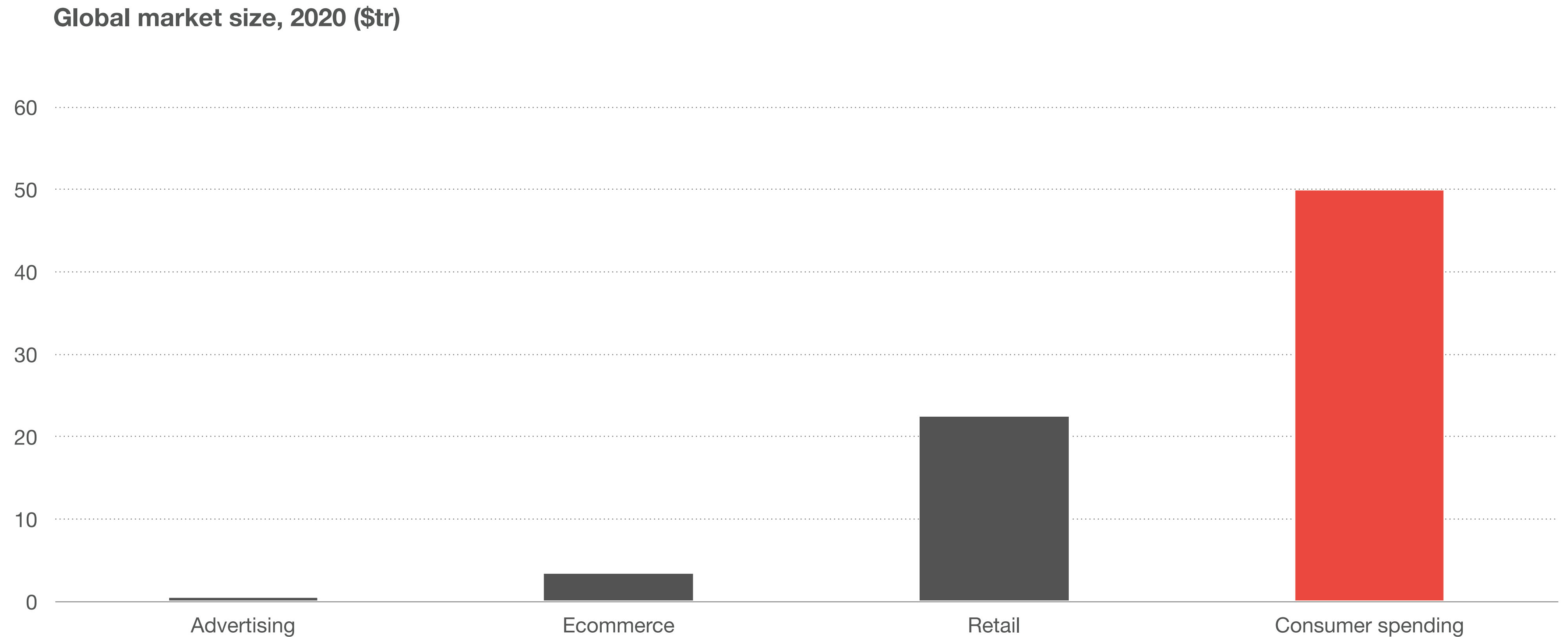


Is that a tech company?

Or a TV / retail / consumer / fashion / CPG  
company - on the internet?

# What's the real opportunity?

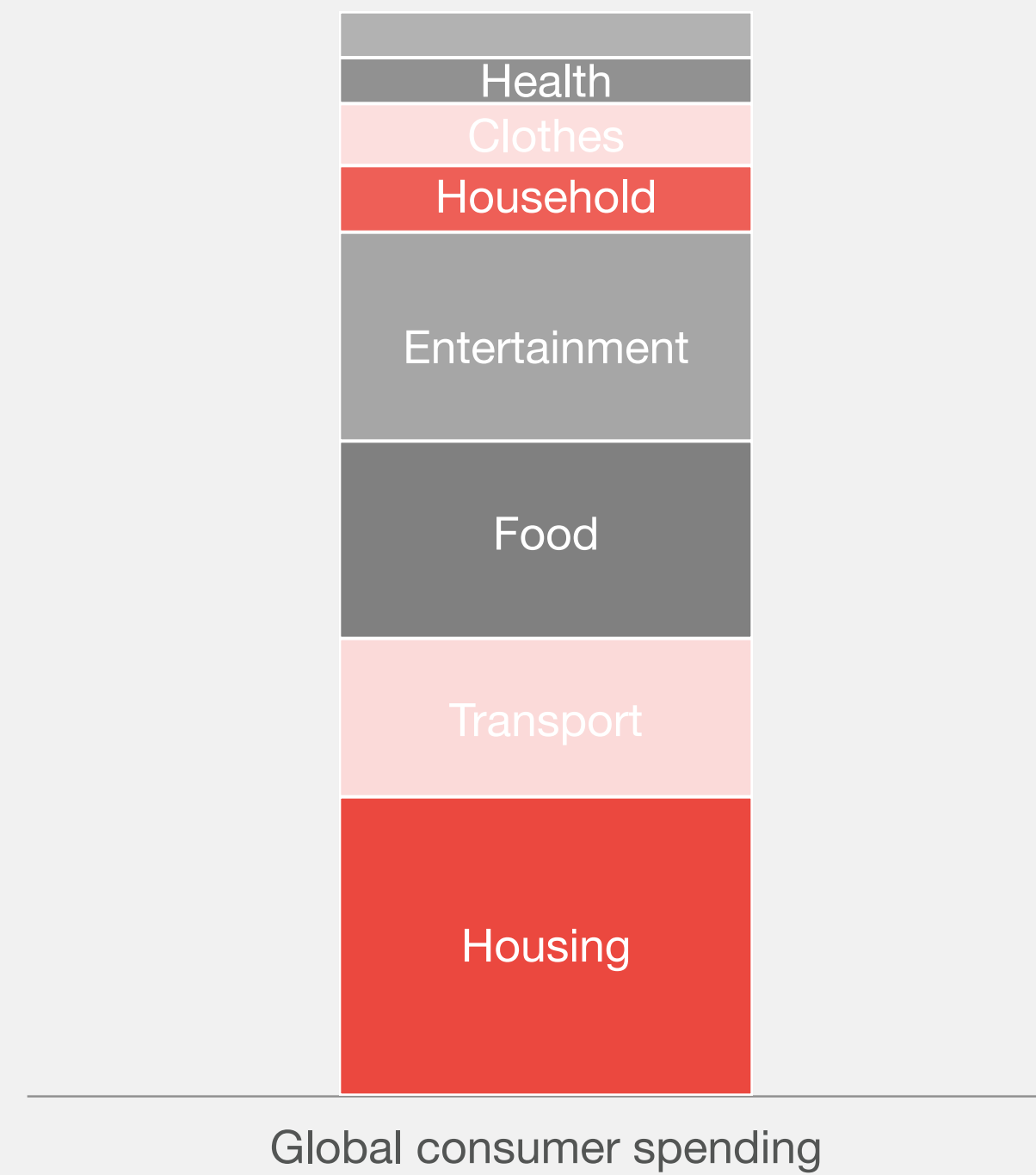
In 1980, IBM was a \$80bn company\*. Now the opportunity is, well, everything.



# Harder problems

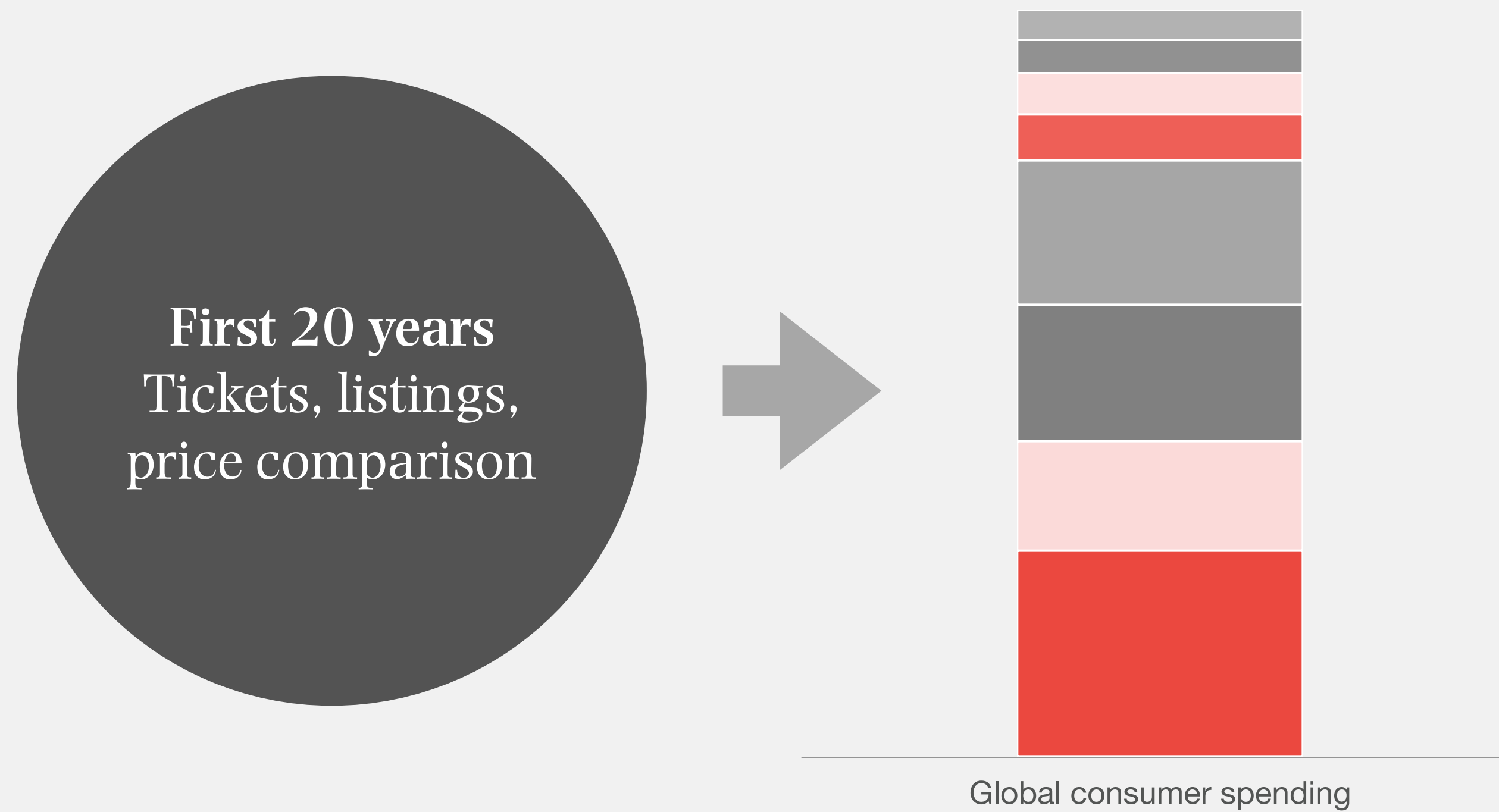
# Let's look at that consumer spending

Circa \$50bn of global consumer spending in 2019 (i.e. pre-Covid)



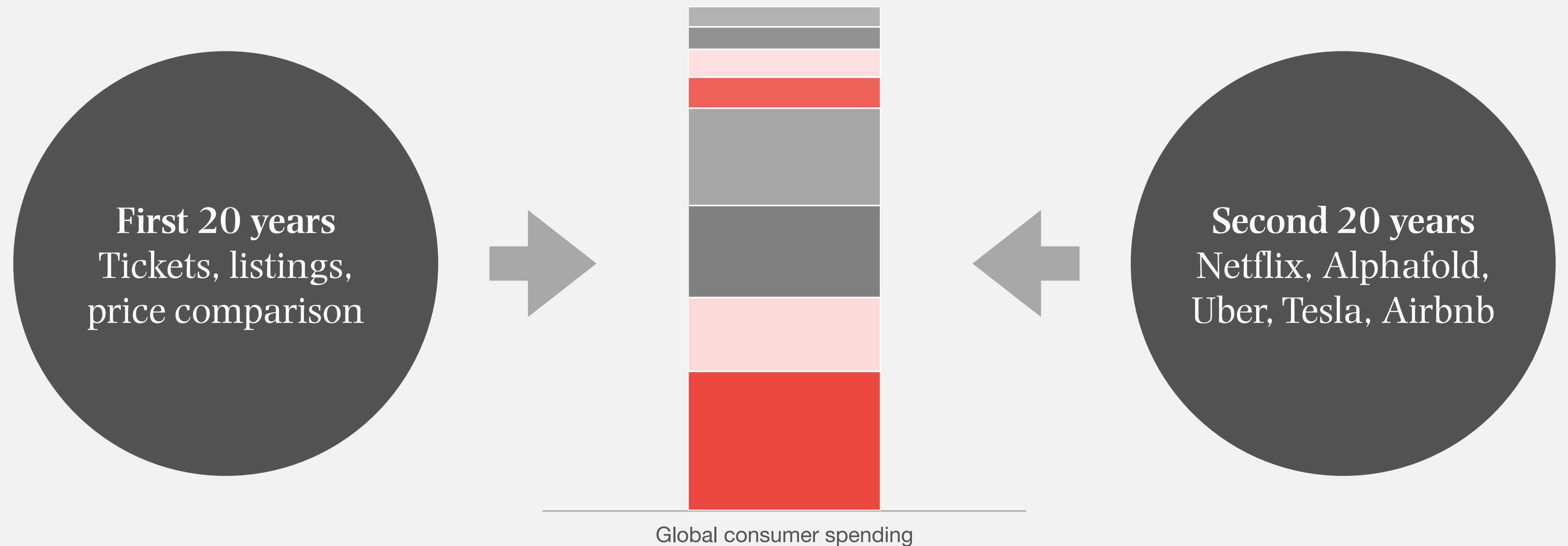
# Moving to harder problems

First 20 years: information arbitrage.



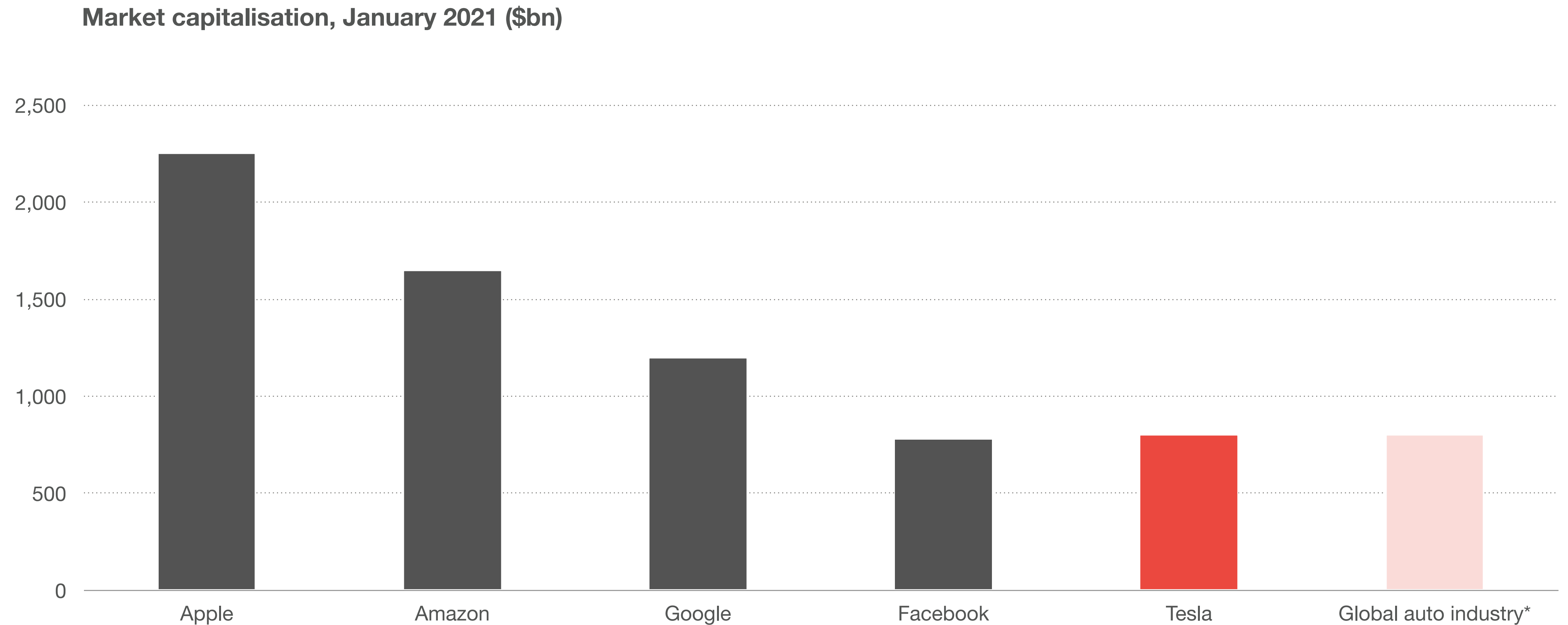
# From selling data to changing industries

First 20 years: information arbitrage. Second 20 years: change entire industries with software



# Software eats cars?

Tesla's market cap is now close to the entire auto industry (!)



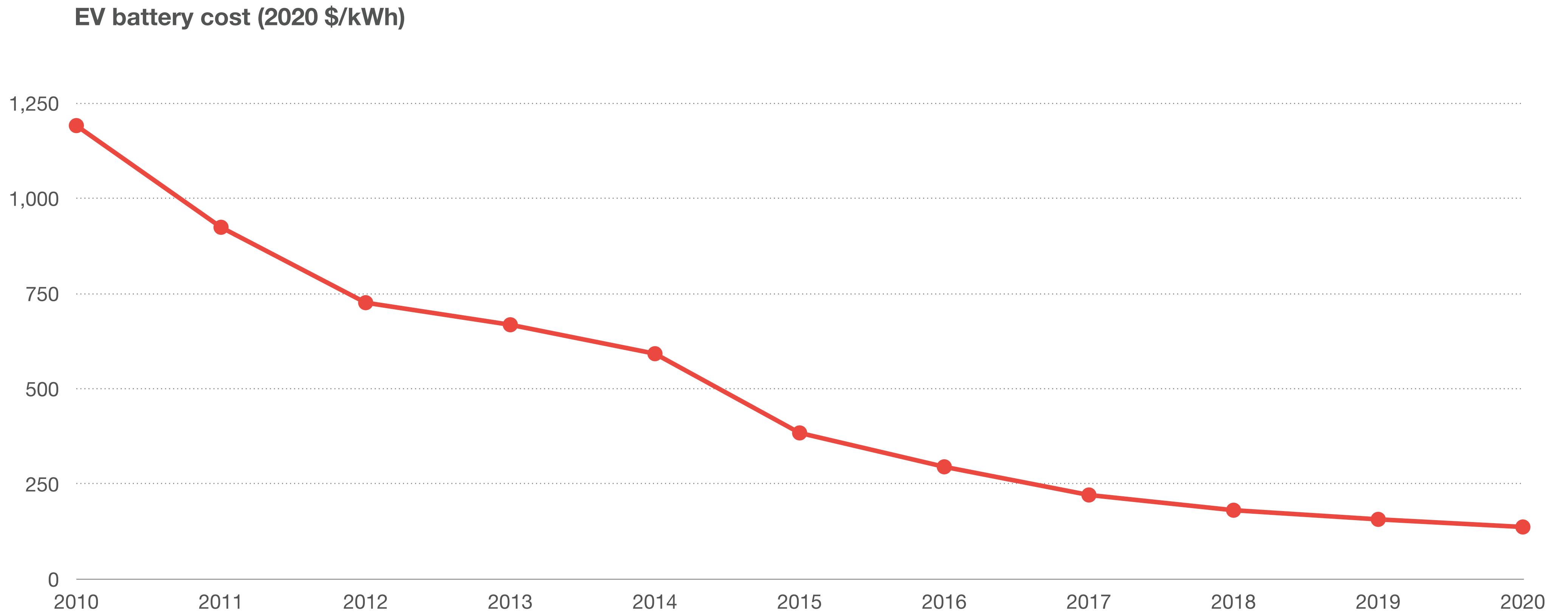
Source: Bloomberg

\* Top 40 OEMs and suppliers by market cap (EV is higher)



# The root cause - collapsing battery costs

EV battery prices have fallen 89% in a decade, driven by volume



# All cars will be electric. But...

Everyone in the auto industry agrees the market is switching. Less clear what that means



5-10x fewer  
moving parts

(Battery prices  
still need to fall  
by another third)

Then - is this  
software, or scale  
manufacturing?



# Not just cars

The Bastø Electric carries 600 passengers and 200 cars

4 MWh battery system

Norway will have 58 electric ferries by the end of 2021

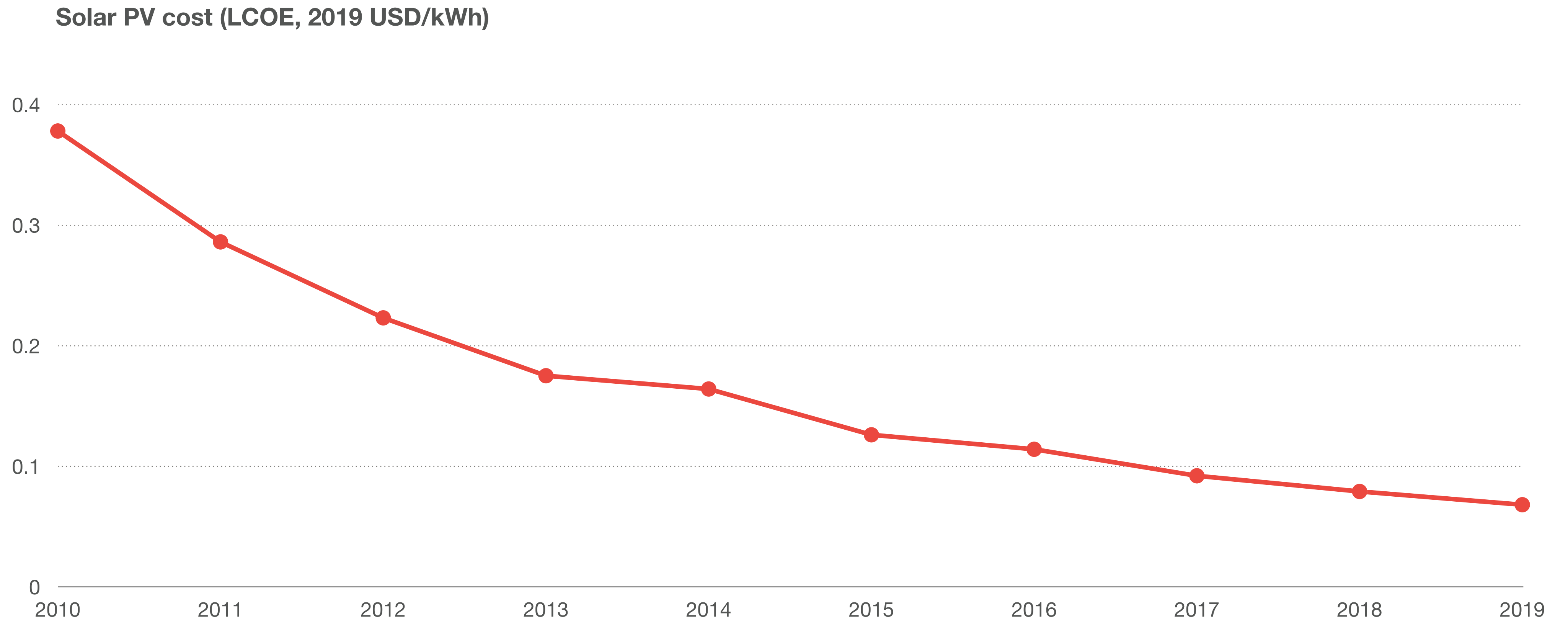
Source: Bastø Fosen





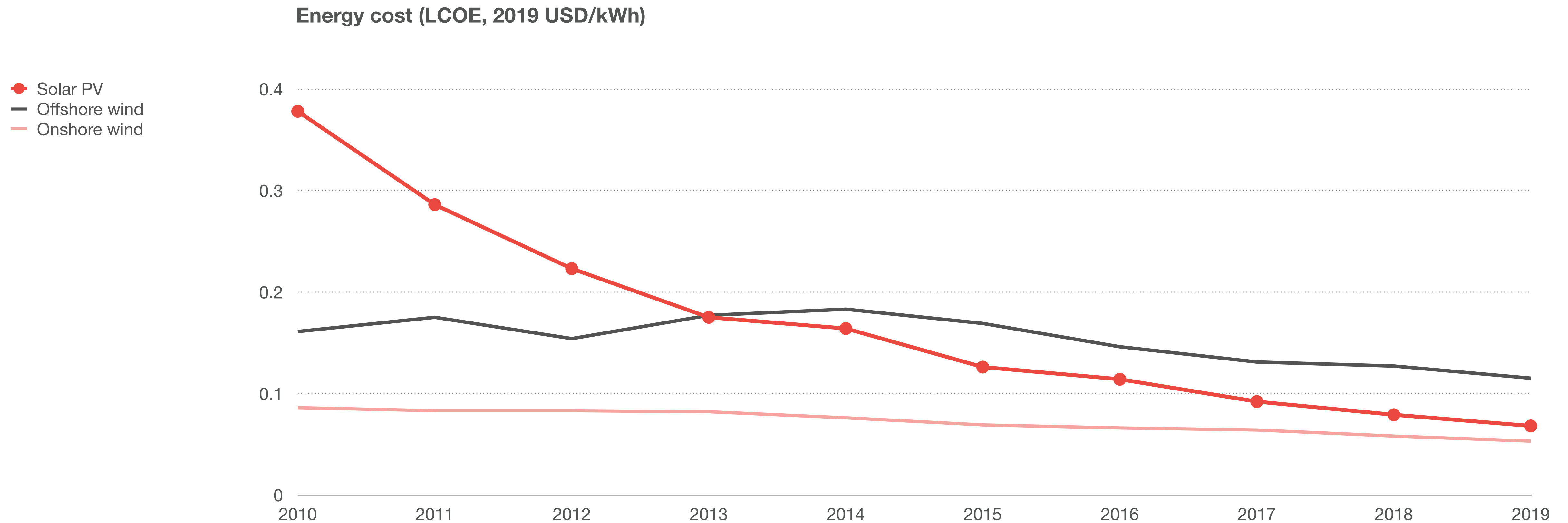
# Equally, collapsing solar costs

Solar PV prices have fallen 82%



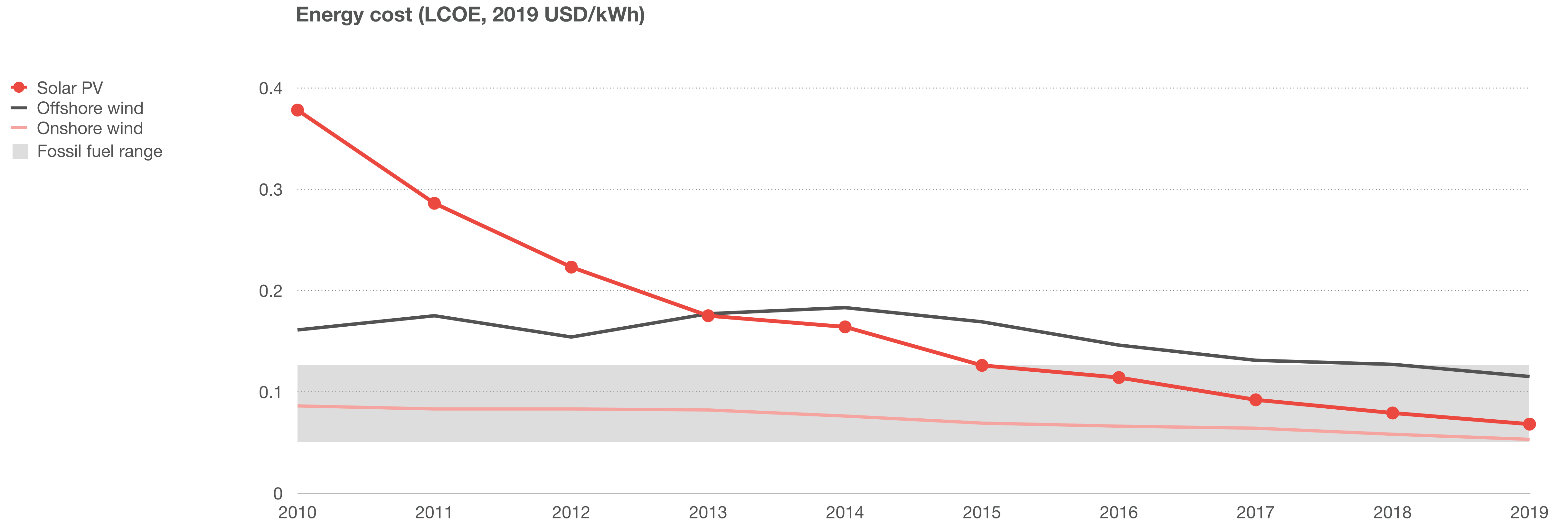
# And wind

Onshore wind prices fall 40% in a decade - offshore (with less leverage) down 30%



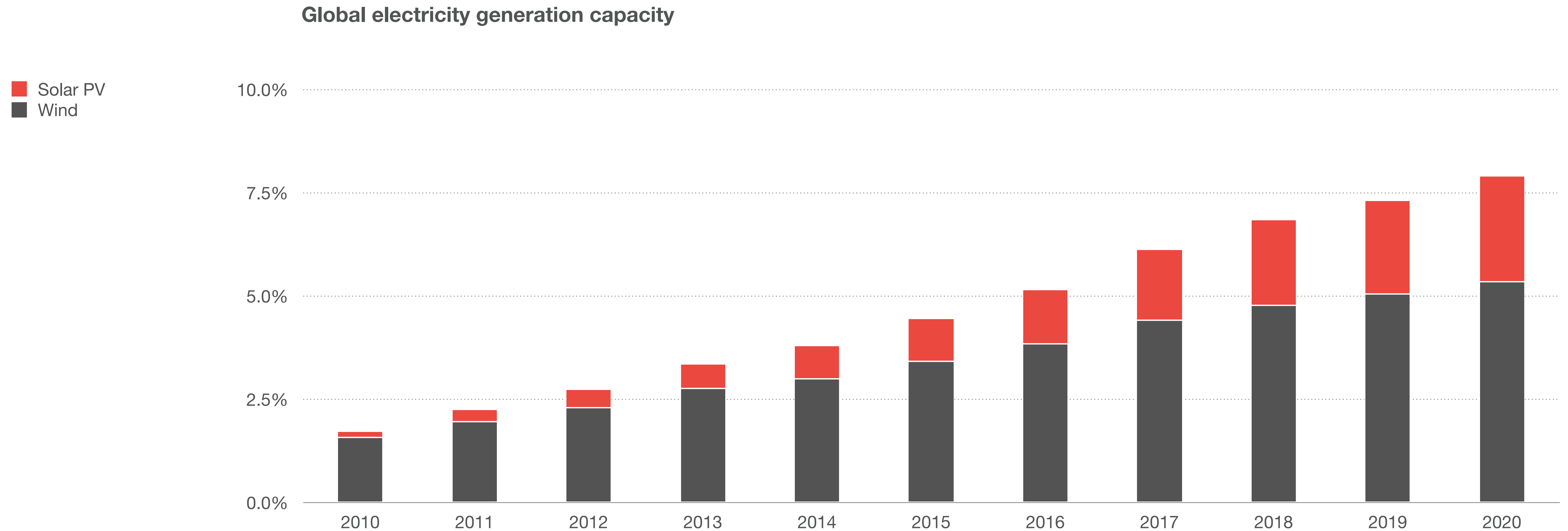
# Putting it on commercial terms with fossil fuel

From science project to product



# Becoming real

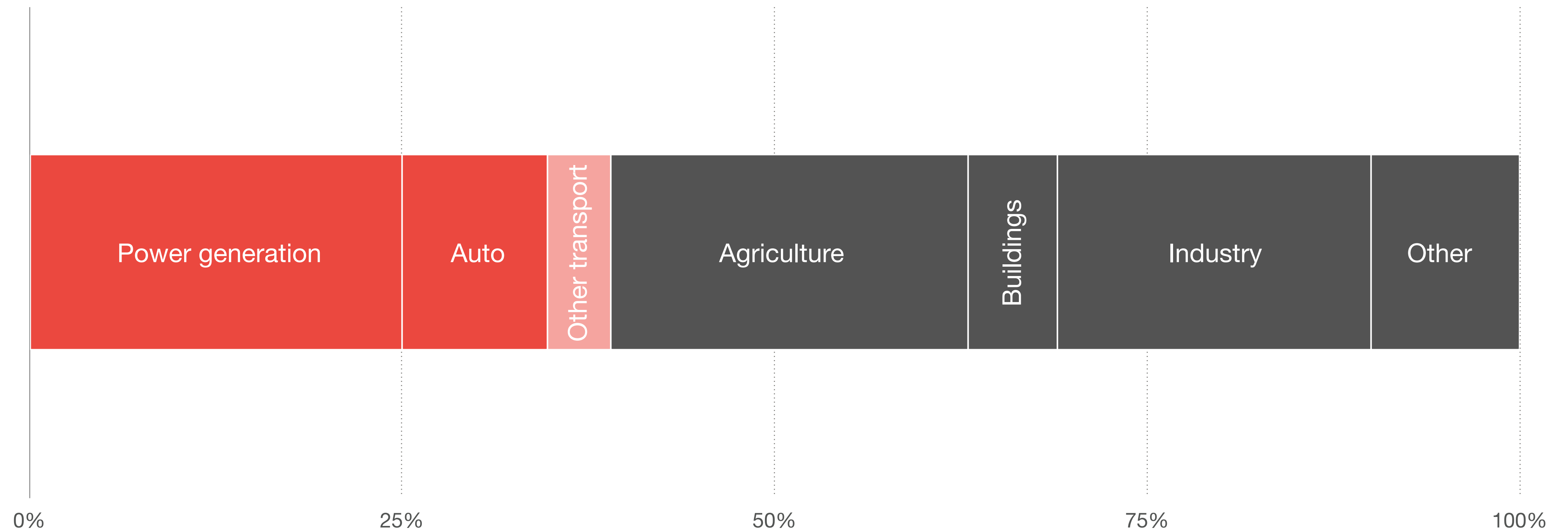
Global installed base share of solar PV + wind has increased 4x since 2010



# (Tech won't save the world, but...)

A third of emissions come from sectors where tech is changing things

Global greenhouse emissions, 2017



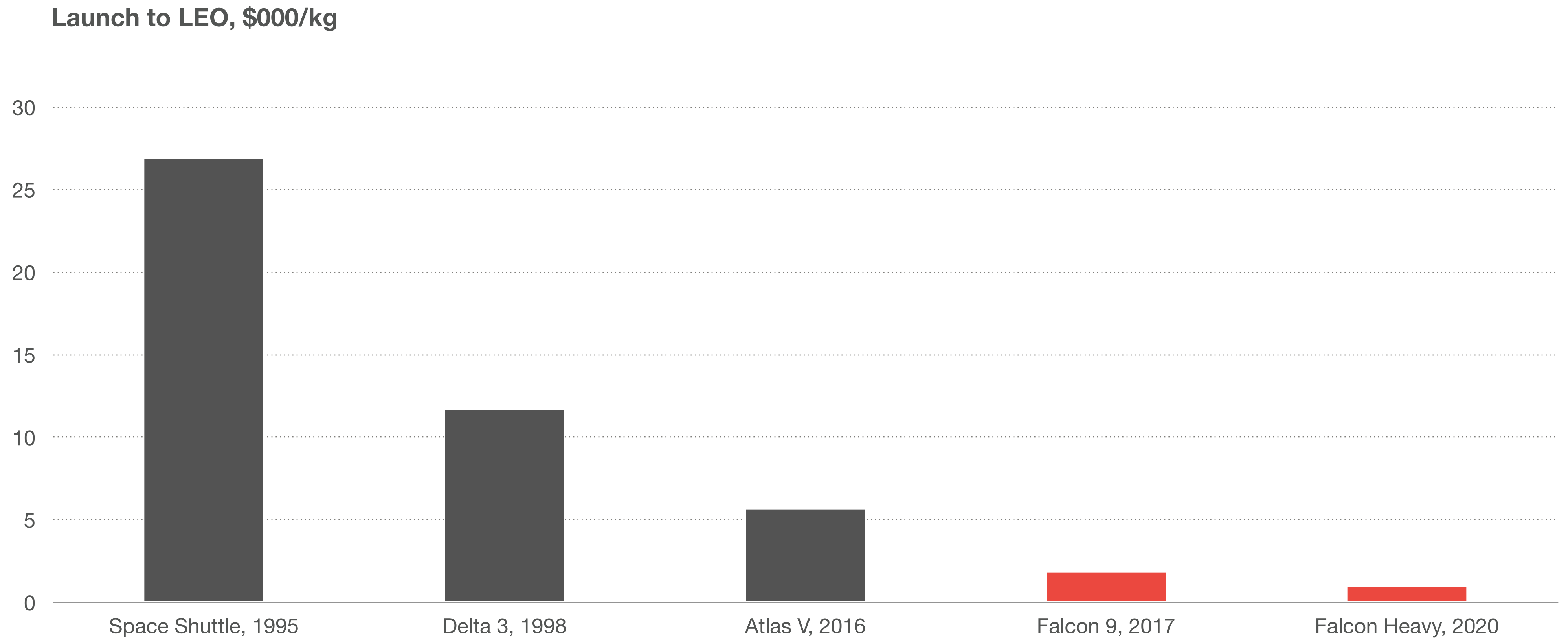


Plant-based meat?  
Leather?



# Moonshots?

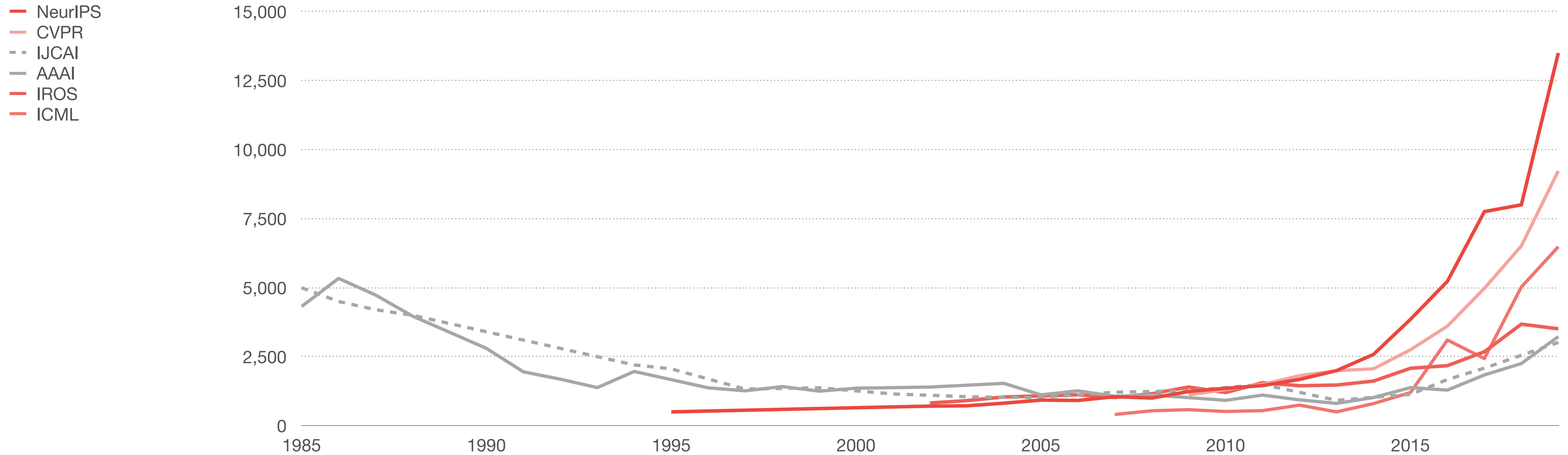
SpaceX has cut launch costs by at least 5x



# From rockets to HAL9000

2010: “Machine learning is a dumb idea from the 80s - don’t bother.”

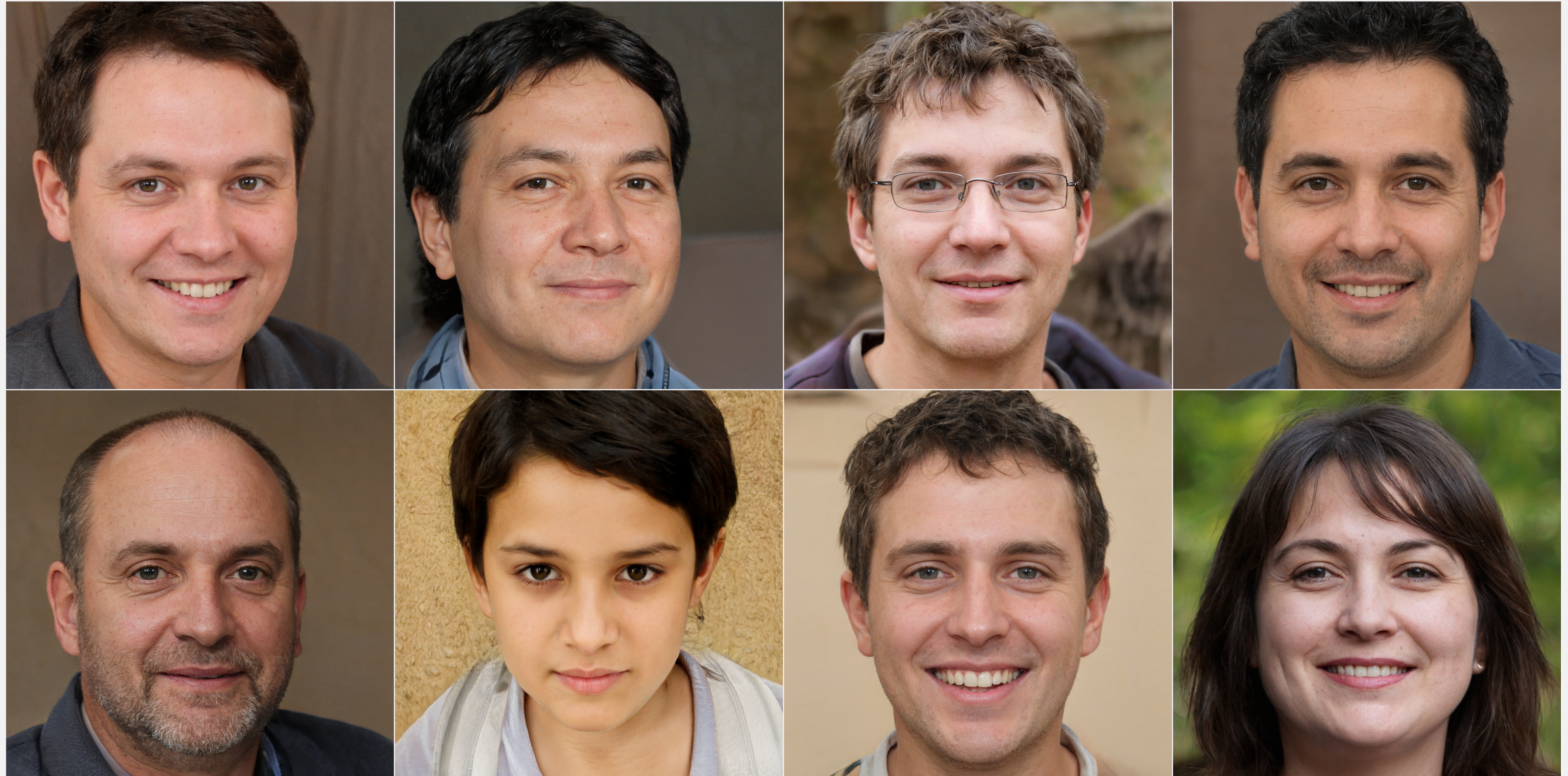
Major AI conference attendance





# None of these people exist

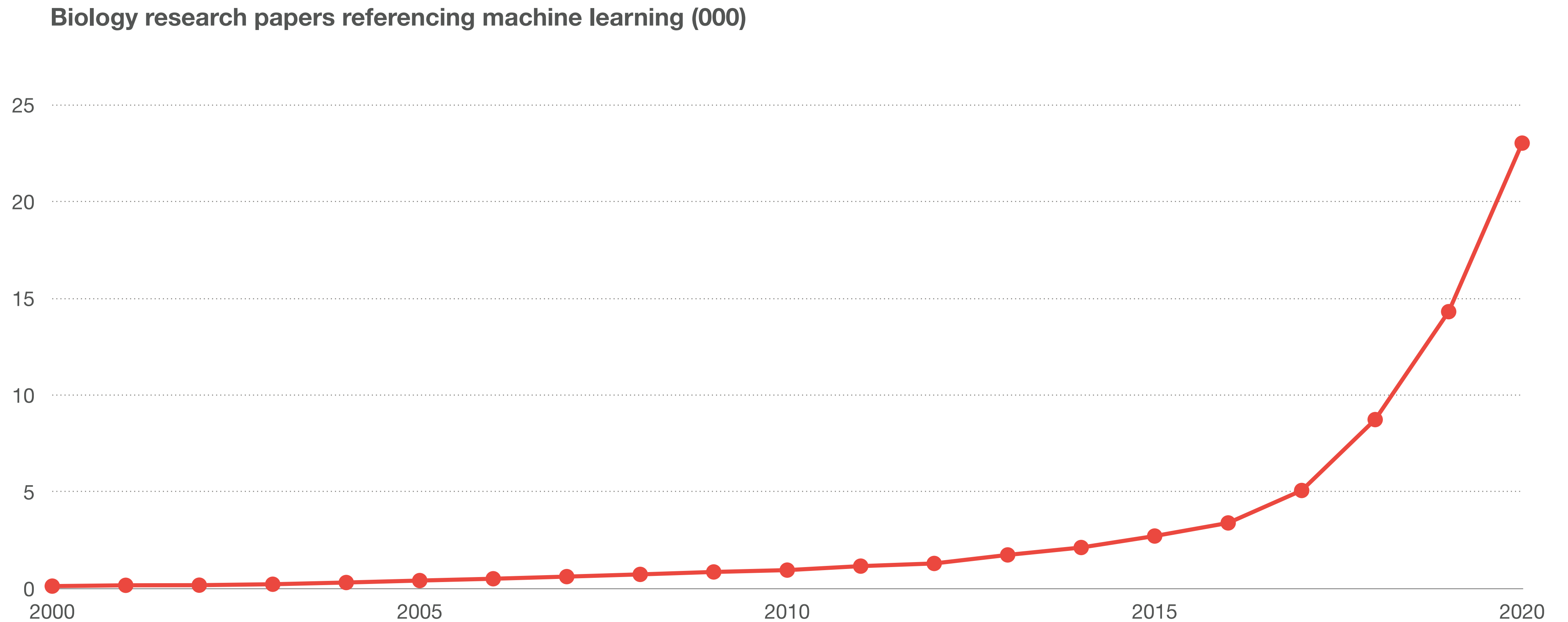
These faces are algorithmically generated by a machine learning system





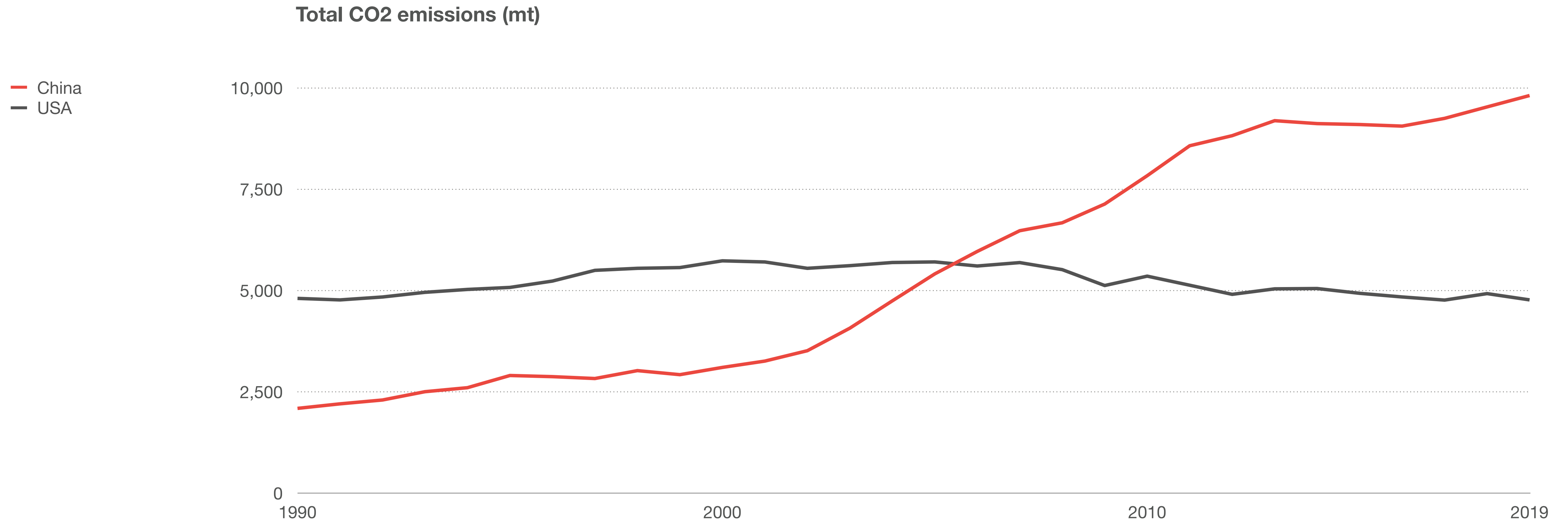
# Computational biology

How many places does 'find patterns in data' solve new problems?



# And one more thing

China is both the largest investor in renewables and the largest emitter of greenhouse gasses



# China and the end of the American internet

# What does 'China' mean for tech?

A Rorschach Blot for the 21st century



Geopolitics

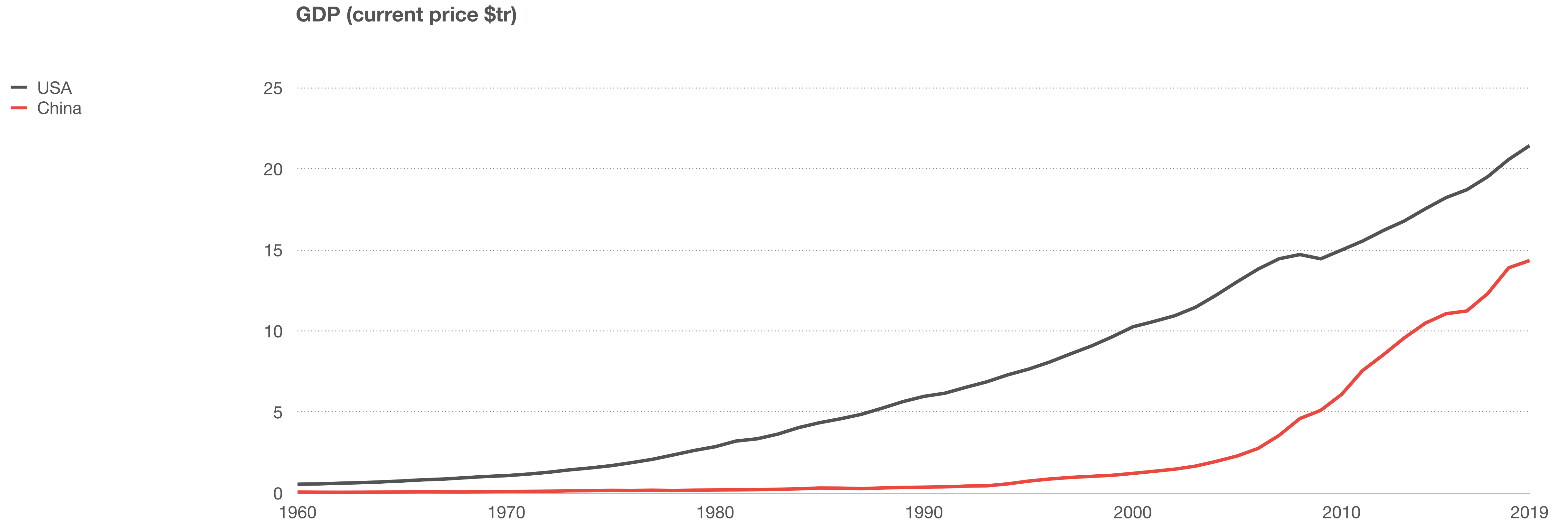
Geopolitics and  
tech

China as a new  
centre of  
innovation?



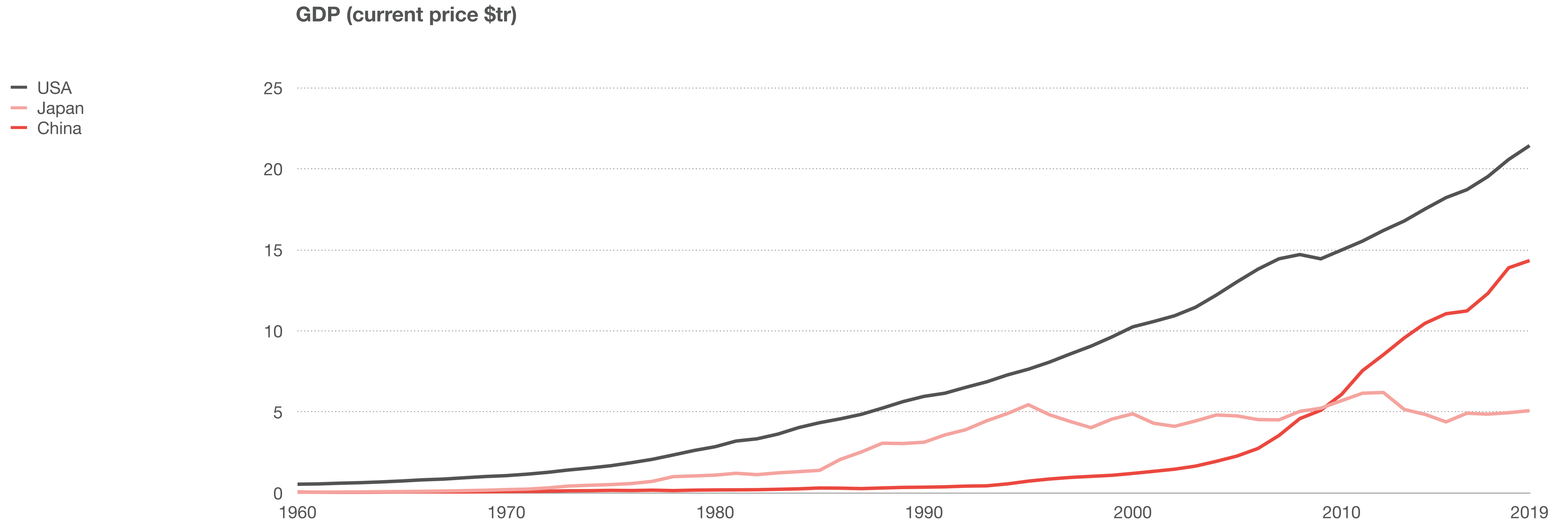
# Geopolitics and superpowers

China is on track to become a bigger industrial economy than the USA (or thinks it is)



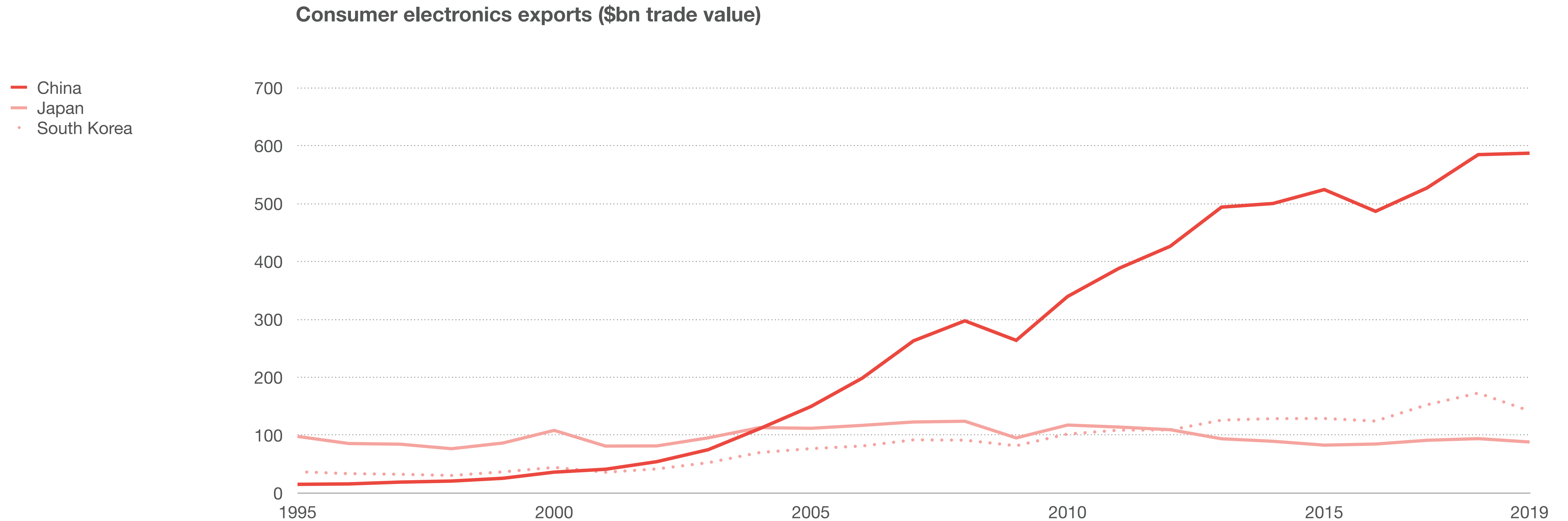
# Americans worried about Japan once...

But in the Great Japan Panic of the 1980s, Japan was a pacifist democracy with only half the USA's population



# Geopolitics and tech

China already the centre of the tech supply chain



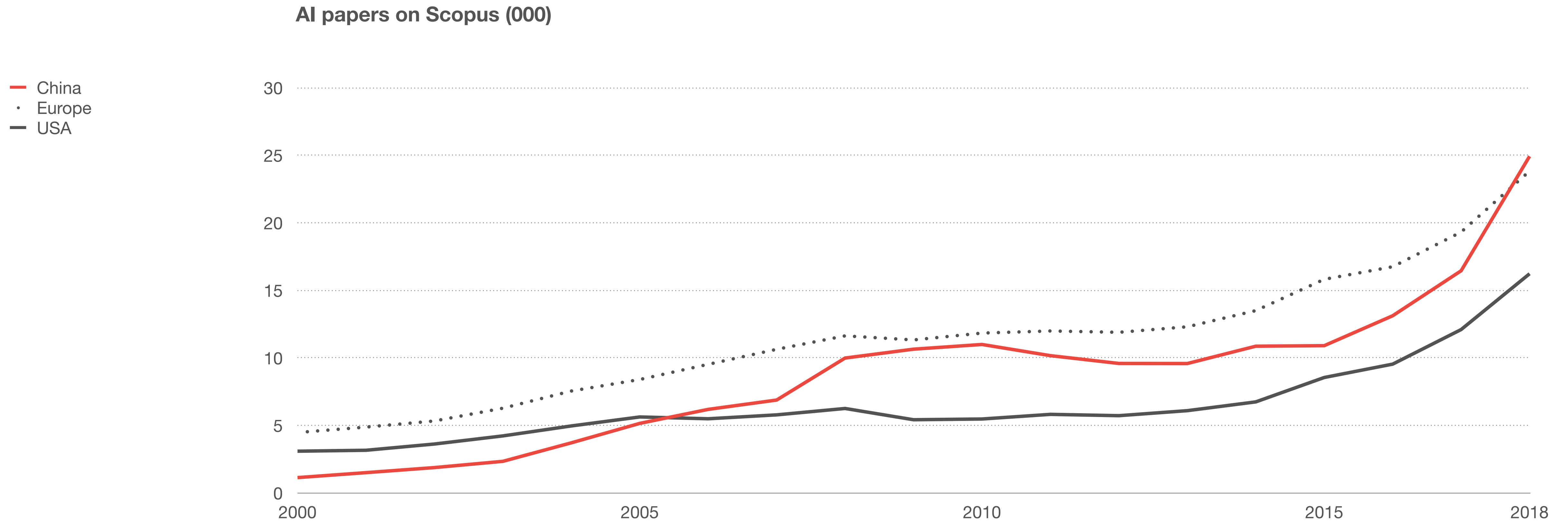
Source: UN Comtrade

Benedict Evans — January 2021

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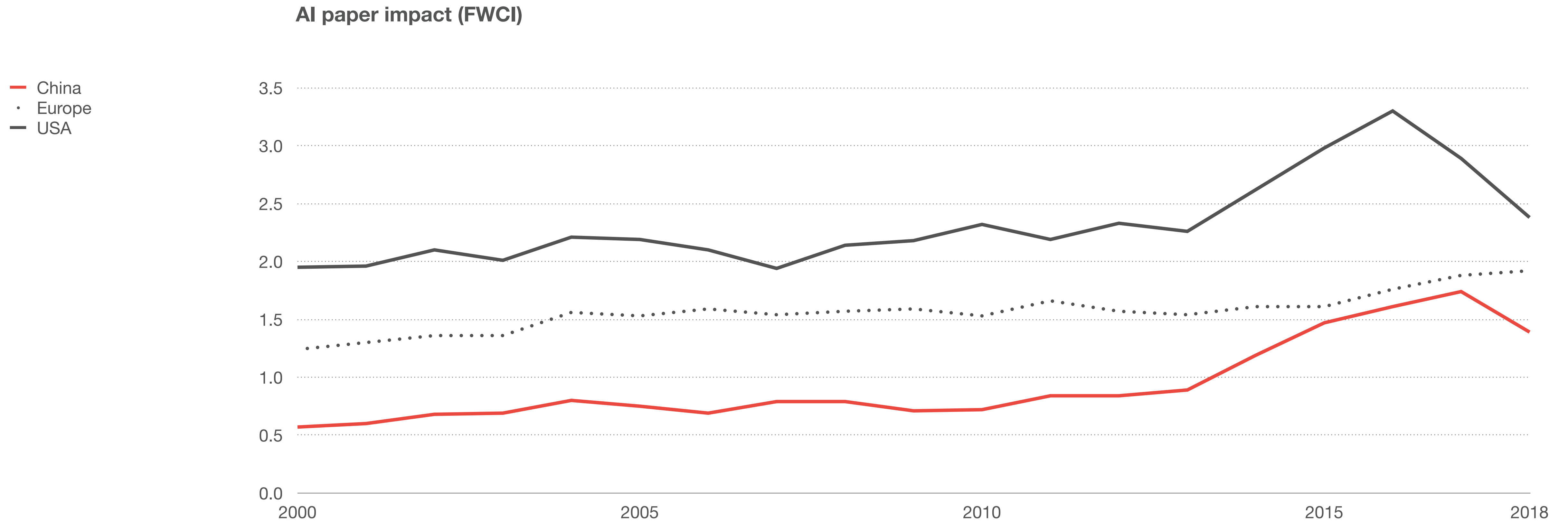
# “China has all the AI!”

China is producing a high volume of research papers...



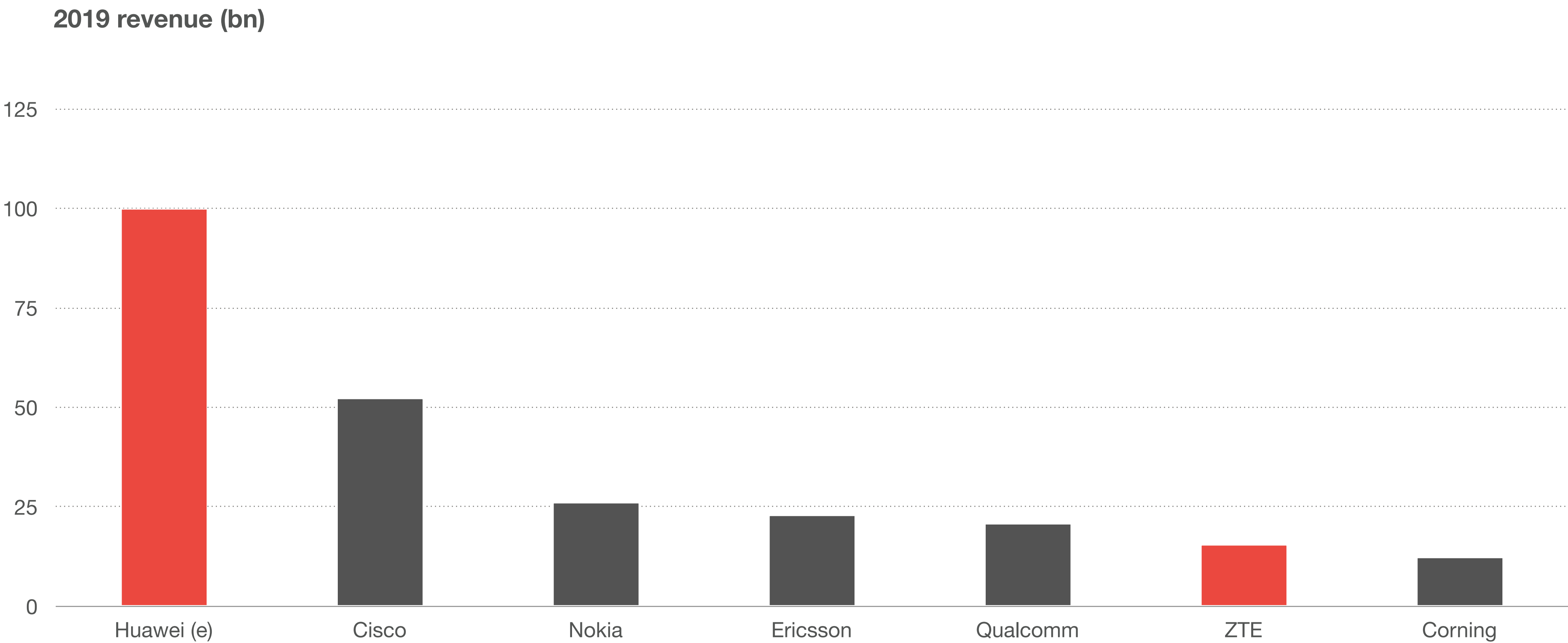
# Where is the research that matters?

However, it's less clear what their real value is



# Huawei and the supply chain question

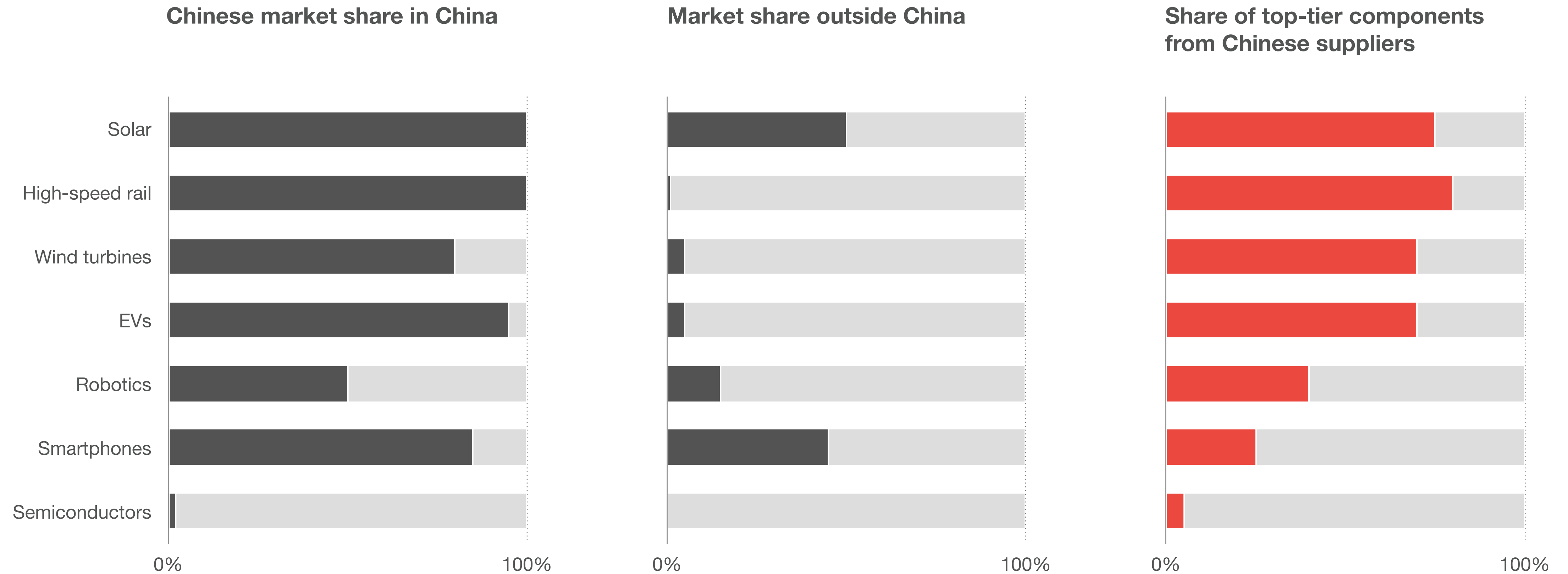
Ignoring ‘5G’ hype - should you depend on the goodwill of today’s Chinese state for any basic infrastructure?



Source: Company data, Morgan Stanley

# But elsewhere, market share or value share?

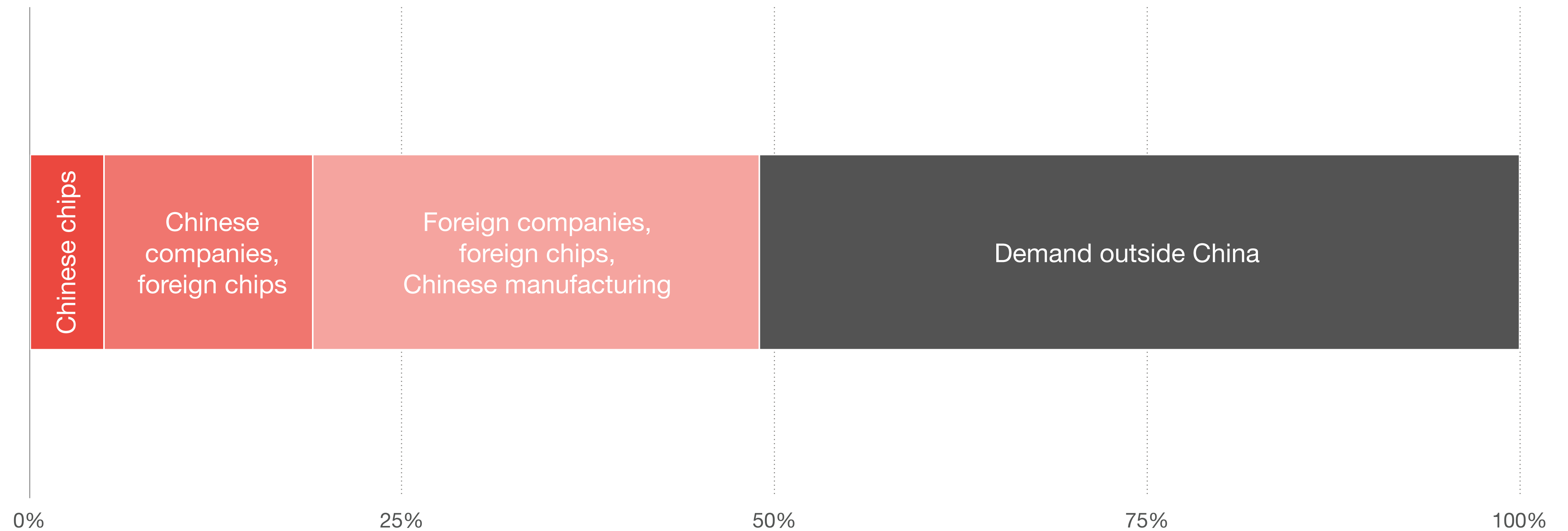
iPhones are made in China, but most of the components come from elsewhere



# Chips with everything

Semiconductors have been a Chinese policy focus for a decade, but with little to show so far

Global semiconductor demand, 2018

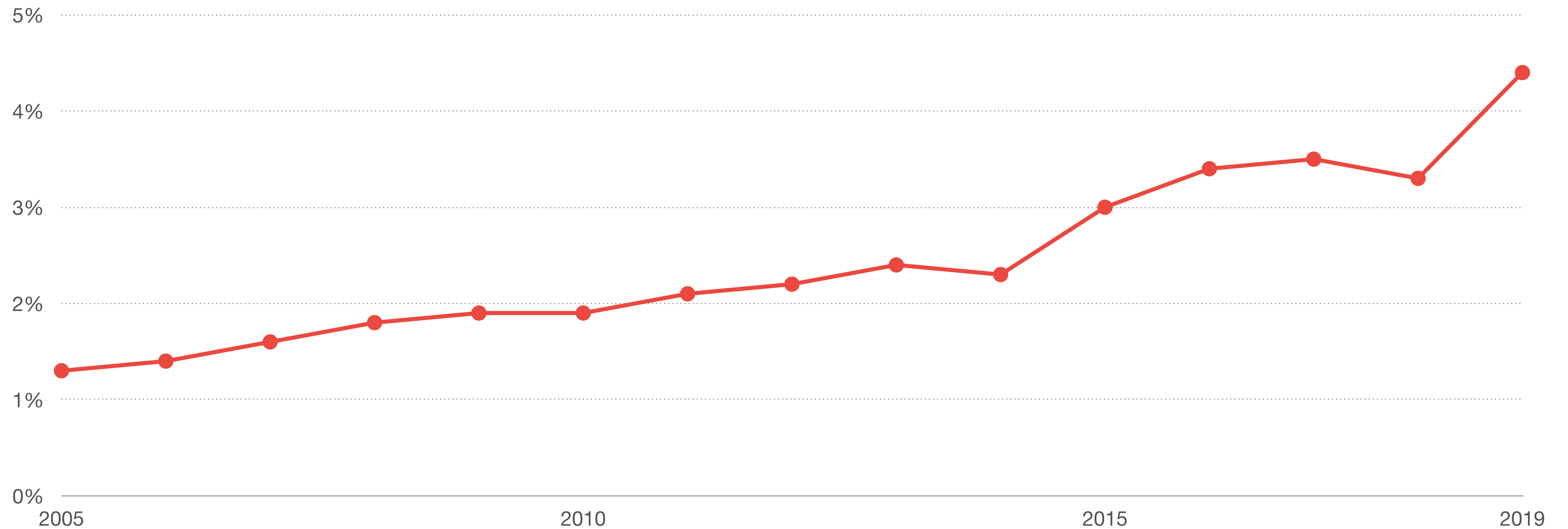




# Tech sovereignty?

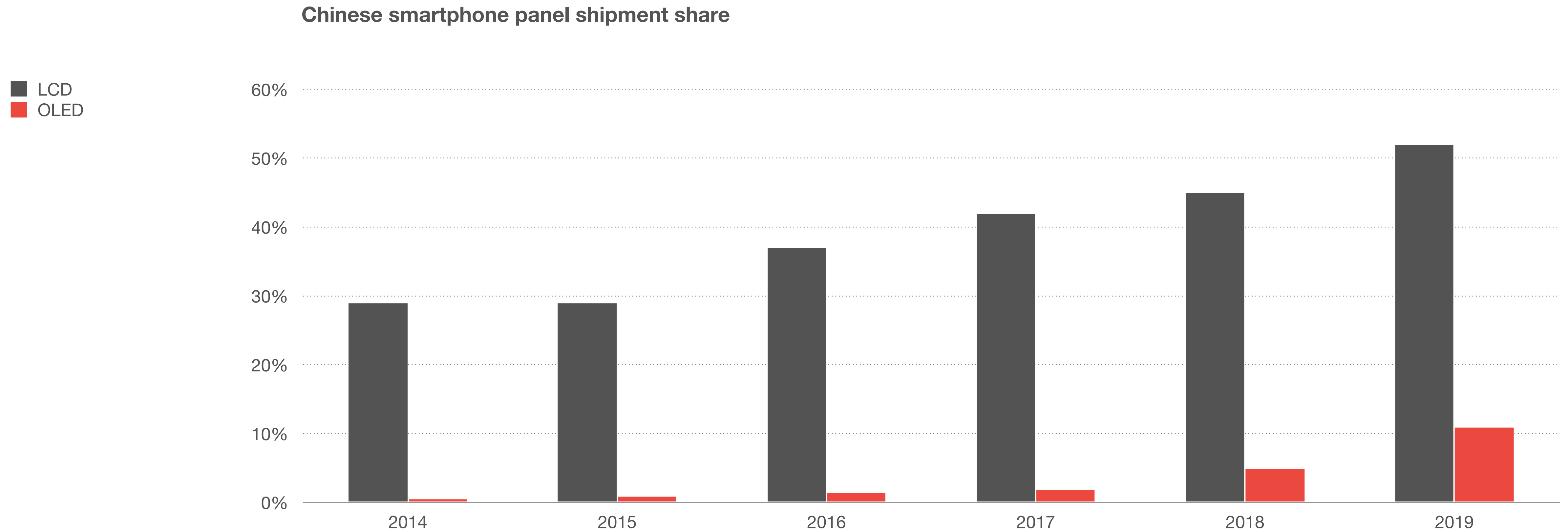
Semiconductors have been a Chinese policy focus for a decade, but with slow progress

China semi market share



# Moving up the value chain?

Takes time and money, but rarely impossible

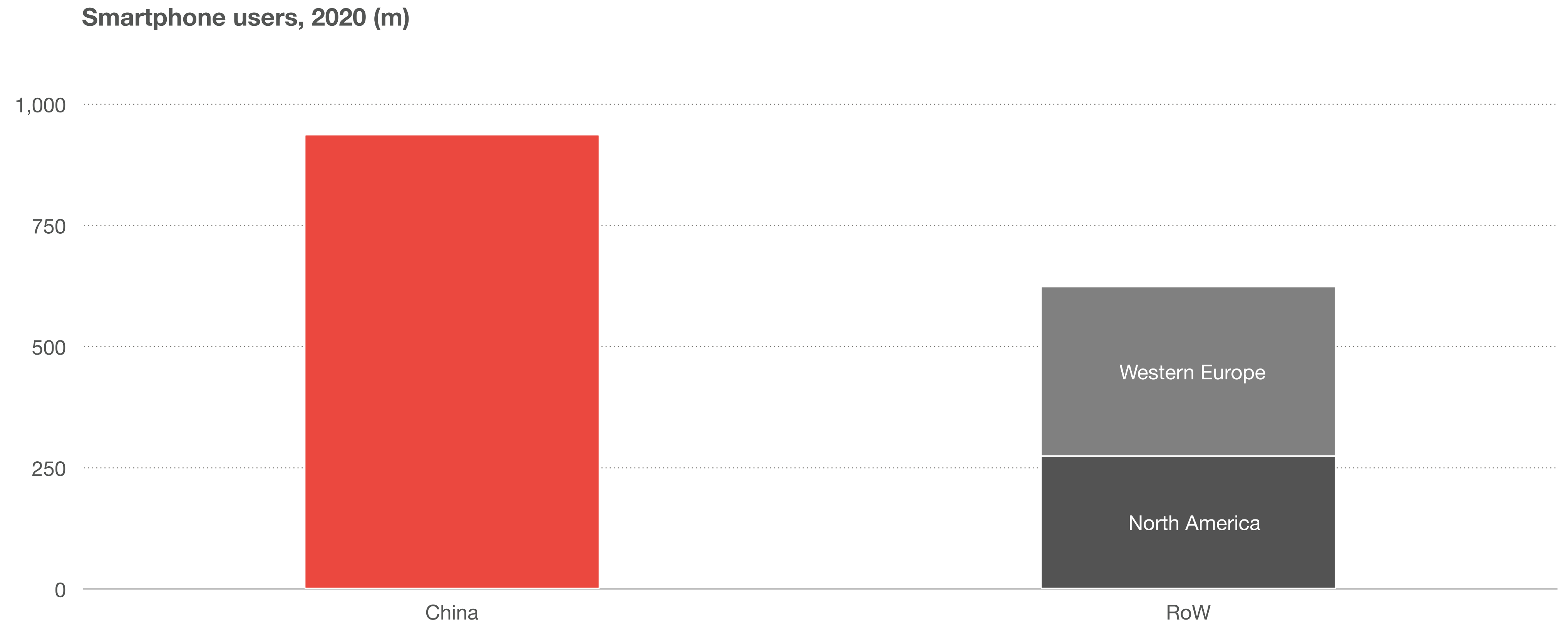


“Who was that transistor salesman?”

Charles de Gaulle, President of France, after  
meeting Hayato Ikeda, Prime Minister of  
Japan, 1962

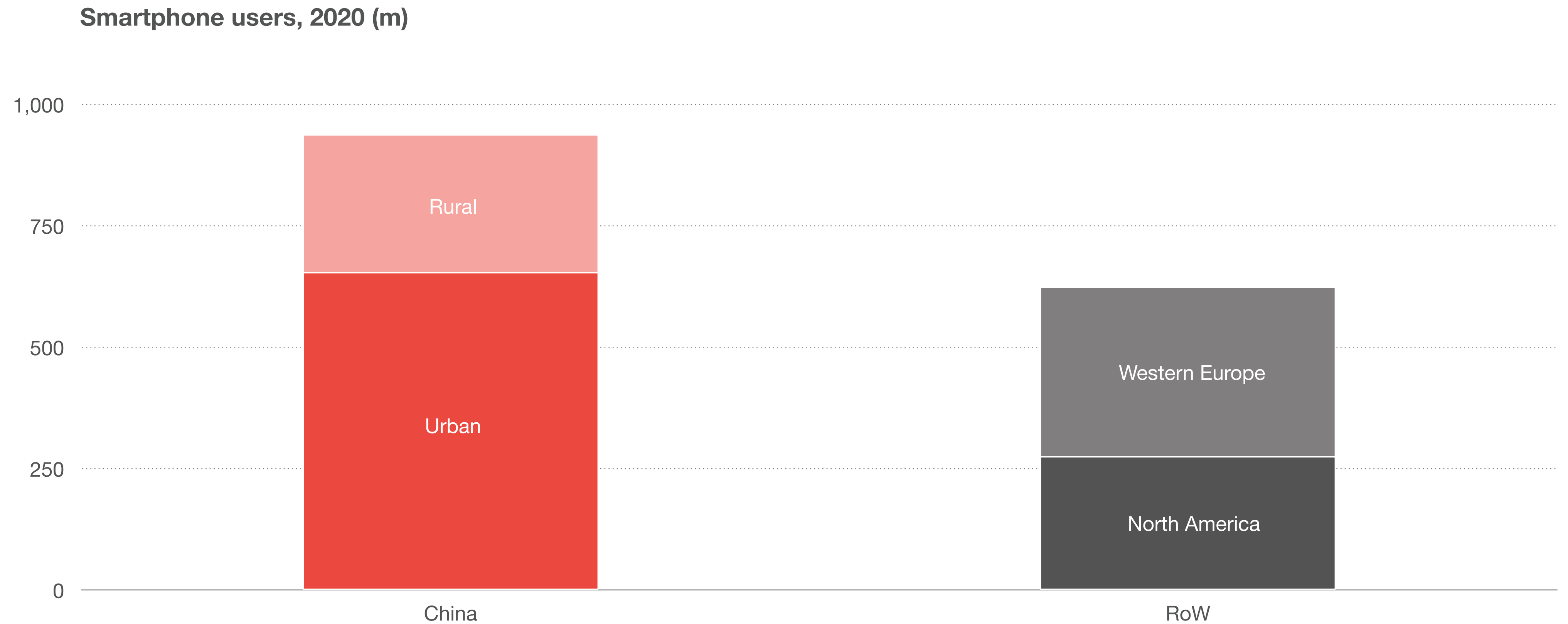
# Meanwhile - a market with 1bn users

The end of the 'American' internet



# Meanwhile - a market with 1bn users

(Which 'China' are we talking about?)



# Very different market structure

Far more overlap, far more copying, different bases of competition



US model:  
Vertical  
category  
winners

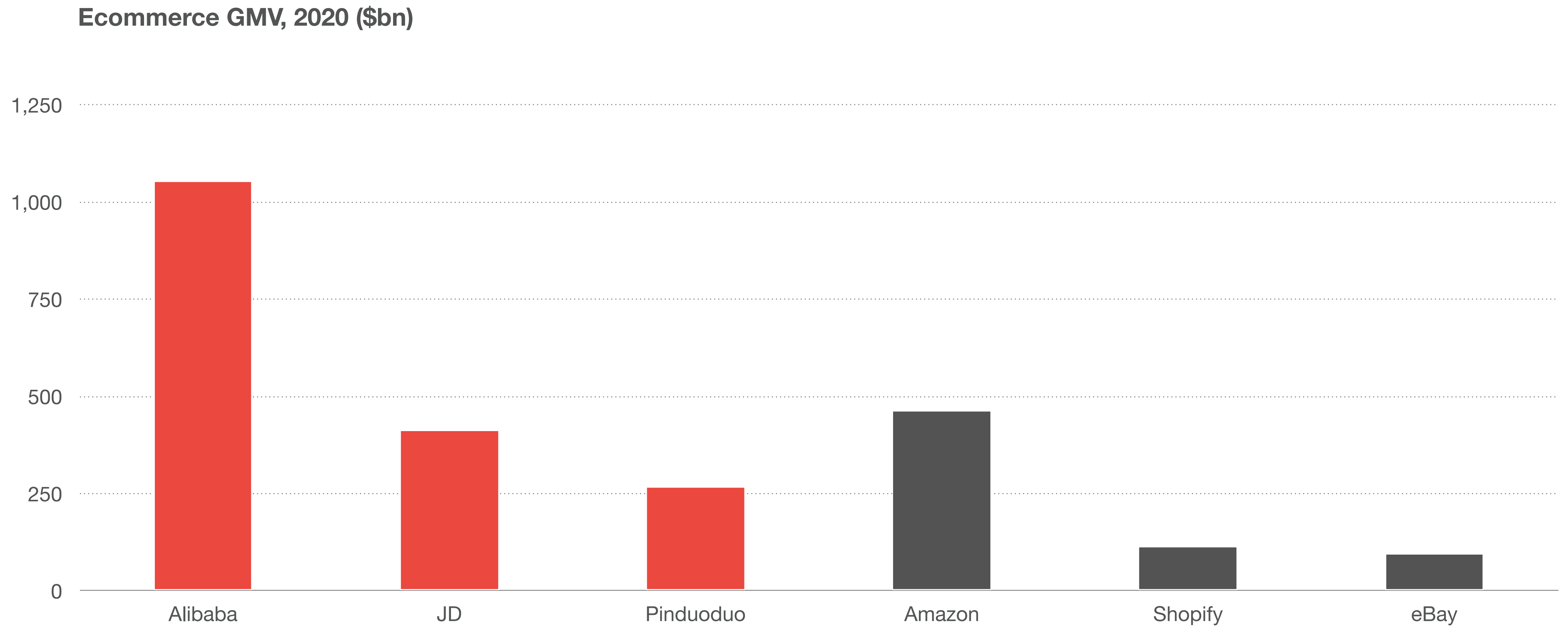
China model:  
Conglomerates  
compete on  
everything

Leapfrog  
20th century  
infrastructure

Ferocious  
competition,  
copying and  
creation

# Big market = (very) big companies

A law of large numbers

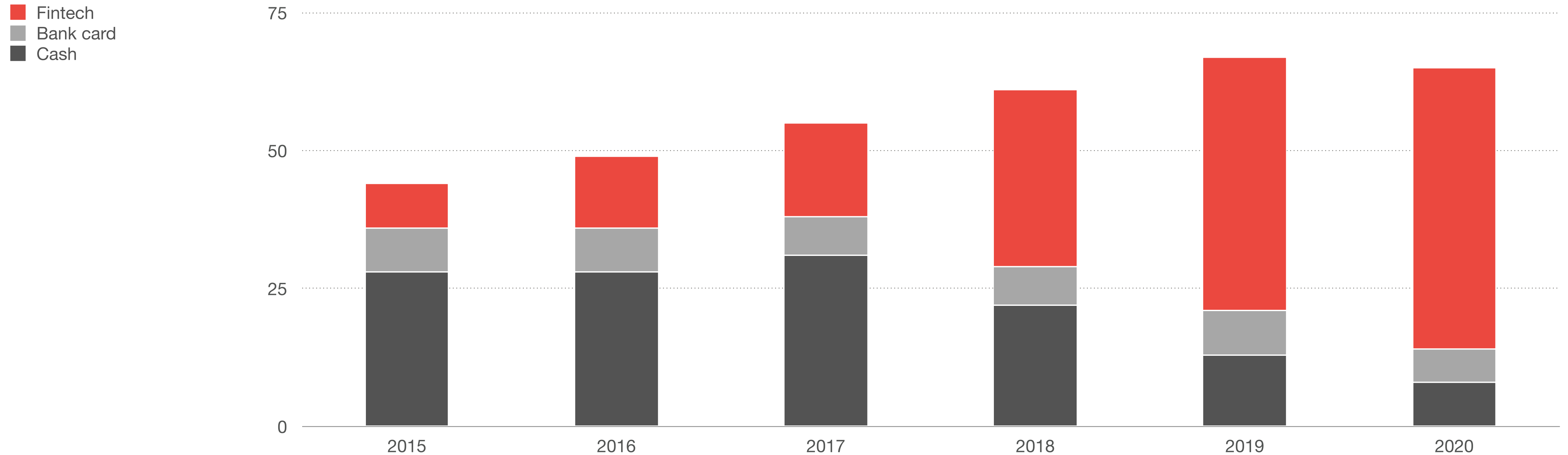


Source: Companies, Goldman Sachs

# Leapfrogging 20th century infrastructure

Ecommerce, payments, entertainment, financial services, credit scoring...

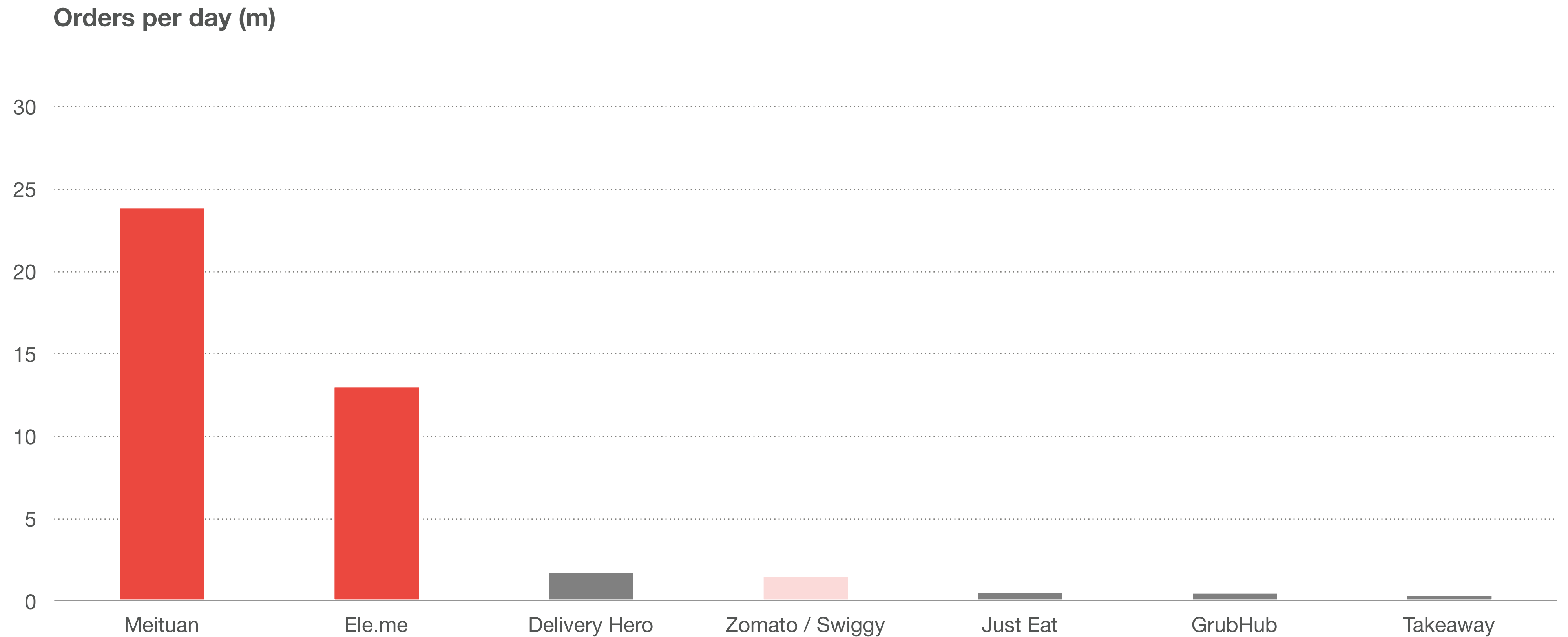
Chinese consumption payments (RMB tr)





# Remember restaurant delivery?

410m Chinese people used restaurant delivery in 2020



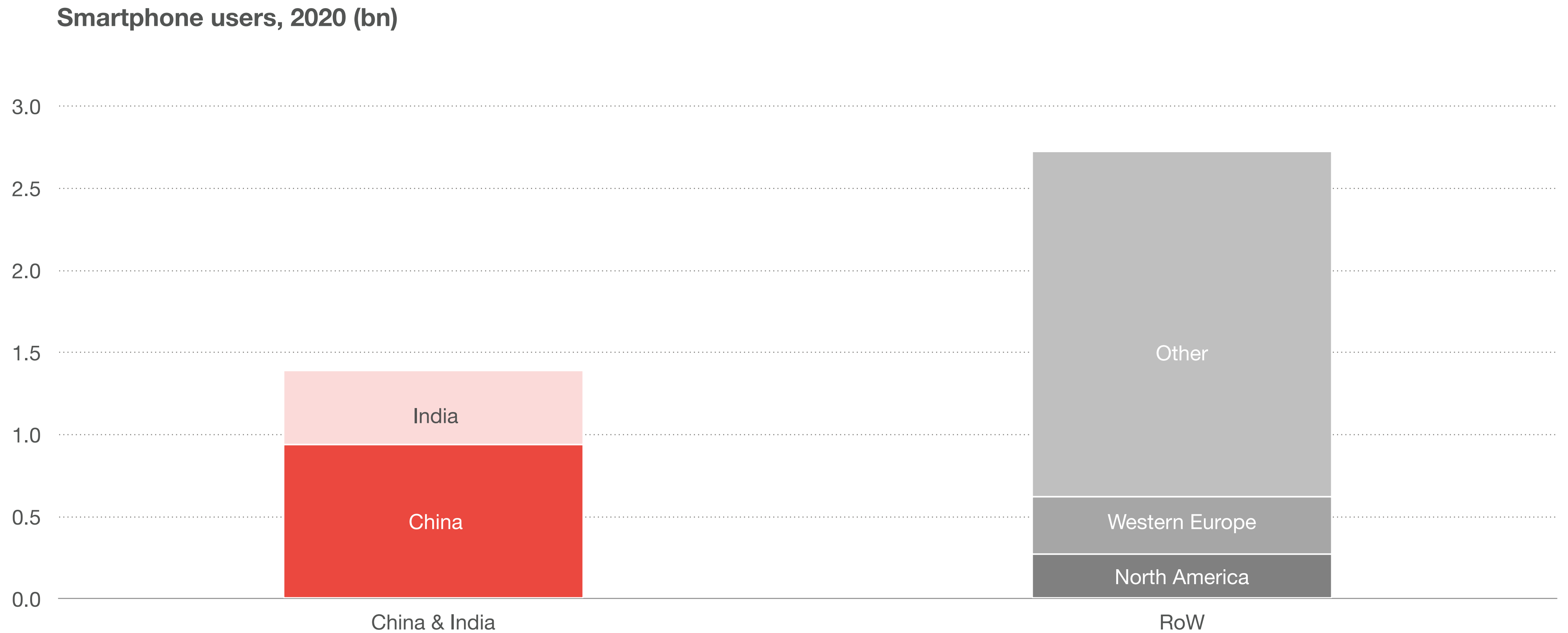
# Yes, but why do we *care*?

Conquest, copying, learning? Chinese companies (mostly) don't go global, so far, but ideas do



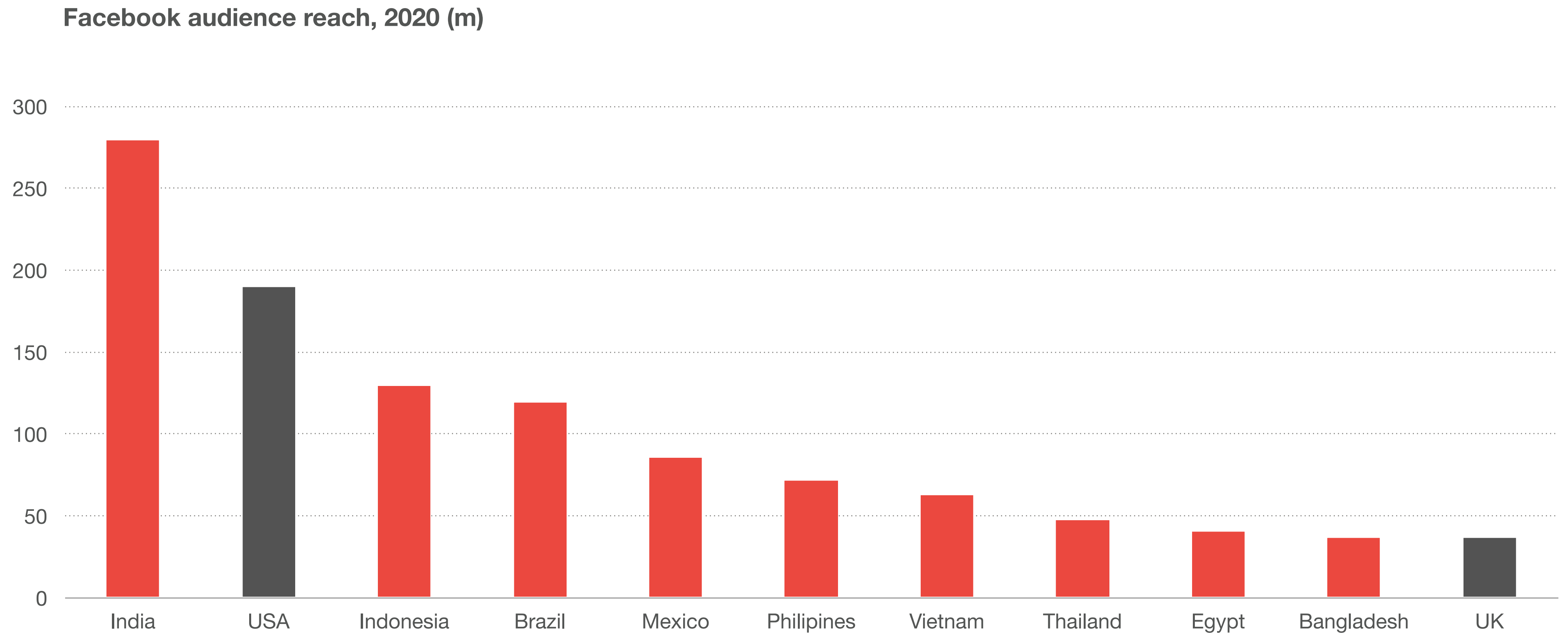
# Where do ideas come from? Where are companies built?

With 4bn+ people connected, where do new ideas come from?



# 90% of Facebook's daily users are outside the USA

India, not the USA, is Facebook's biggest market by users

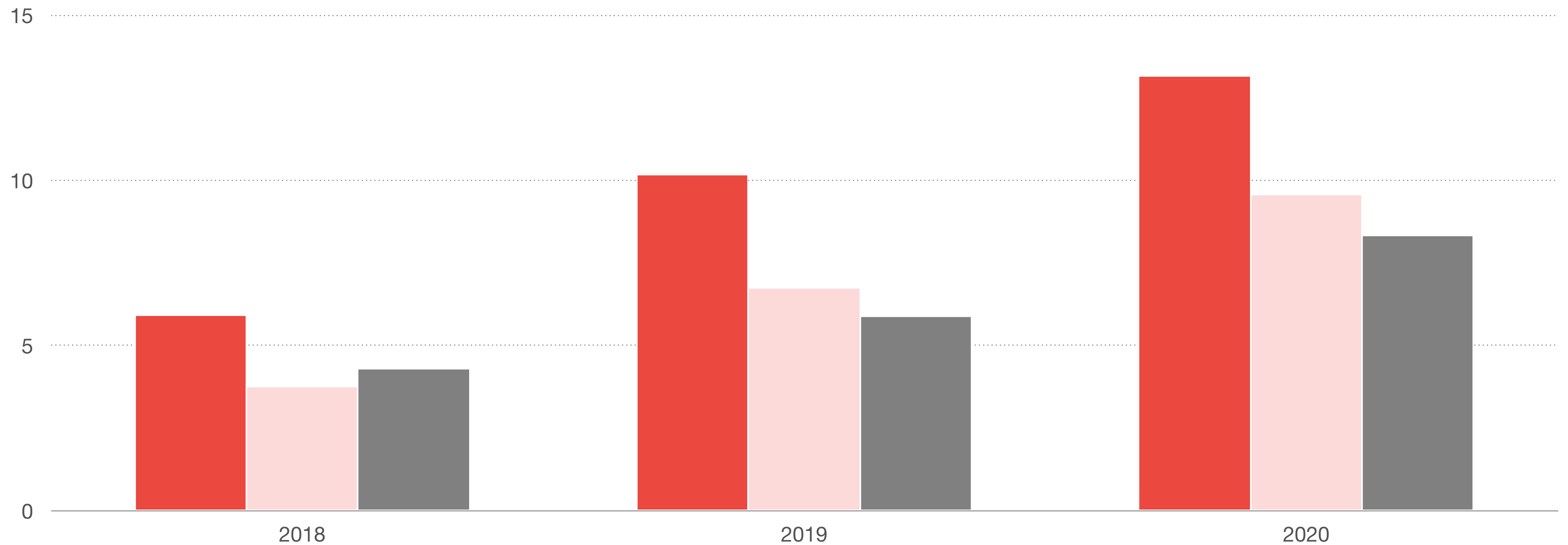


# The end of the American internet

China and India each have more mobile data traffic than the USA and Europe combined

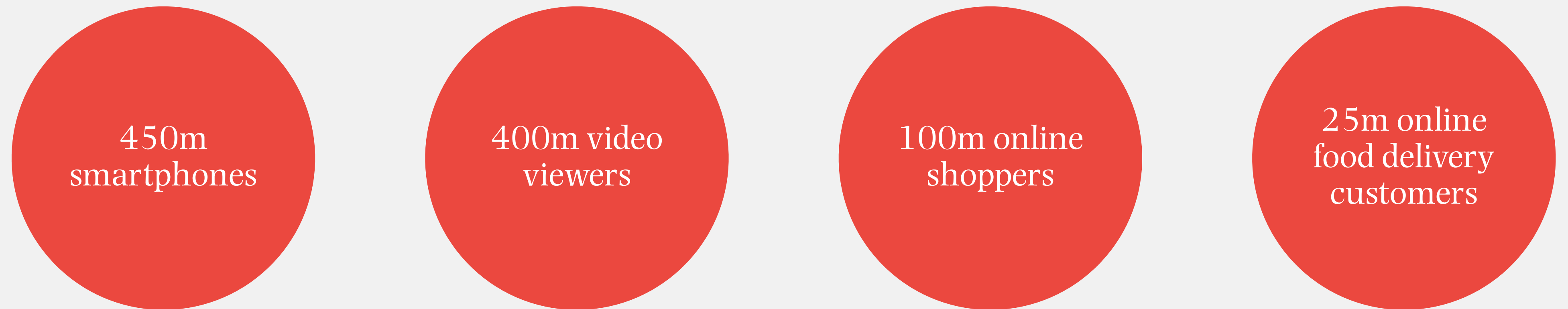
Mobile data consumption (EB/month)

China  
India  
N American & W Europe



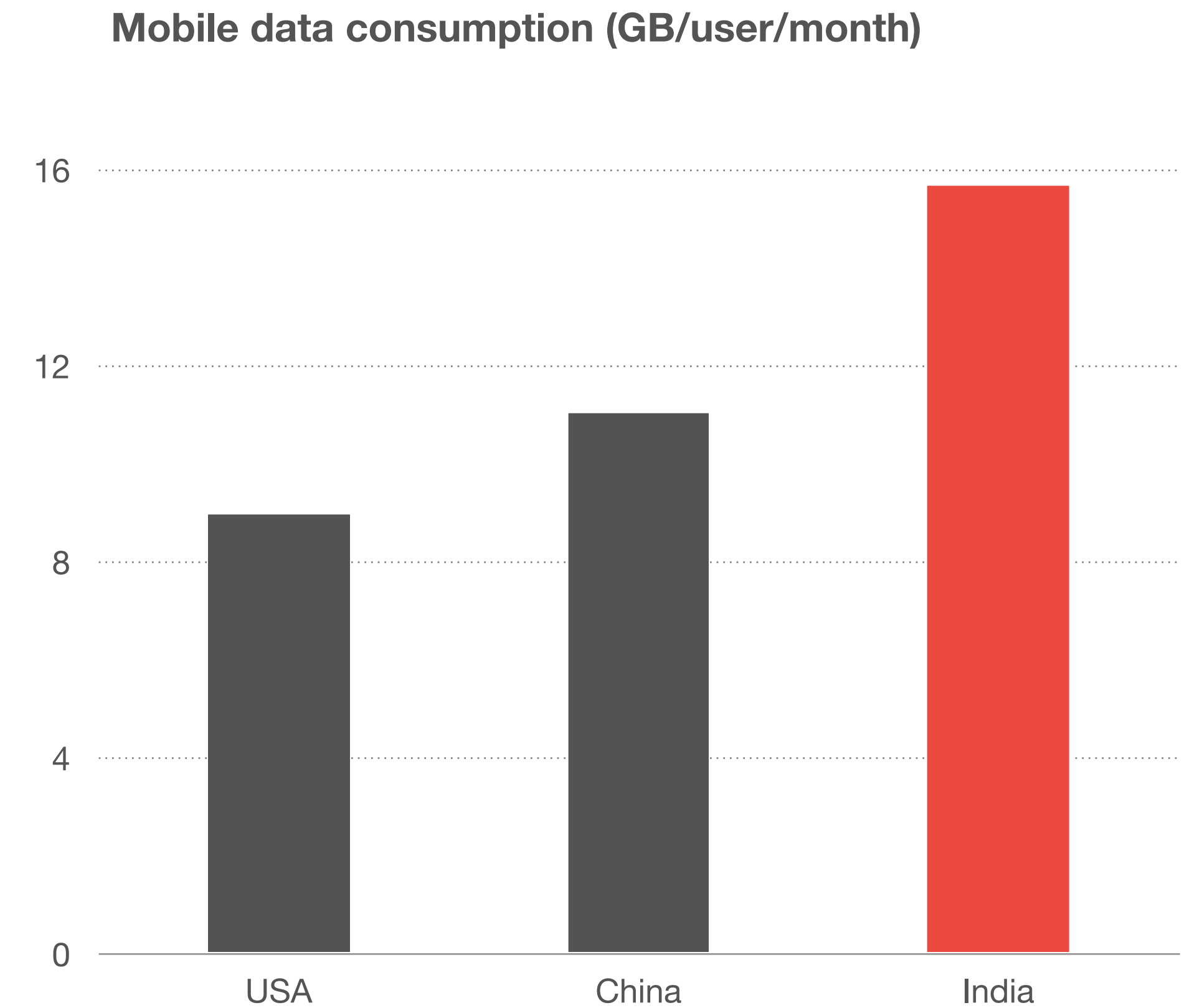
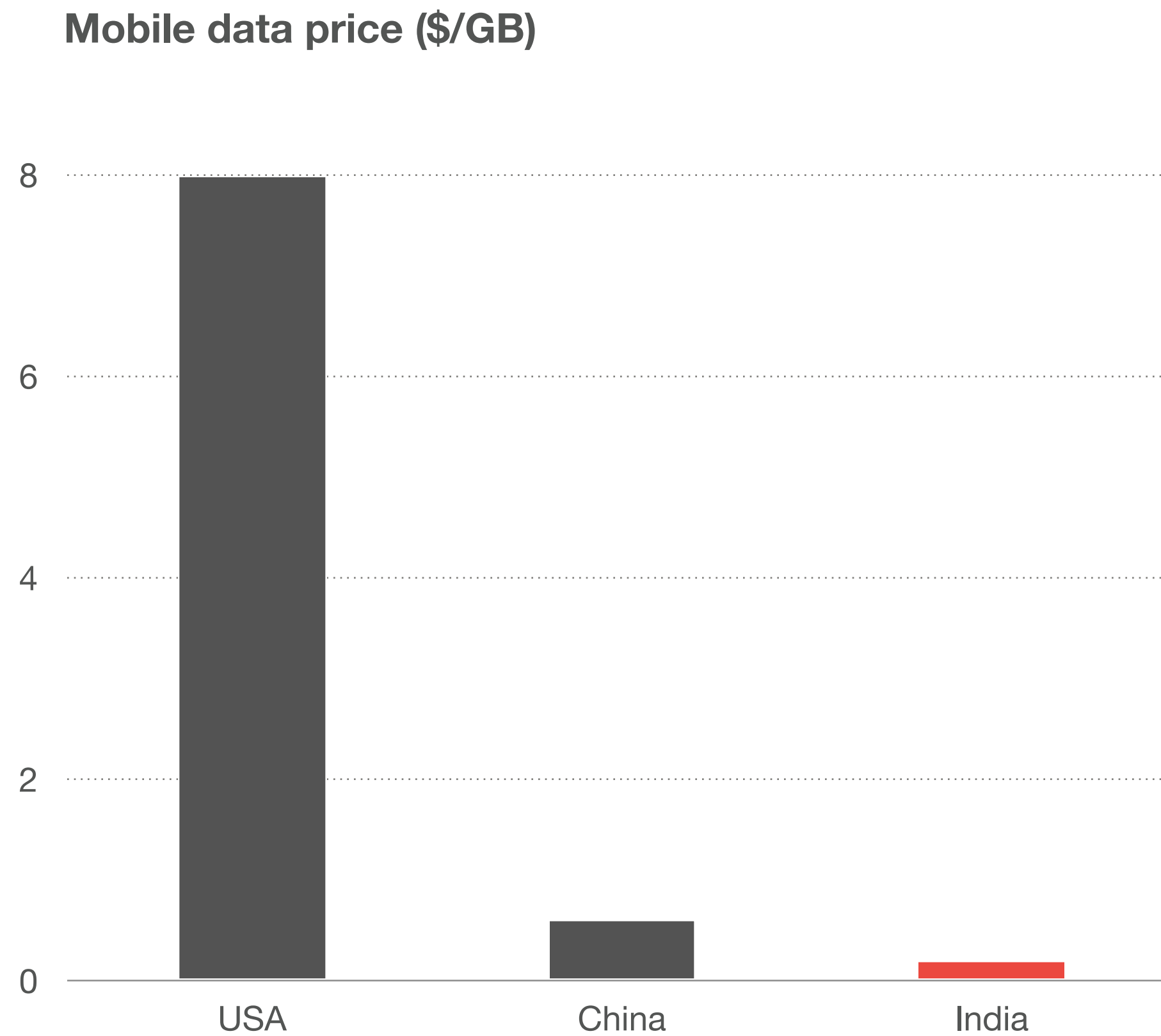
# The India take-off

The state of internet adoption in 2020



# India: cheapest data and highest use on earth

The Jio effect

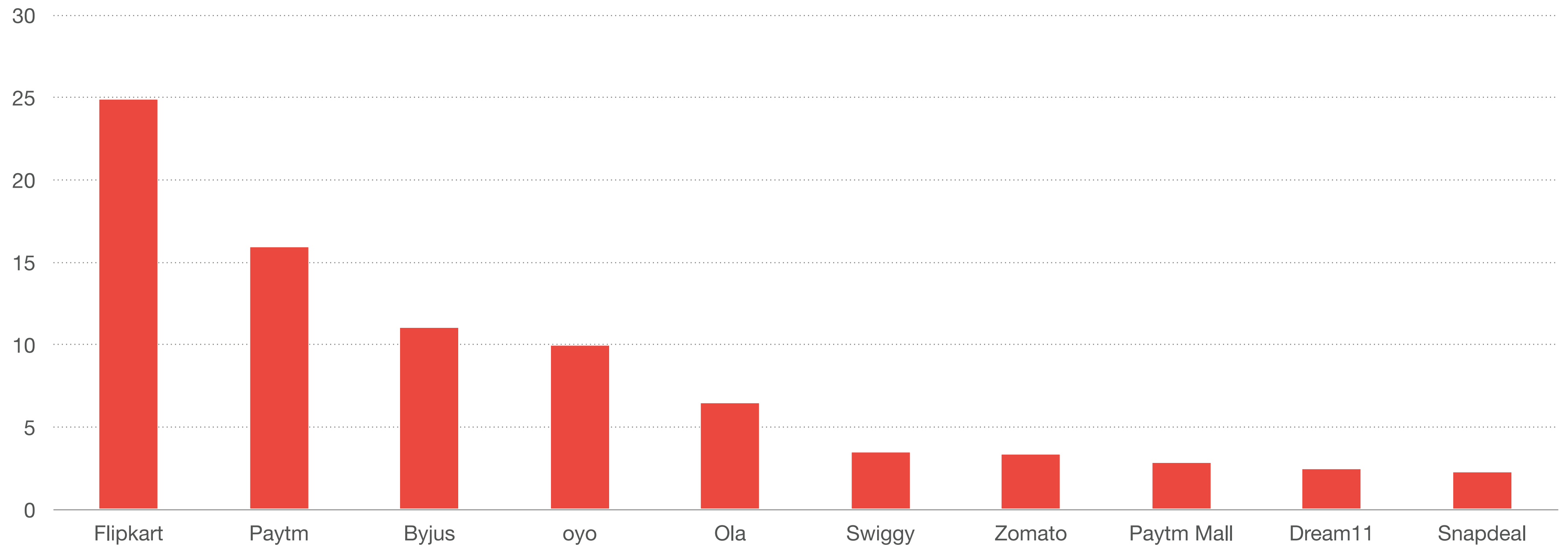


Source: Nokia, Ericsson

# A wave of unicorns

India has a word for entrepreneur

Top 10 Indian startups by value (\$bn)



Source: Bloomberg, press reports



# And then there's Indonesia

More markets, more people, more creation

4th largest  
internet  
population on  
earth

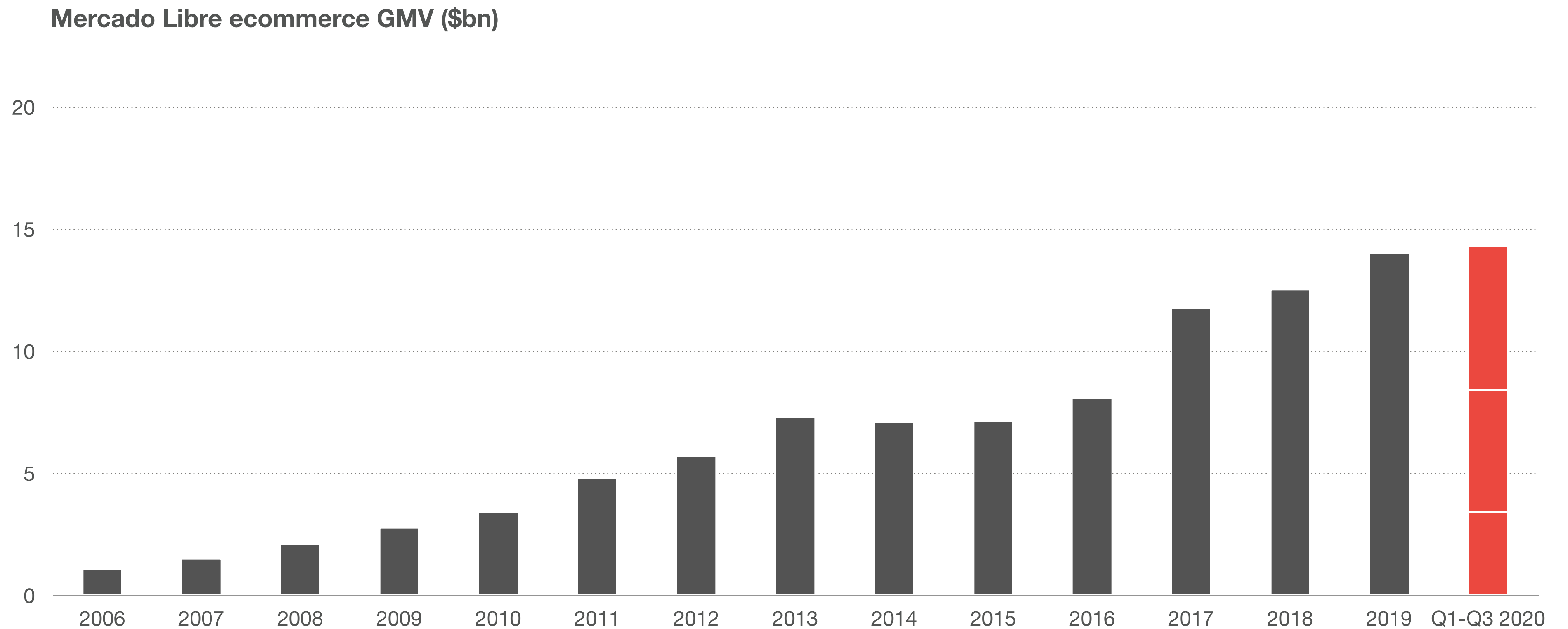
200m+  
smartphone  
users

4 hours+ a  
day in apps

50% ride  
share  
penetration?

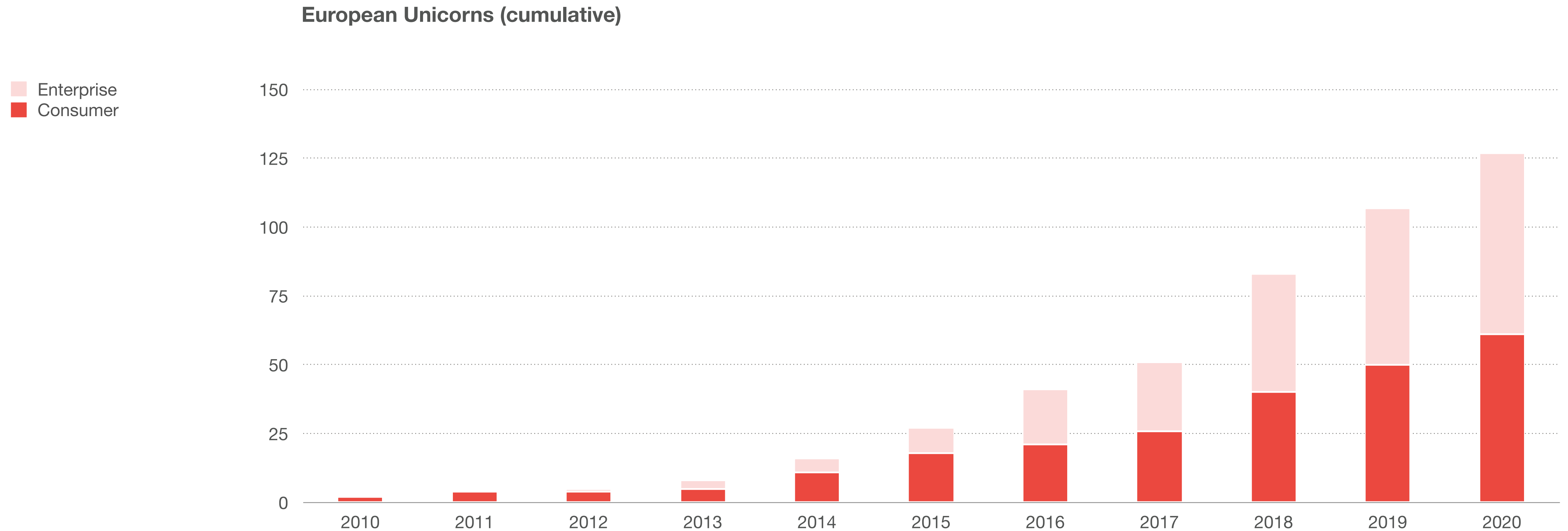
# And Latam...

650m people, 90%+ smartphone penetration, 5% ecommerce penetration...



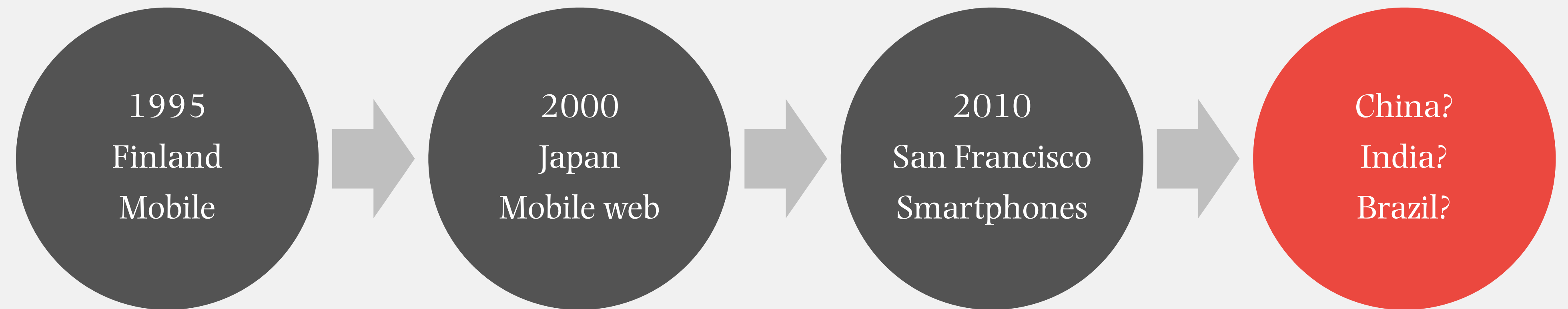
# Even... Europe?!

Over 120 new \$1bn+ tech companies have emerged in Europe in the last decade, today worth \$600bn+



# Where do you go to see the future?

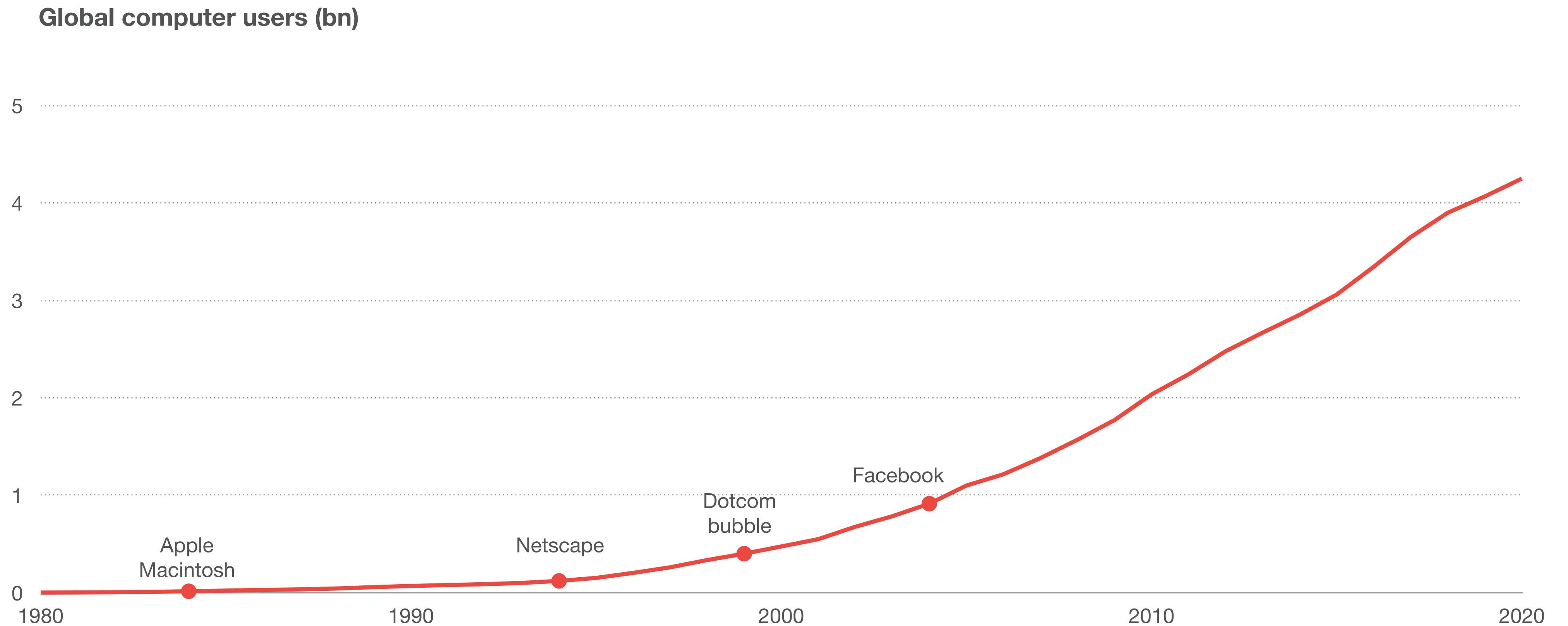
‘The future is here, but it’s unevenly distributed’



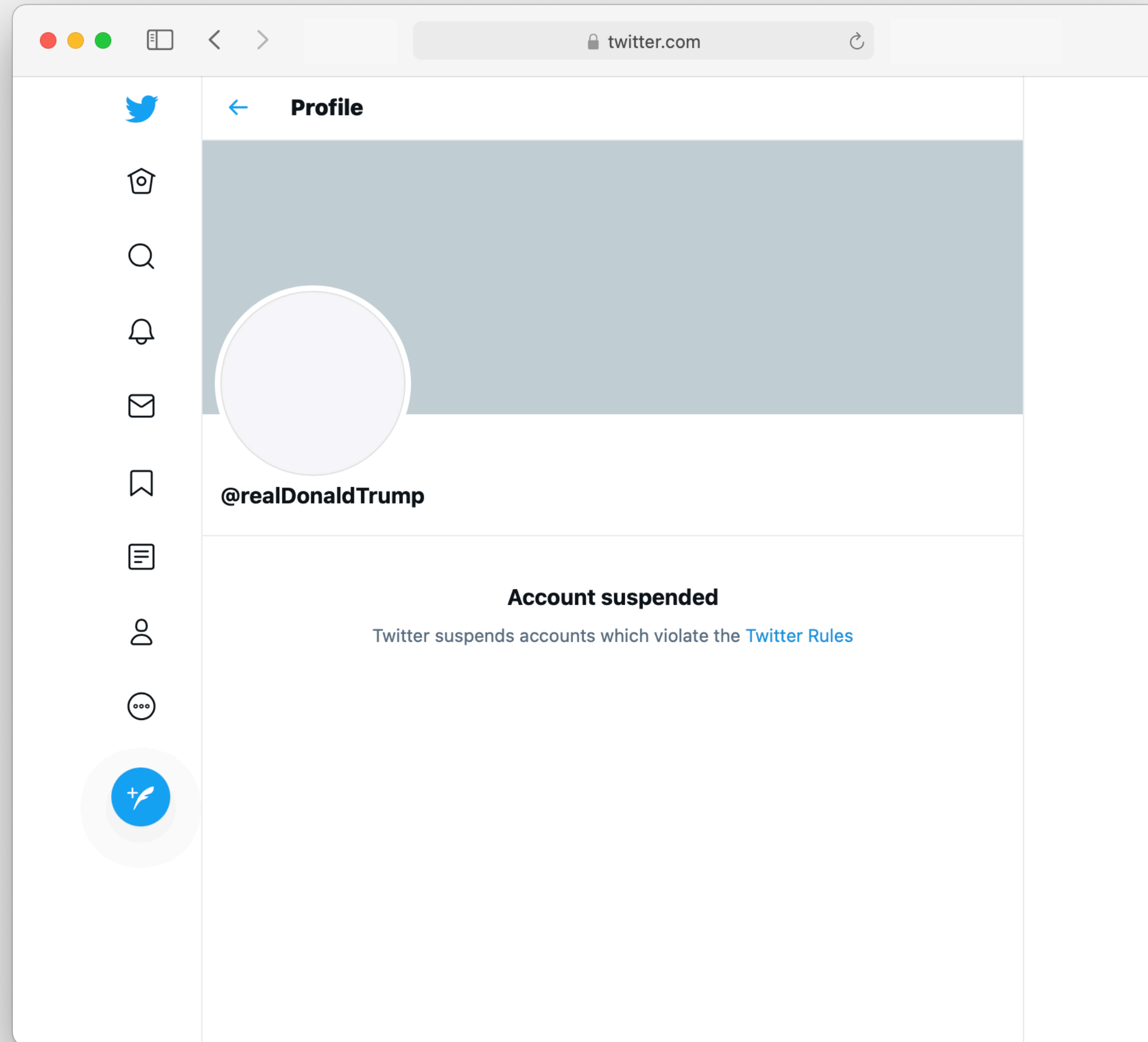
# Tech becomes a regulated industry

# Tech was very small until very recently

Tech was exciting and interesting, but wasn't part of most people's daily lives



# Welcome to 2021



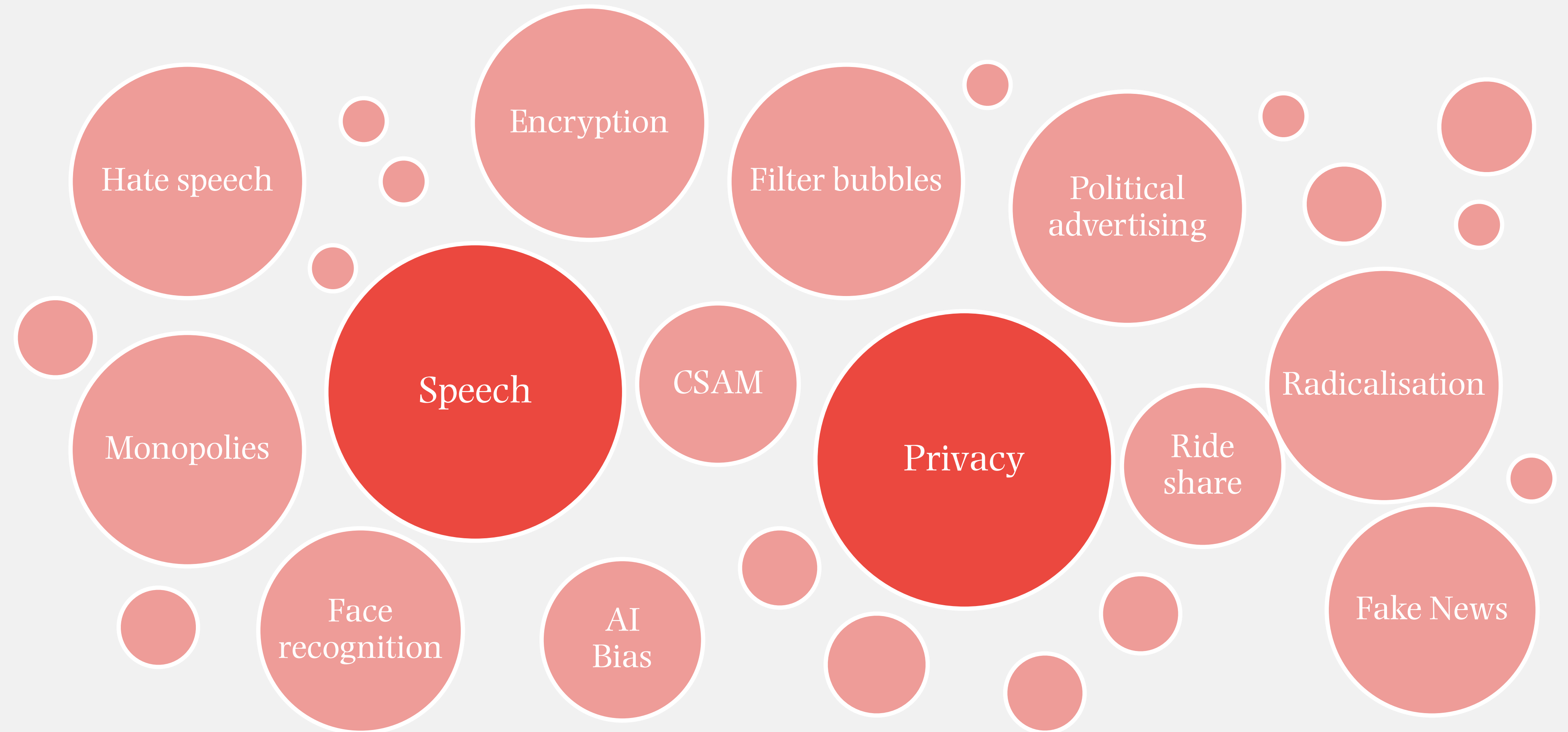
Software ate the world, so all the world's  
problems get expressed in software

And channeled, amplified and reshaped



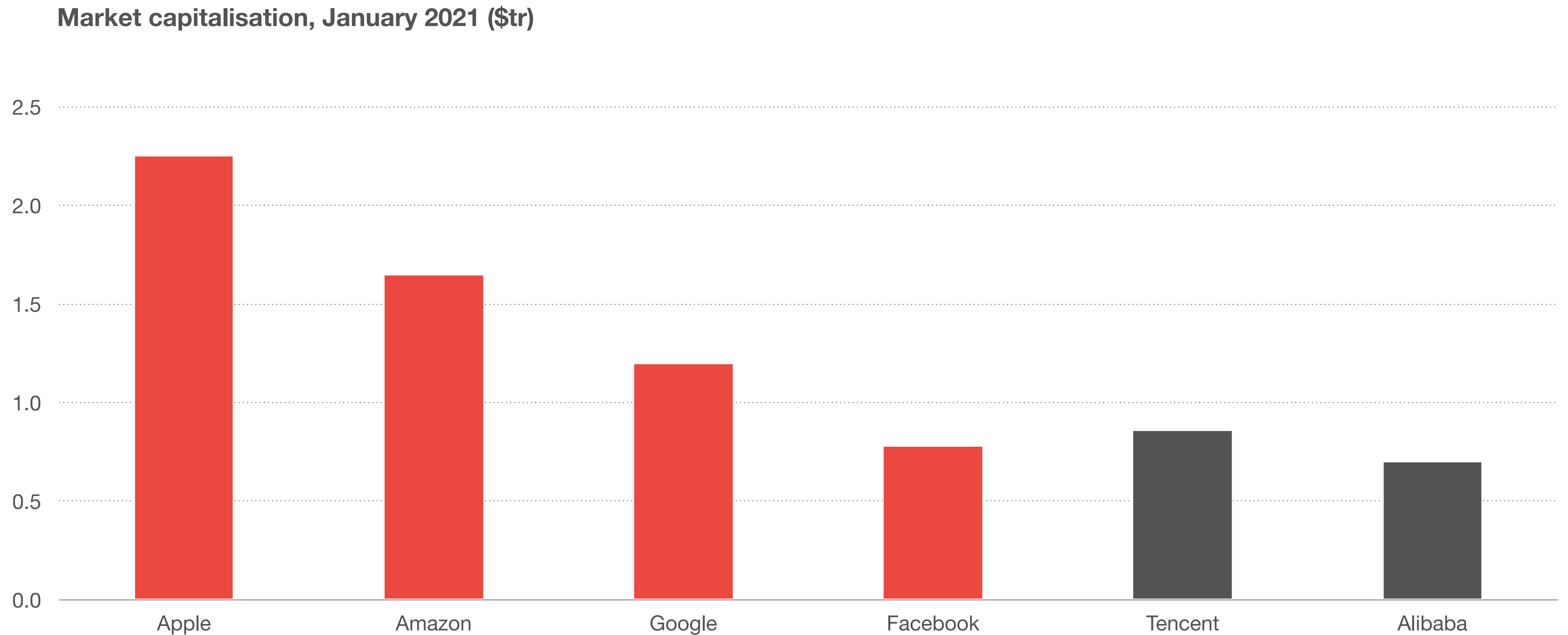
# All sorts of problems

Every month there's something else to worry about



# And some giant companies

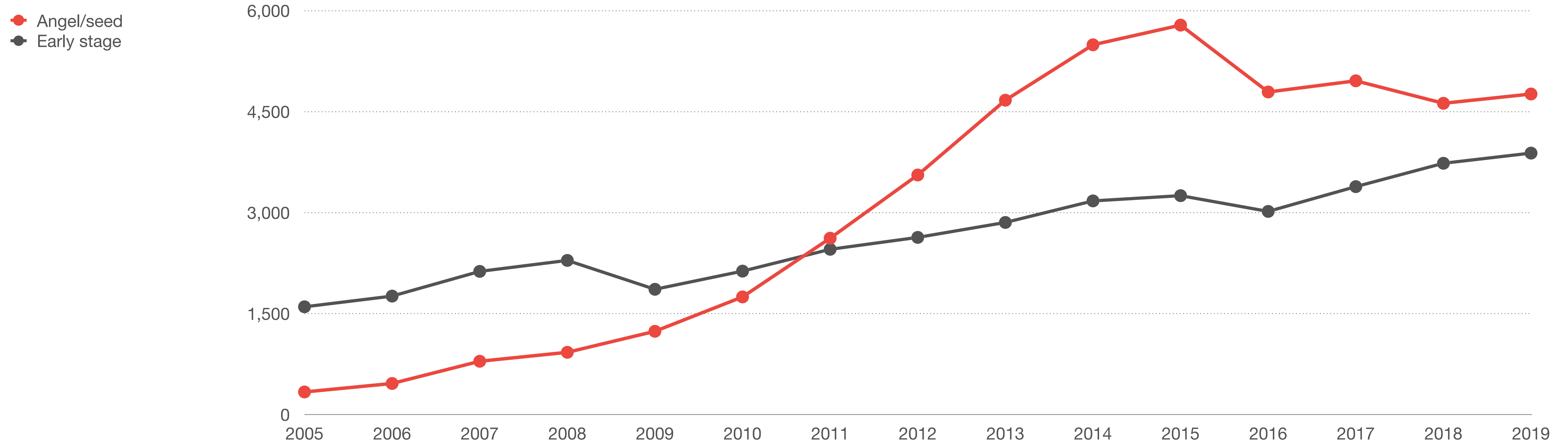
In global, winner-takes-most markets with 4-5bn potential customers, winning creates a big company



# (No, this has not killed startup creation)

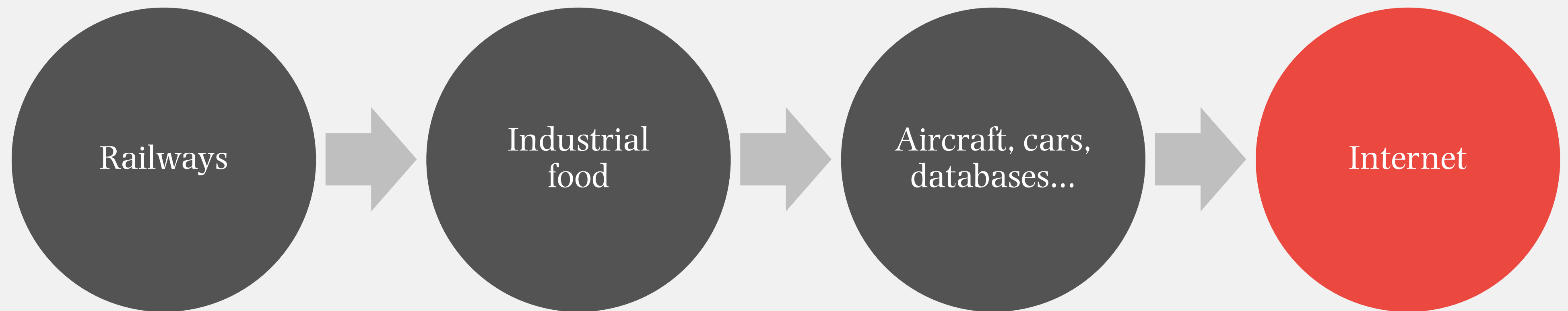
Tech startup creation is up 3-4x in a decade, powered by a much larger market and the growth of enabling platforms

## US early-stage venture investments



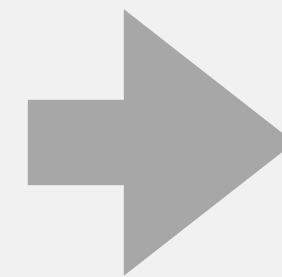
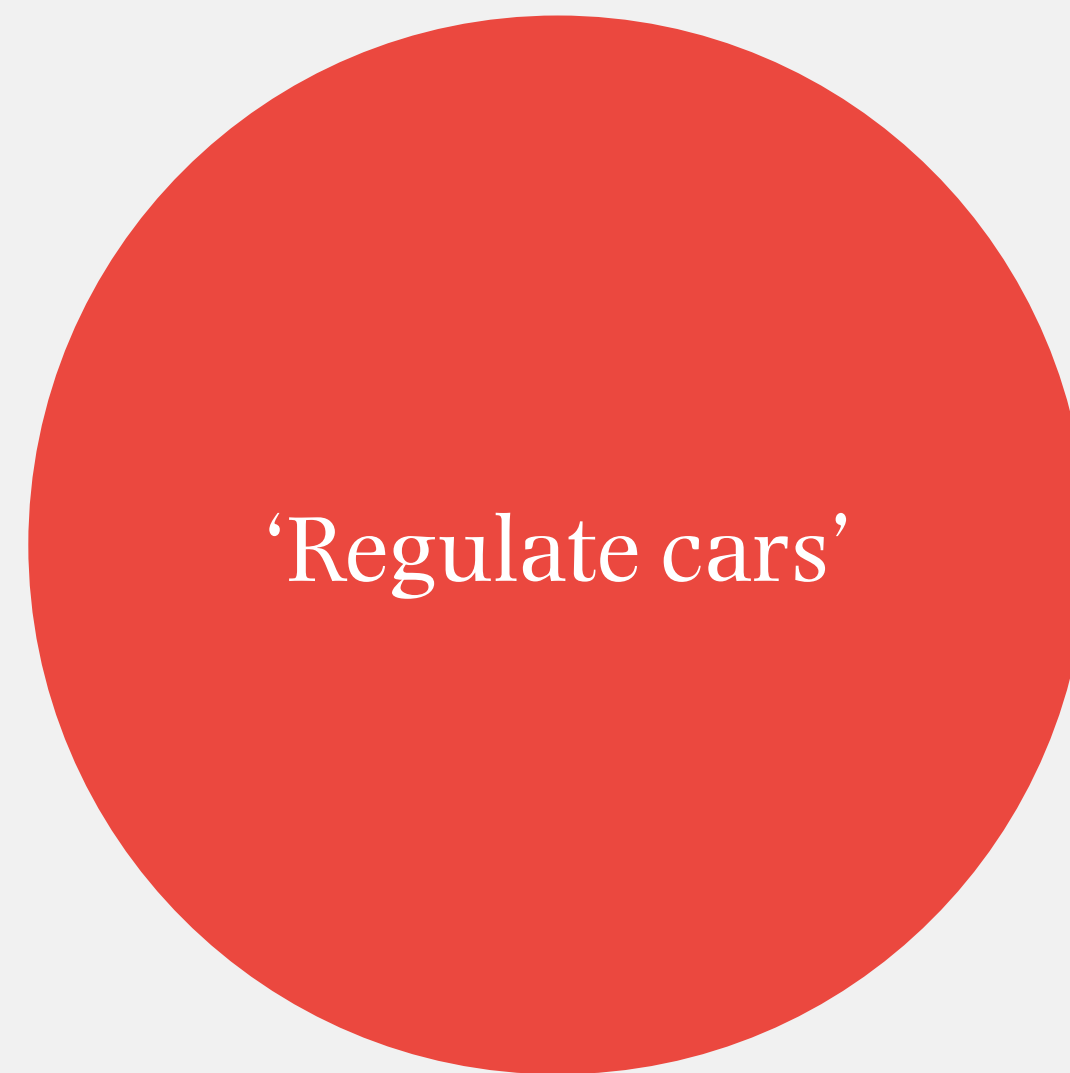
# Every wave of tech changes the world, and gets regulated

Every important industry causes and expresses problems, and gets industry-specific regulation



# But we don't actually regulate 'cars'

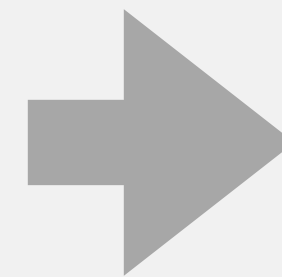
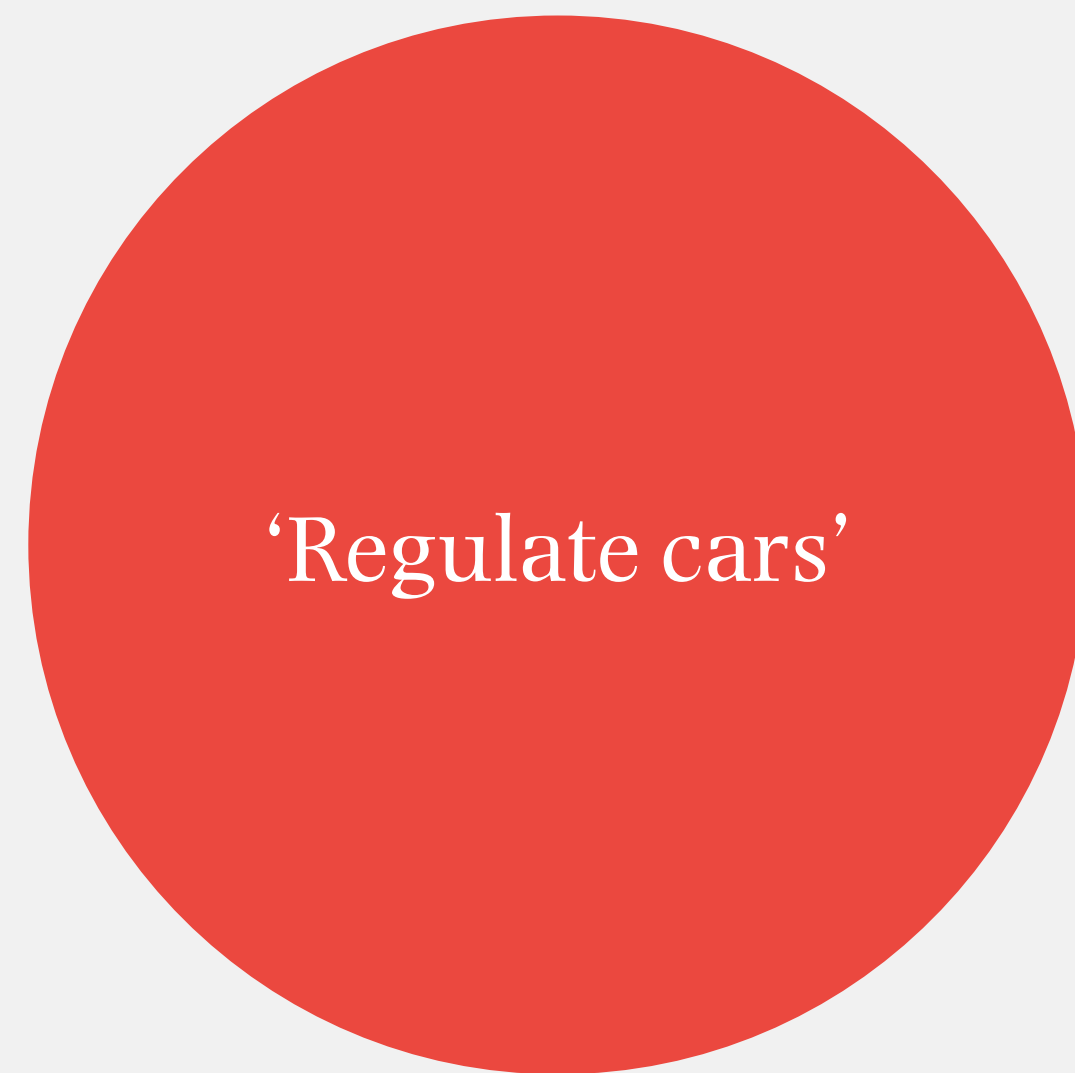
Lots of different regulation for different issues and companies



Safety	Emissions	Supplier & dealer contracts
Drink driving	Speed limits	Parking & congestion
Urban planning	Public transit	And so much more...

# Break up big auto!

Not everything is an antitrust problem - or an engineering problem



Safety	Emissions	Supplier & dealer contracts
Drink driving	Speed limits	Parking & congestion
Urban planning	Public transit	And so much more...



# This was not an antitrust problem

Car companies could reduce emissions, but they couldn't build cycle lanes





# Pattern recognition

What happens when you regulate natural monopolies, or just sue them? It's complicated

## Mobile operators

Regulating MTRs & roaming cut earnings by ~25%

Regulate adtech?  
Store commissions?

## Broadband

LLU gave up to half the market to new entrants

Wholesale access to Google search data?

## Microsoft

“Lawsuits failed, but slowed it down”  
(Much disputed)

How many lawsuits?



# Yes, but what actually *changes*?

If you don't own stock in Google or Spotify, the big change will be the shift to a regulated world



Google / FB ad  
business gets  
hammered

Competitive  
search?

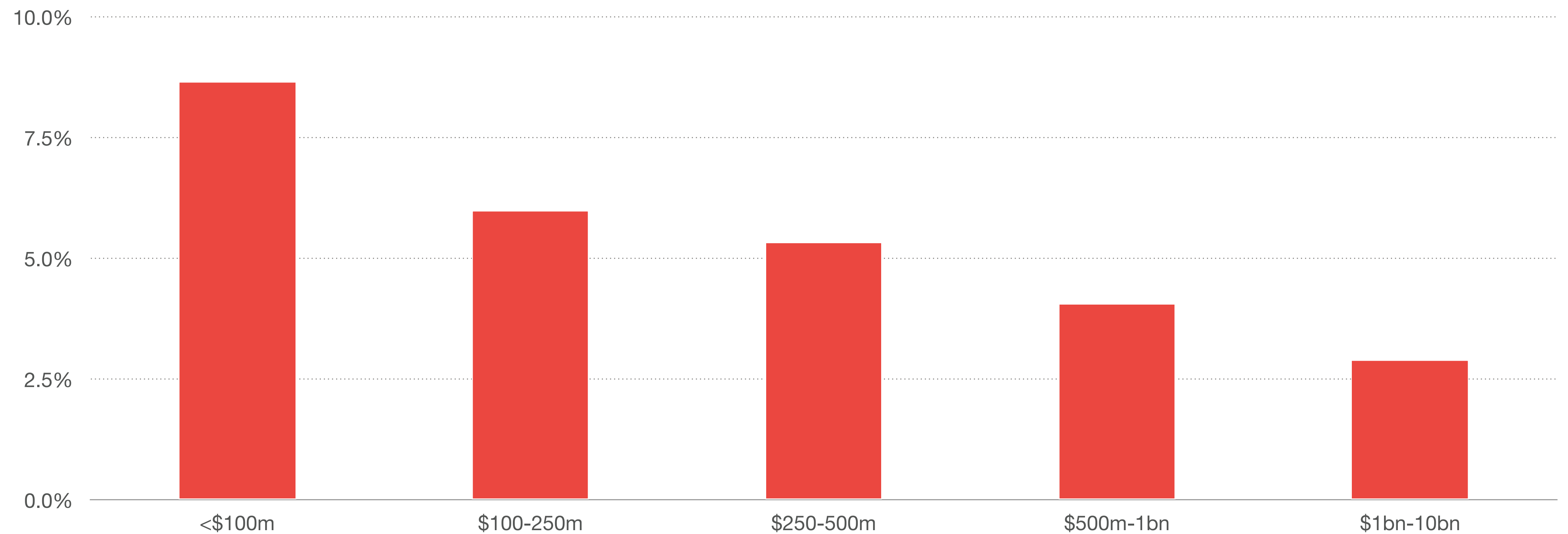
*Ex ante* rules

Regulation,  
cost and  
compliance

# The only certainty: regulation as a regressive tax

Regulation tends to be good for incumbents

Mean compliance costs at US financial institutions by size



Source: Dahl, Meyer and Neely 2016

# Conclusion:

## The next 50 years



# The first 707... Where did it all go wrong?

Design, technology and speeds unchanged since 1958

And the experience...

The death of innovation?



No other Jet to Europe offers you the extra comfort of Pan Am's exclusive first-class lounge.

## Halfway to Europe between cocktails and coffee

Don't plan to catch up on your reading. There's too much to take in—too much to talk about on your first Jet Clipper\* flight.

While the stewardess removes the last cordial glass from your dinner table, she reminds you to set your watch five hours ahead and tells you that

there's barely enough time to finish a chapter before you see the lights of London.

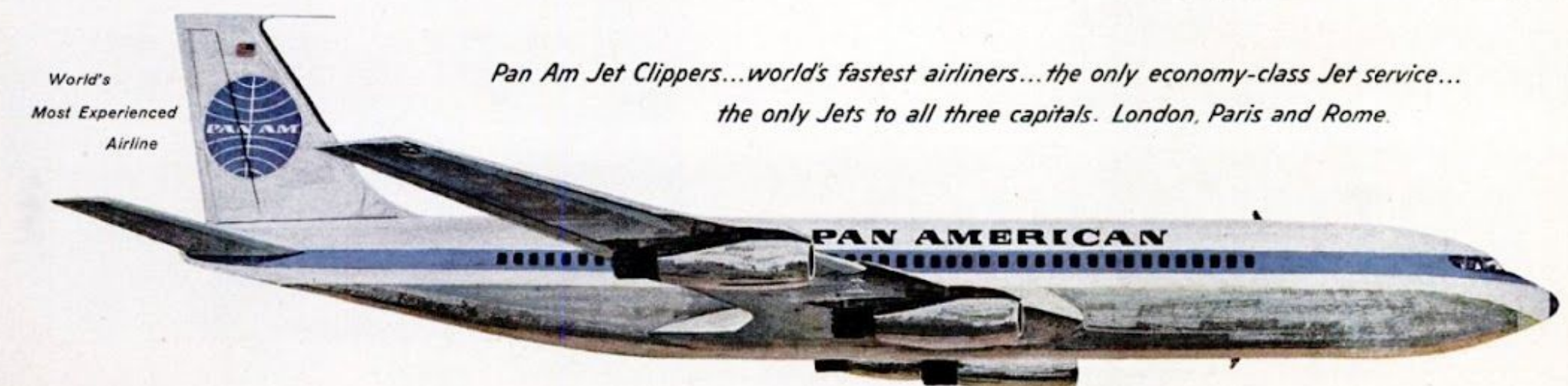
Pan Am Jets are fastest to London, the only Jets to Paris and Rome. And this summer, Pan Am is increasing its schedules to include as many as four Jet flights a day to Europe—with deluxe

*President Special* service available on every one. You can also fly economy-class Clipper Thrift service, if you wish, with fares starting as low as \$453<sup>60†</sup> round trip.

For reservations, call your Travel Agent or any of Pan Am's 61 offices in the U. S. and Canada.

\*Trade-Mark, Reg. U. S. Pat. Off.

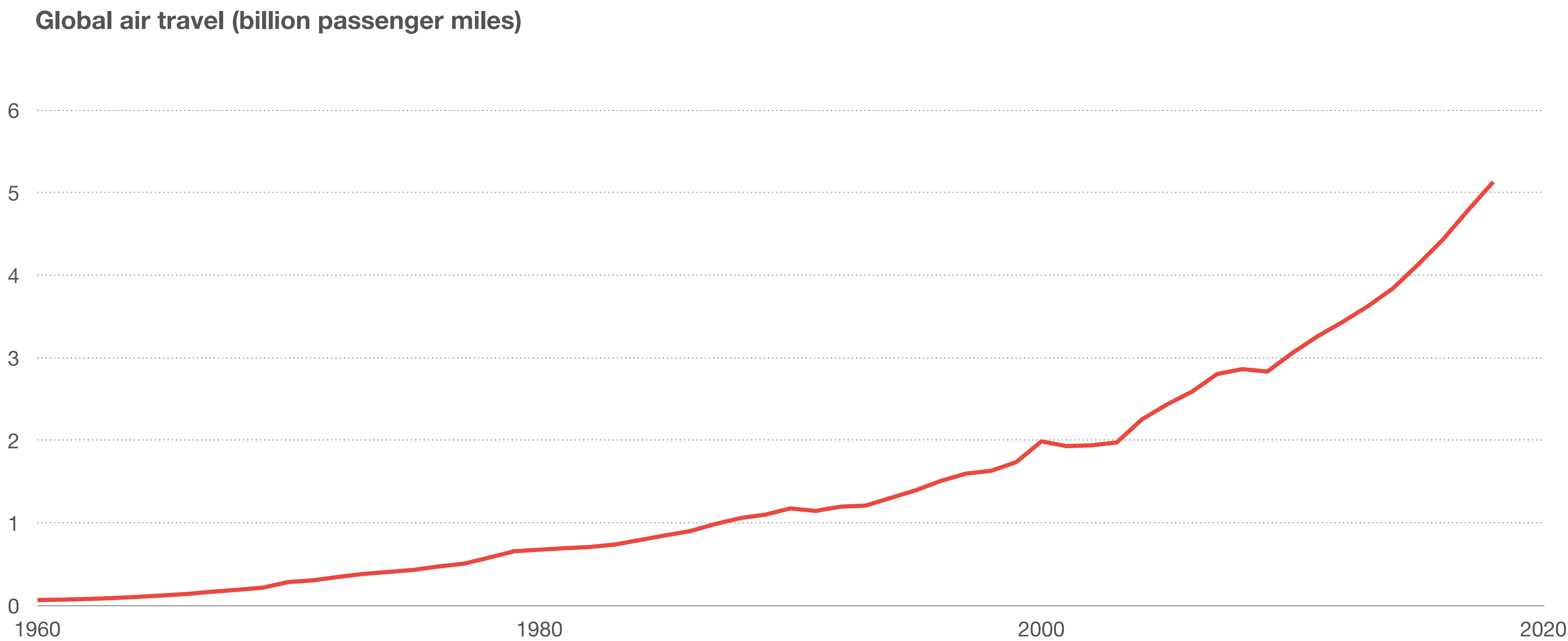
†Fares subject to change.





# But something has changed

In 1958, a PanAm New York - London economy return cost \$4,100 in 2020 dollars



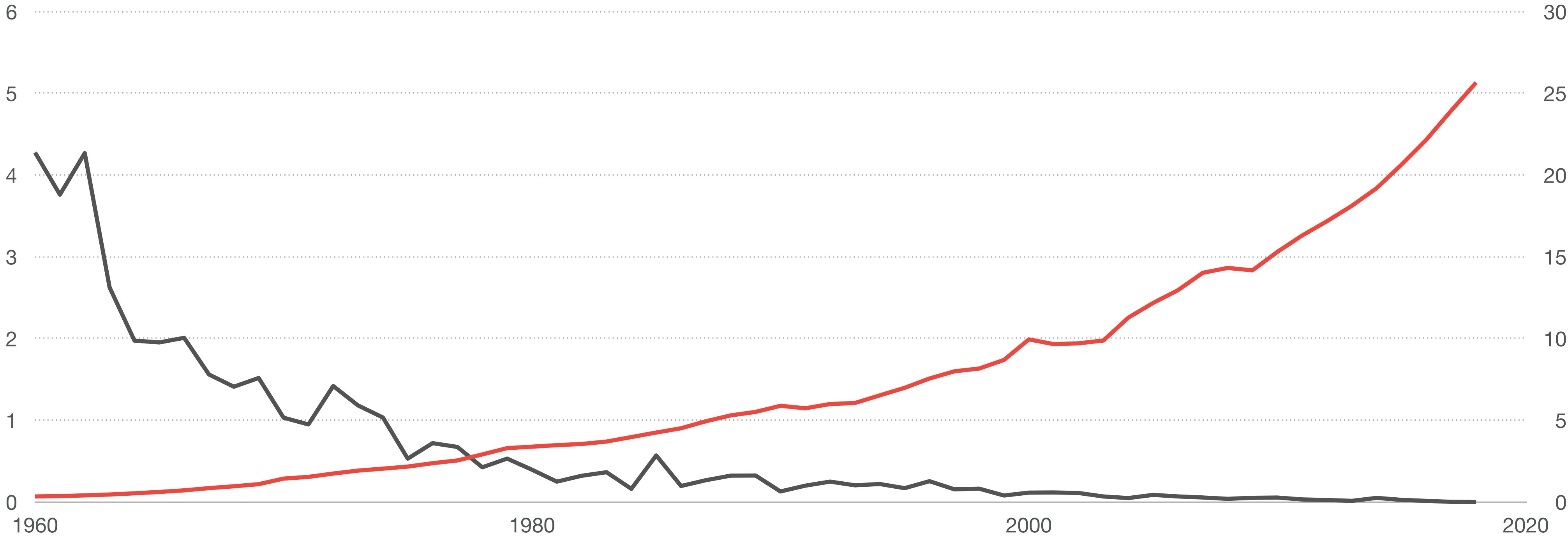
Source: IACO

# Better and cheaper (if not faster)

Airline fatality rate per mile was 200x higher in the 1970s

## Global air travel

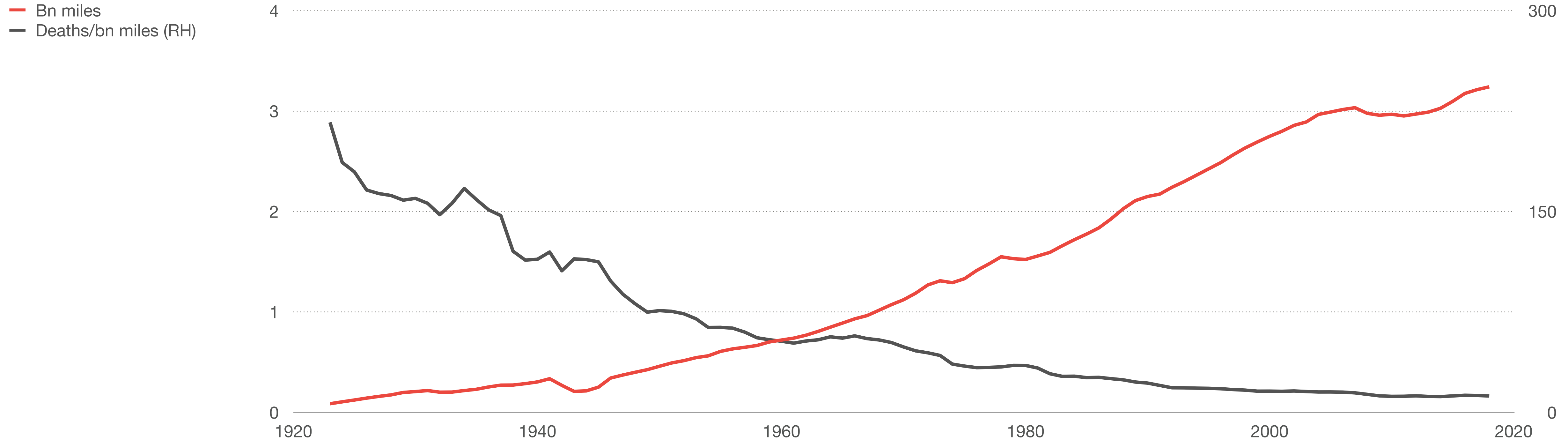
— Bn passenger miles  
— Deaths/bn miles (RH)



# And the same for cars

Cars have looked much the same for 50 years, but they've become vastly safer, more efficient and less polluting

## US car travel





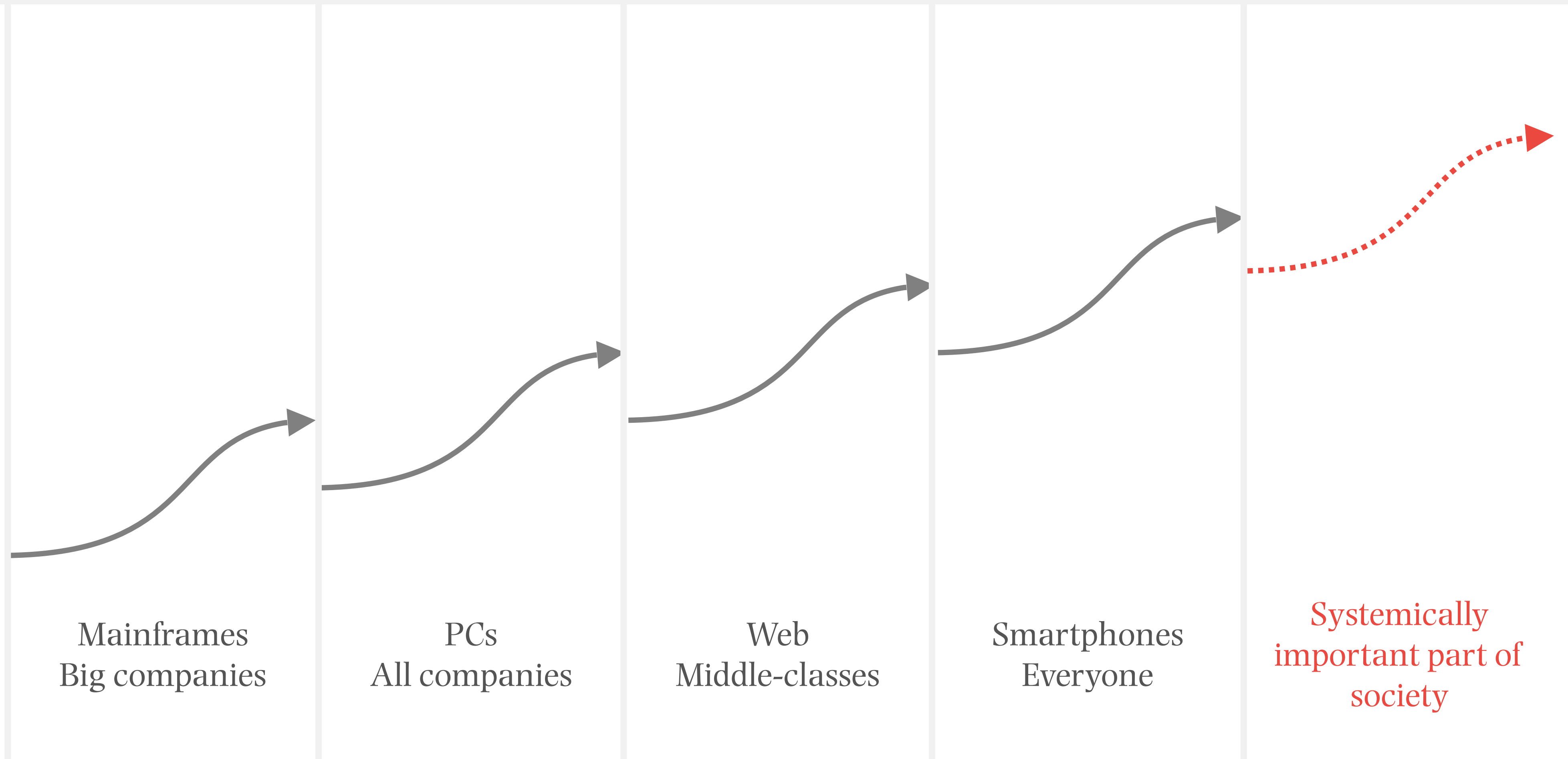
# First 50 years, second 50 years

Cars created far more billionaires outside the car industry than in it



# First 50 years, second 50 years

Tech used to sell accounting tools to big companies - now it's part of our life



# Thank you

**Benedict Evans**

January 2021

[www.ben-evans.com](http://www.ben-evans.com)

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