

The Great Unbundling

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www.ben-evans.com

Welcome to 2021

What matters in tech?



COVID
acceleration

The Great
Unbundling

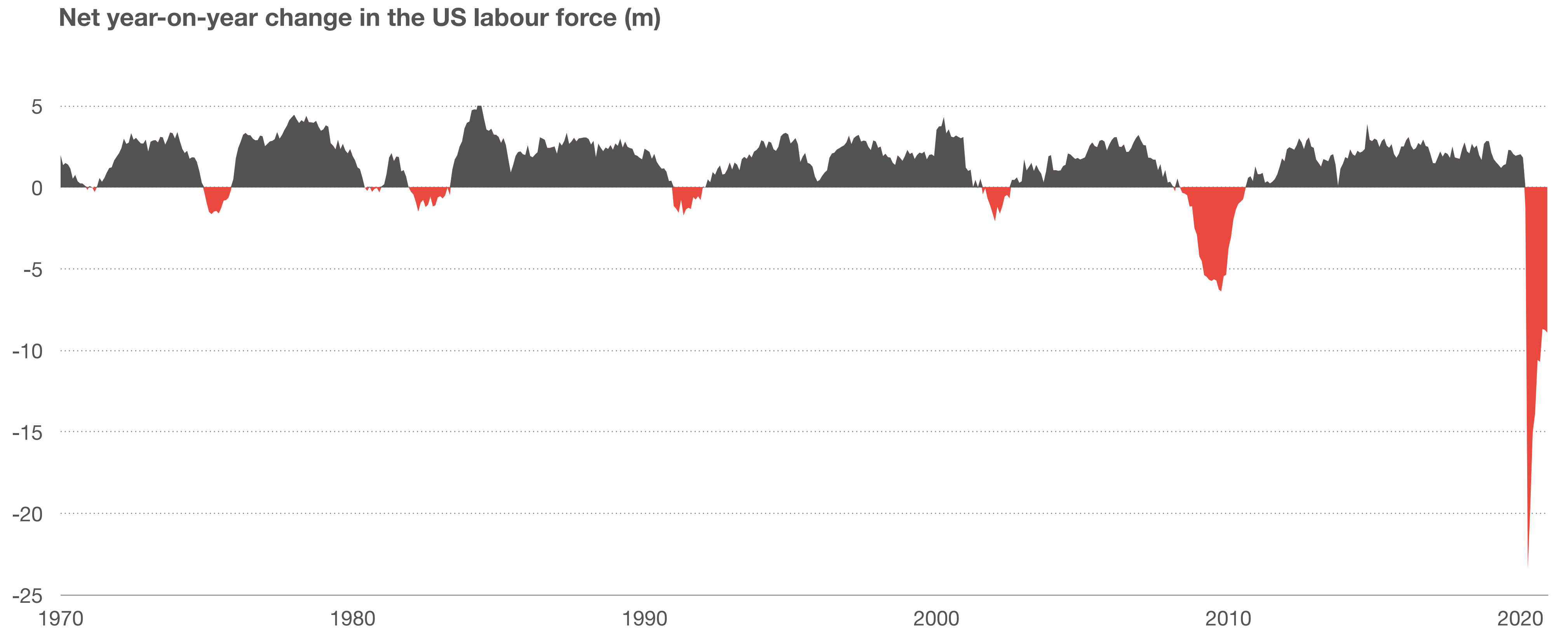
Harder
problems
China

Tech becomes
a regulated
industry

COVID acceleration

Shock

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

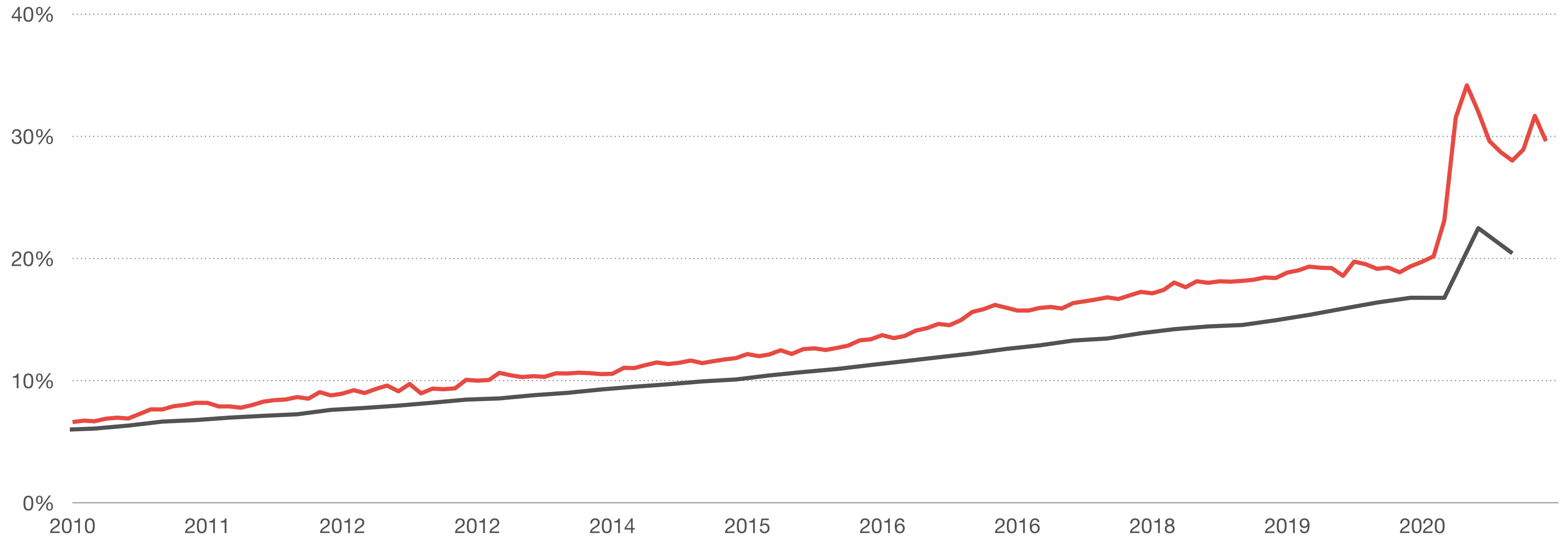


Ecommerce steps forward 5-10 years

Lockdown has pulled forward a huge amount of future adoption

Ecommerce as a share of addressable retail*

— UK (monthly)
— USA (quarterly)



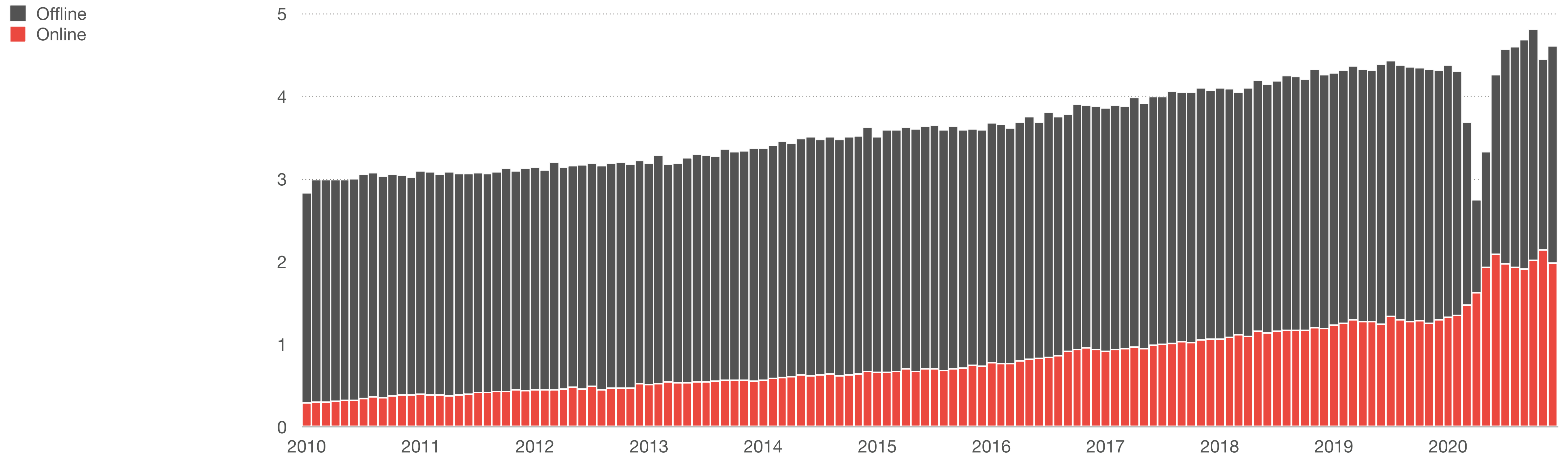
Source: ONS, US Census

* 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)



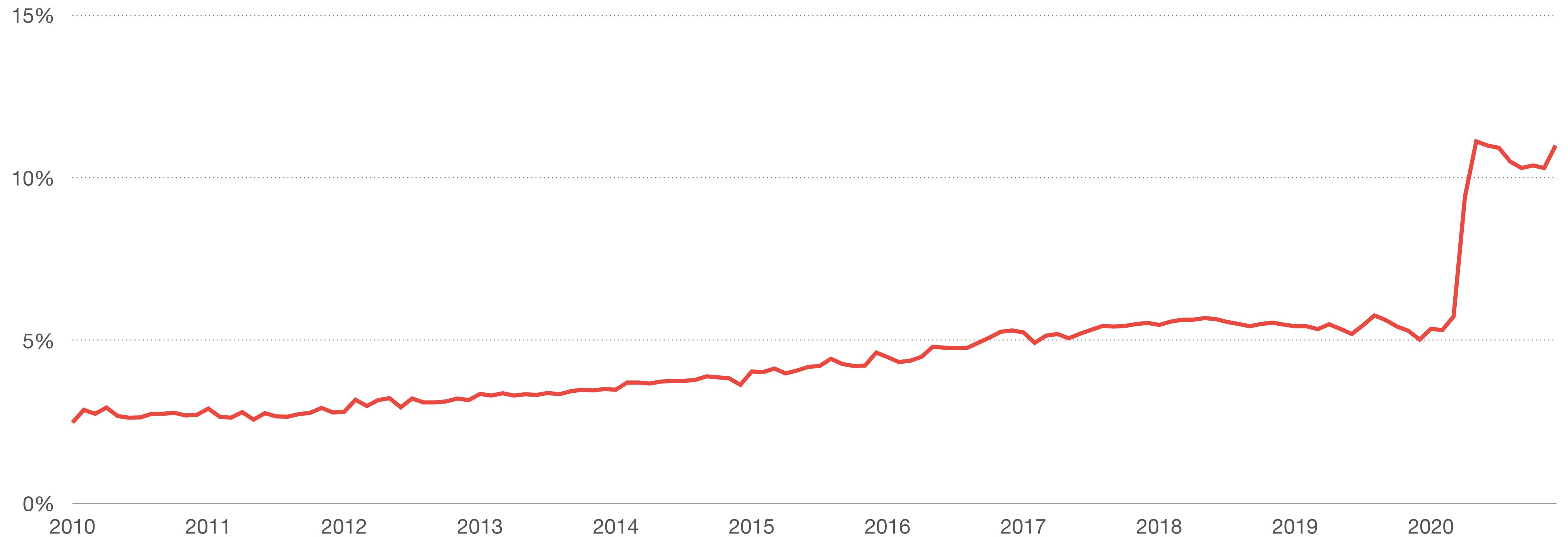
Source: ONS

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

Online grocery sales have doubled

Forced adoption, forced experiment

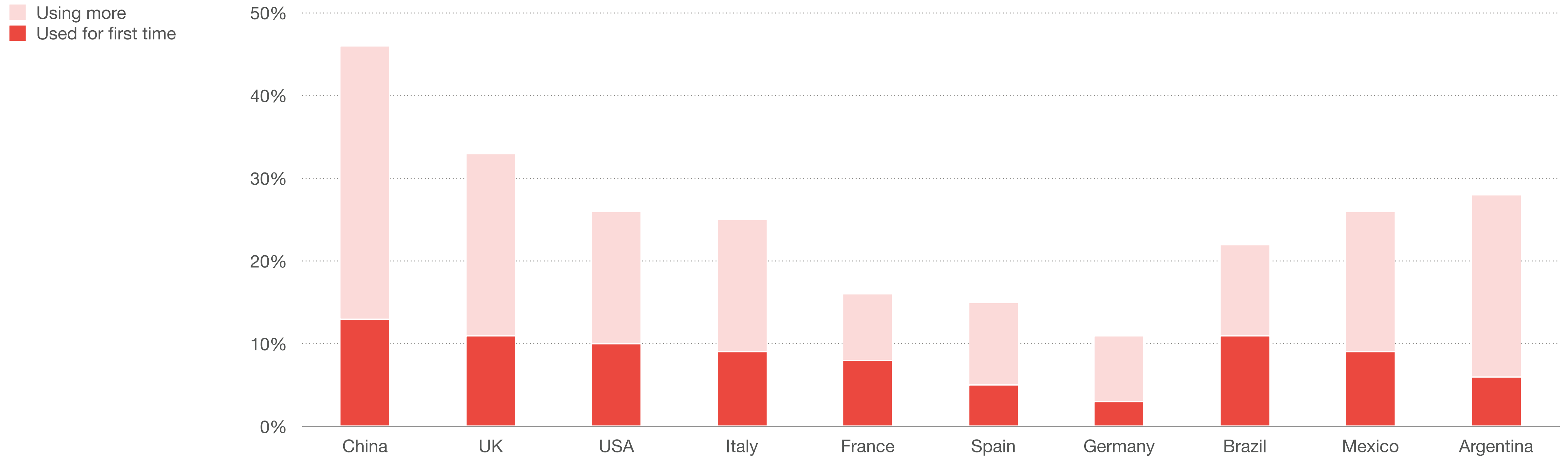
UK online grocery as % total grocery



Forced experiment, forced adoption

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

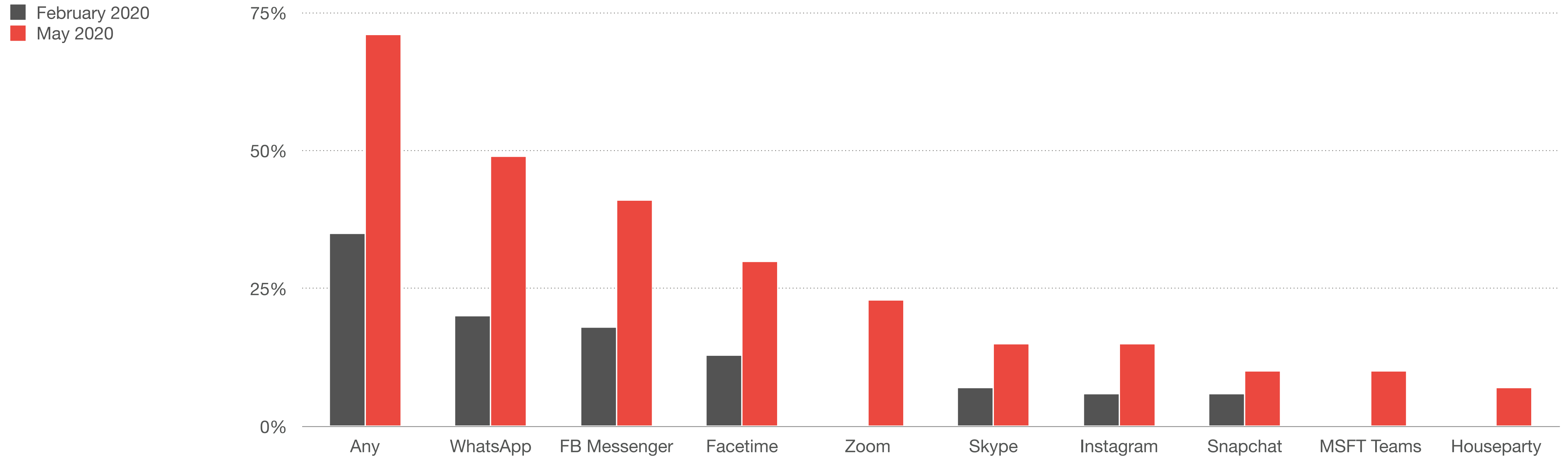
Growth of grocery delivery during Covid



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

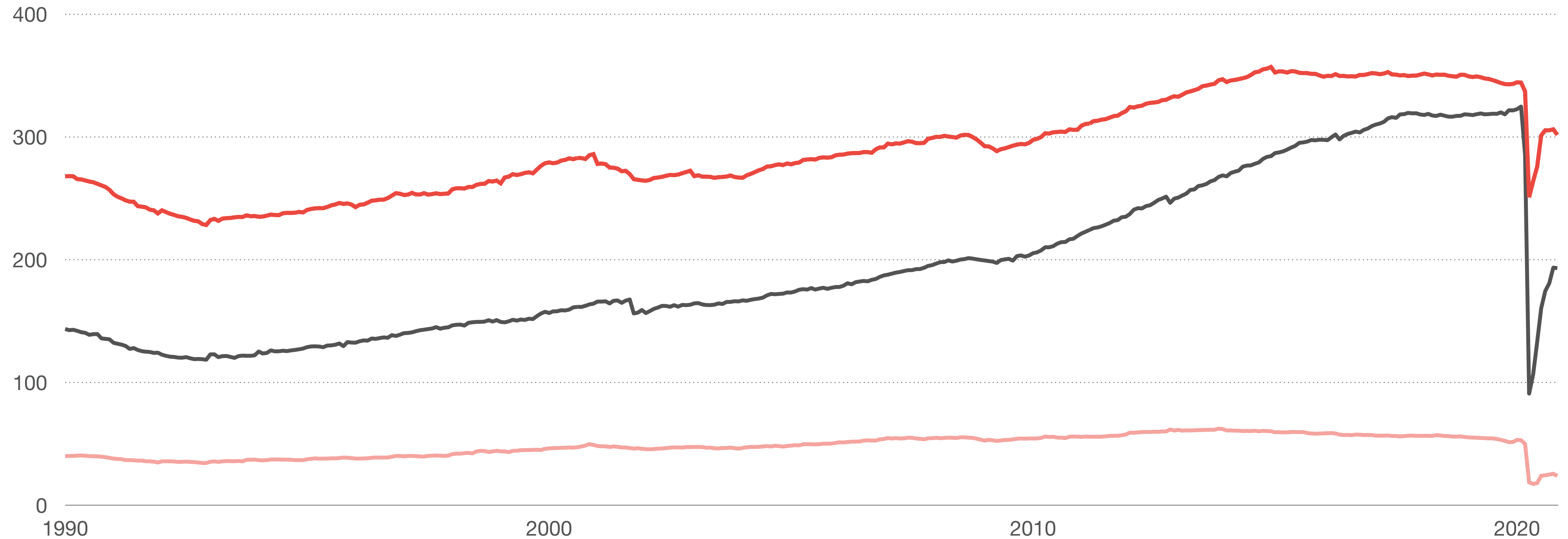
Collaboration?
Social capital?
Training?

What does WFH mean for retail? Office rents?

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

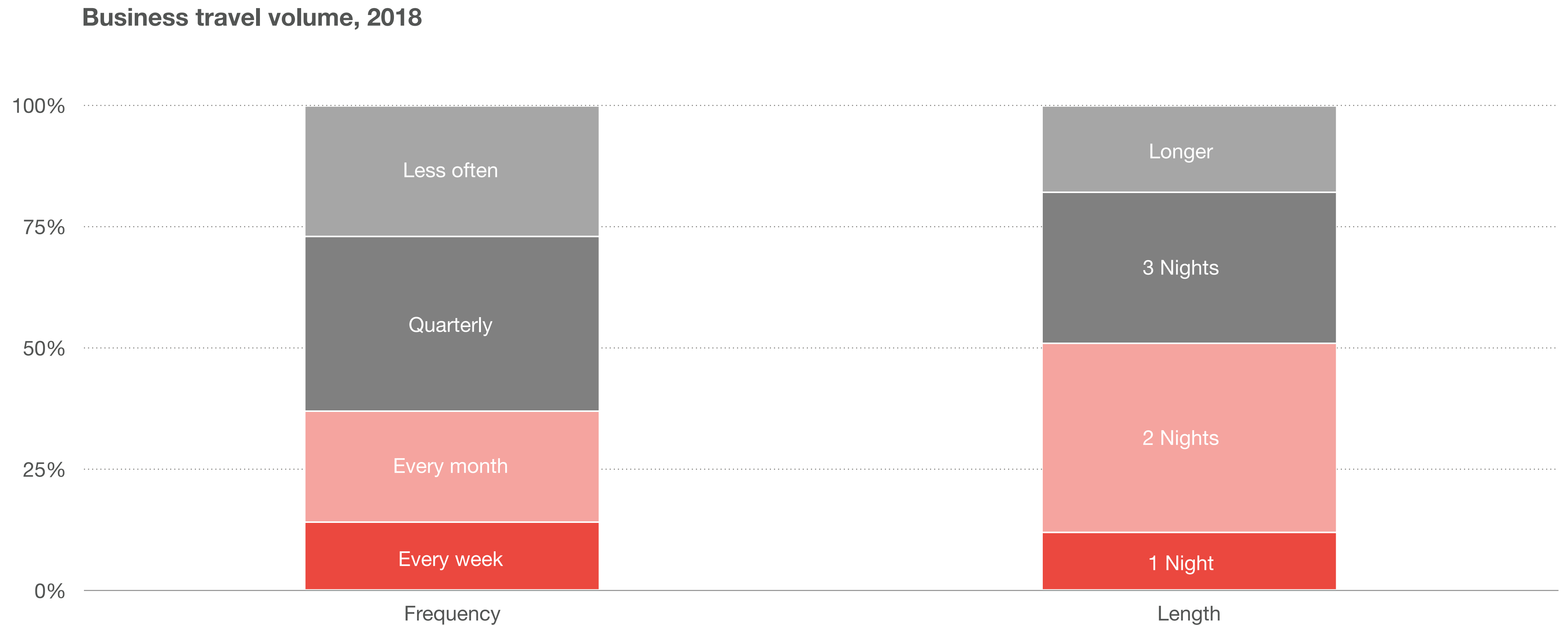
Employment in New York City (000s)

— 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



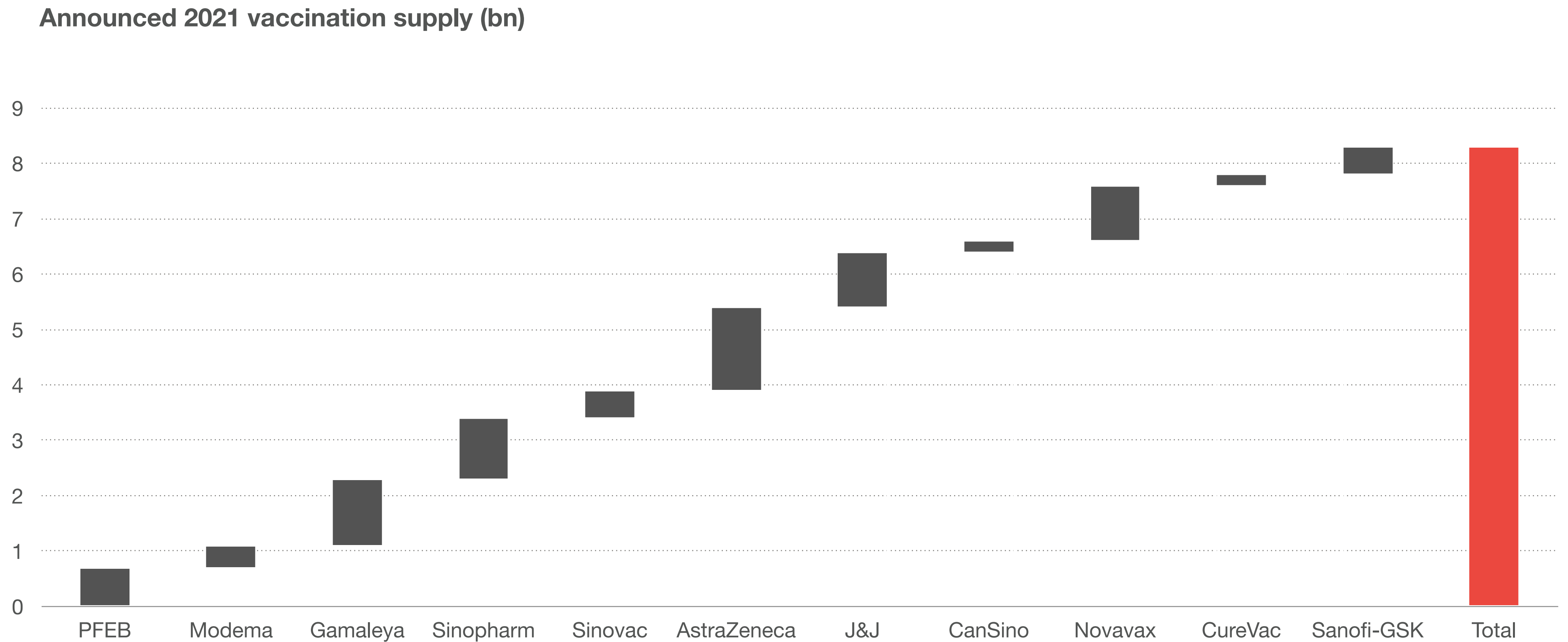
Zoom
\$110bn

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

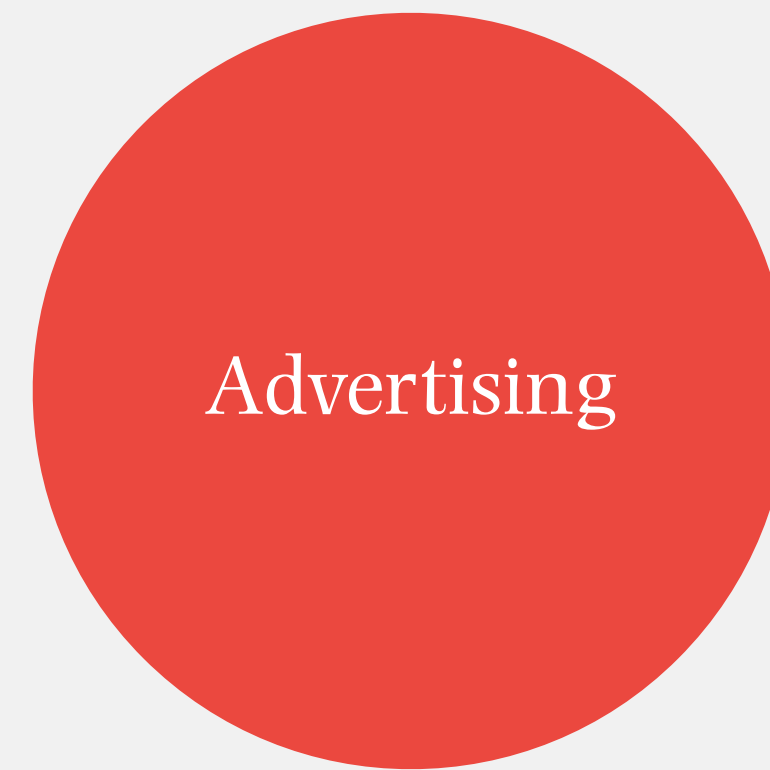
“I’m a terrified dinosaur...

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

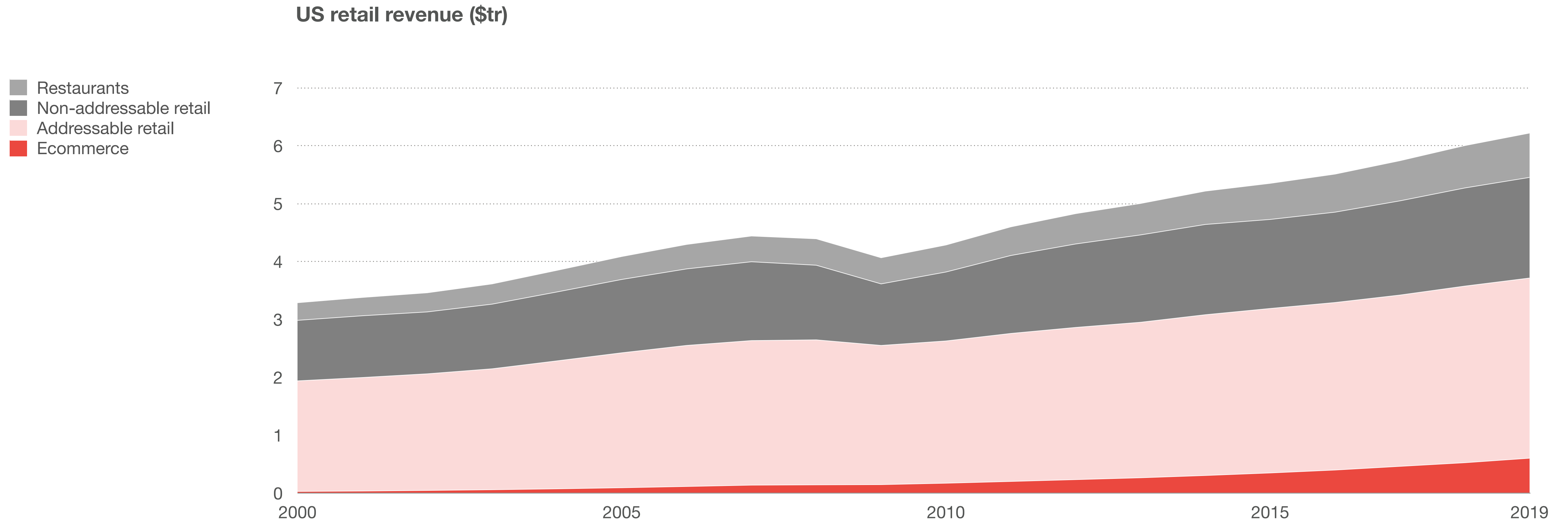
\$25tr - and nobody knows anything

Every part of the retail and media journey is being unbundled



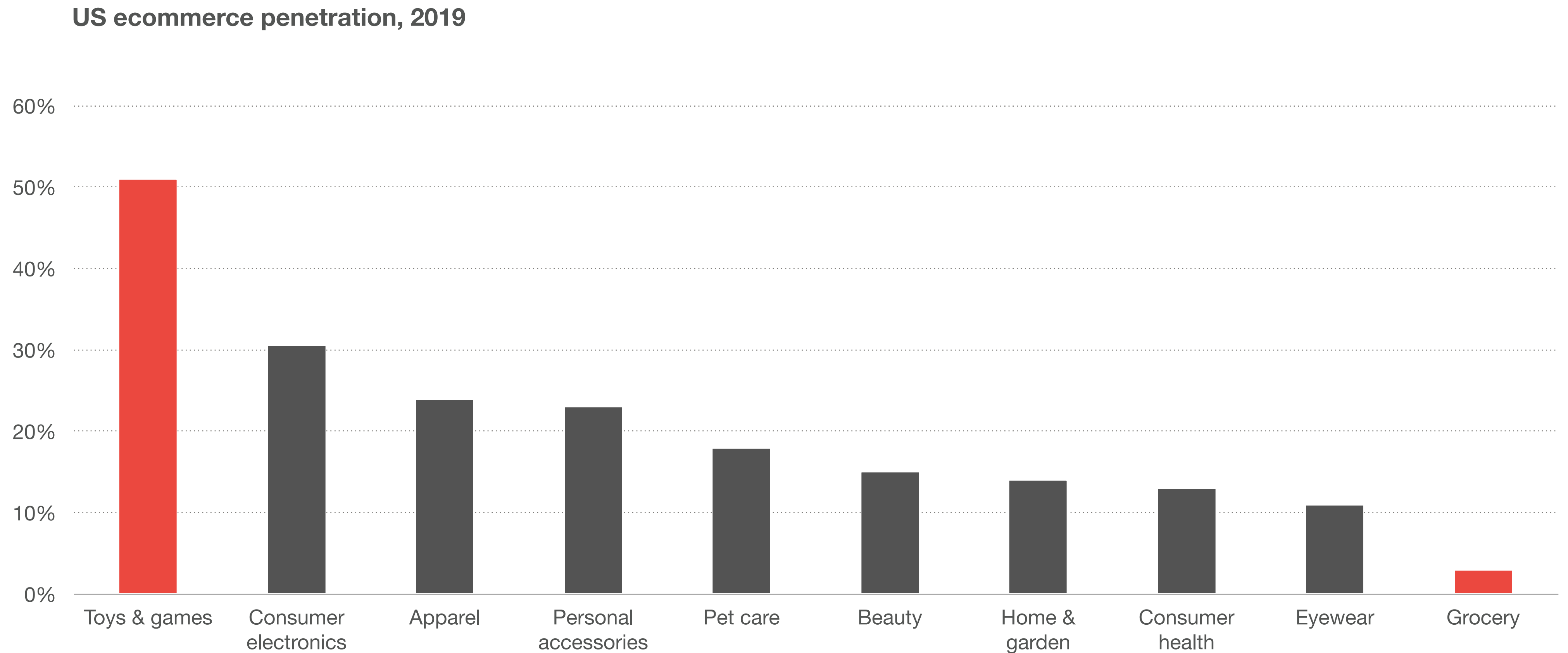
The traditional view of ecommerce

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



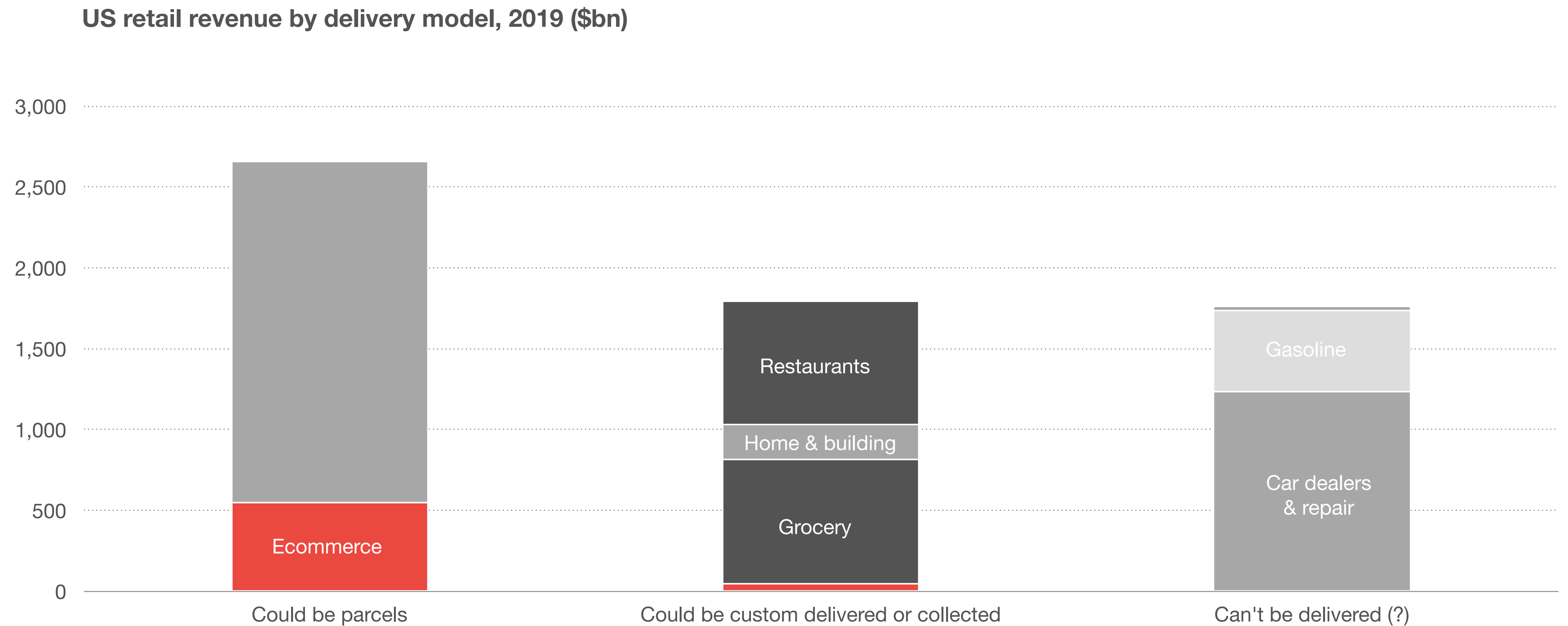
But is that a useful split?

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



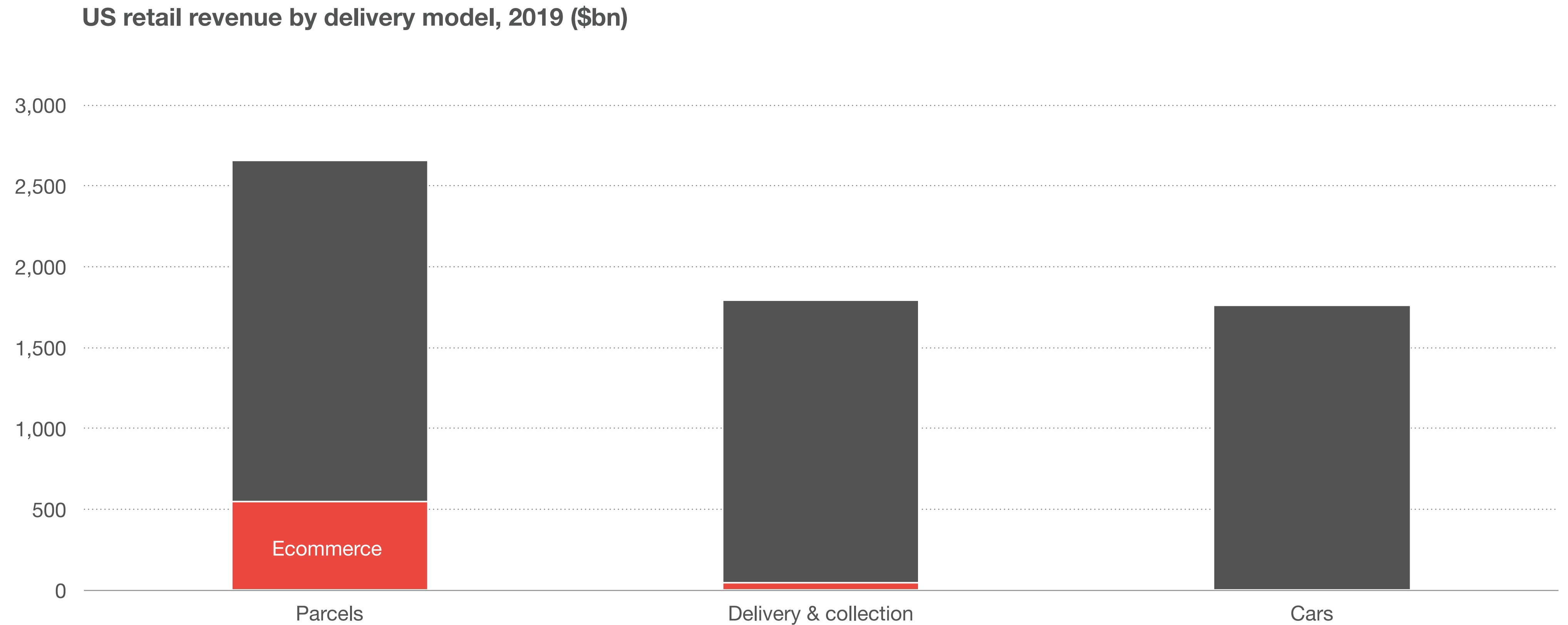
Much more useful: ecommerce as logistics

Cardboard boxes versus hand delivery, trucks and bikes



Much more useful: ecommerce as logistics

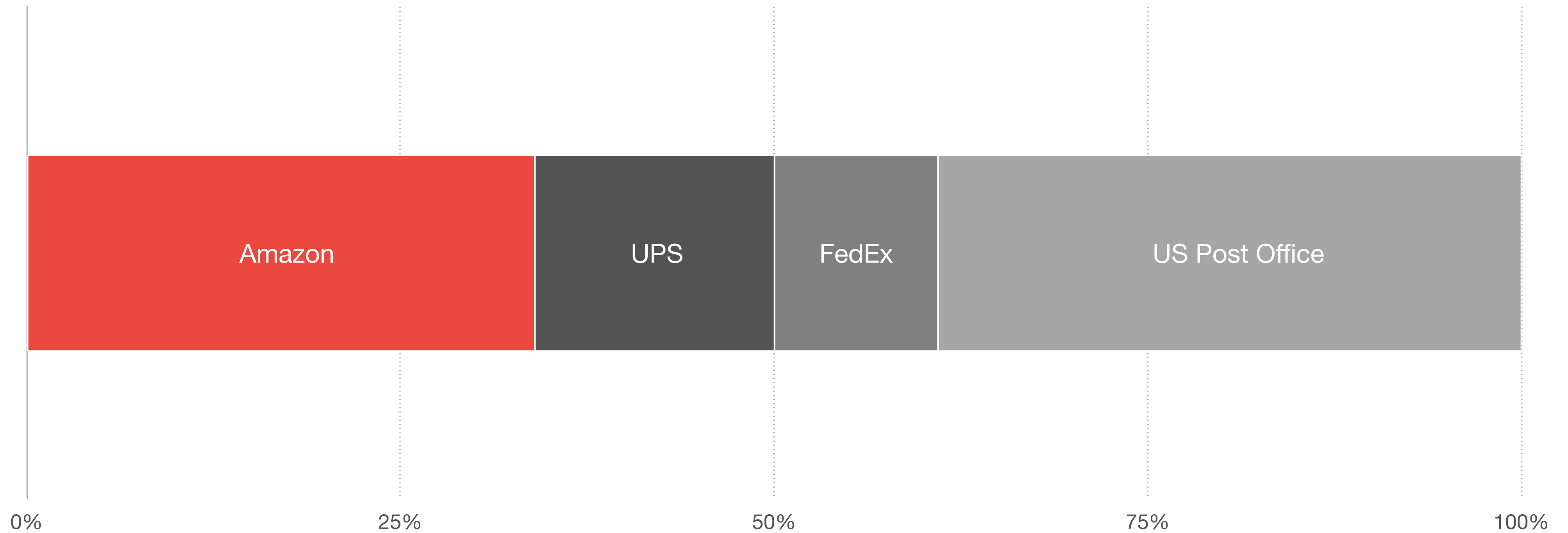
Cardboard boxes versus hand delivery, trucks and bikes



Parcels: Amazon replaces the post office

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

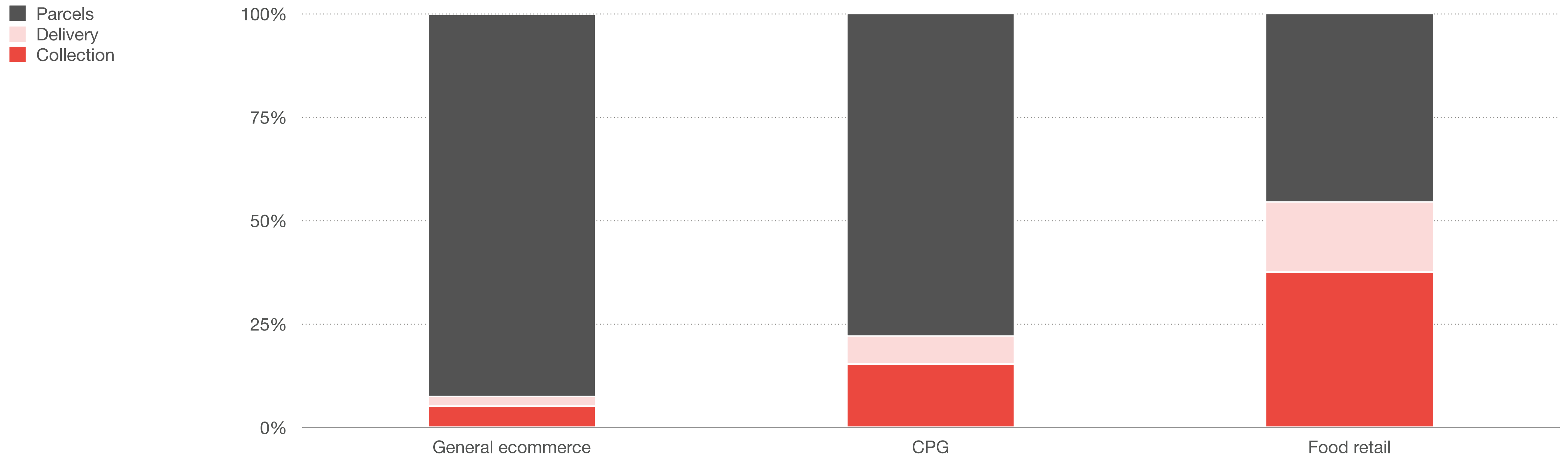
US parcel deliveries, July 2020



Delivery: how many logistics models?

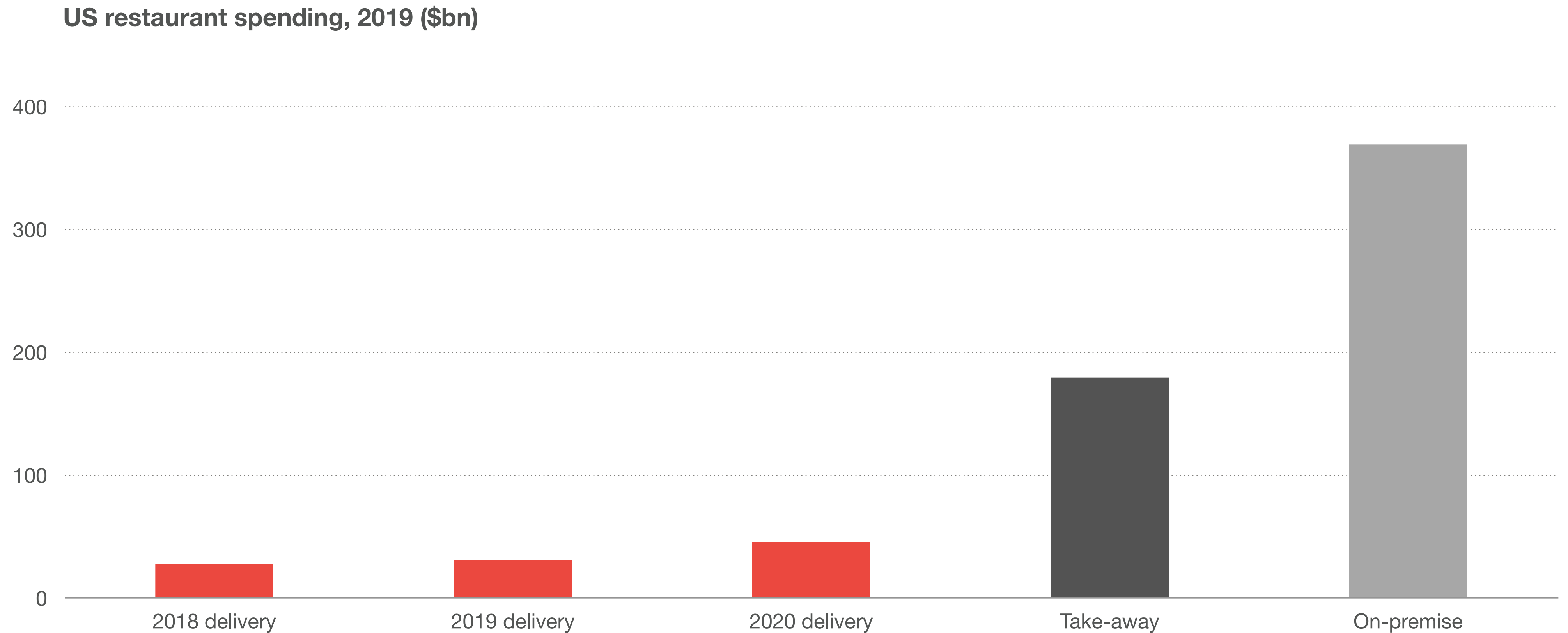
General ecommerce is almost all shipped by parcel, but half of food is collected or delivered

US ecommerce by fulfilment, June 2020



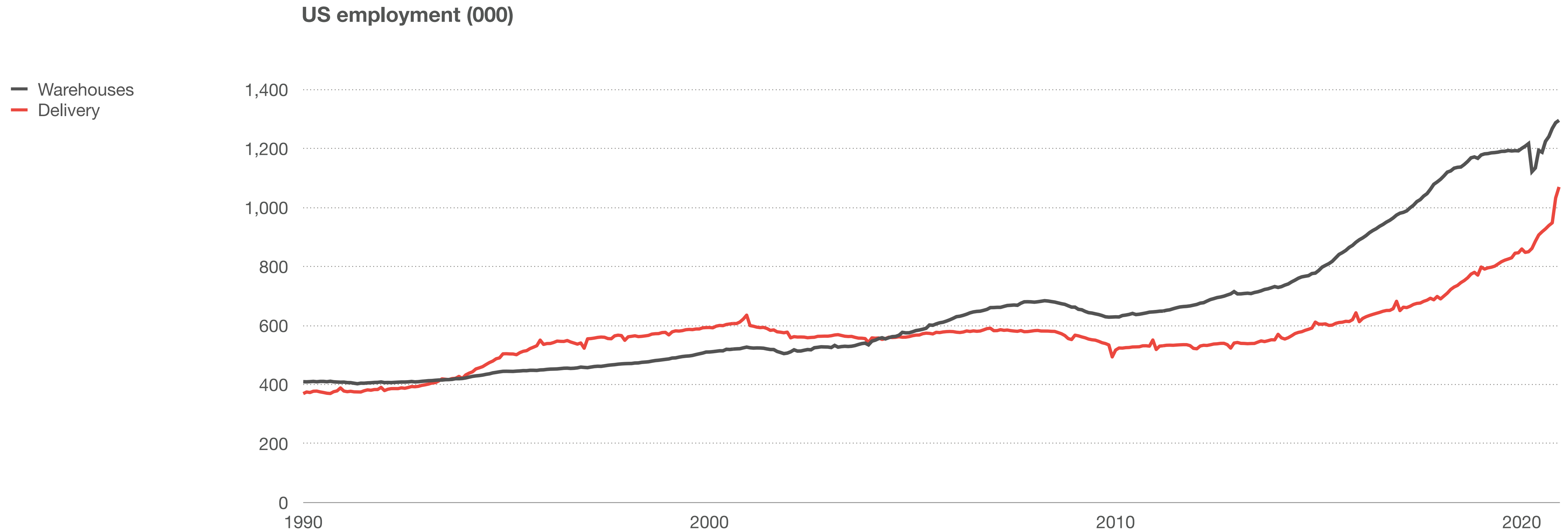
Restaurants - arbitrage

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



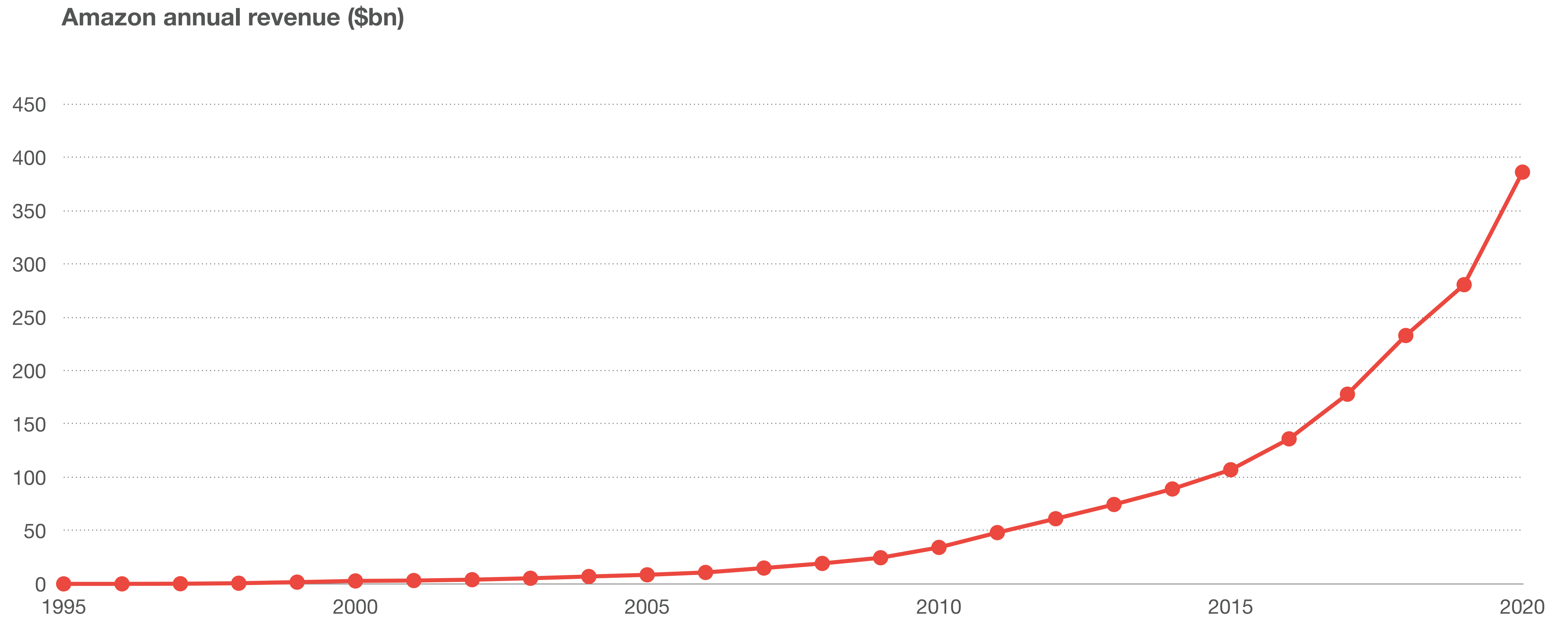
Delivery employment already has doubled

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



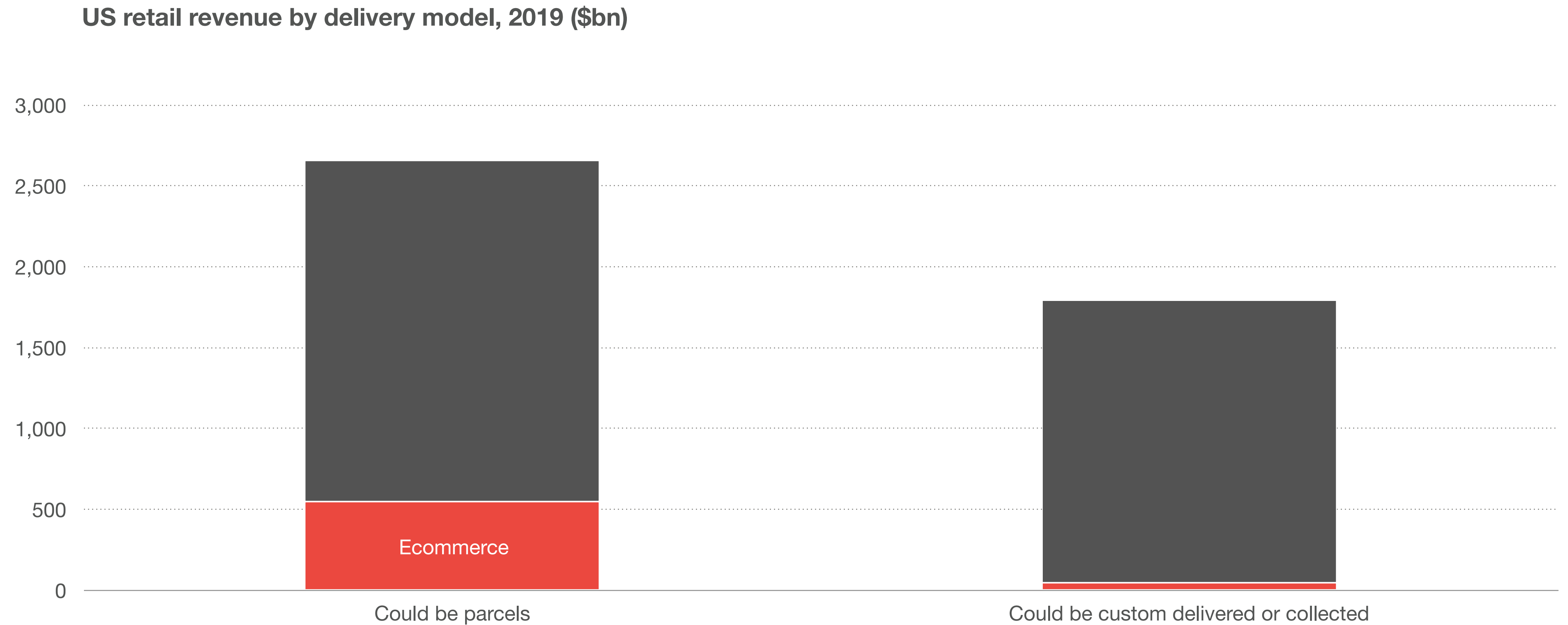
Oh yes - what about Amazon?

Amazon's revenue grew 37% in 2020



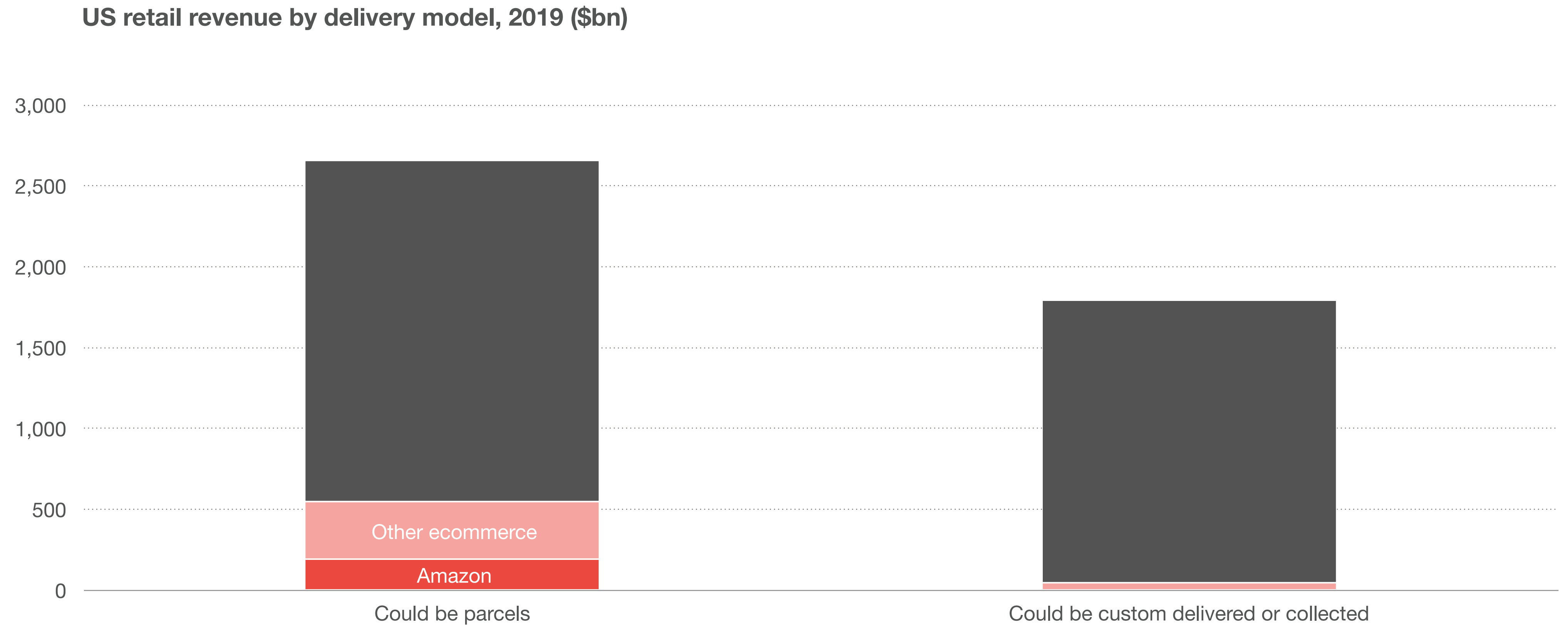
Ecommerce as logistics

What's Amazon's market?



Ecommerce as logistics

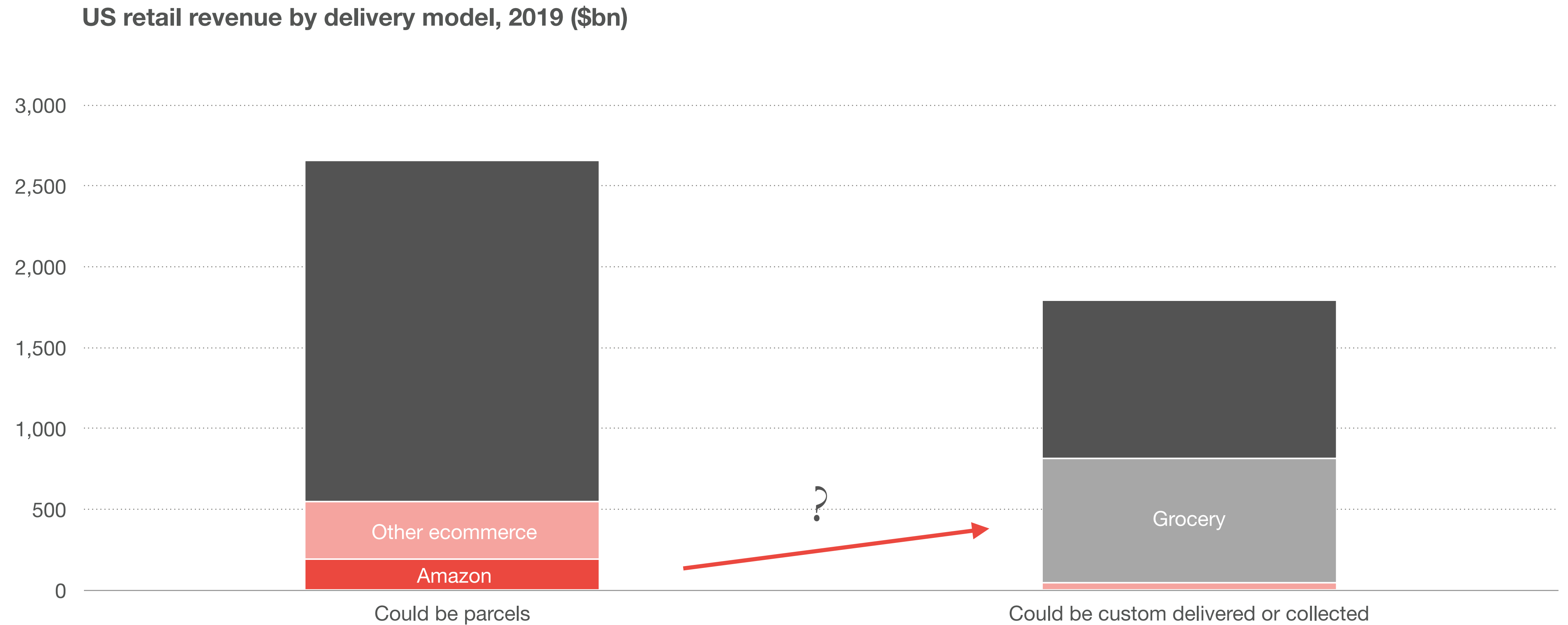
What's Amazon's market?



Source: US Census

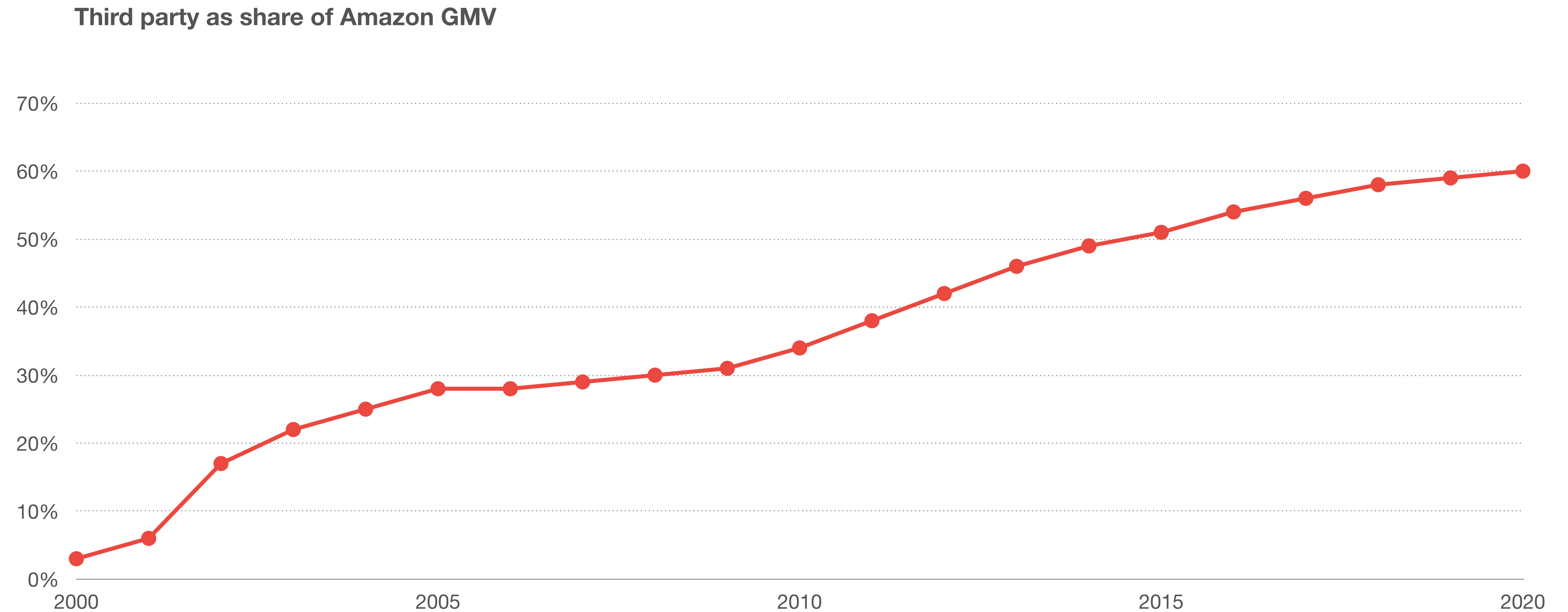
Ecommerce as logistics

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



Meanwhile - bundling and unbundling

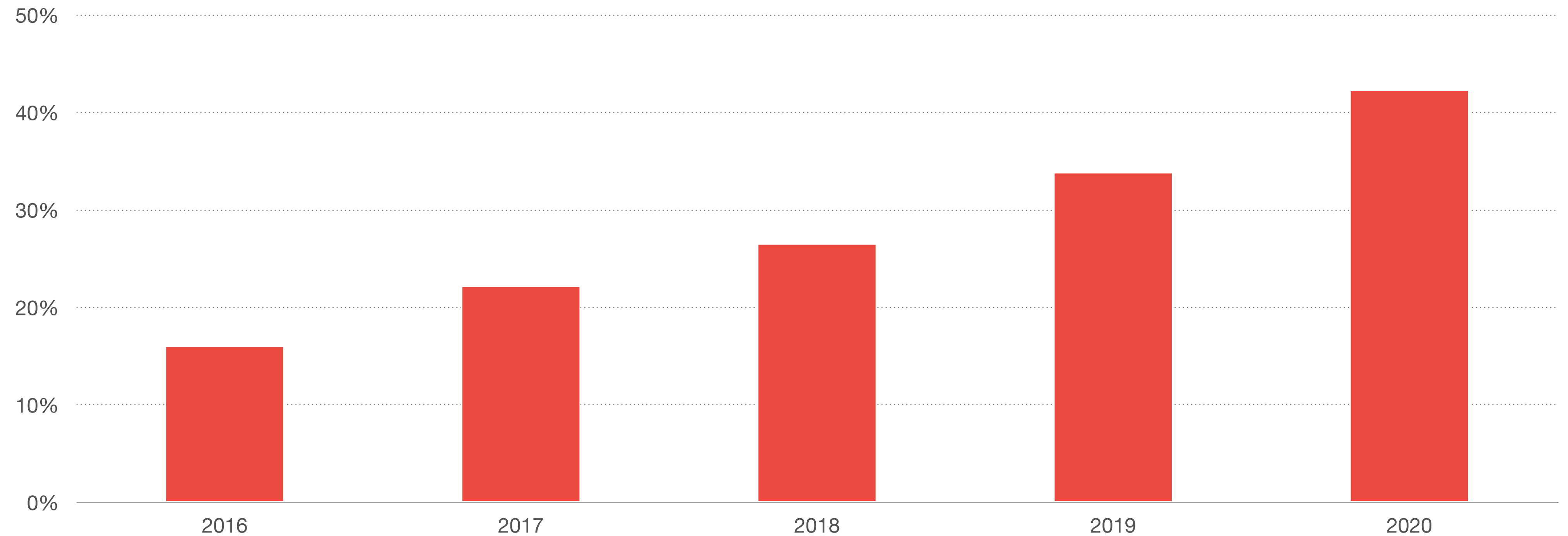
Amazon Marketplace is now ~60% of ecommerce GMV



Chinese supply chain bundles and unbundles?

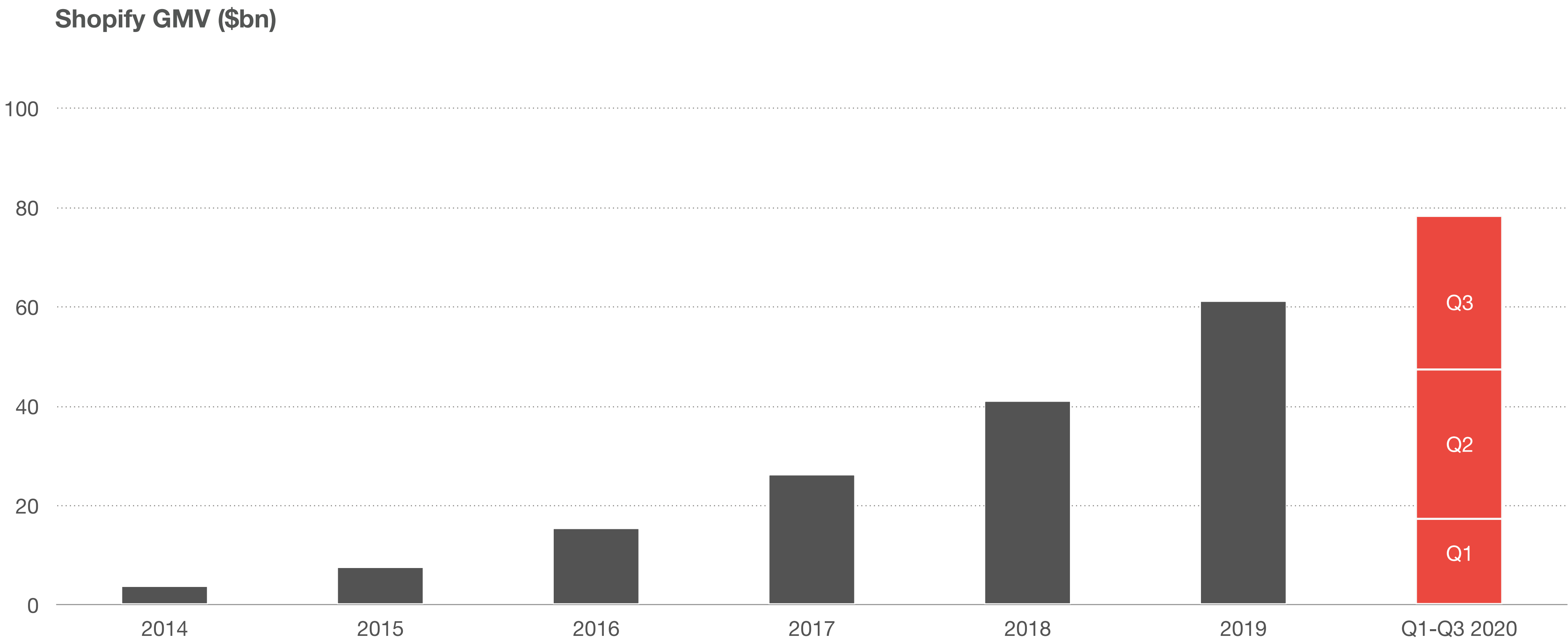
Chinese suppliers use Amazon (and other marketplaces) to go direct to the end customer

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



Why does Shopify matter?

A software tool that rides a structural shift in the market



“No-one can
compete with
Amazon”

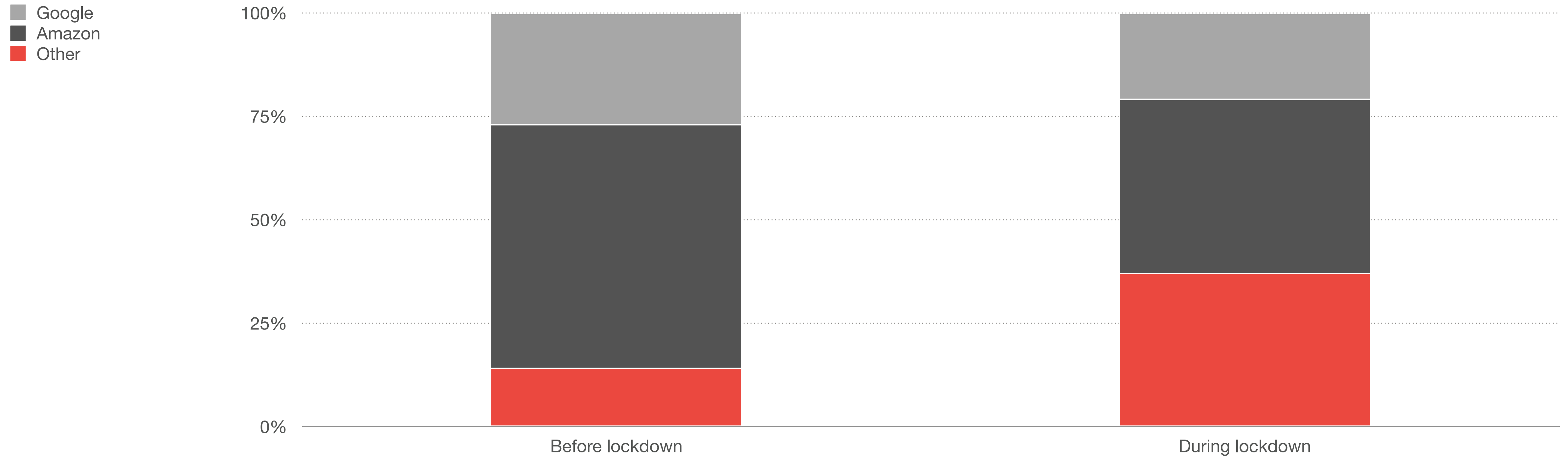
“Wasn’t this
already solved?”

Brands and
consumers ready to
go direct

Lockdown drives a wider funnel

Consumers are broadening online shopping behaviour

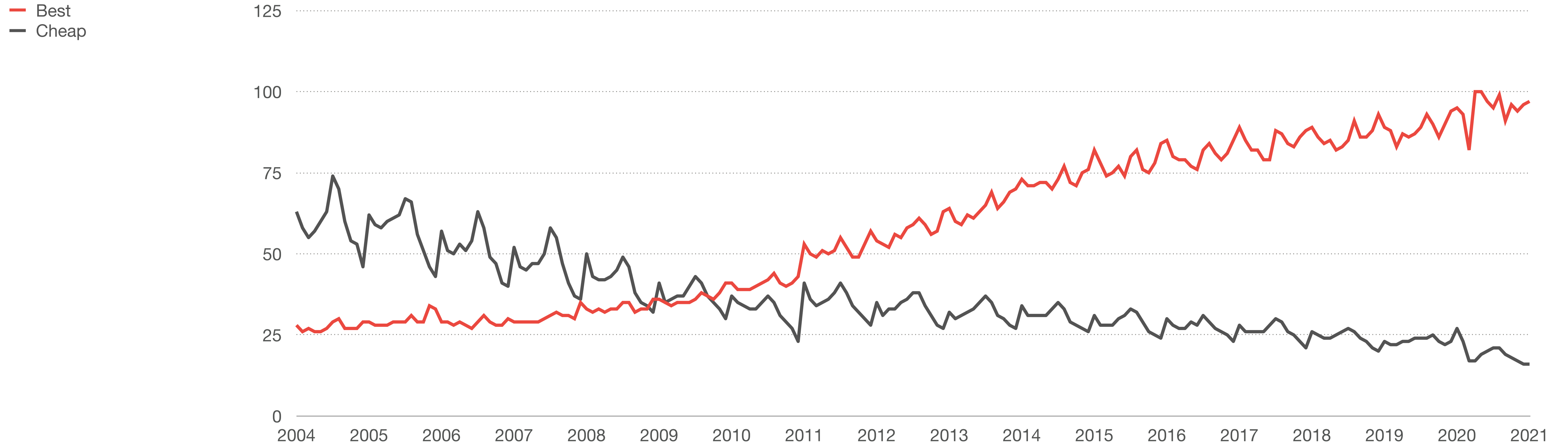
US online product search by channel



As the internet moves up the funnel

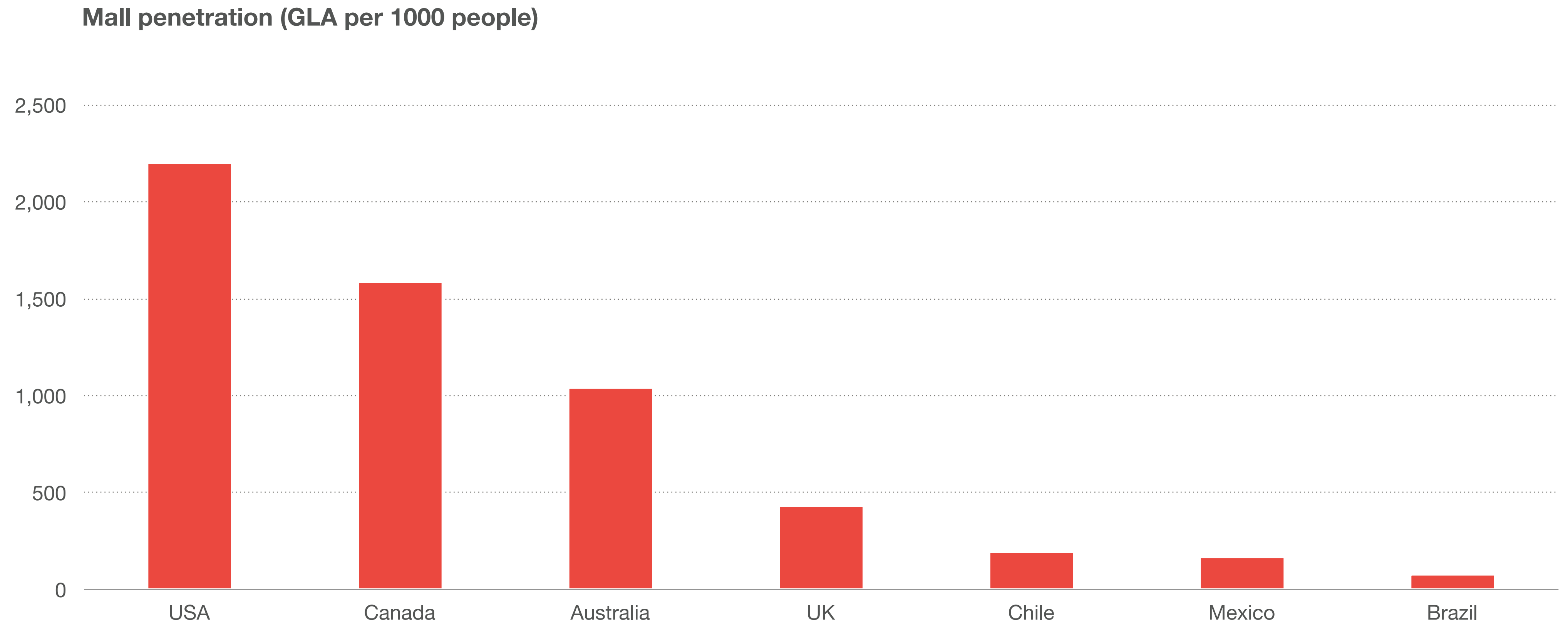
From price comparison to expertise and recommendation

Relative search interest, UK



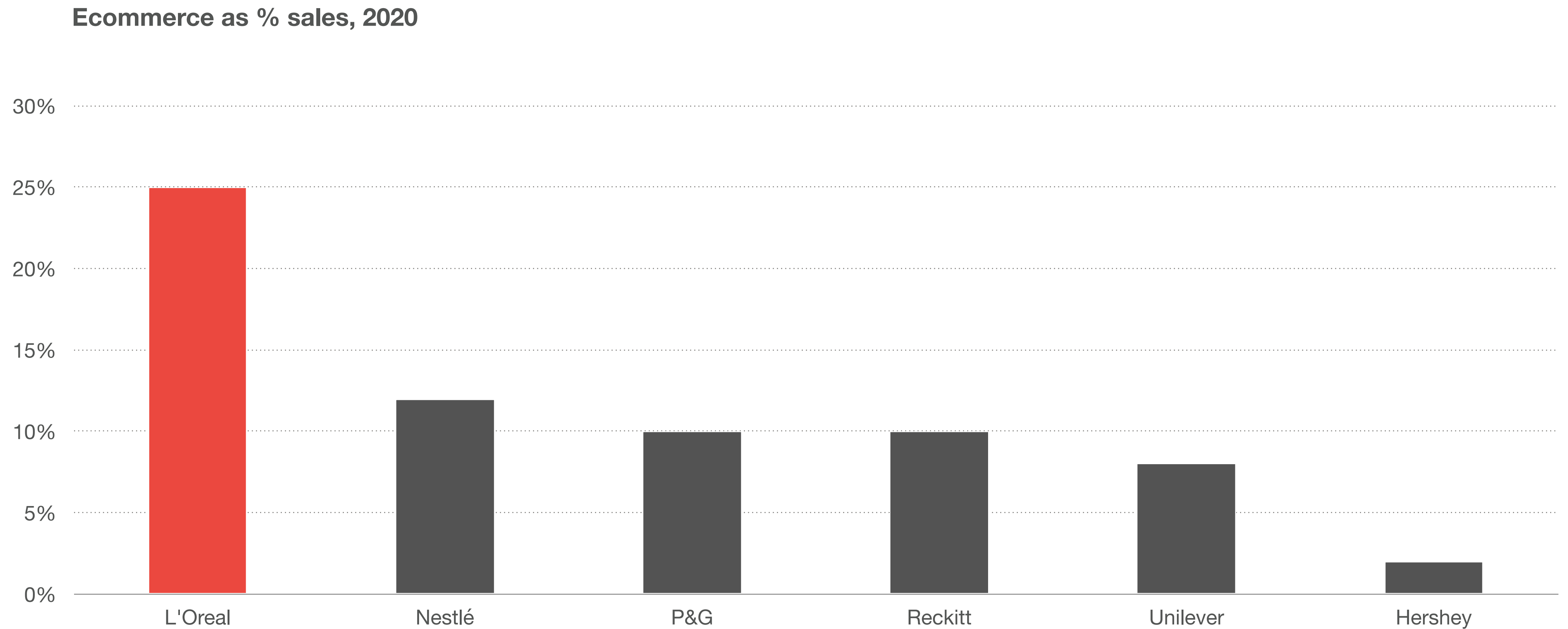
Accelerate the inevitable

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

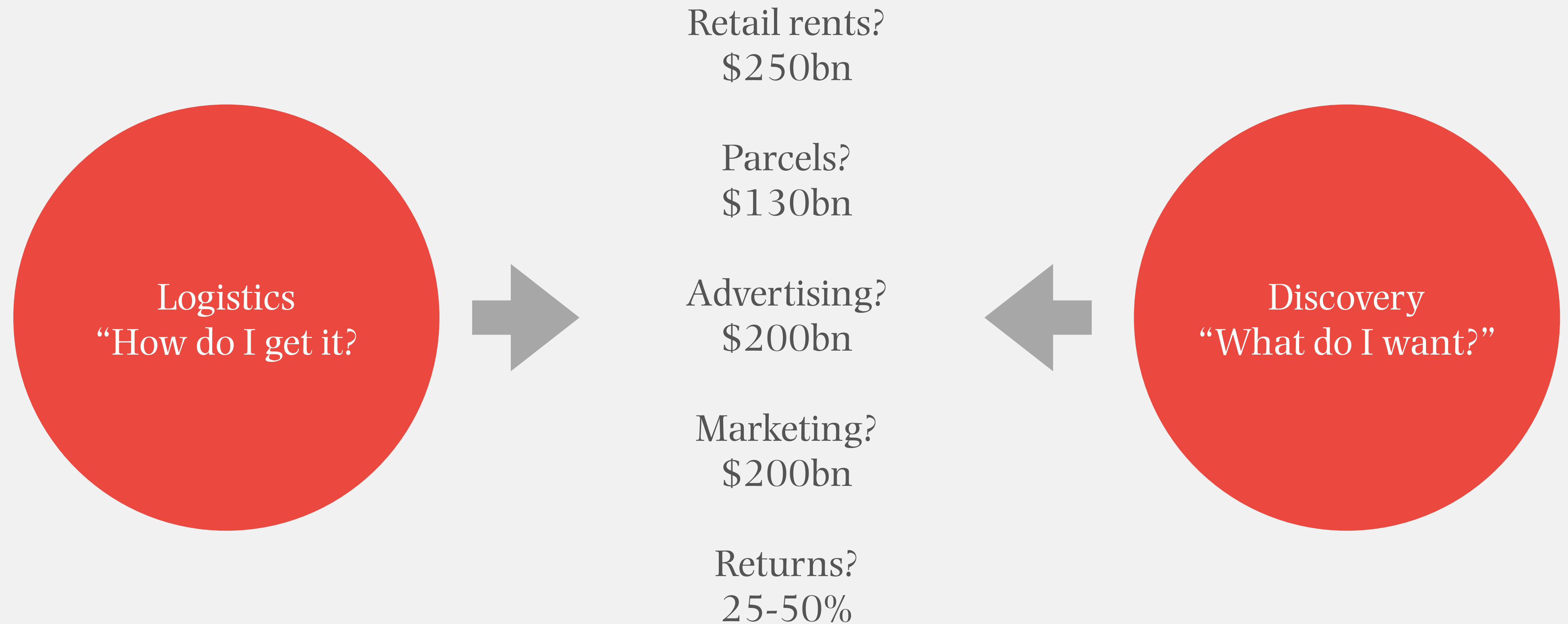
The ecommerce margin question

Ecommerce changes retail and brand leverage



How do you reach your customers? Why?

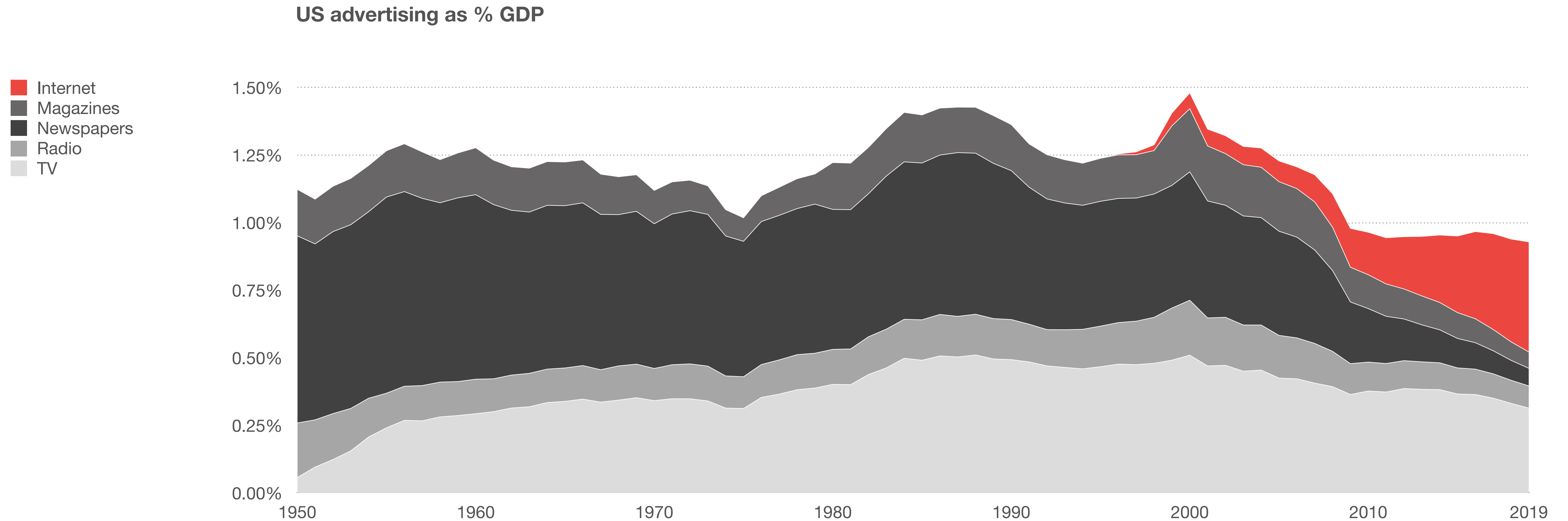
US brands & retailers spend \$7-800bn to reach their customers



Disrupted retail, meet disrupted advertising

Reshaping advertising and marketing

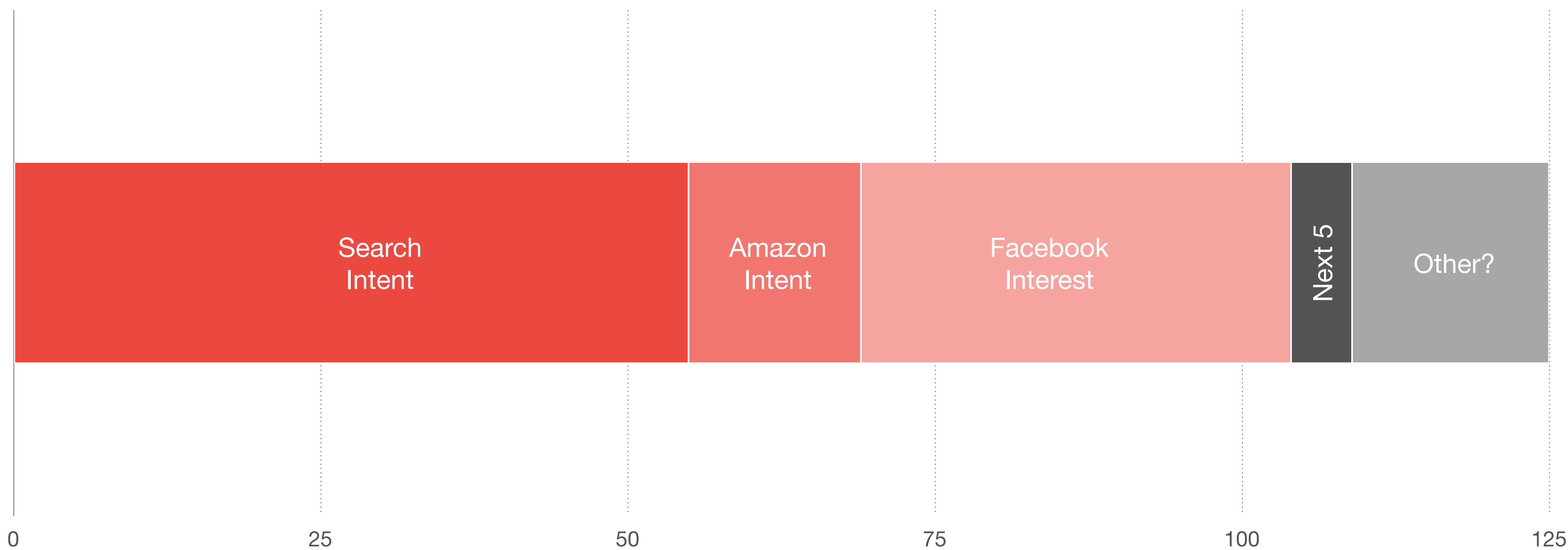
Yes, print and internet - but look at the top line



Does ‘online advertising’ really exist?

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

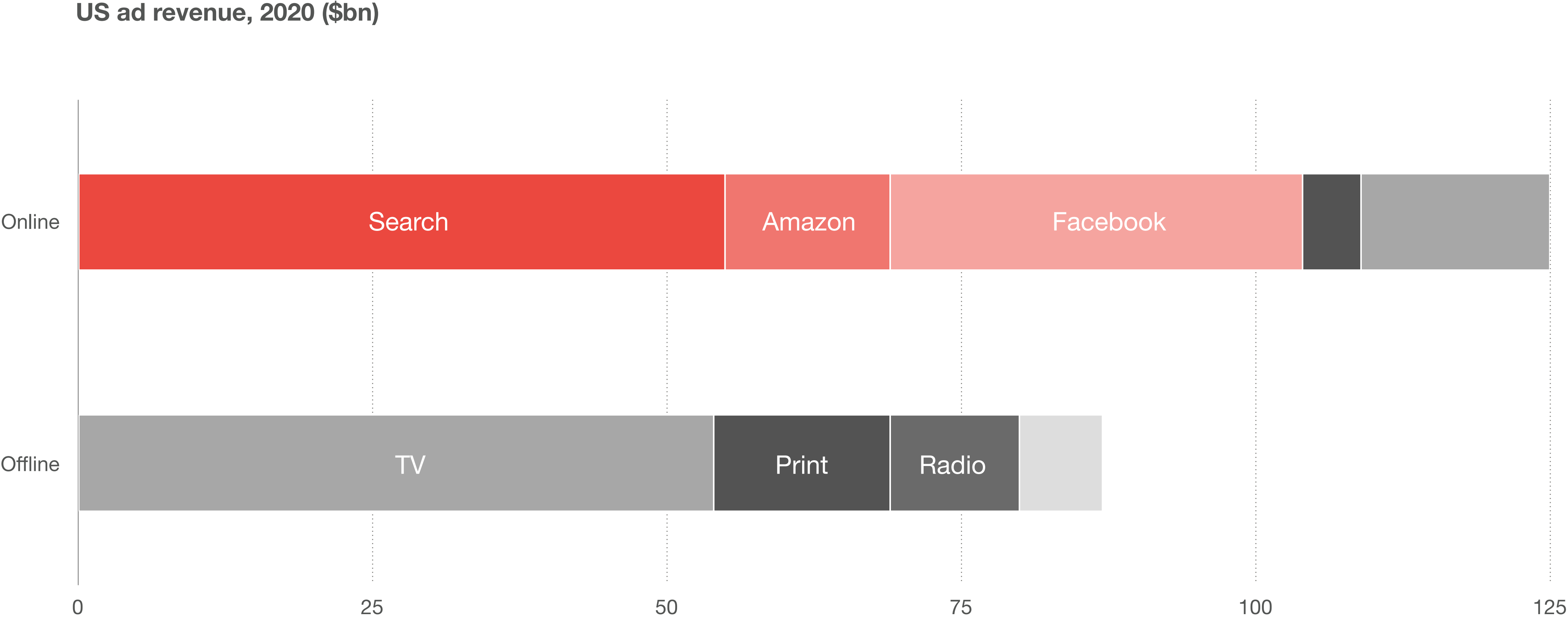
US online ad revenue, 2020 (\$bn)



Source: Company data, Zenith, GroupM, @BenedictEvans

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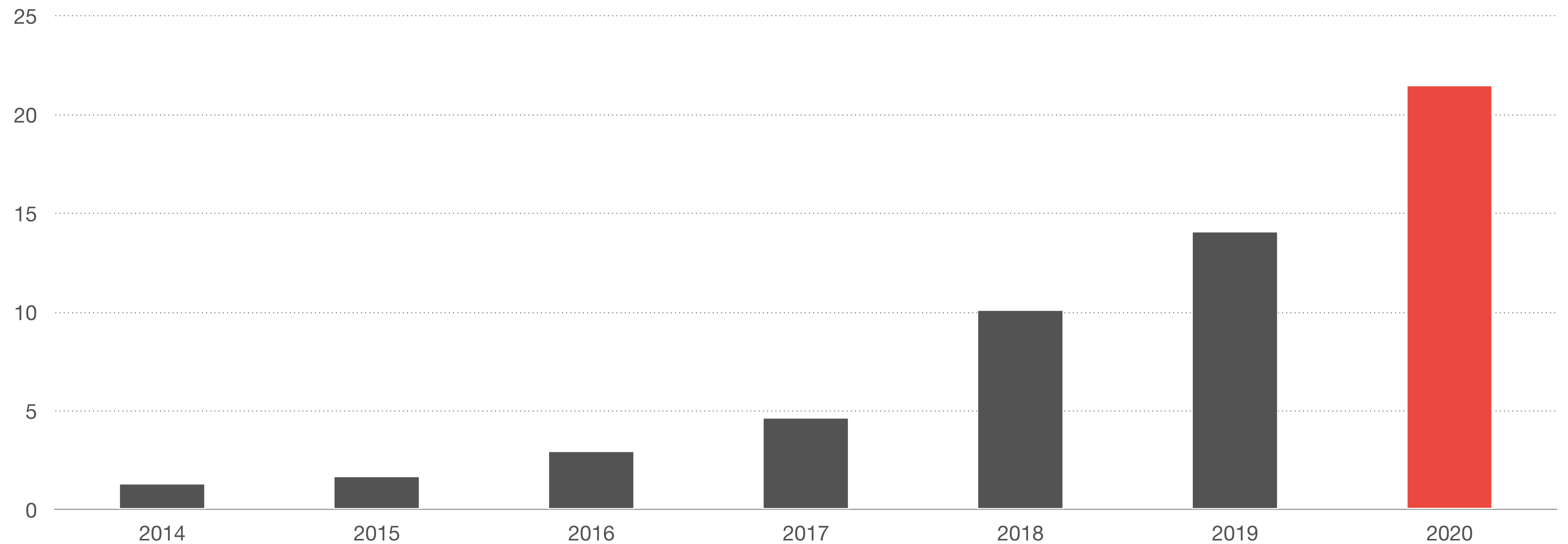


Source: Company data, Zenith, GroupM, @BenedictEvans

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



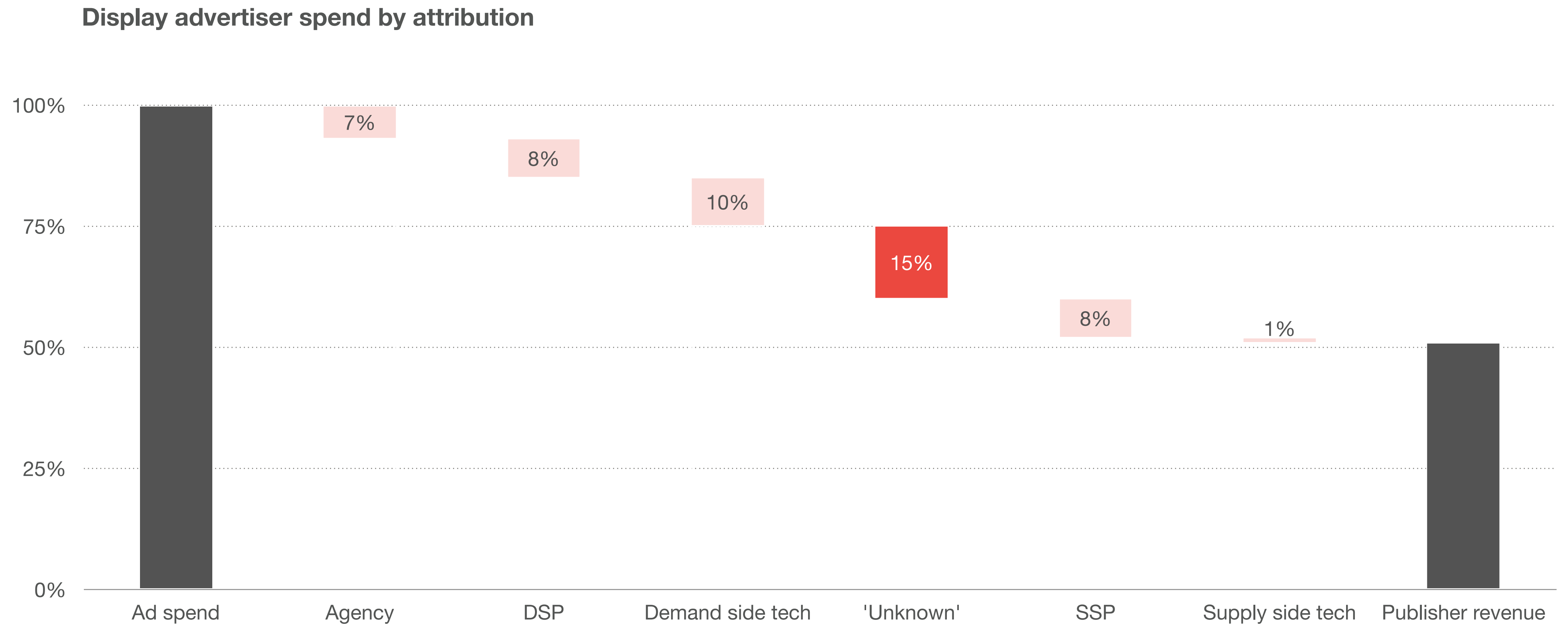
The 'cookie apocalypse'

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



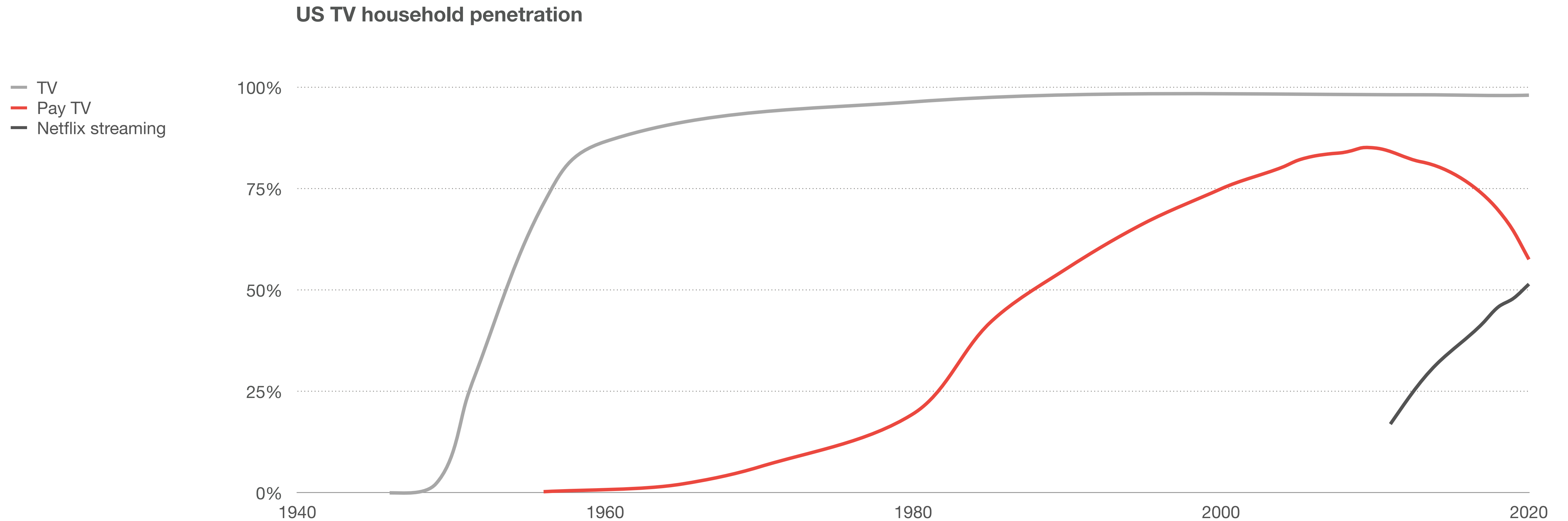
Tesla

No ad budget, but...

“Well, at least we have TV”

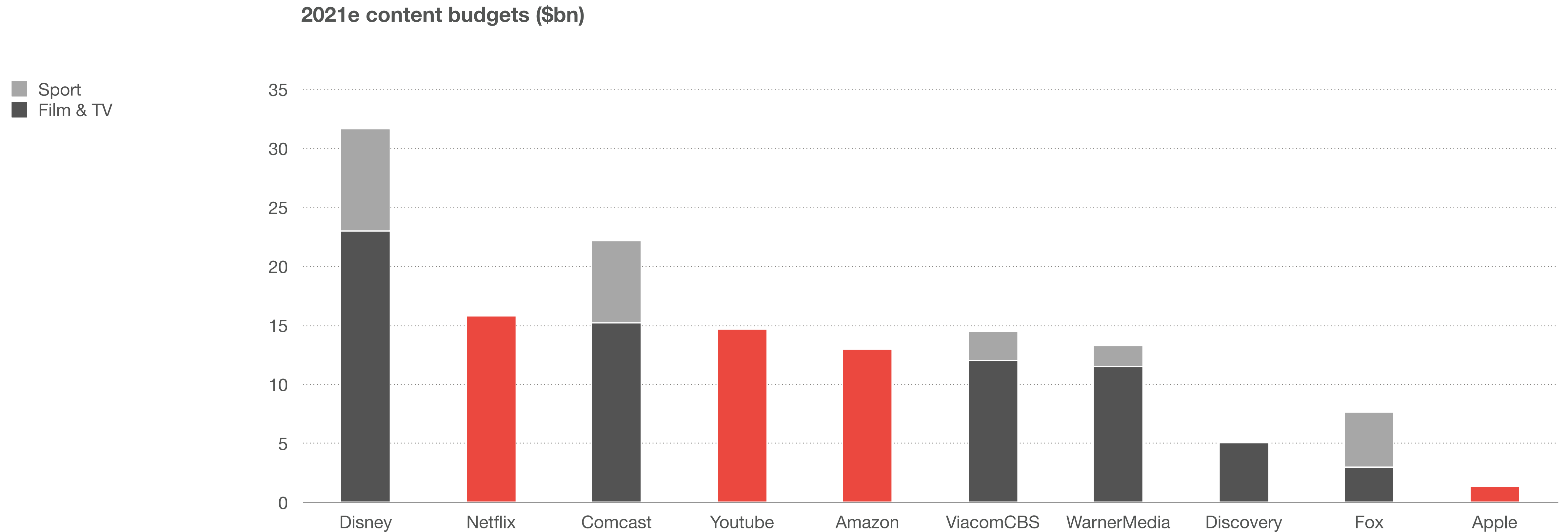
TV is dead, long live TV

US pay TV penetration is down a third from the peak



Show me the money

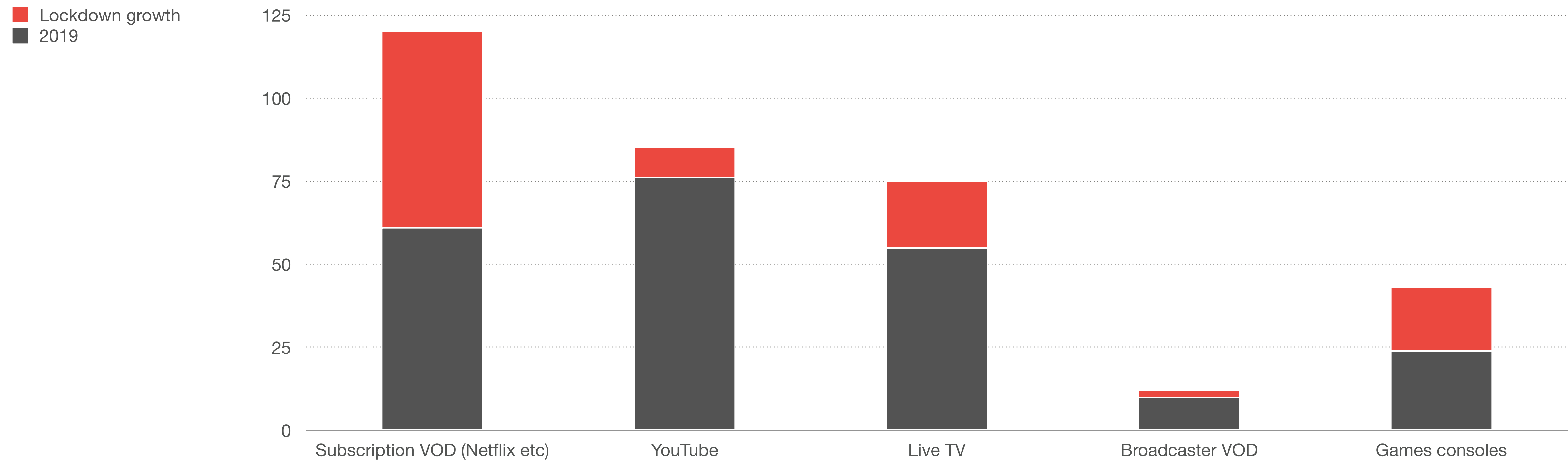
New entrants outspending most legacy content manufacturers



Lockdown accelerates the change

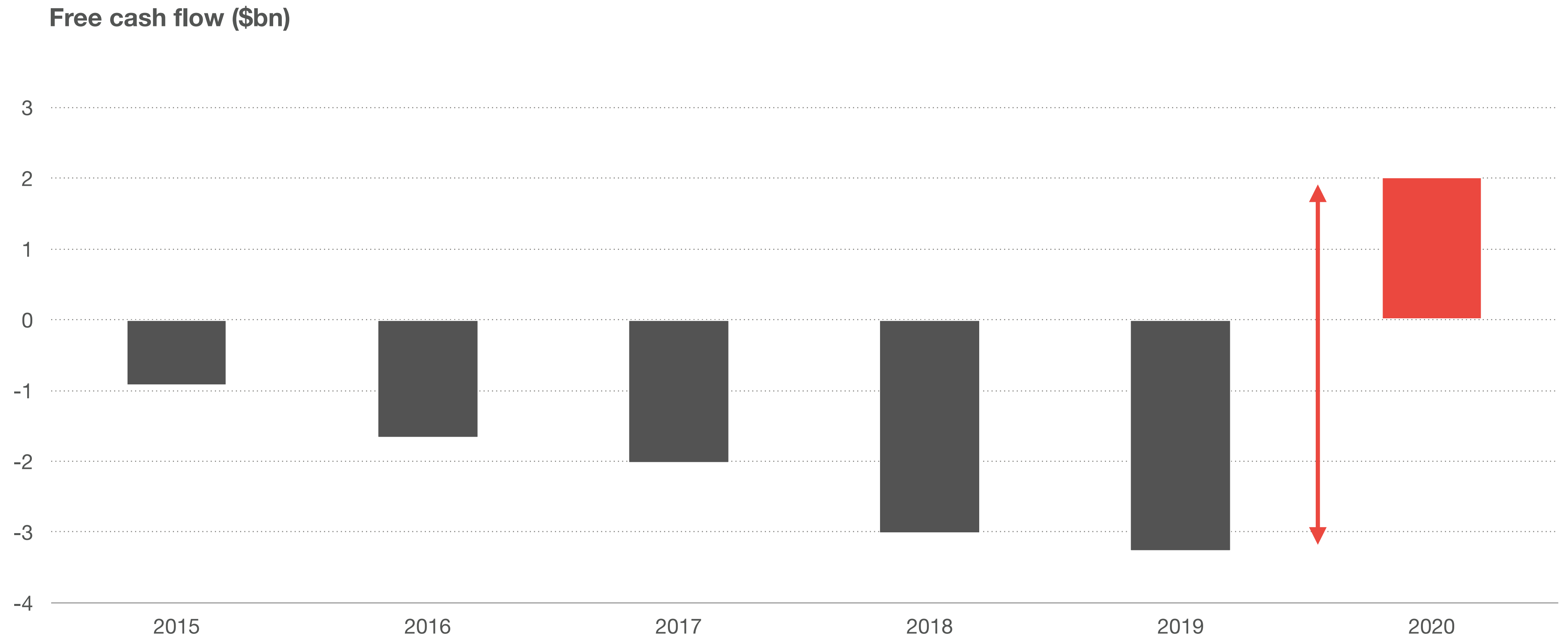
Netflix and YouTube are each bigger than total UK live TV, for 16-24s

UK 16-24s daily video viewing (minutes)



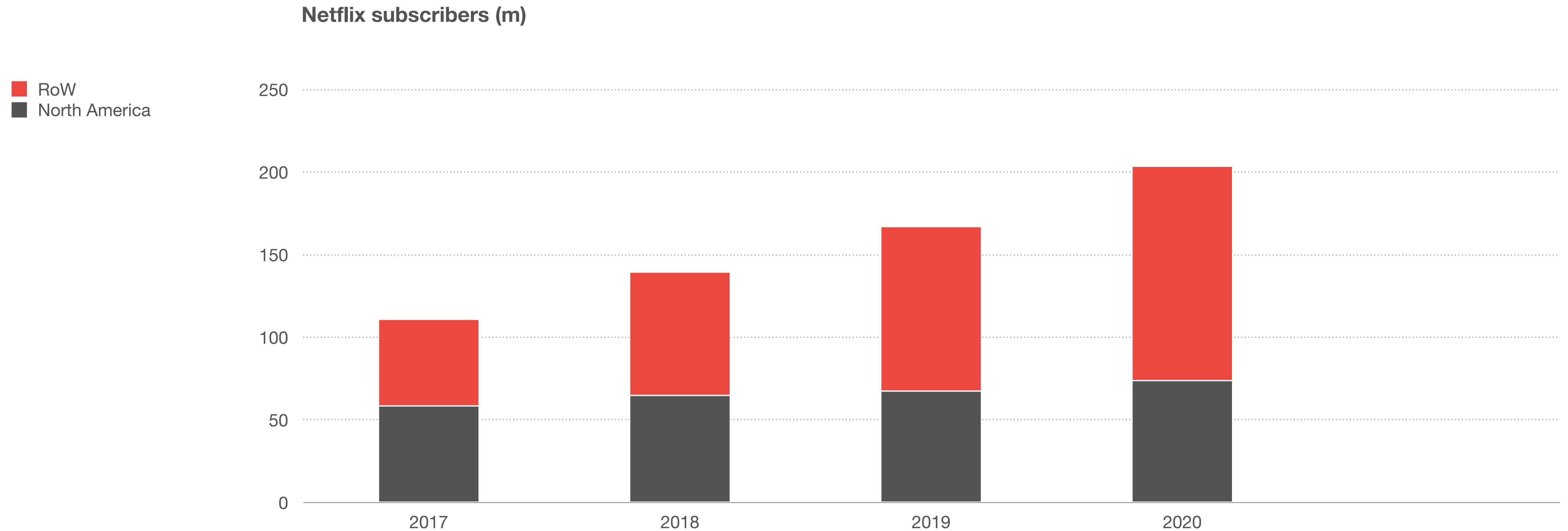
Netflix - a \$5bn swing

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



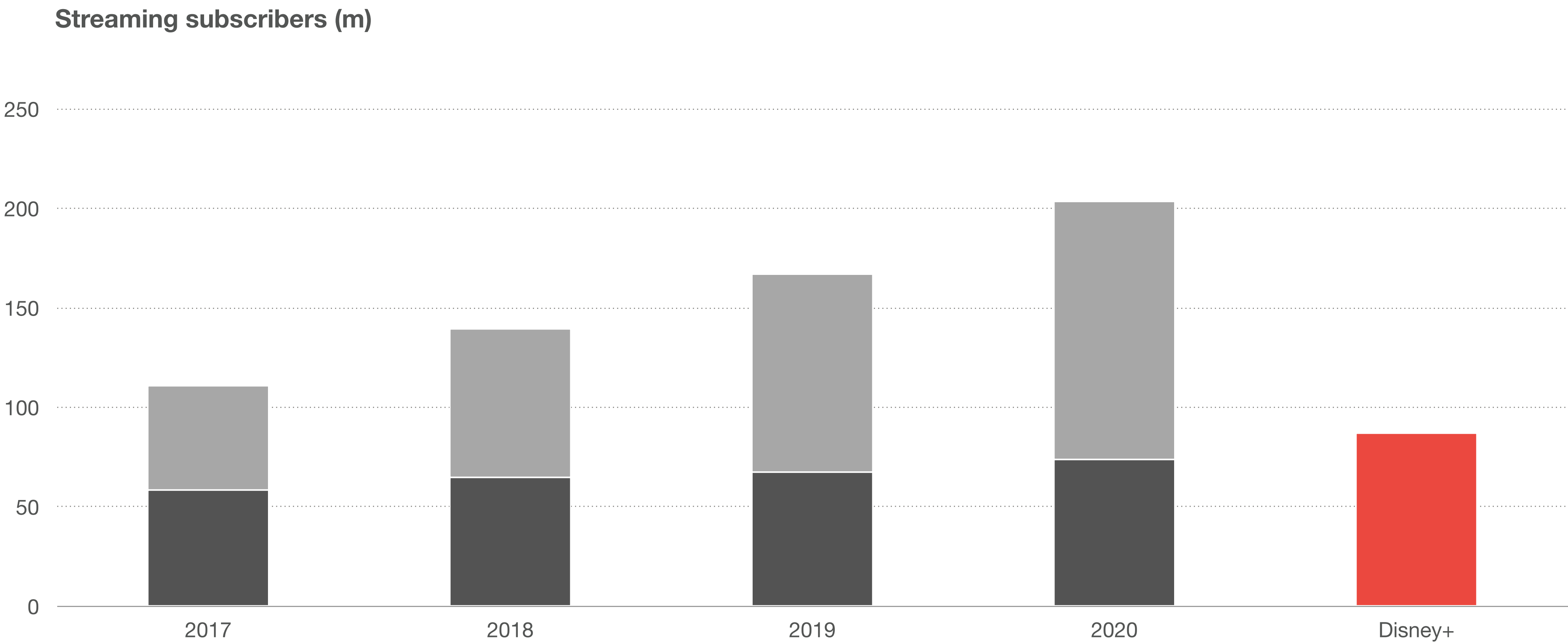
Netflix breaks 200m subs (mostly outside the USA)

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

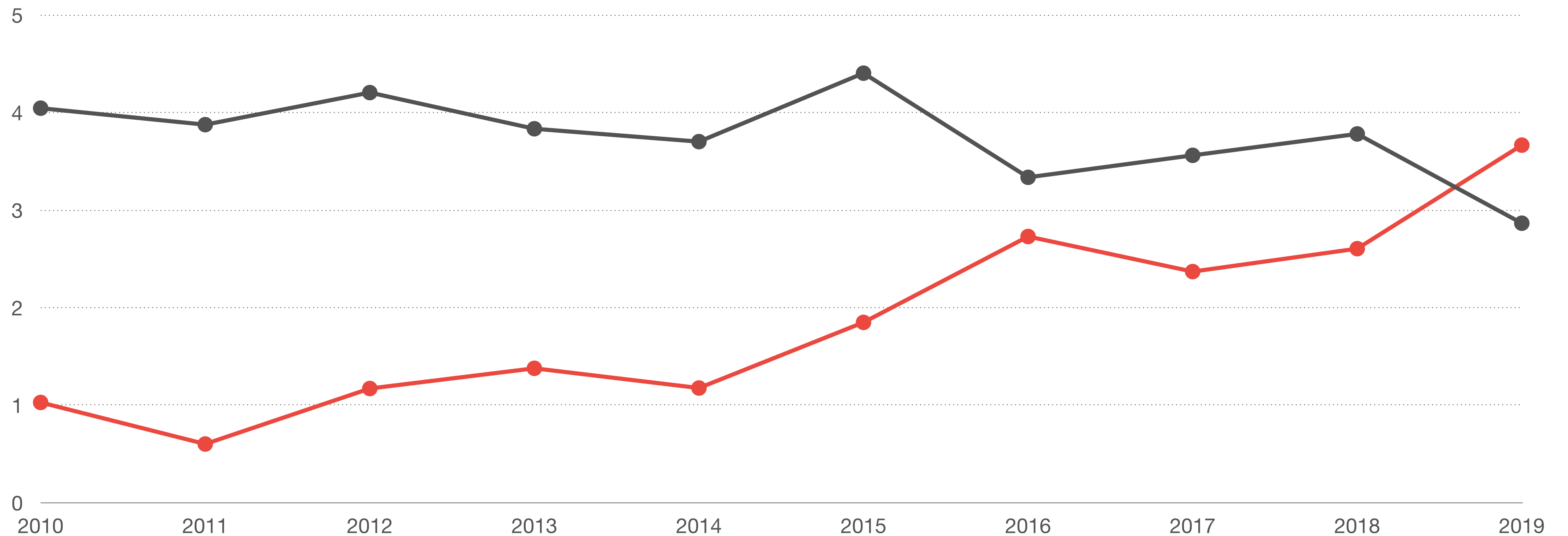


(And takes over the movie business)

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)

● All other studios
● Disney



“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

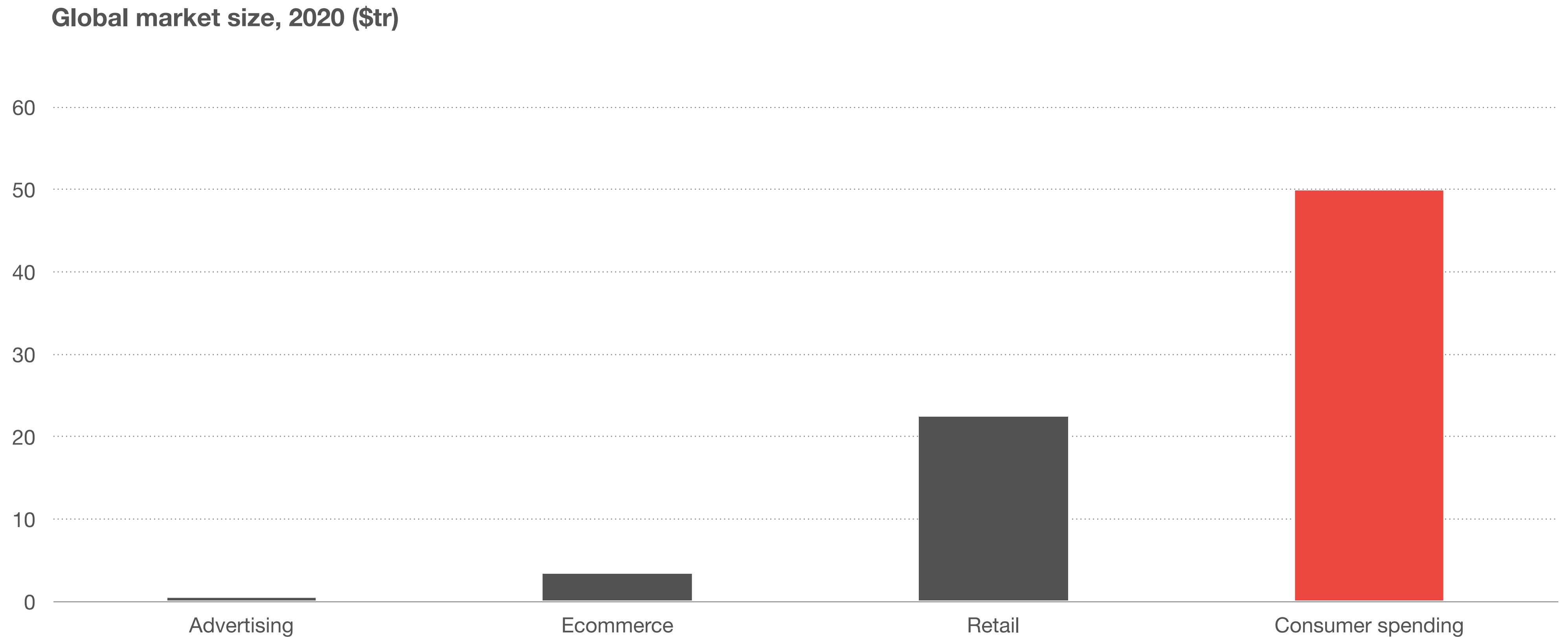


Is that a tech company?

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

What's the real opportunity?

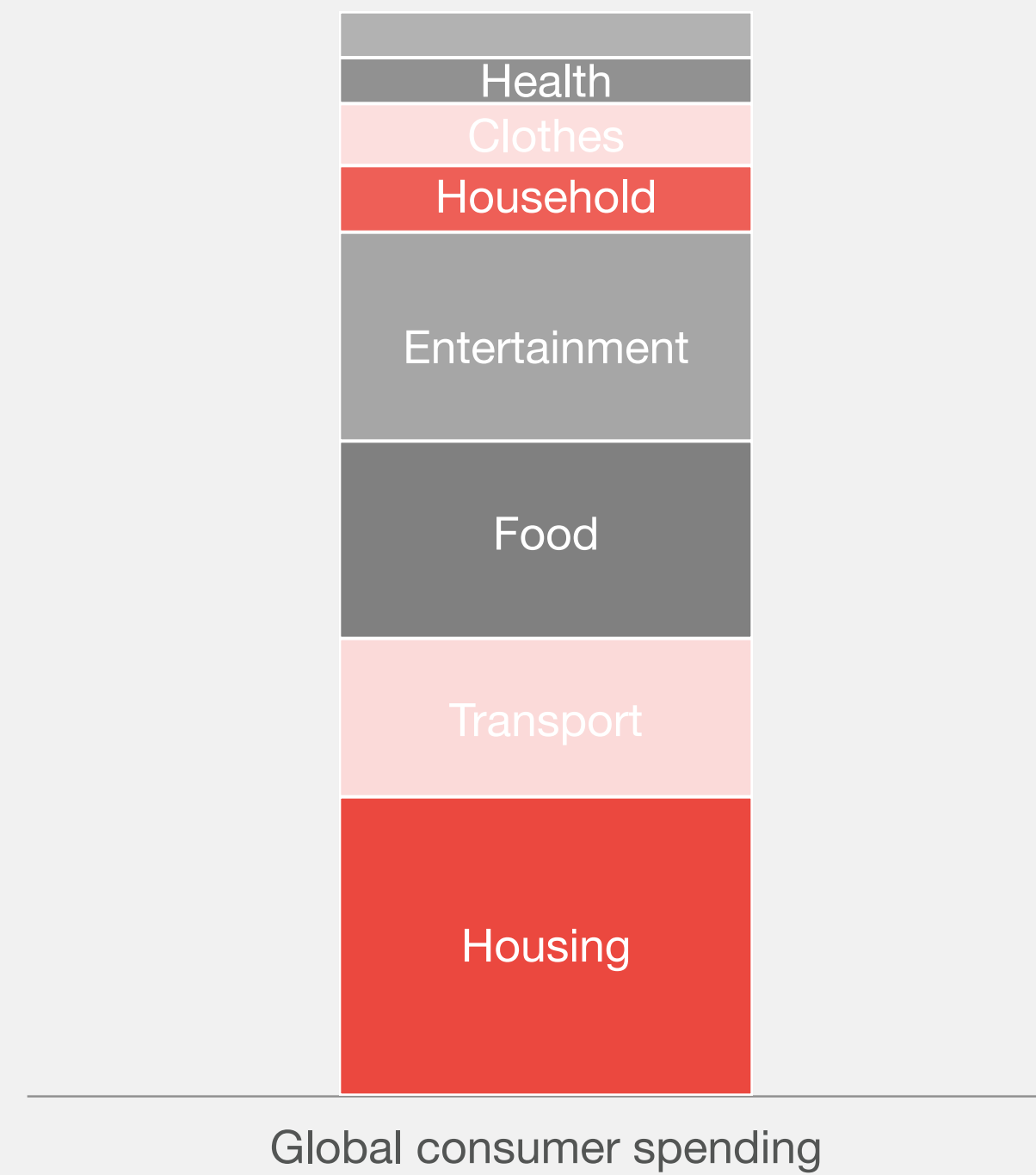
In 1980, IBM was a \$80bn company*. Now the opportunity is, well, everything.



Harder problems

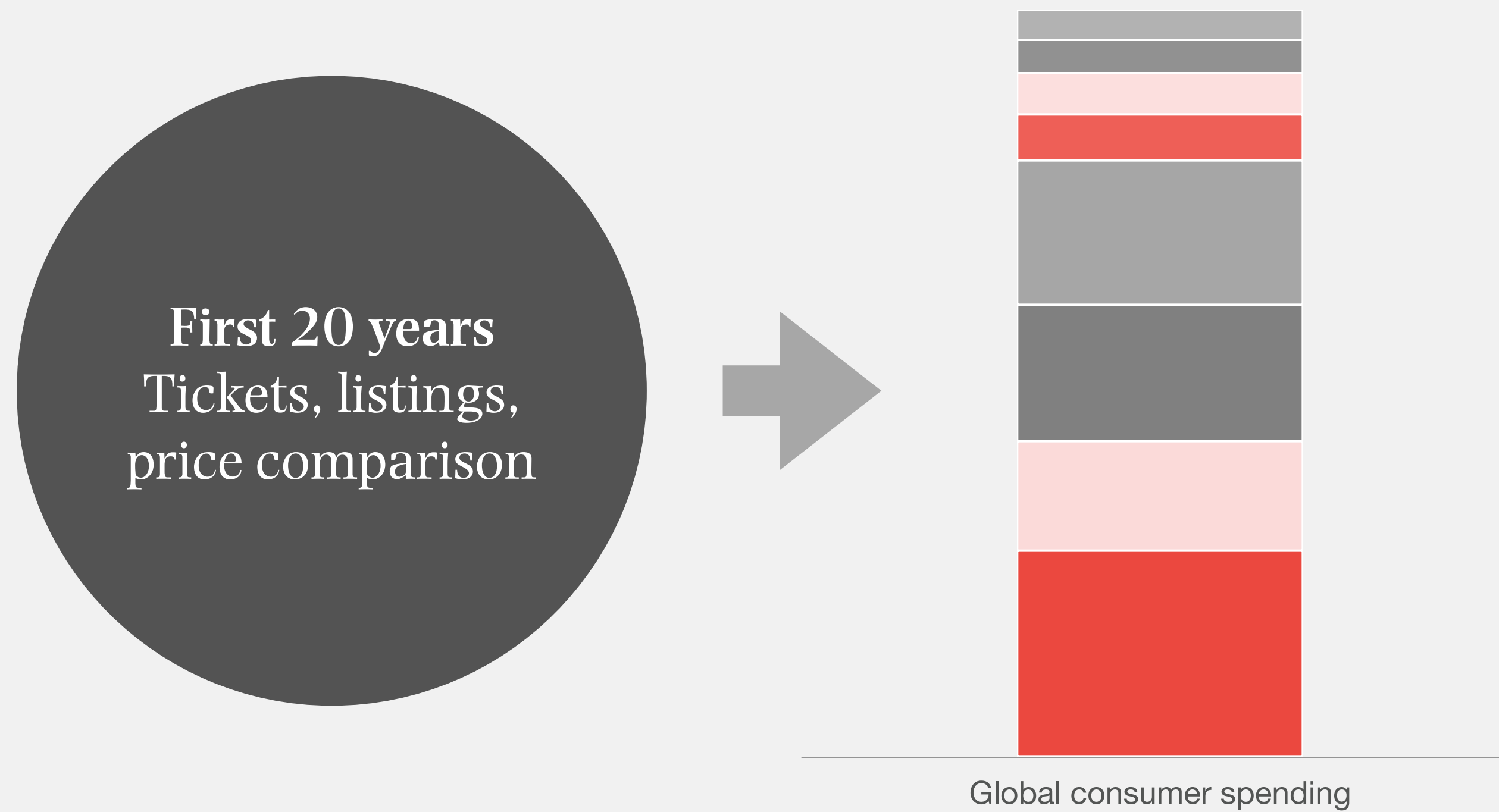
Let's look at that consumer spending

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



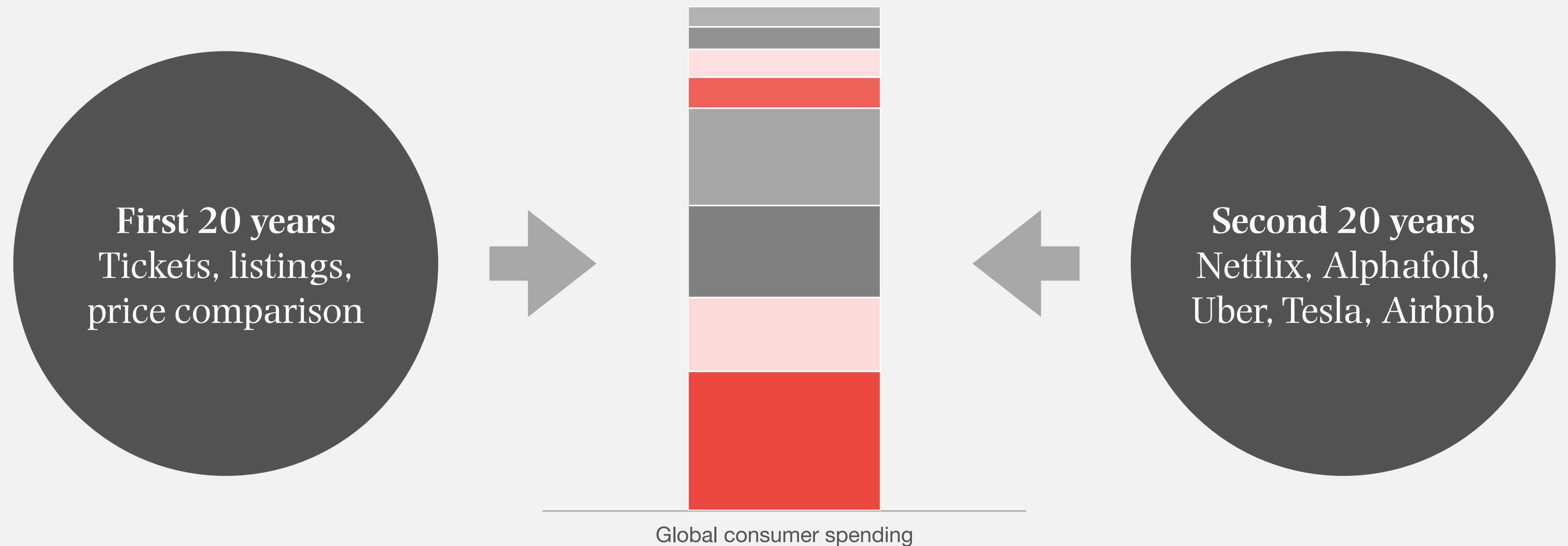
Moving to harder problems

First 20 years: information arbitrage.



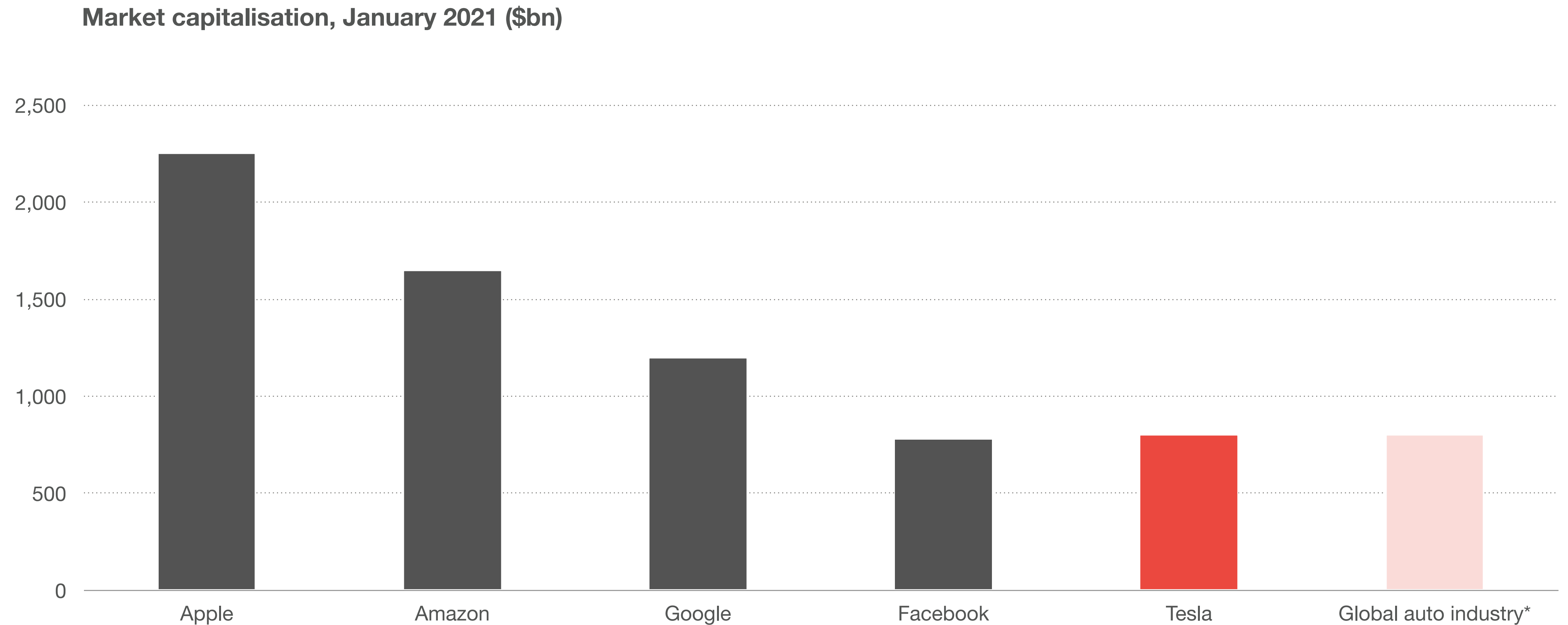
From selling data to changing industries

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 (!)

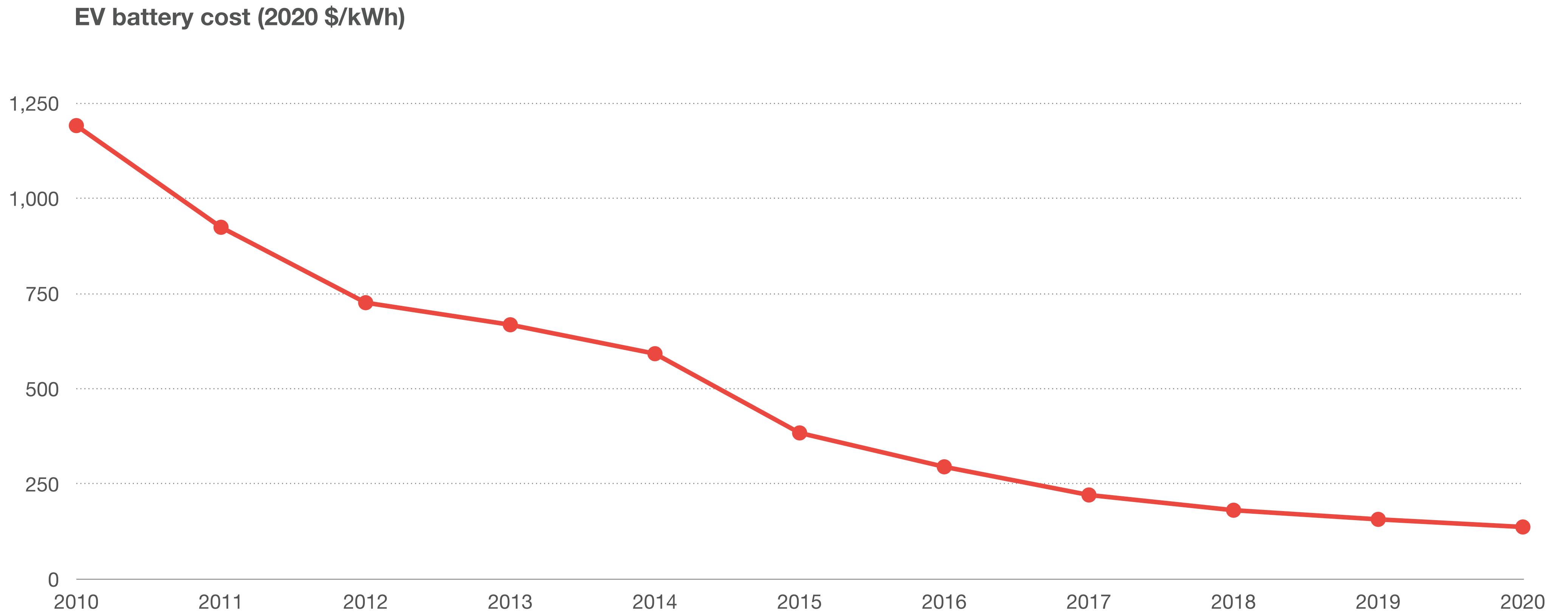


Source: Bloomberg

* 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

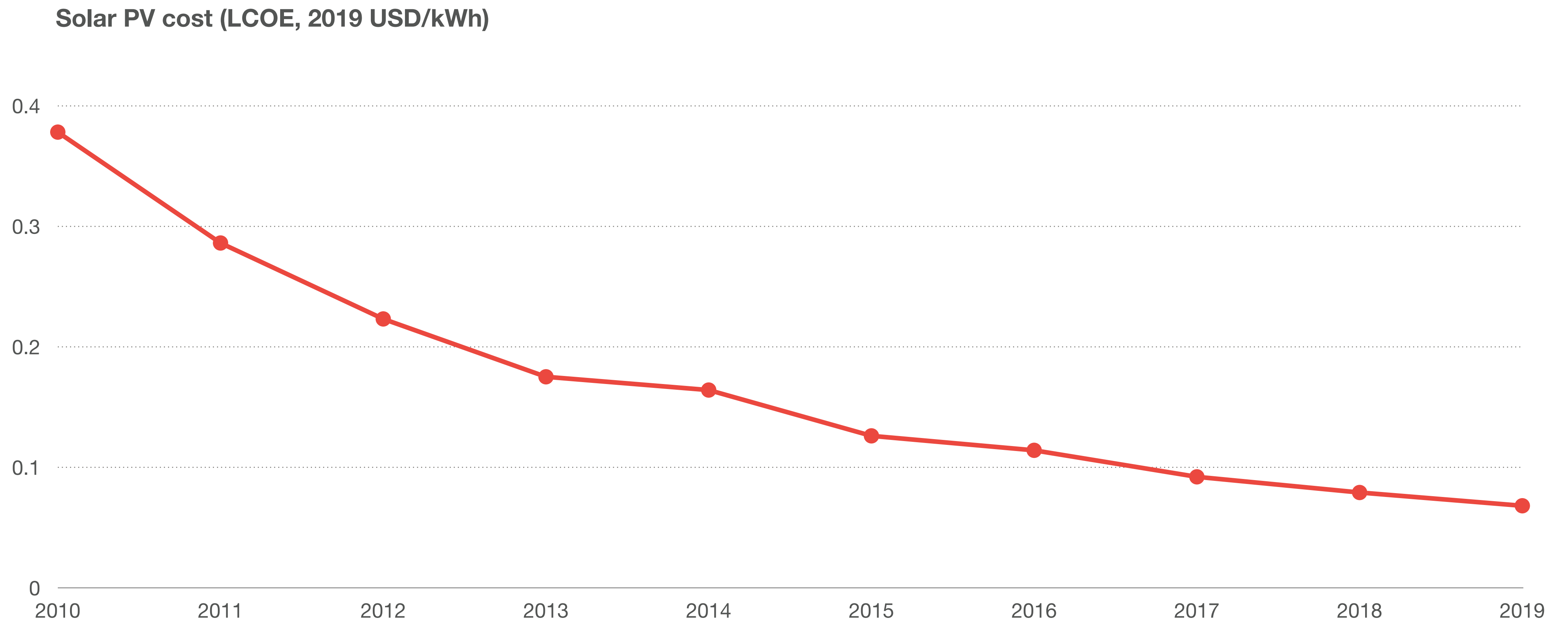
Norway will have 58 electric ferries by the end of 2021

Source: Bastø Fosen



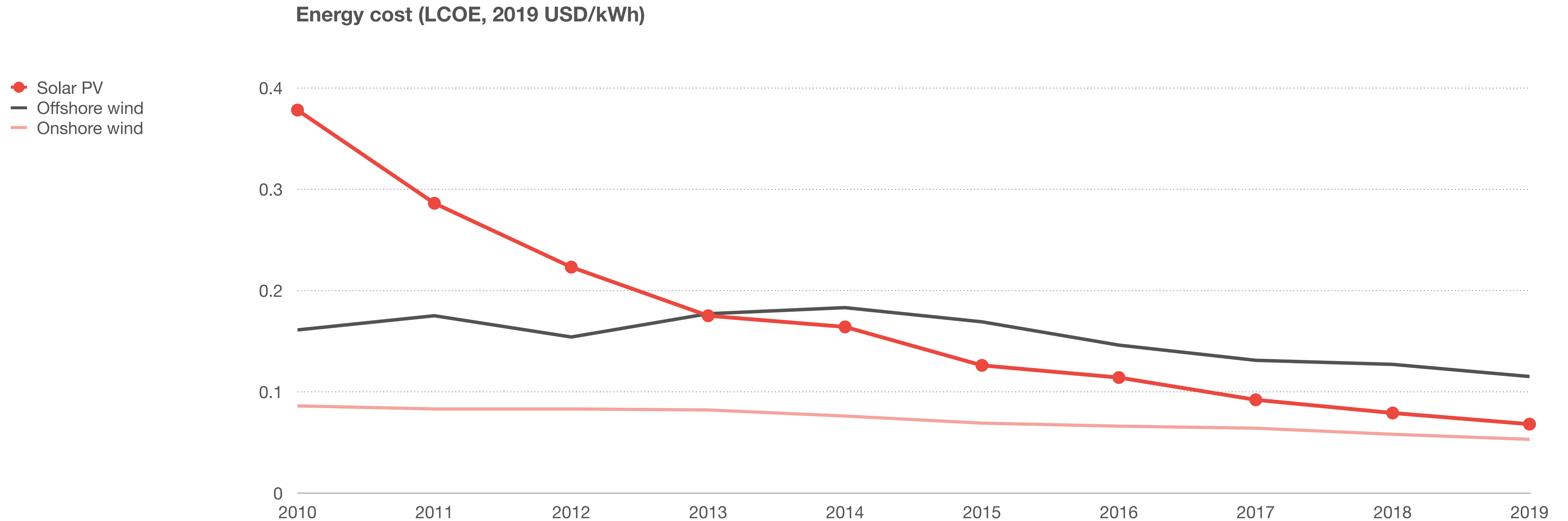
Equally, collapsing solar costs

Solar PV prices have fallen 82%



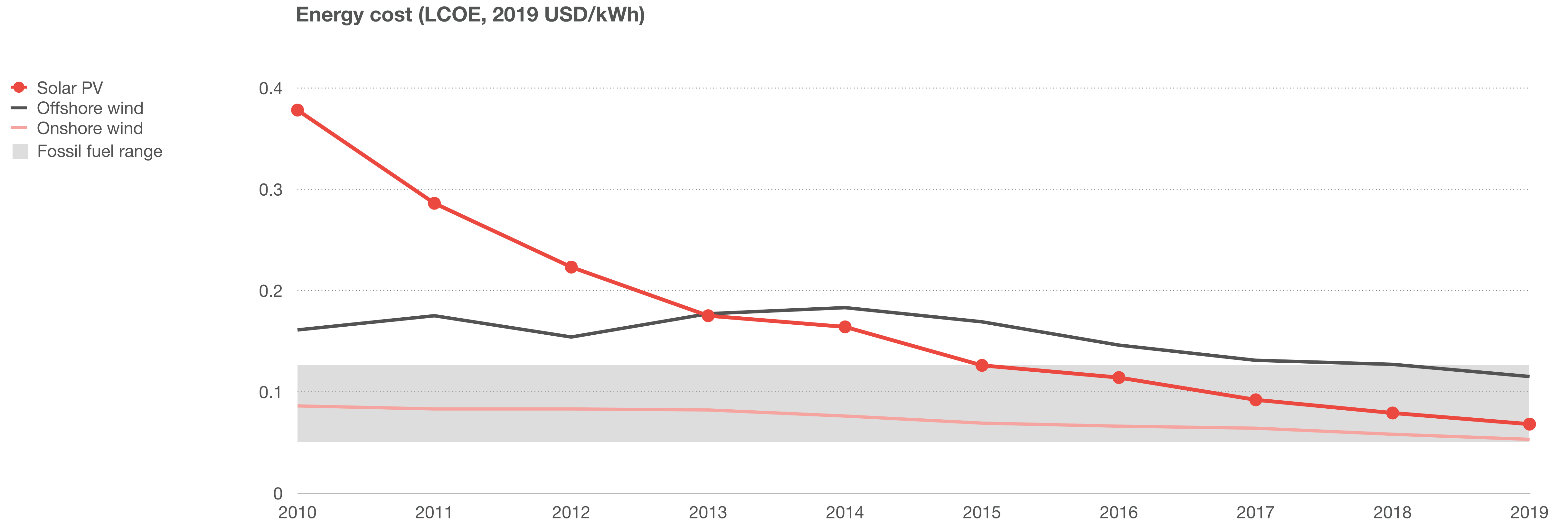
And wind

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



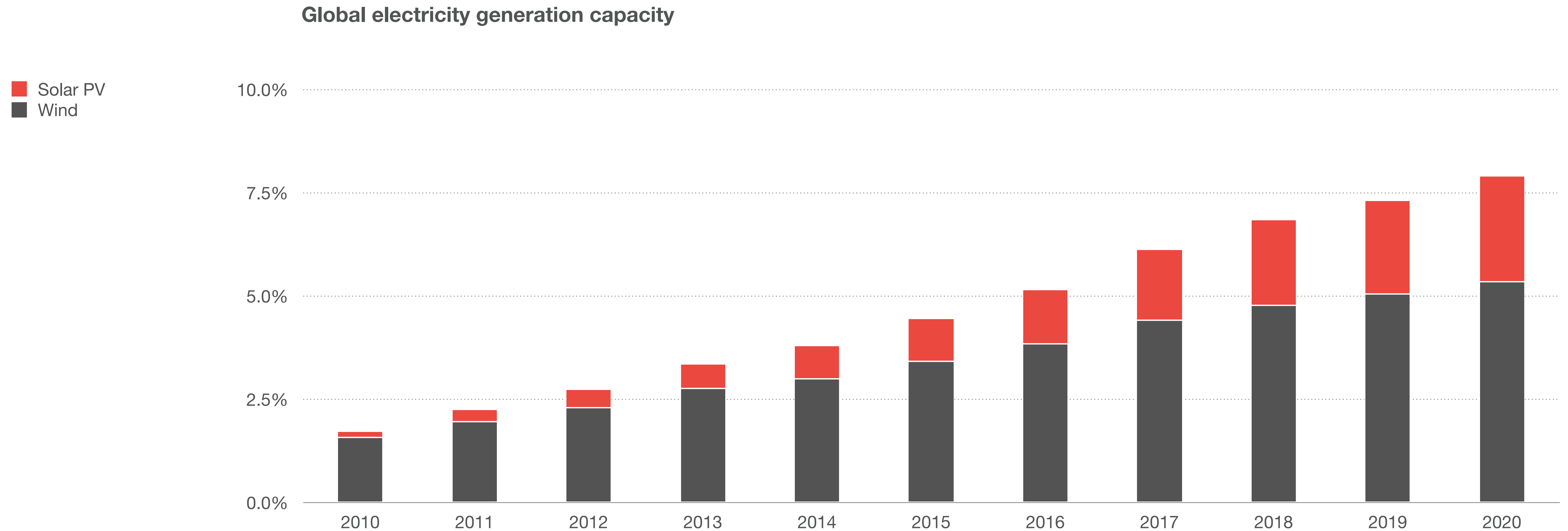
Putting it on commercial terms with fossil fuel

From science project to product



Becoming real

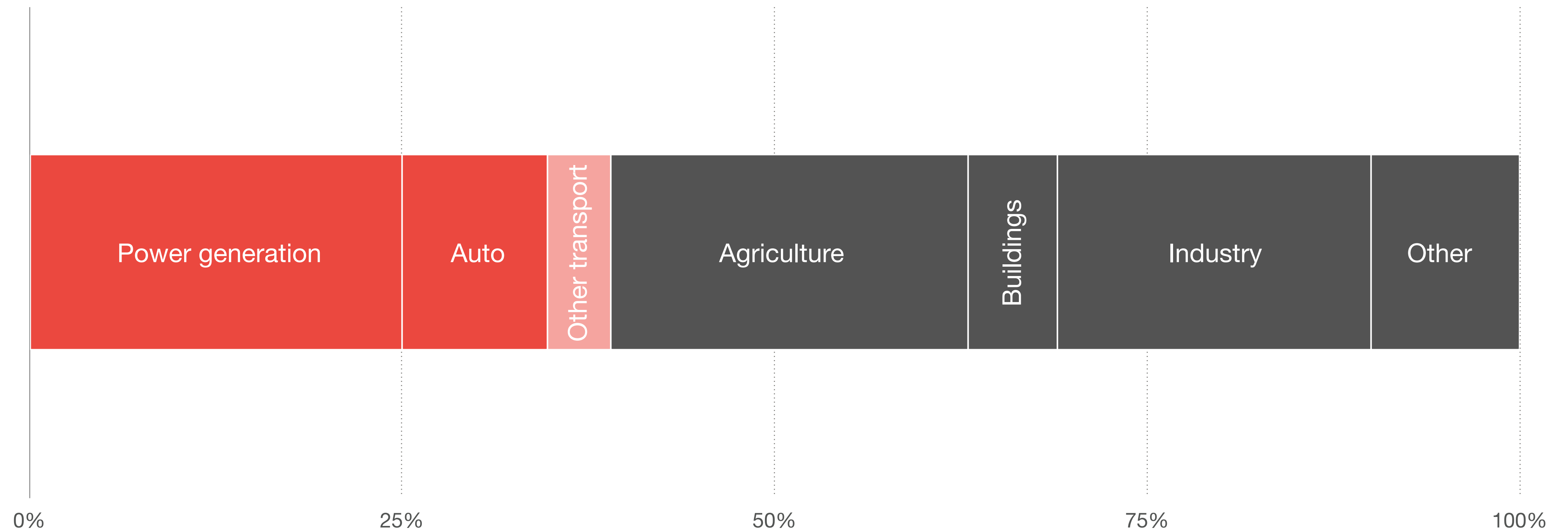
Global installed base share of solar PV + wind has increased 4x since 2010



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

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

Global greenhouse emissions, 2017

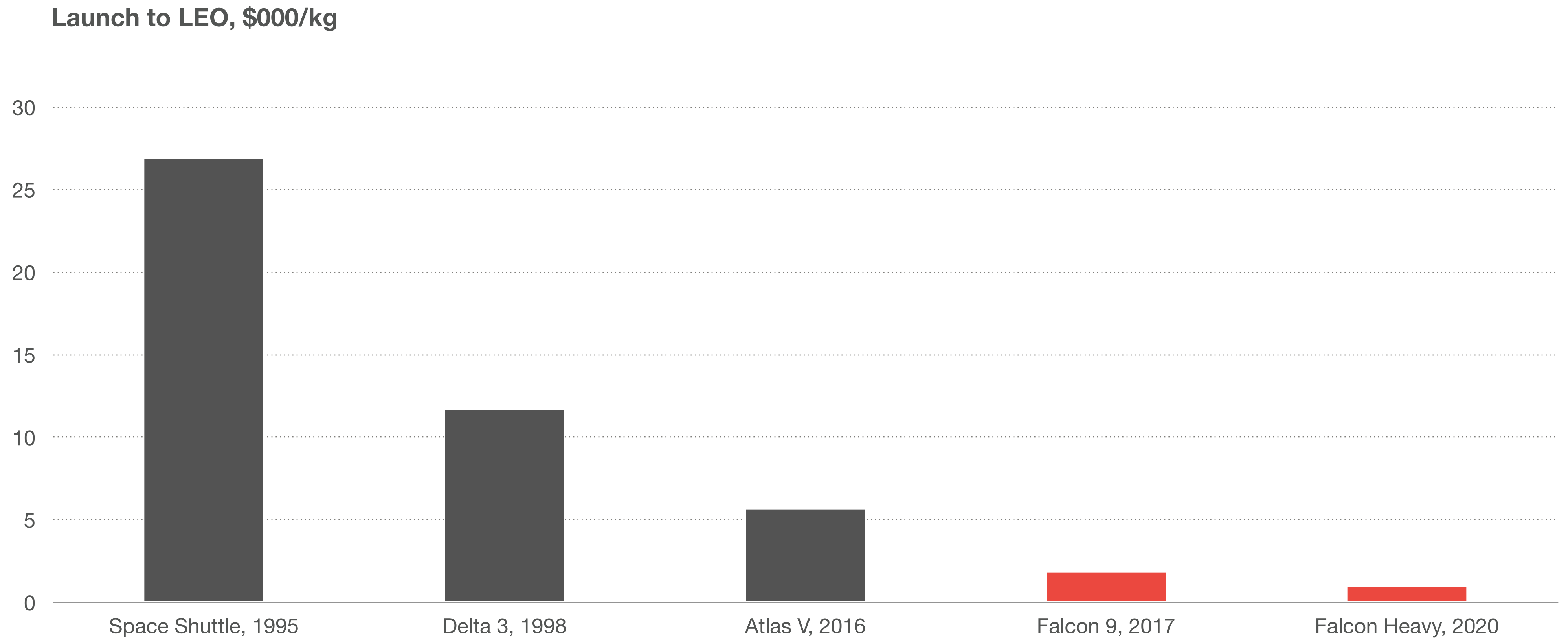


Plant-based meat?
Leather?



Moonshots?

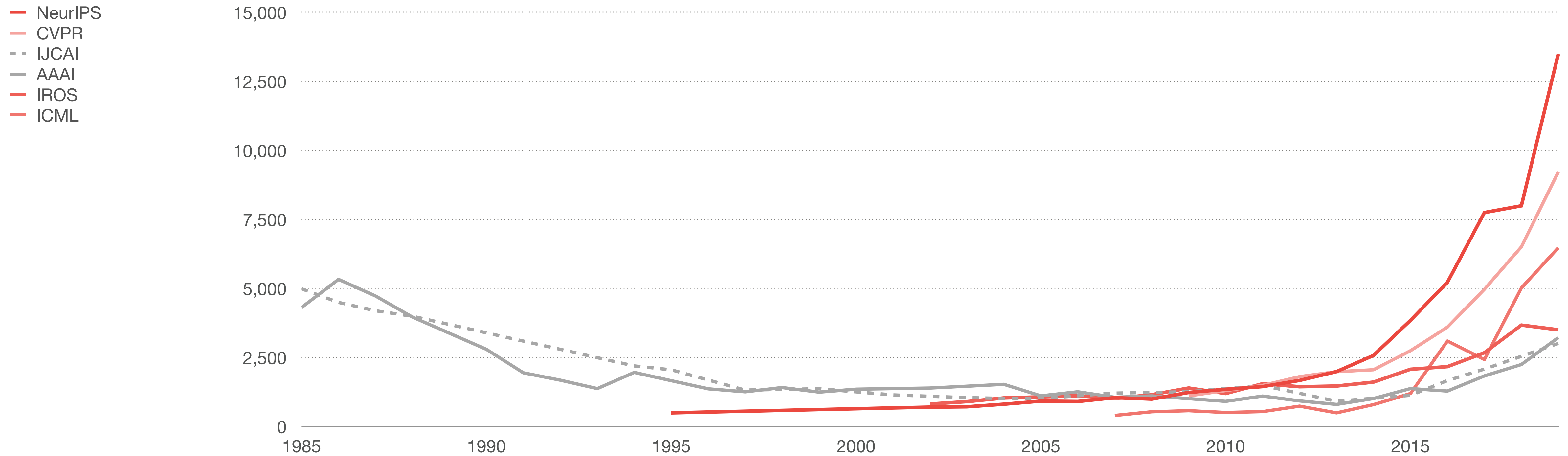
SpaceX has cut launch costs by at least 5x



From rockets to HAL9000

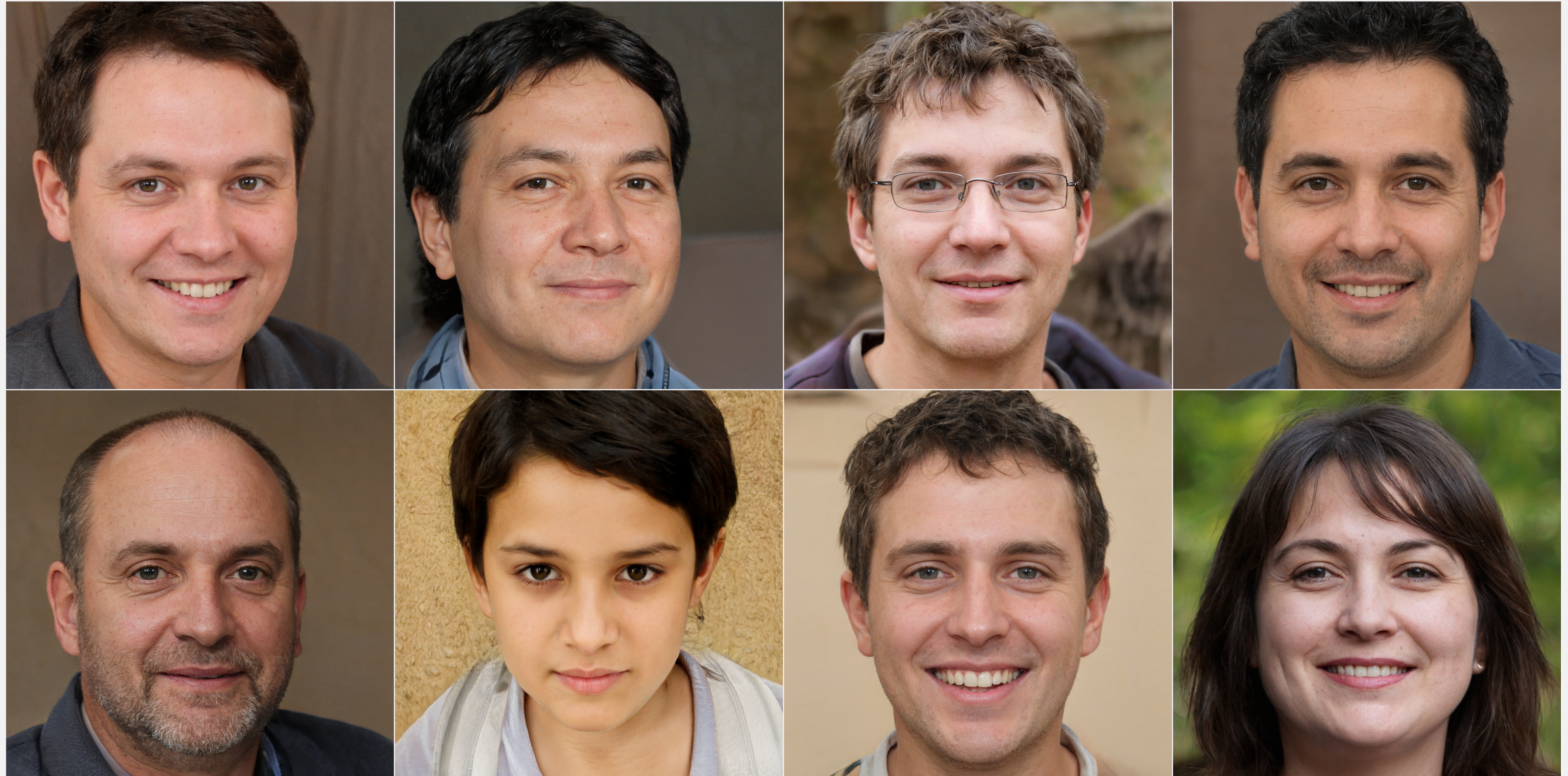
2010: “Machine learning is a dumb idea from the 80s - don’t bother.”

Major AI conference attendance



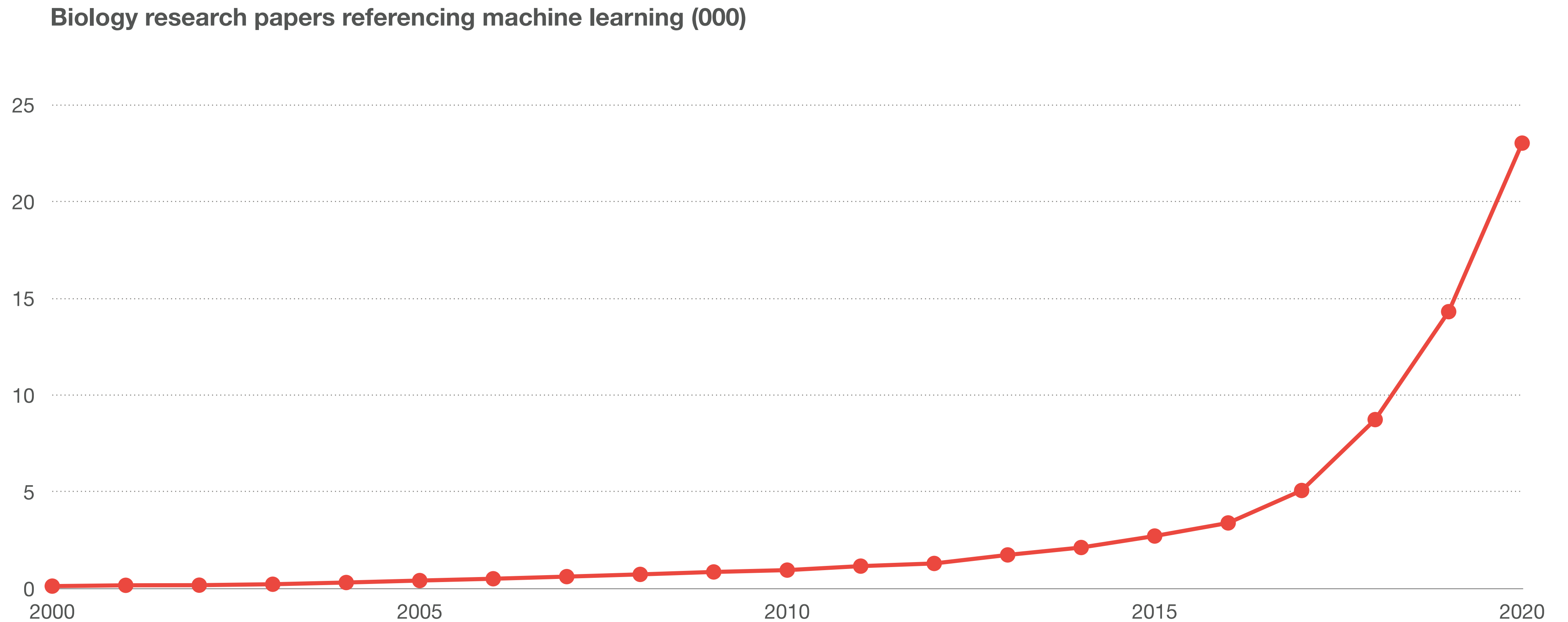
None of these people exist

These faces are algorithmically generated by a machine learning system



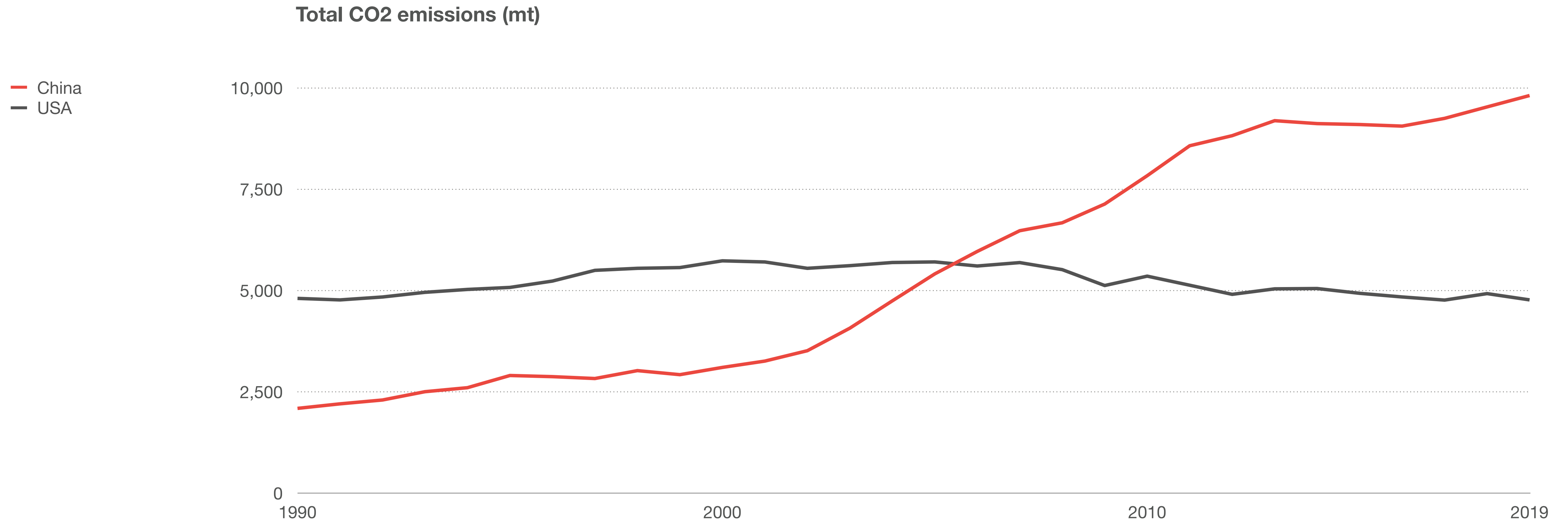
Computational biology

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



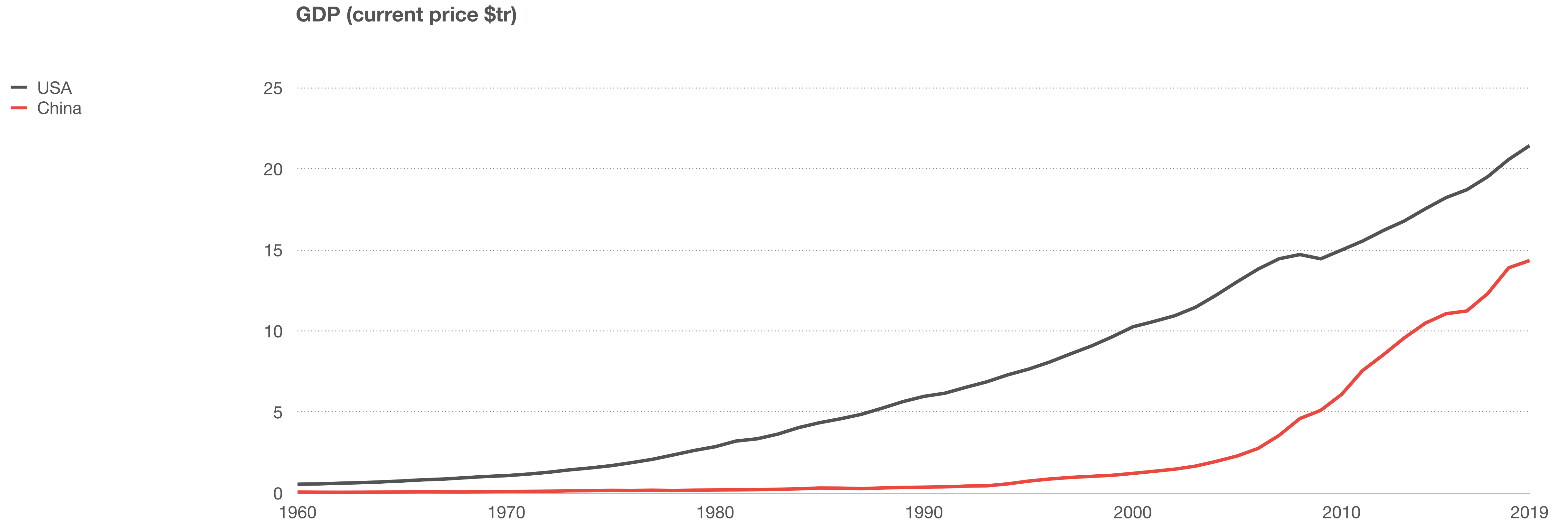
Geopolitics

Geopolitics and
tech

China as a new
centre of
innovation?

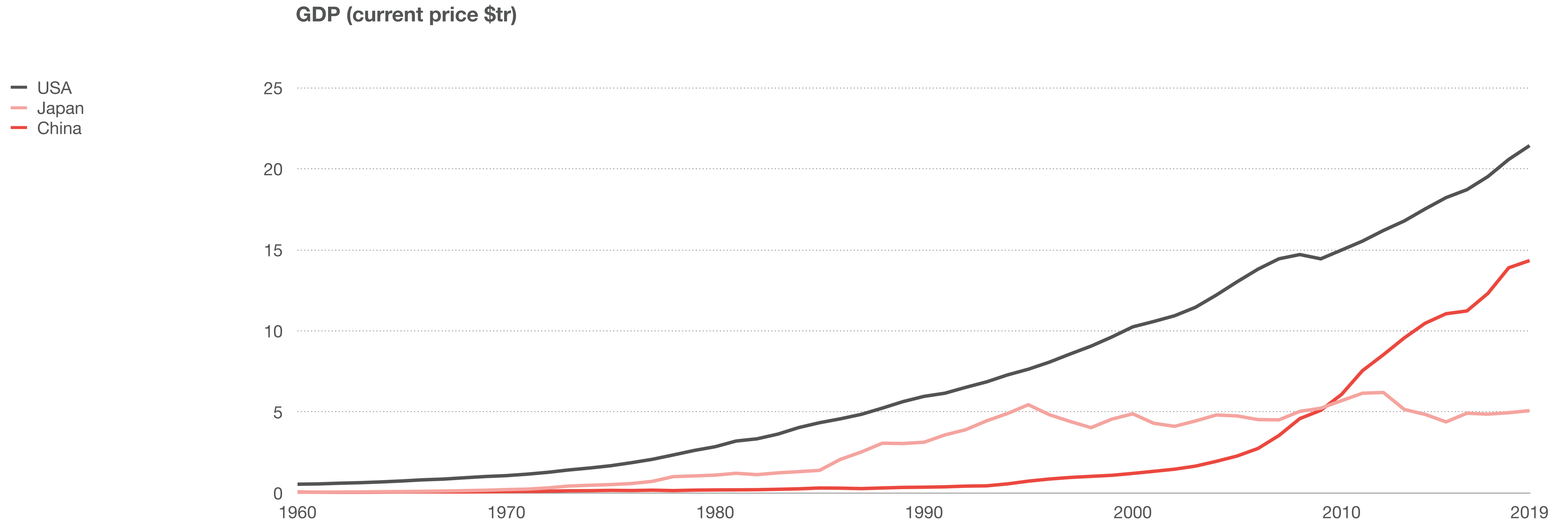
Geopolitics and superpowers

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



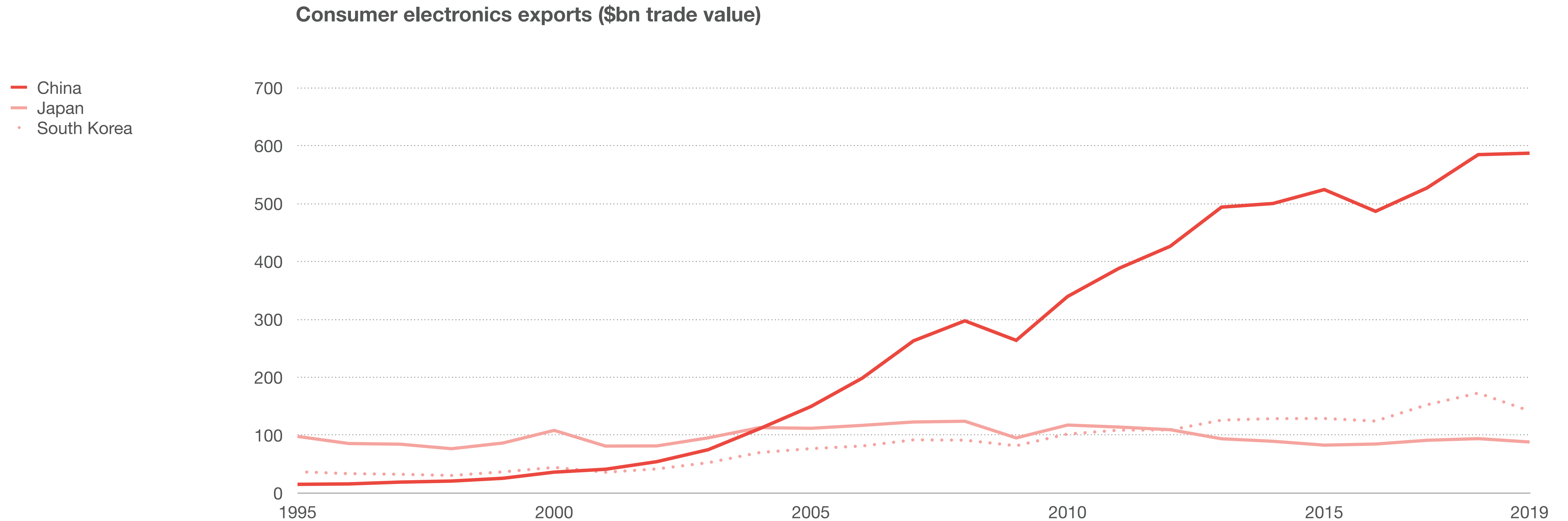
Americans worried about Japan once...

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



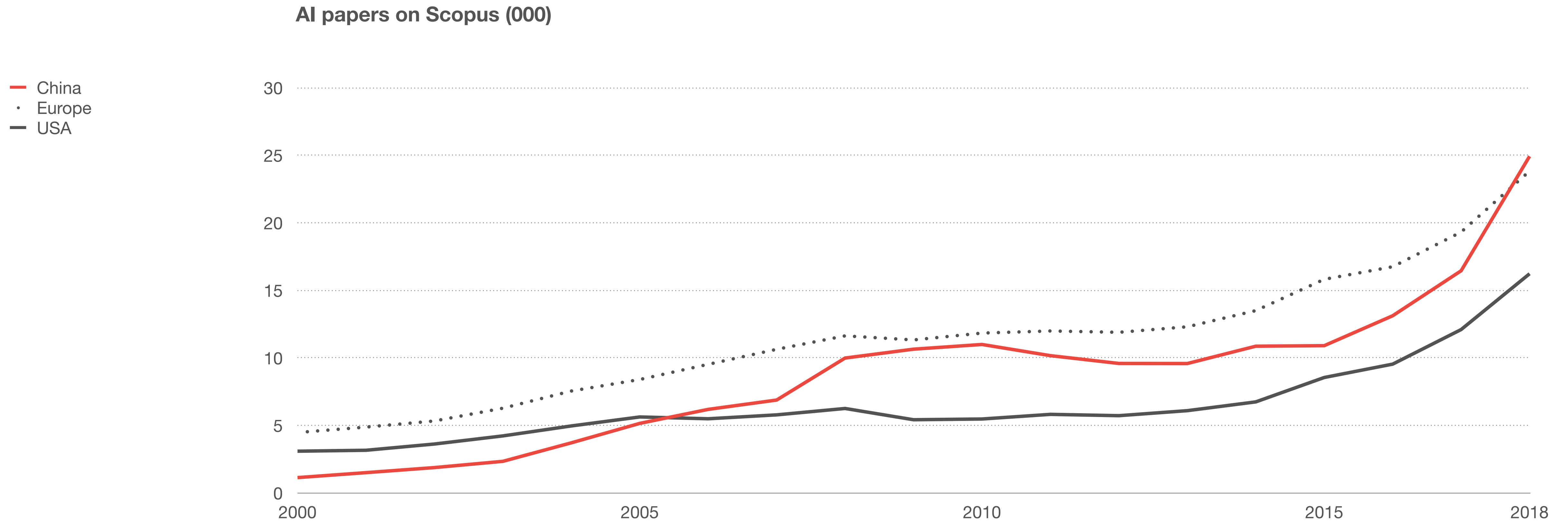
Source: UN Comtrade

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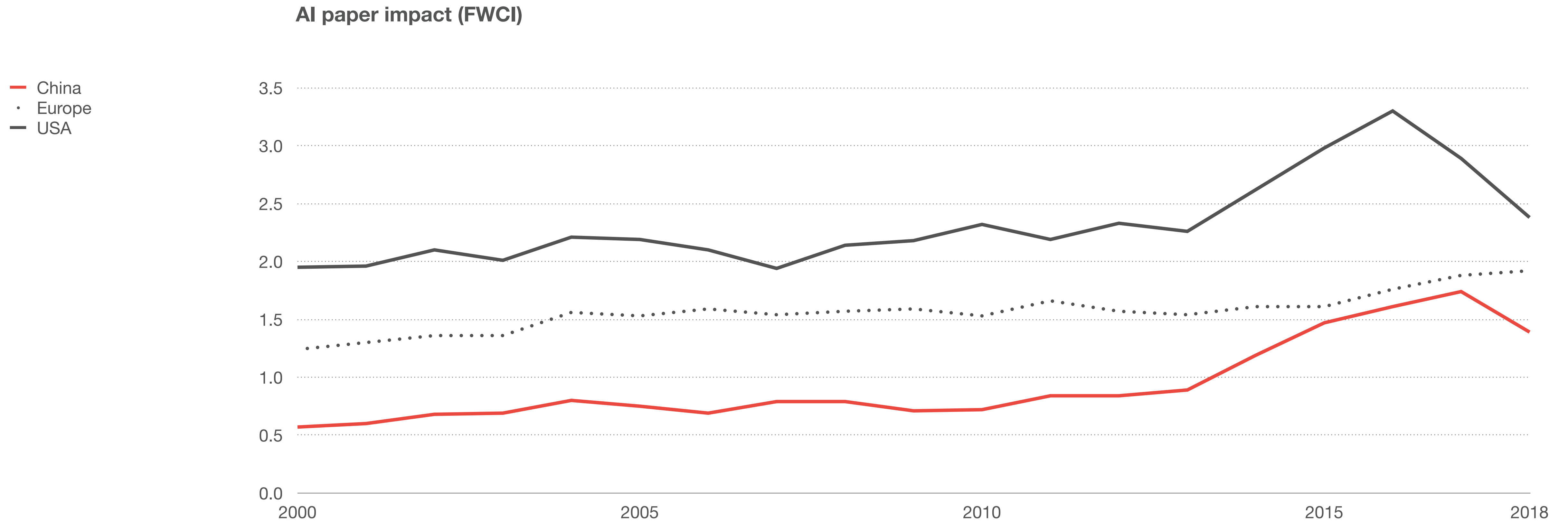
“China has all the AI!”

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



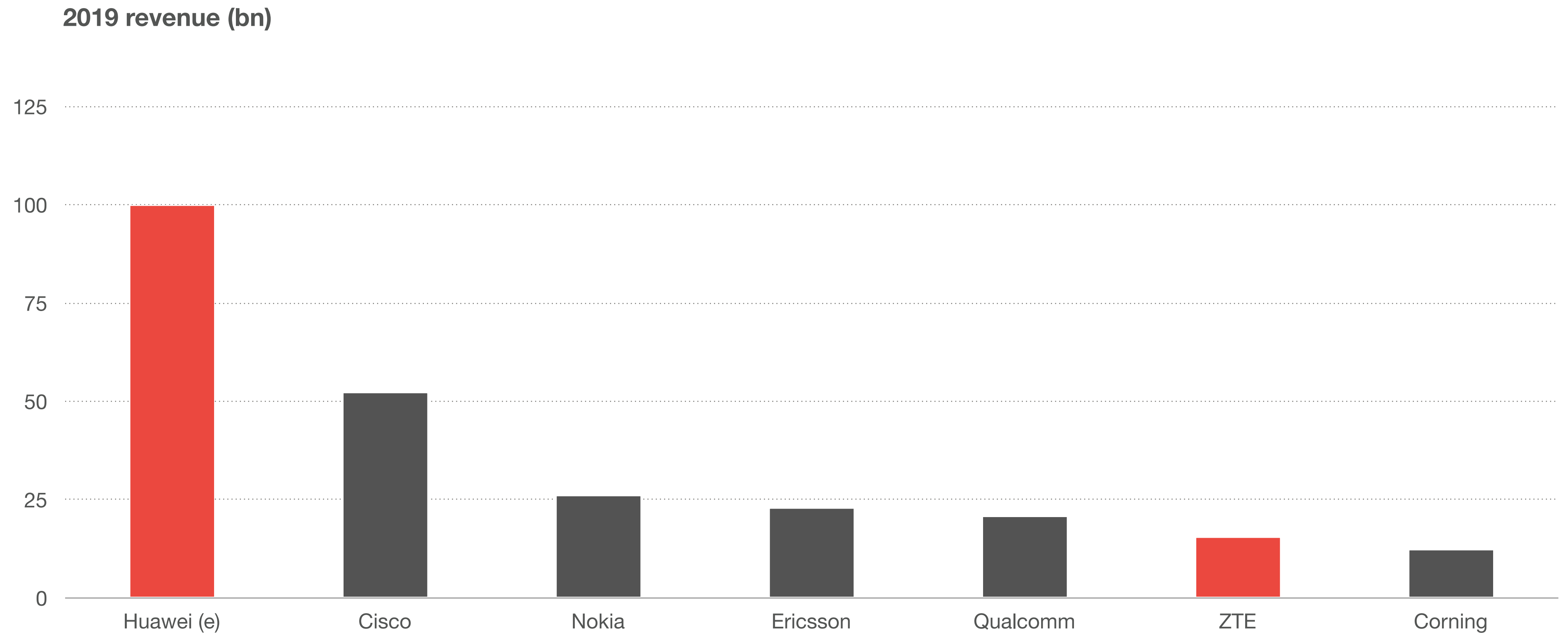
Where is the research that matters?

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



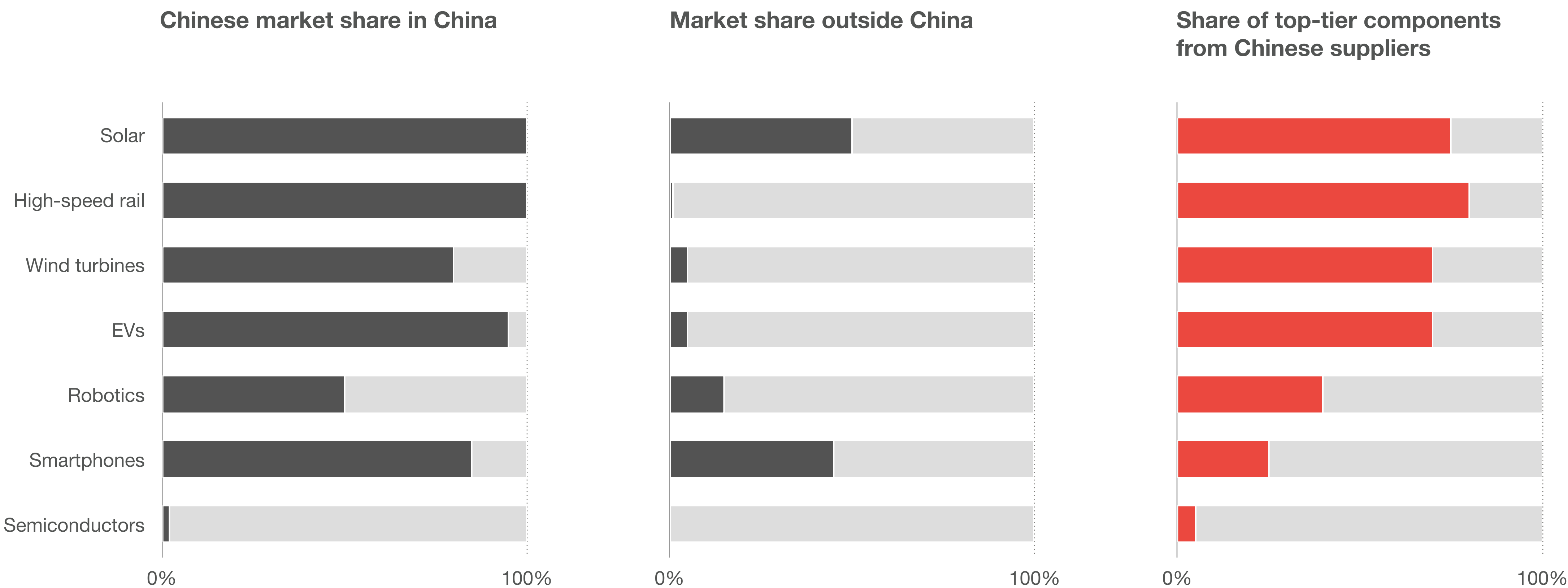
Huawei and the supply chain question

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



But elsewhere, market share or value share?

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

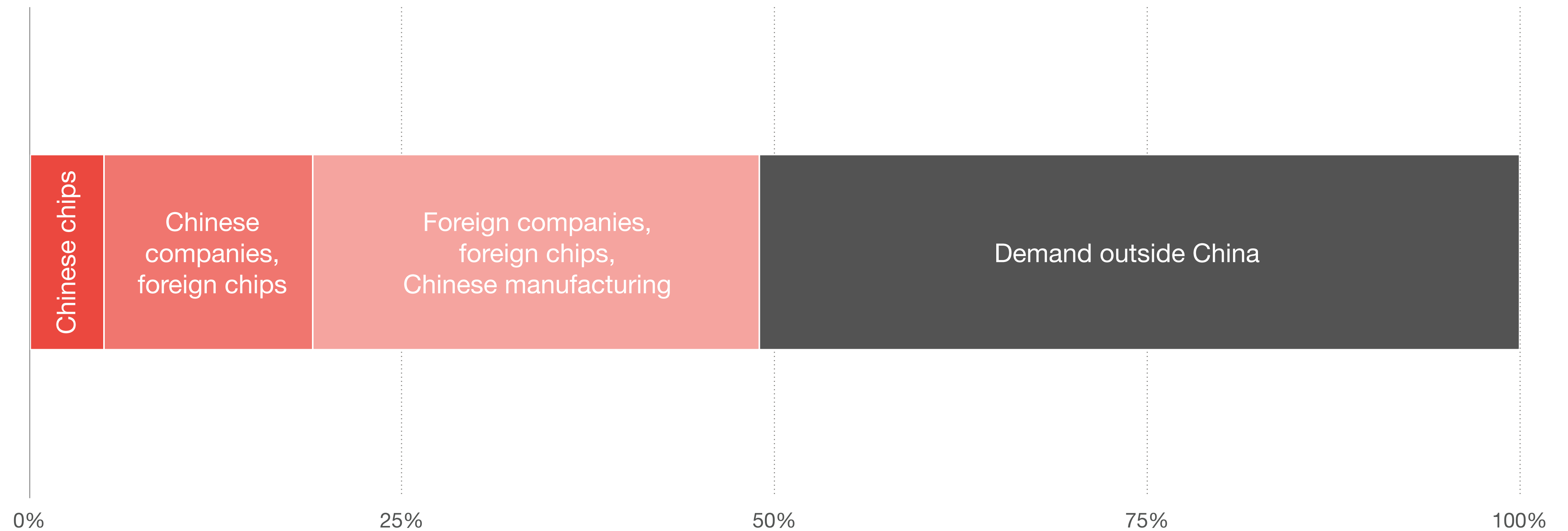


Source: MGI, BarCap

Chips with everything

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

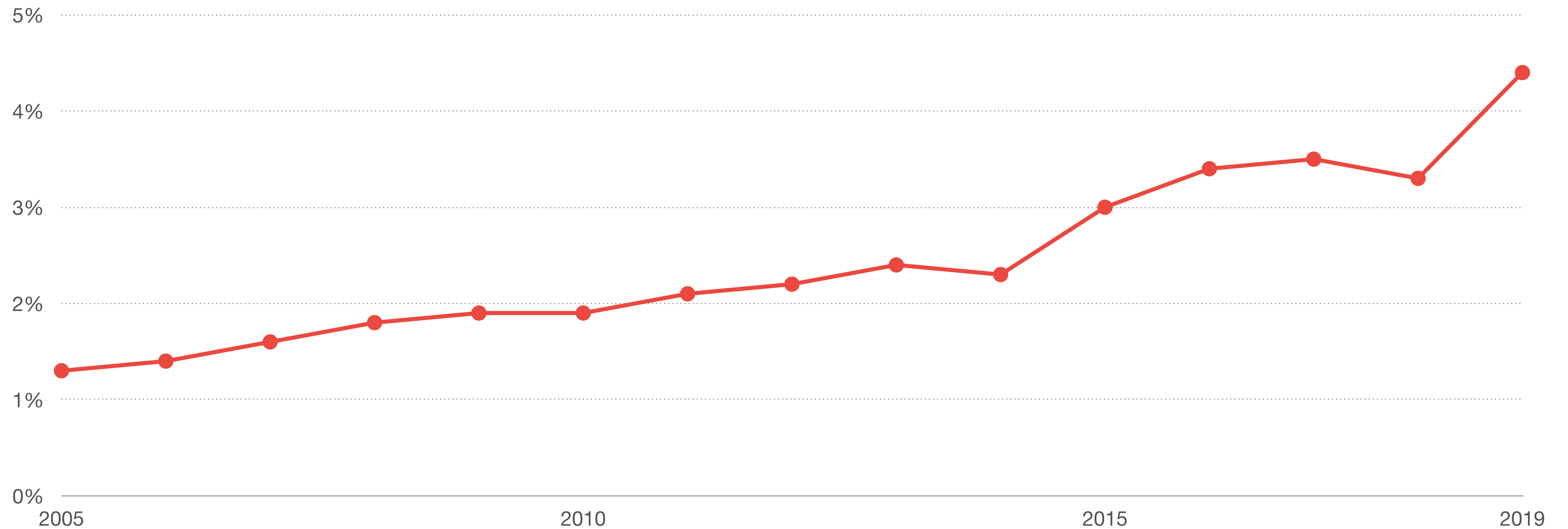
Global semiconductor demand, 2018



Tech sovereignty?

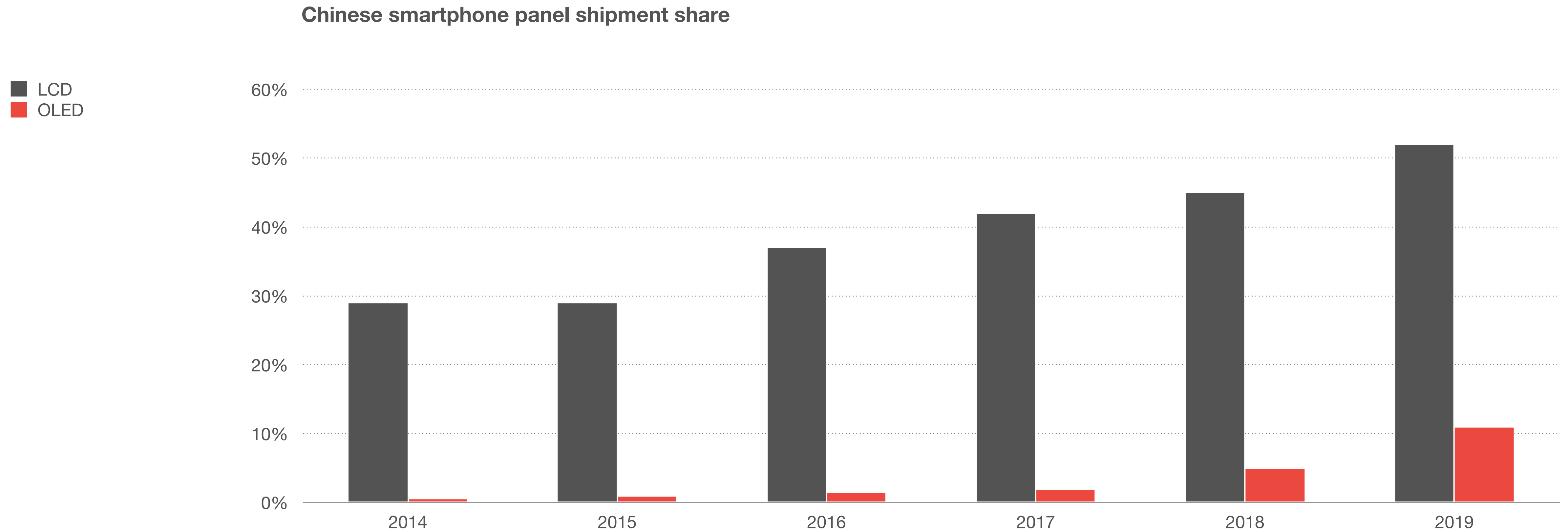
Semiconductors have been a Chinese policy focus for a decade, but with slow progress

China semi market share



Moving up the value chain?

Takes time and money, but rarely impossible

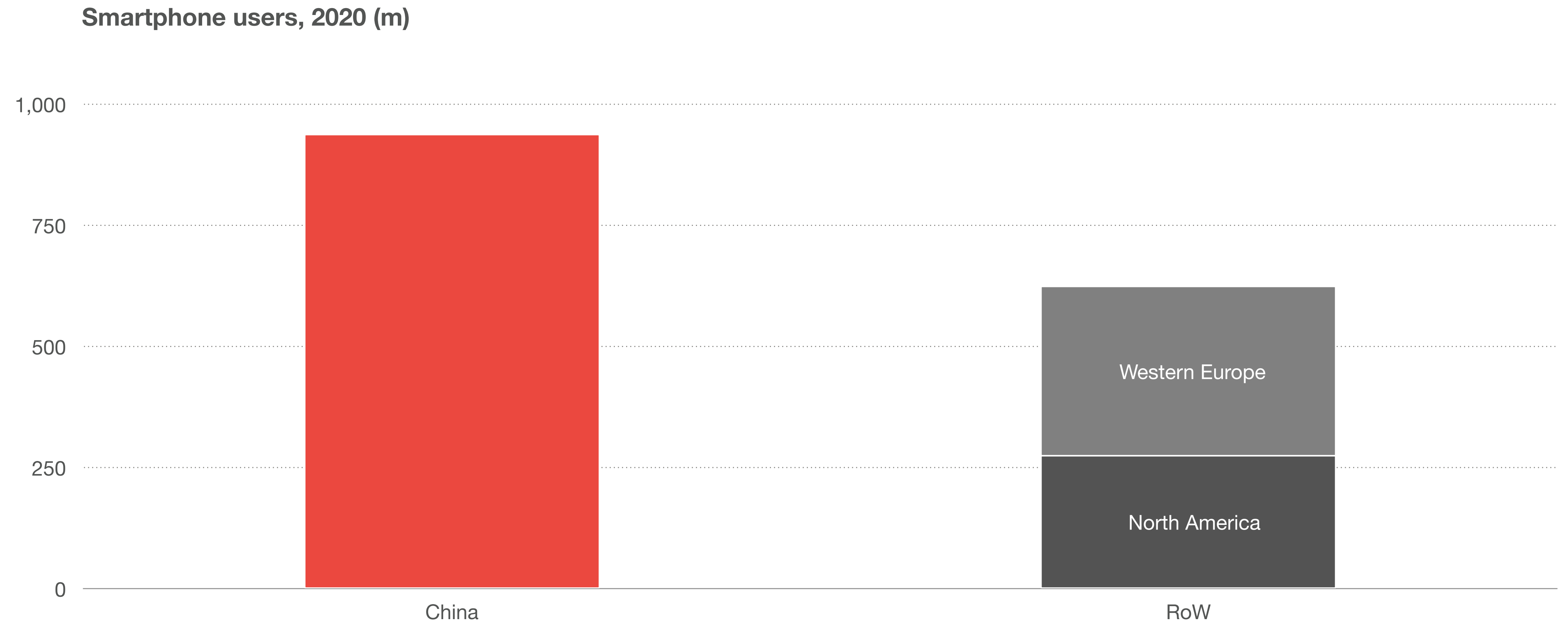


“Who was that transistor salesman?”

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

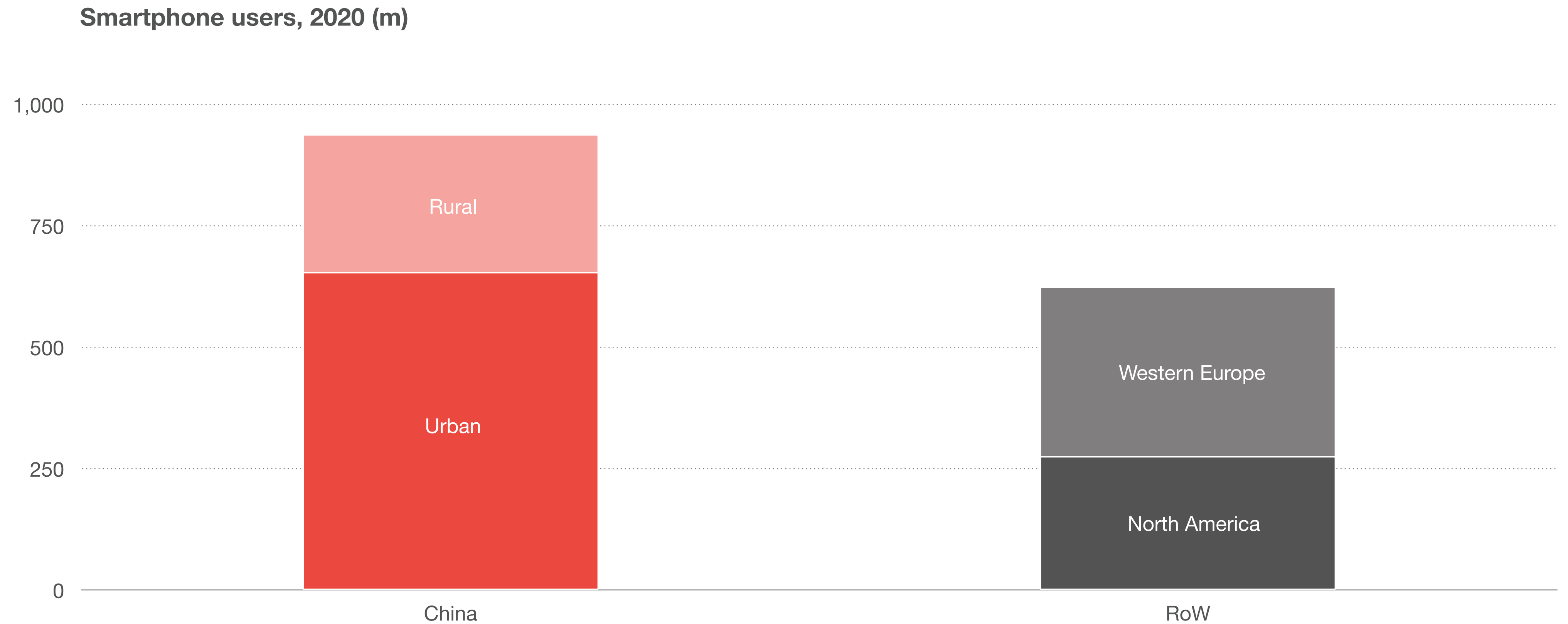
Meanwhile - a market with 1bn users

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

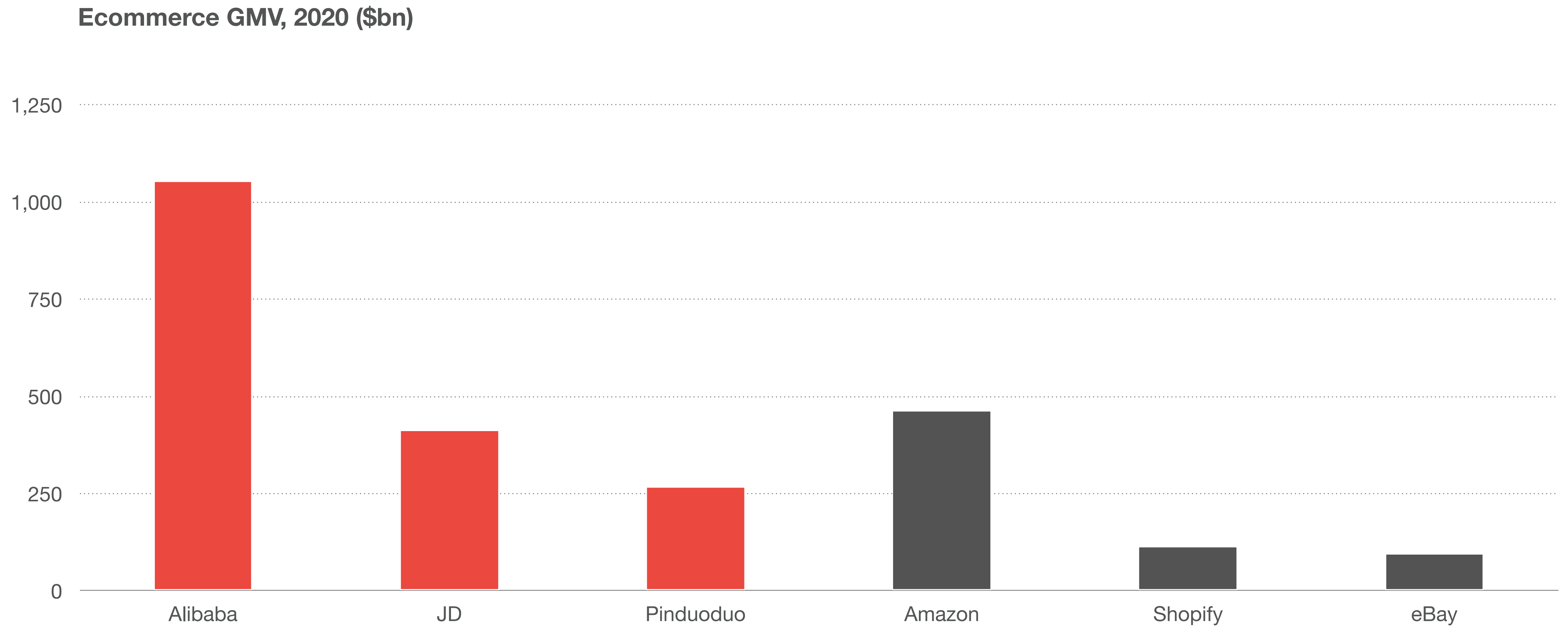
China model:
Conglomerates
compete on
everything

Leapfrog
20th century
infrastructure

Ferocious
competition,
copying and
creation

Big market = (very) big companies

A law of large numbers

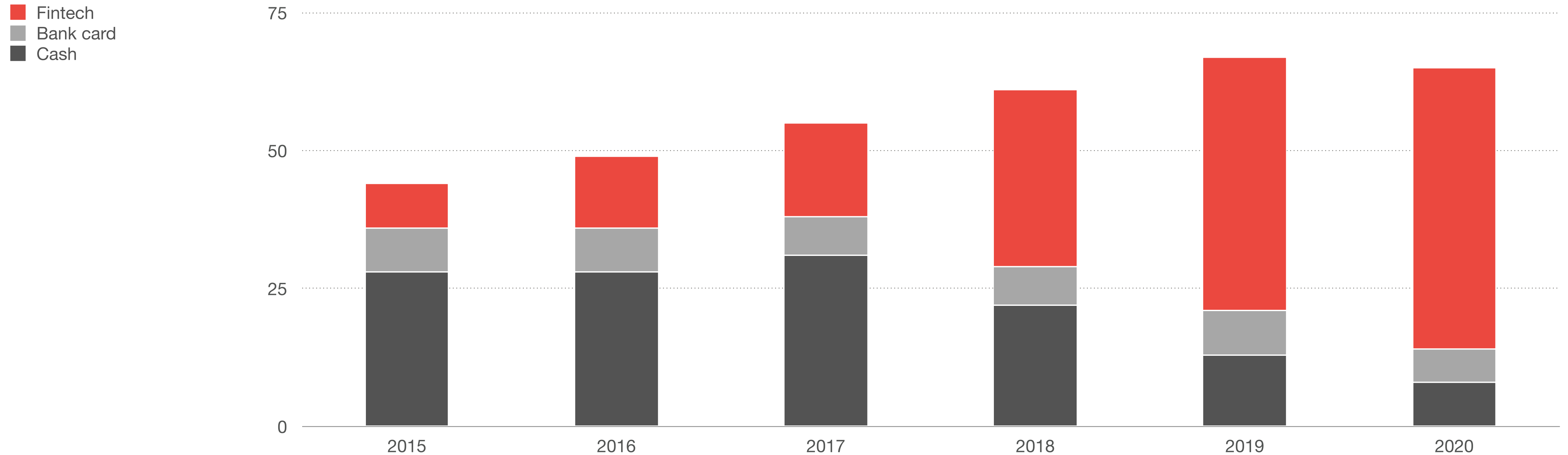


Source: Companies, Goldman Sachs

Leapfrogging 20th century infrastructure

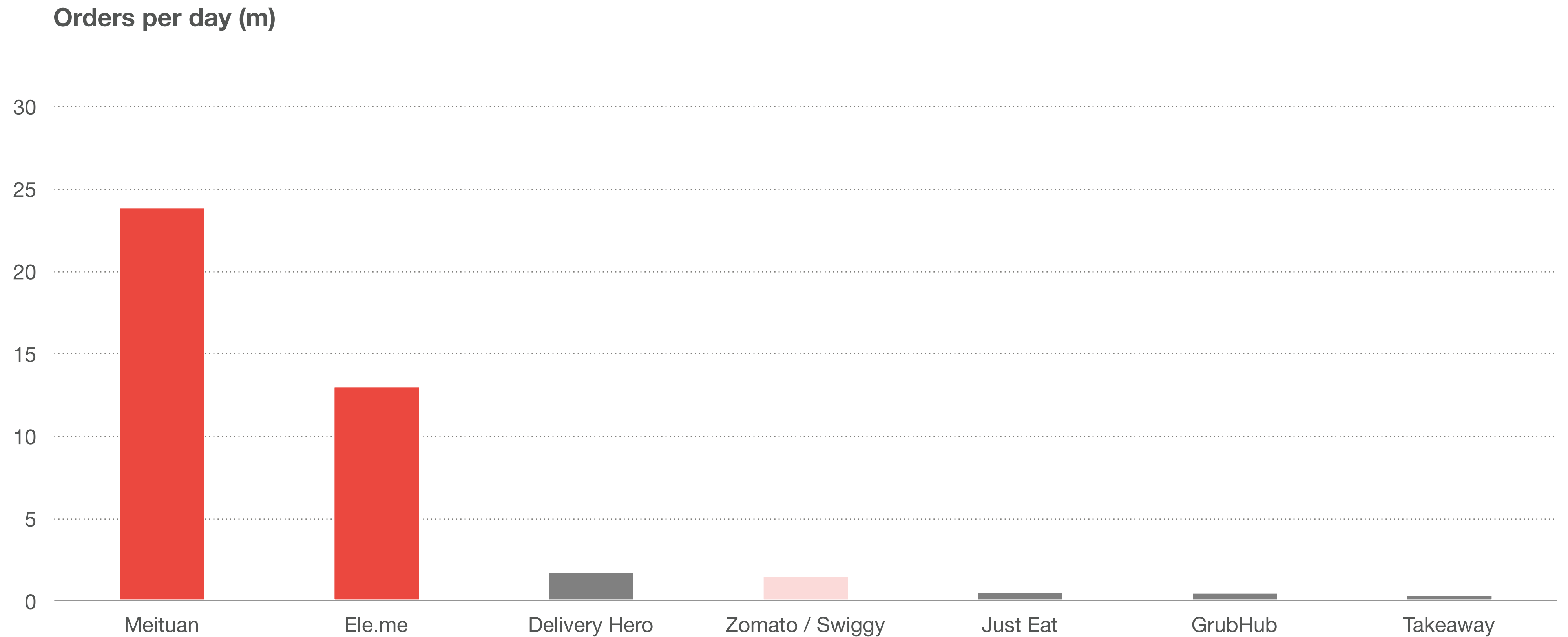
Ecommerce, payments, entertainment, financial services, credit scoring...

Chinese consumption payments (RMB tr)



Remember restaurant delivery?

410m Chinese people used restaurant delivery in 2020



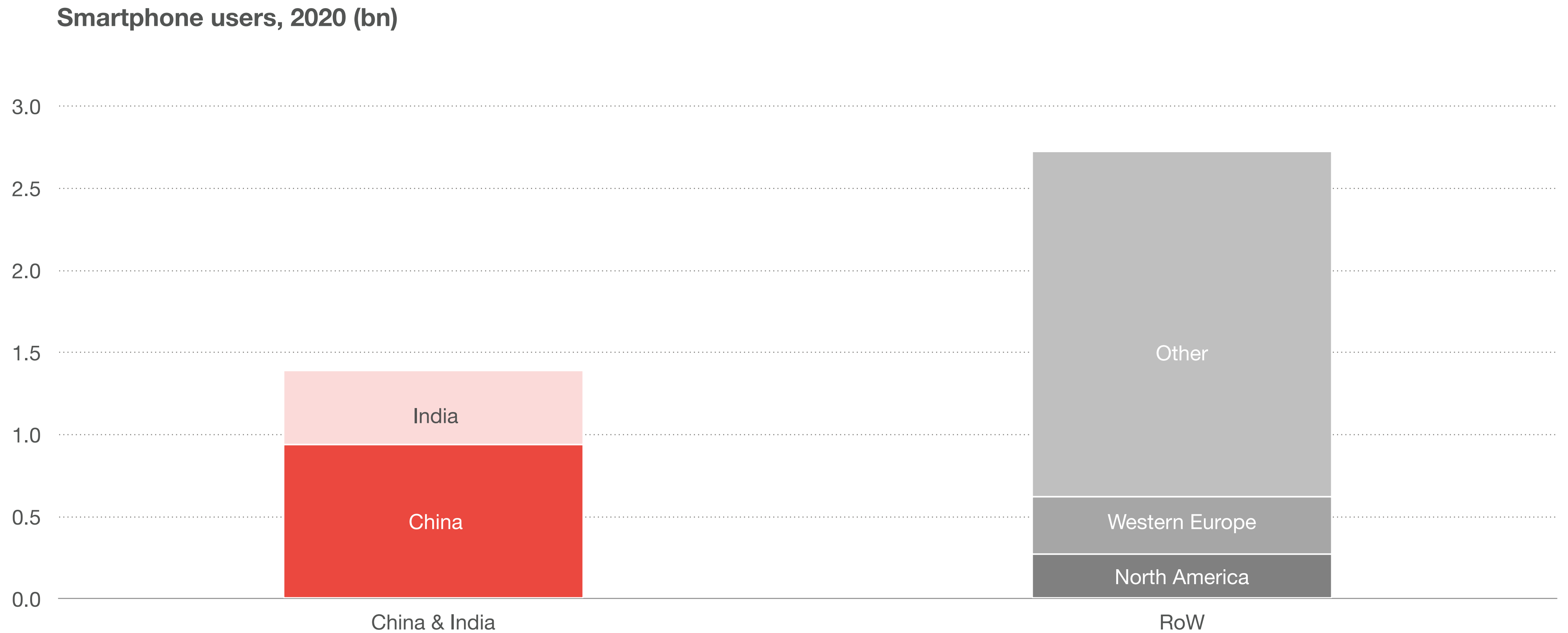
Yes, but why do we *care*?

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



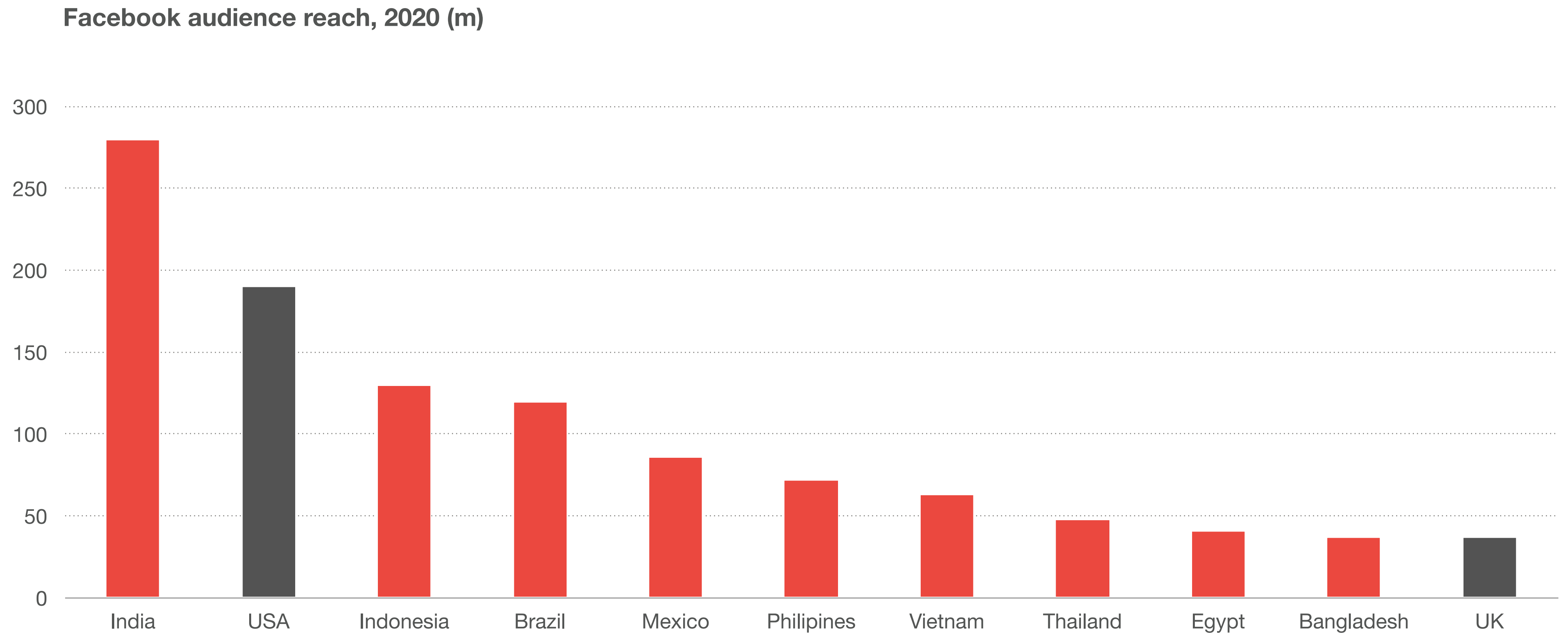
Where do ideas come from? Where are companies built?

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

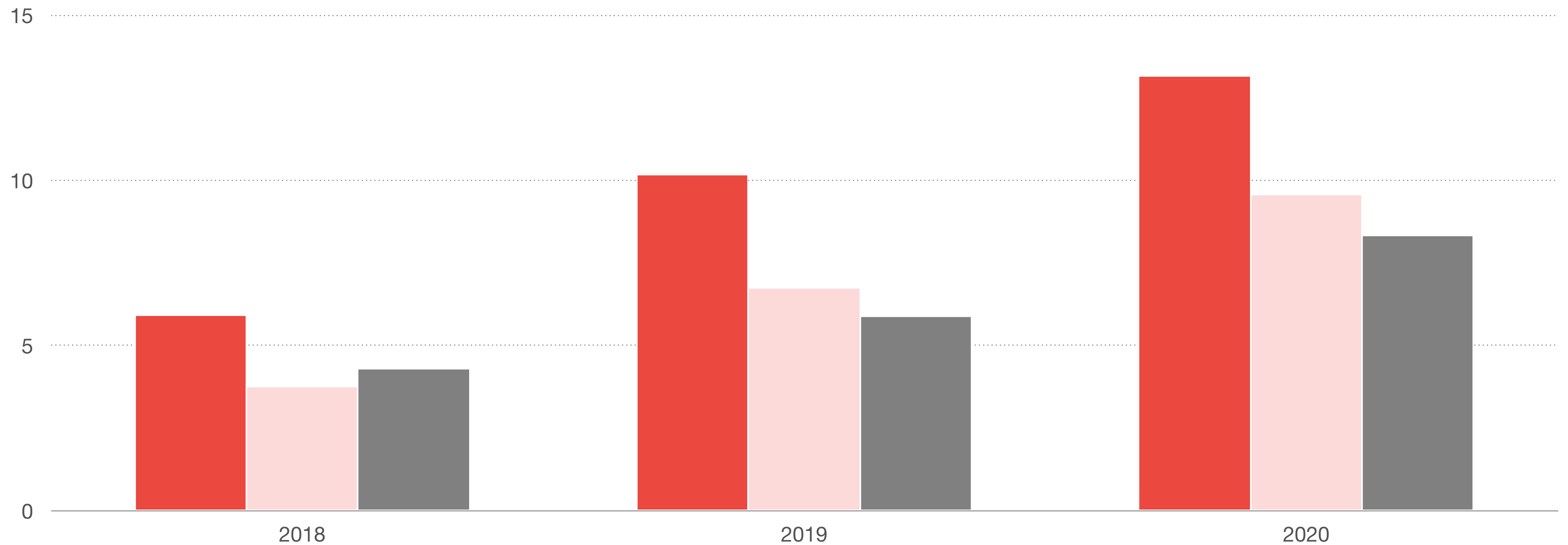


The end of the American internet

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

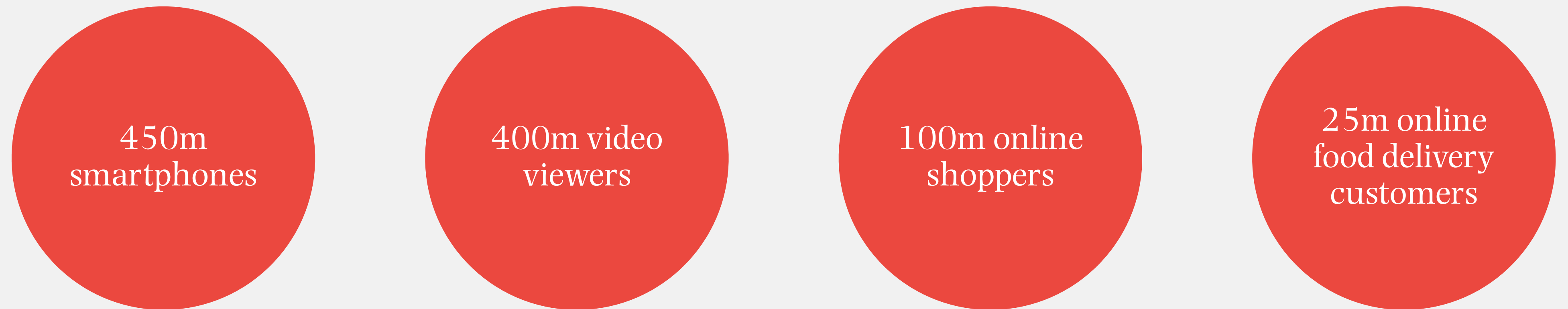
Mobile data consumption (EB/month)

China
India
N American & W Europe



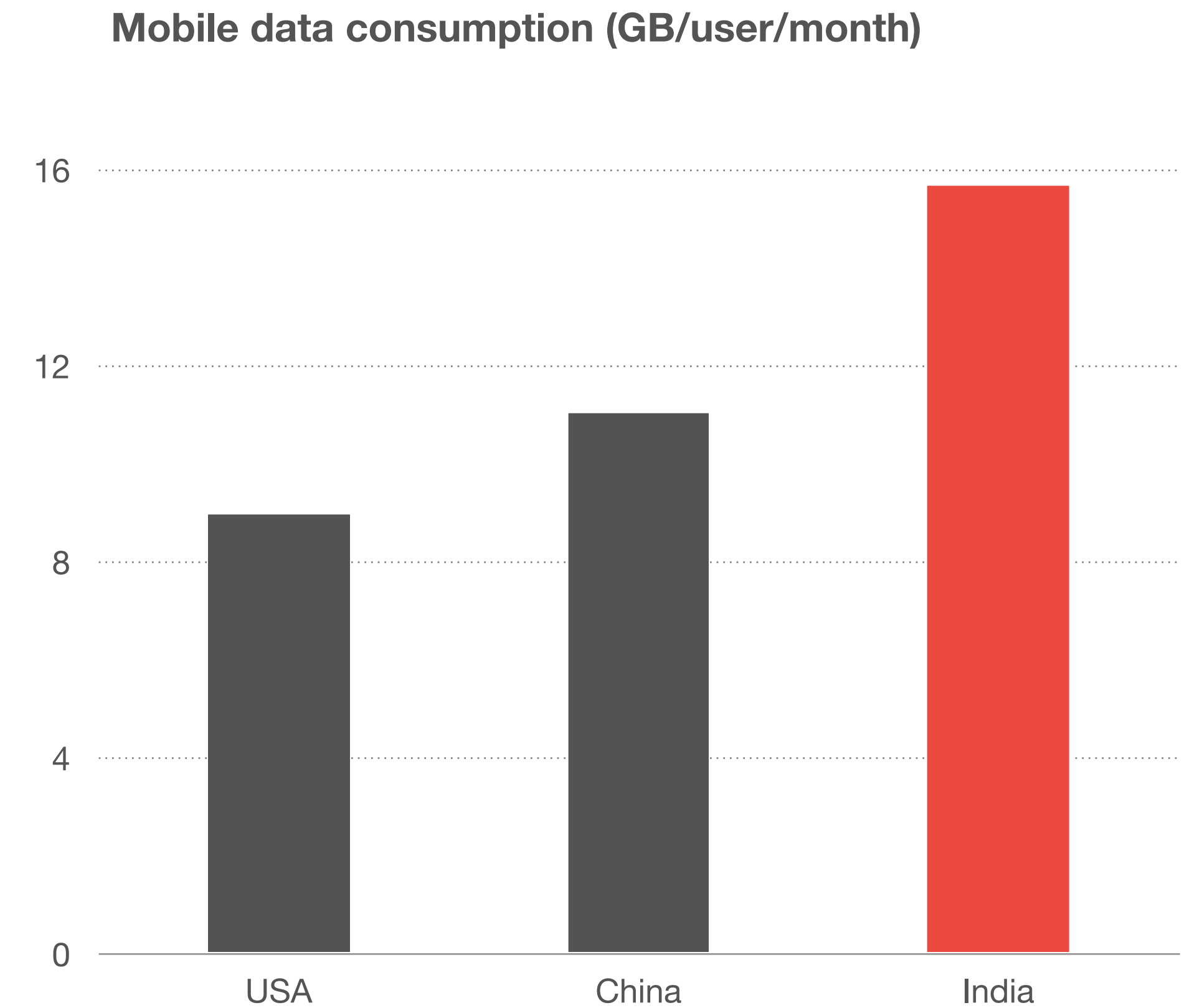
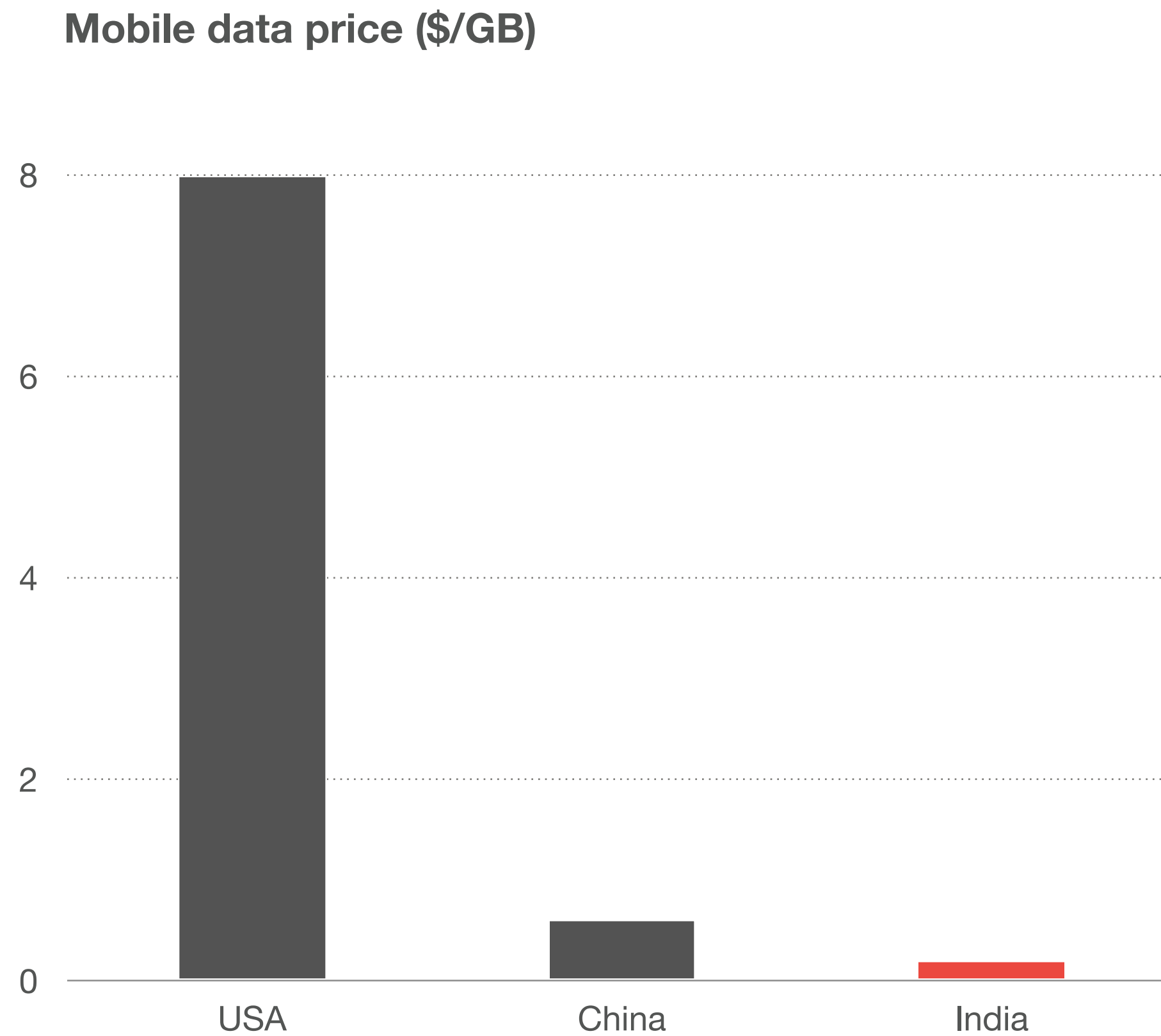
The India take-off

The state of internet adoption in 2020



India: cheapest data and highest use on earth

The Jio effect

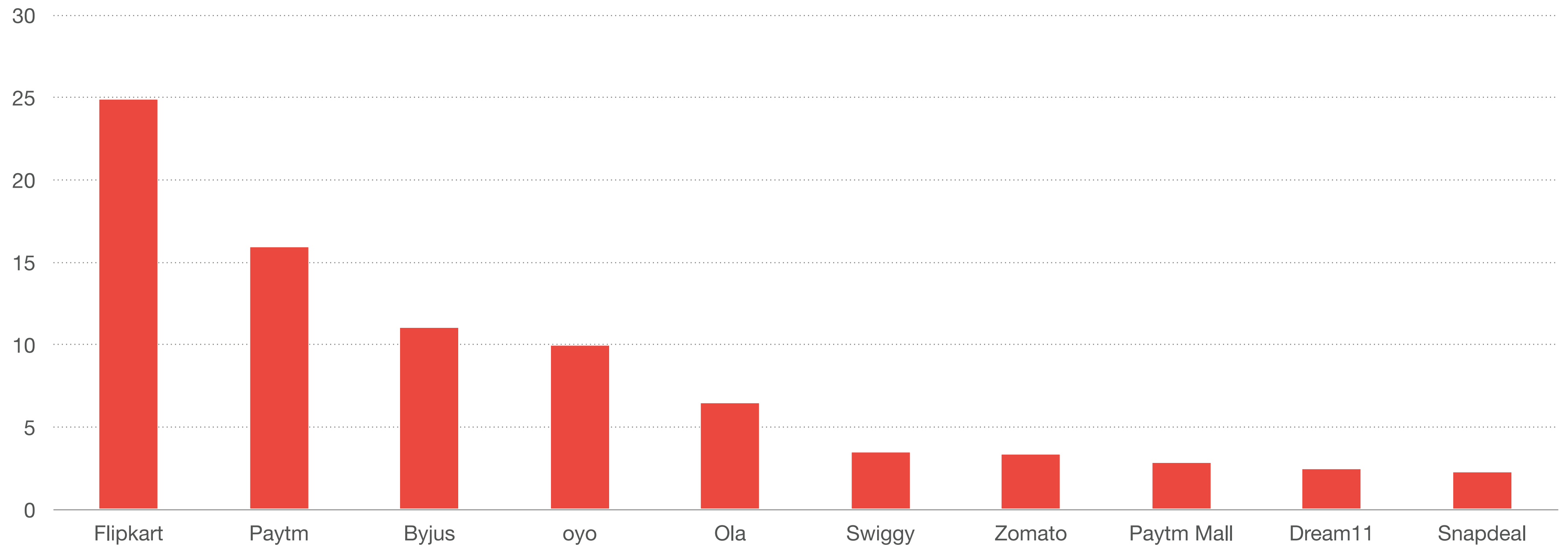


Source: Nokia, Ericsson

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

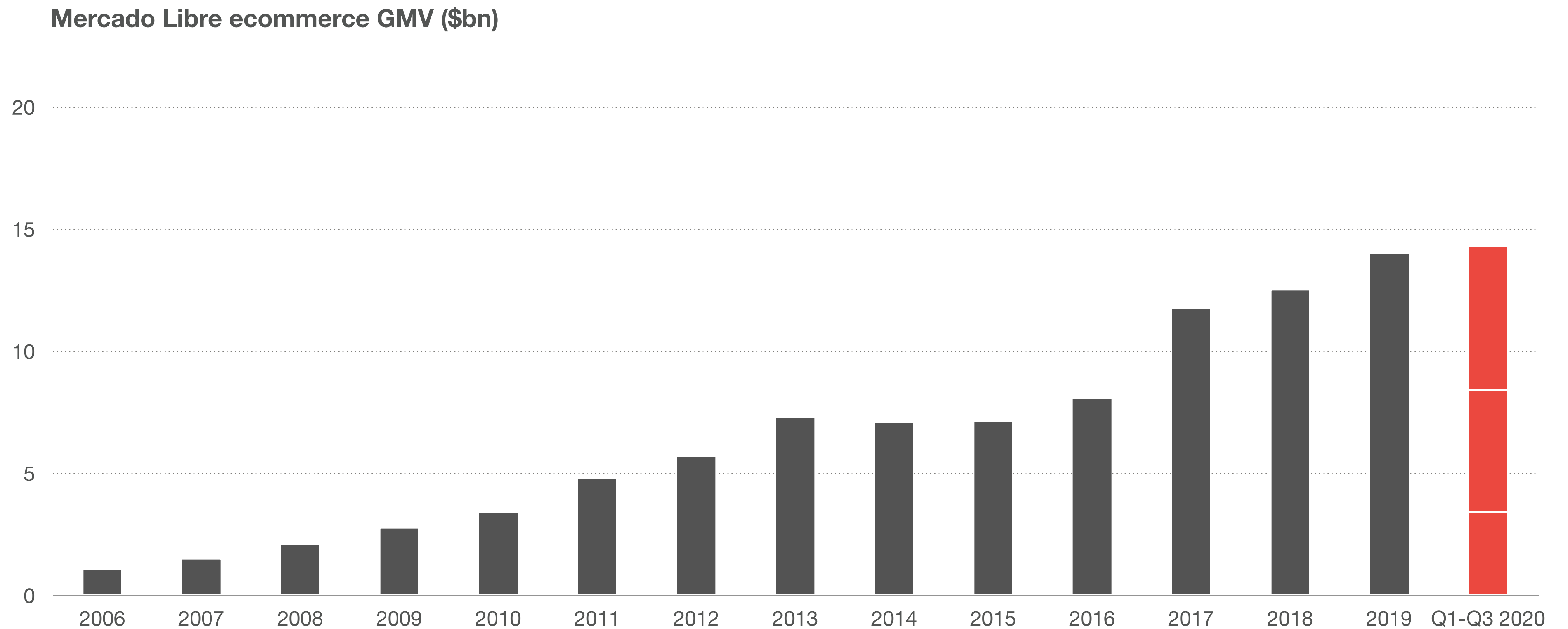
200m+
smartphone
users

4 hours+ a
day in apps

50% ride
share
penetration?

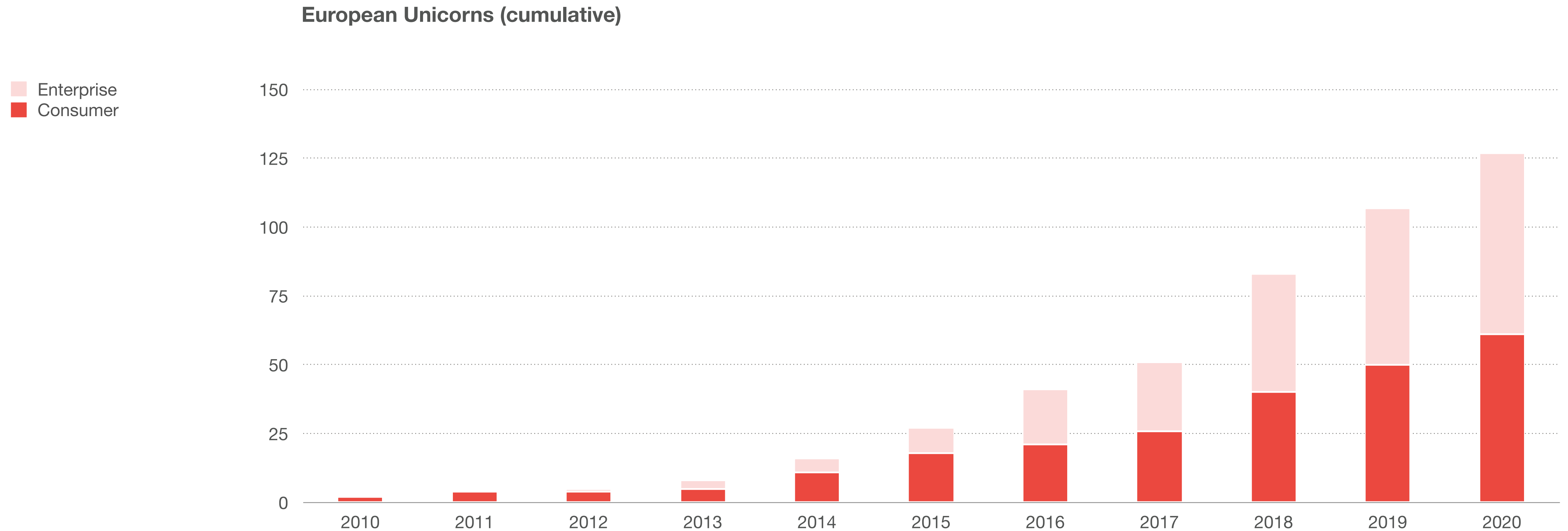
And Latam...

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



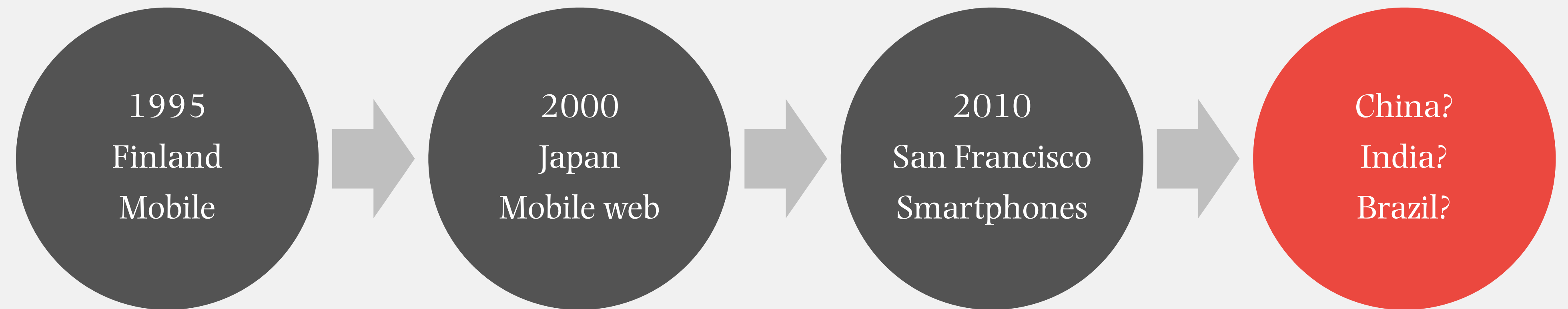
Even... Europe?!

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?

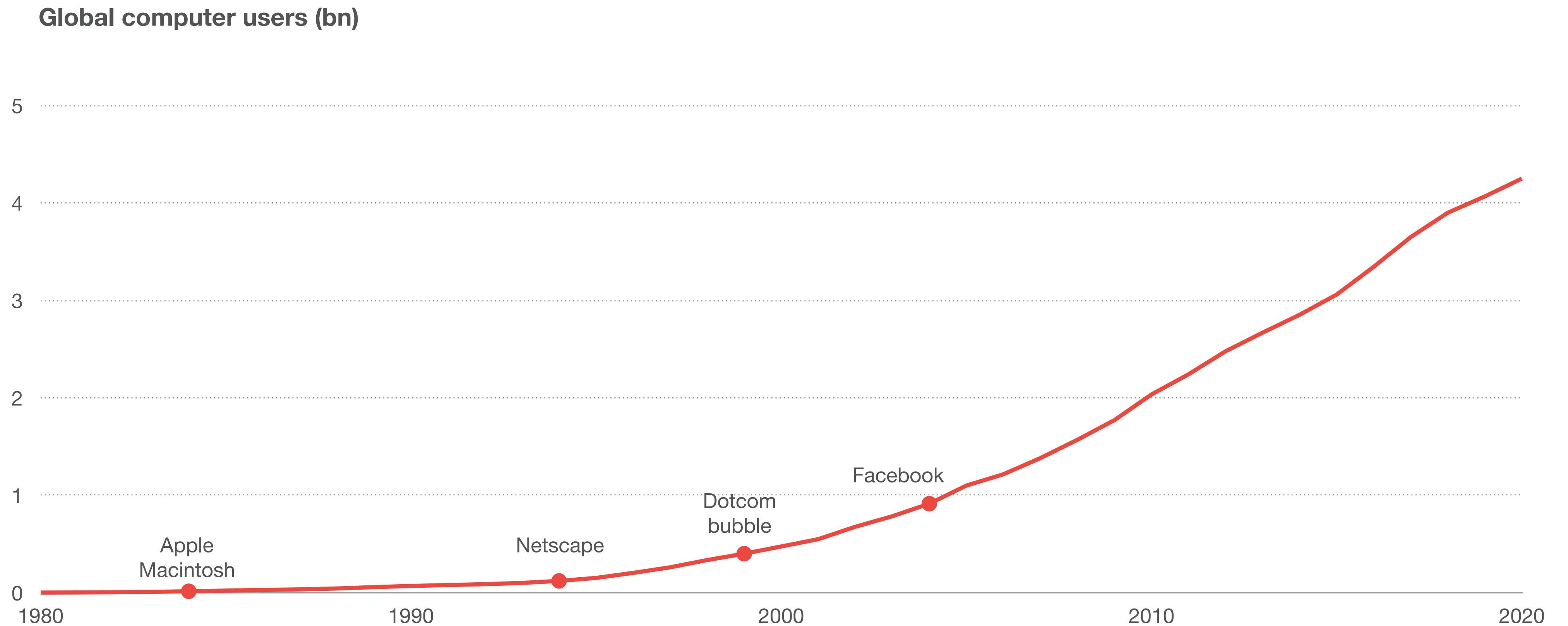
‘The future is here, but it’s unevenly distributed’



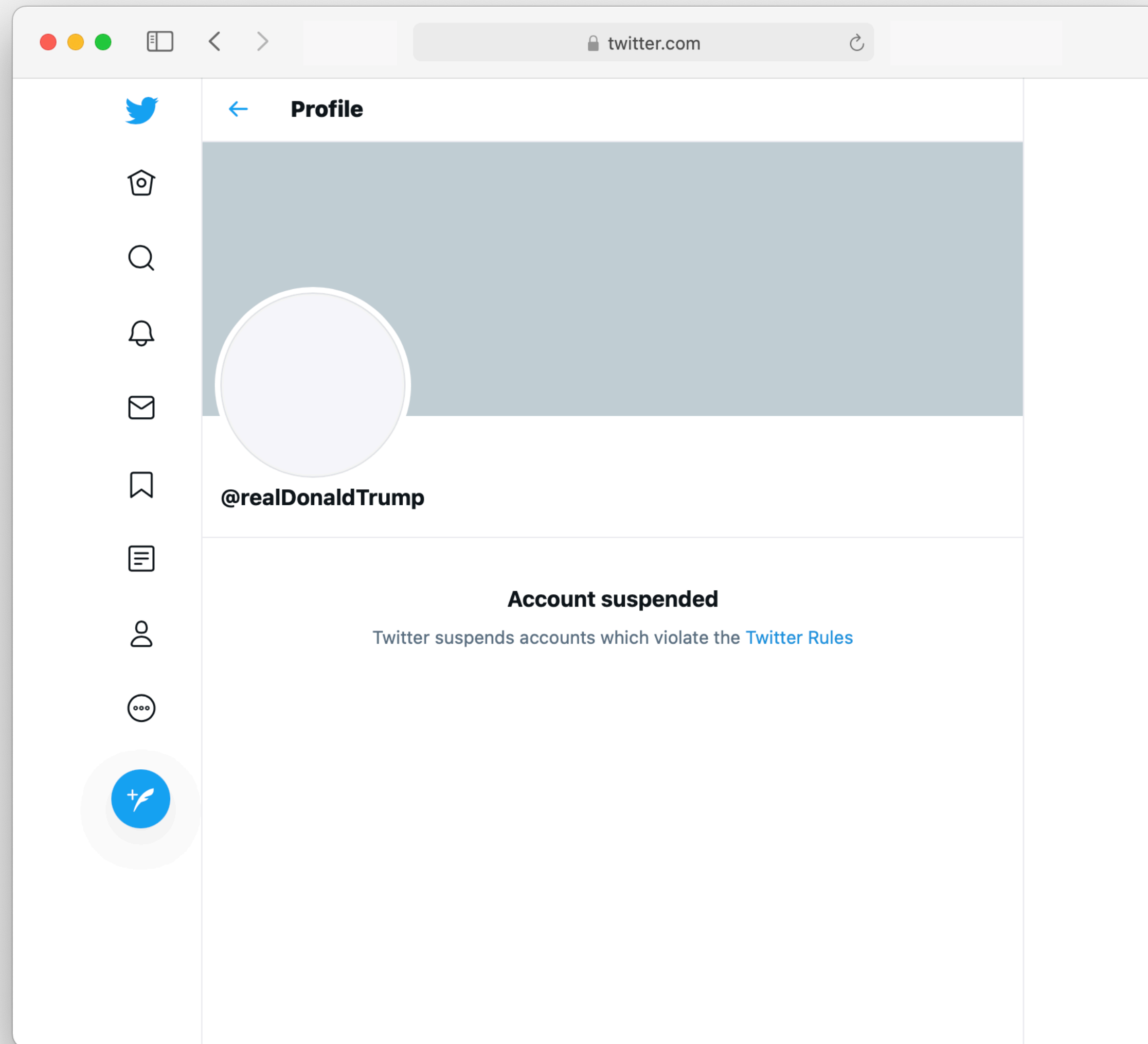
Tech becomes a regulated industry

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

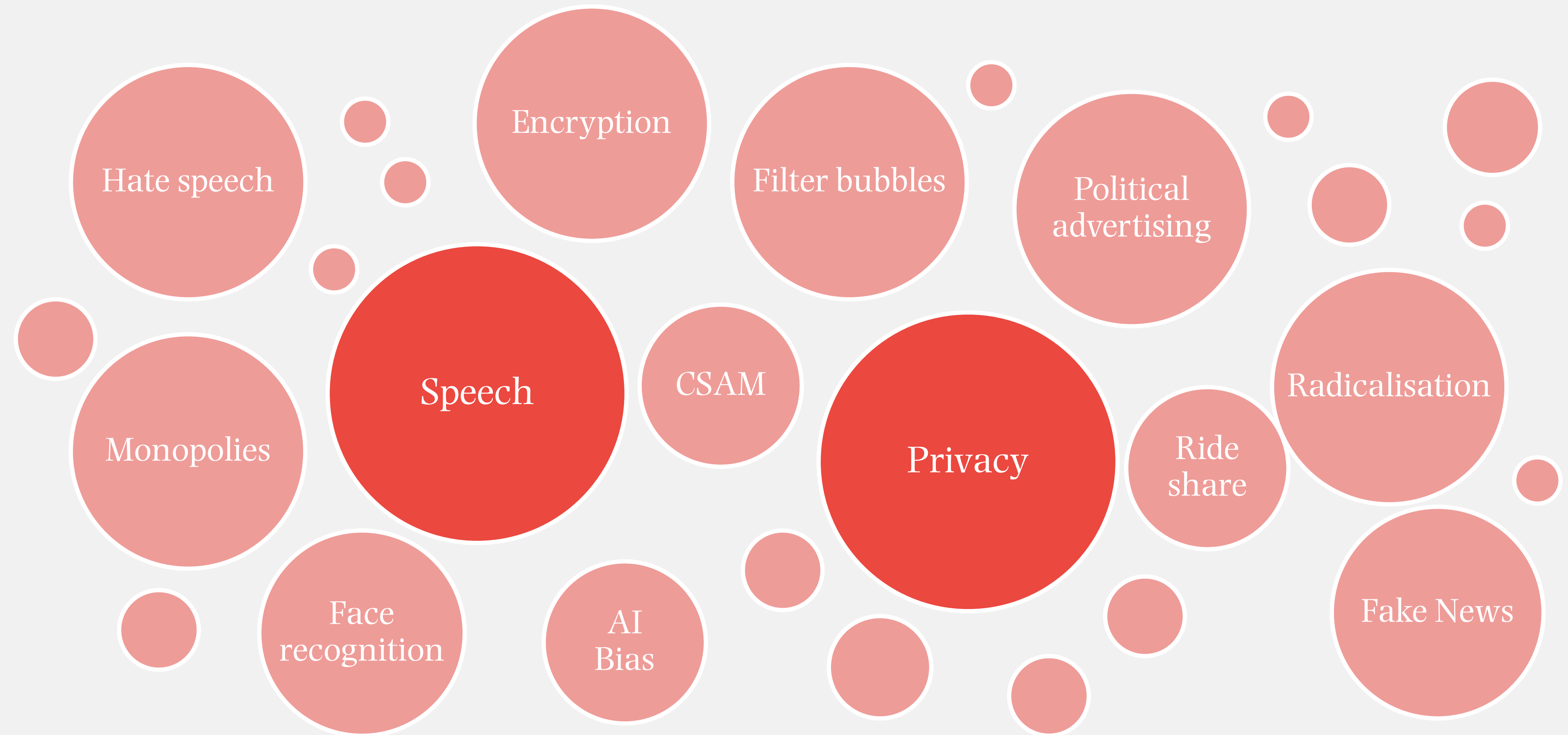


Software ate the world, so all the world's
problems get expressed in software

And channeled, amplified and reshaped

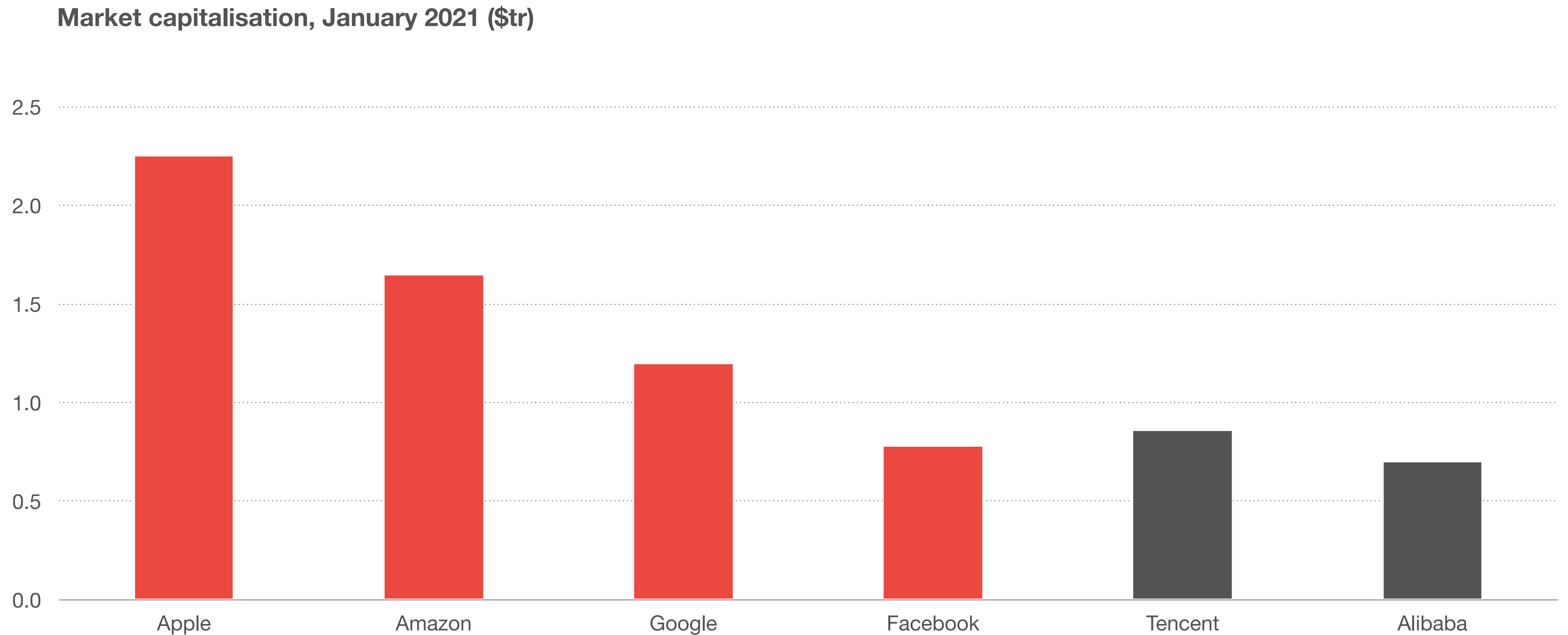
All sorts of problems

Every month there's something else to worry about



And some giant companies

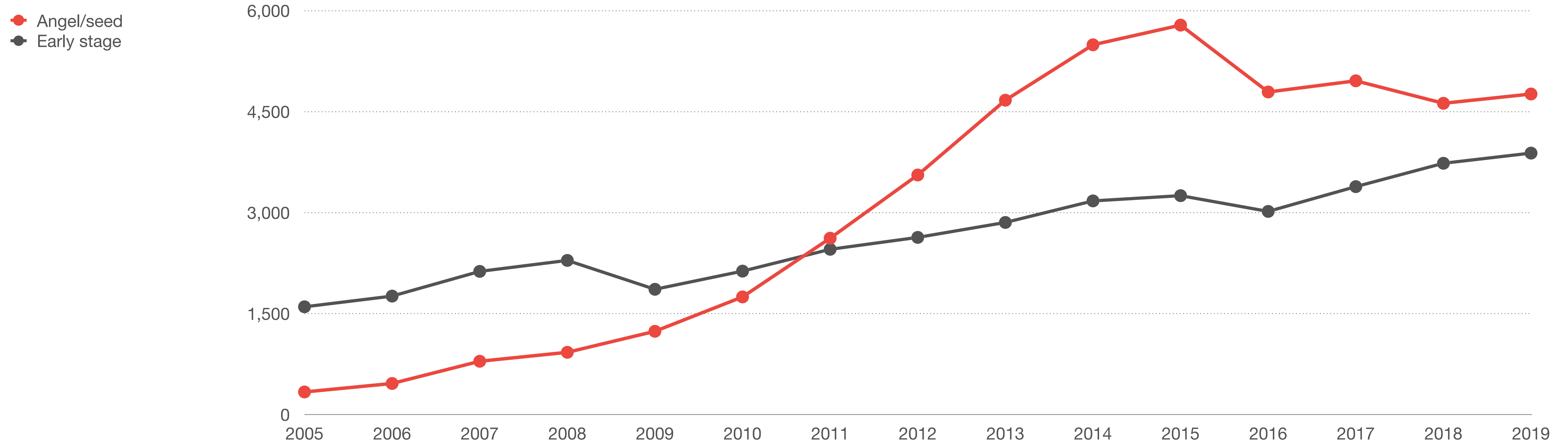
In global, winner-takes-most markets with 4-5bn potential customers, winning creates a big company



(No, this has not killed startup creation)

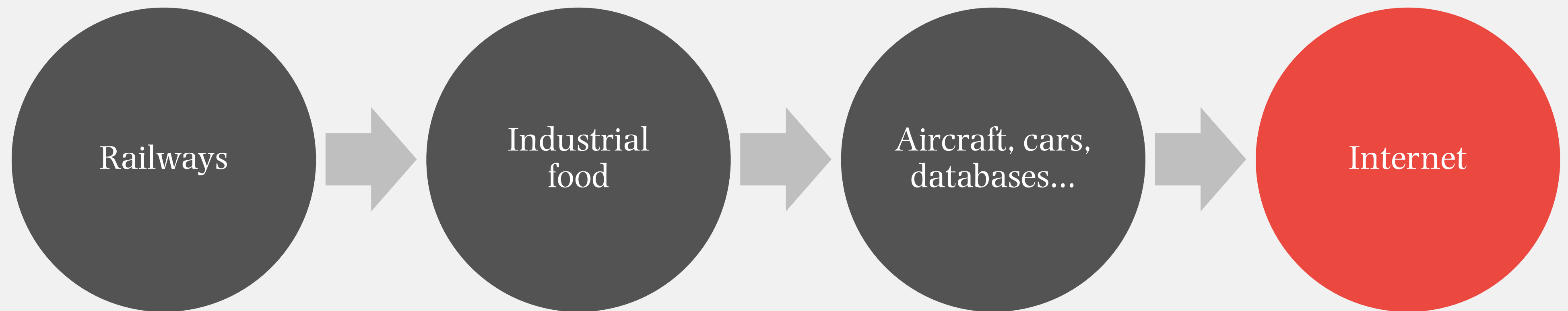
Tech startup creation is up 3-4x in a decade, powered by a much larger market and the growth of enabling platforms

US early-stage venture investments



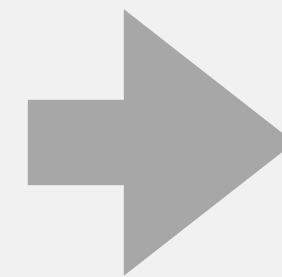
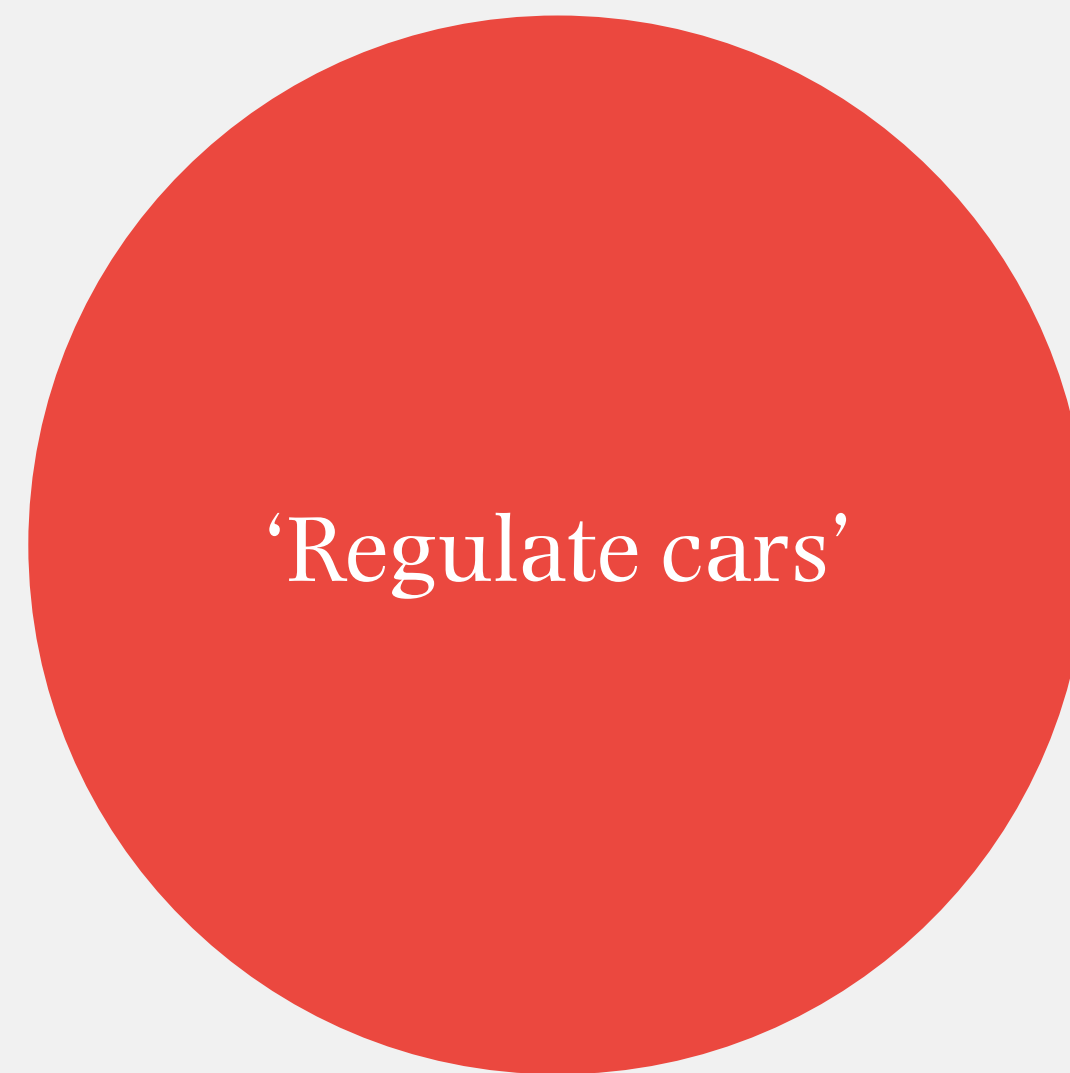
Every wave of tech changes the world, and gets regulated

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



But we don't actually regulate 'cars'

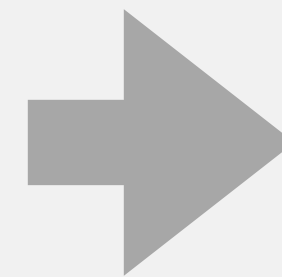
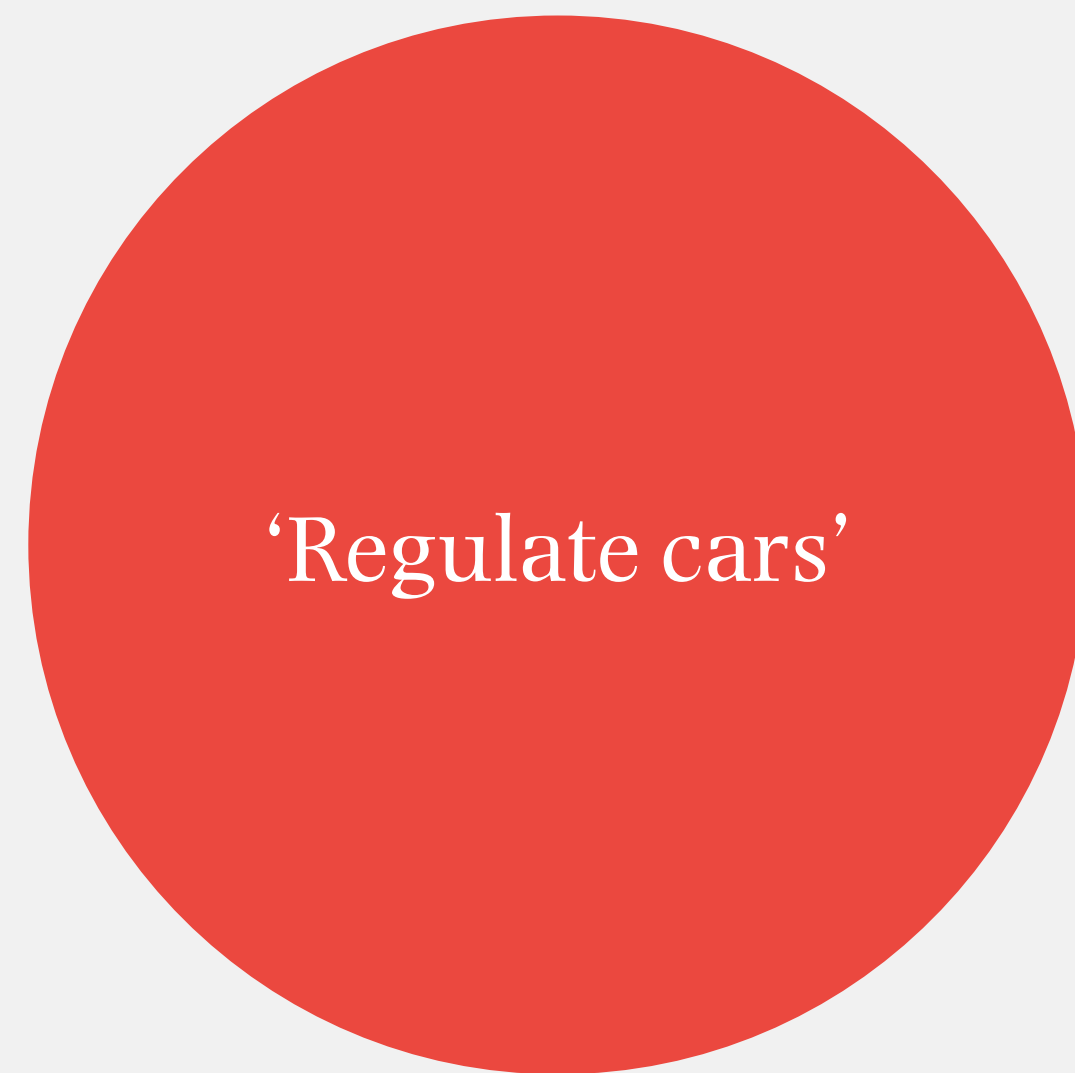
Lots of different regulation for different issues and companies



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



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.

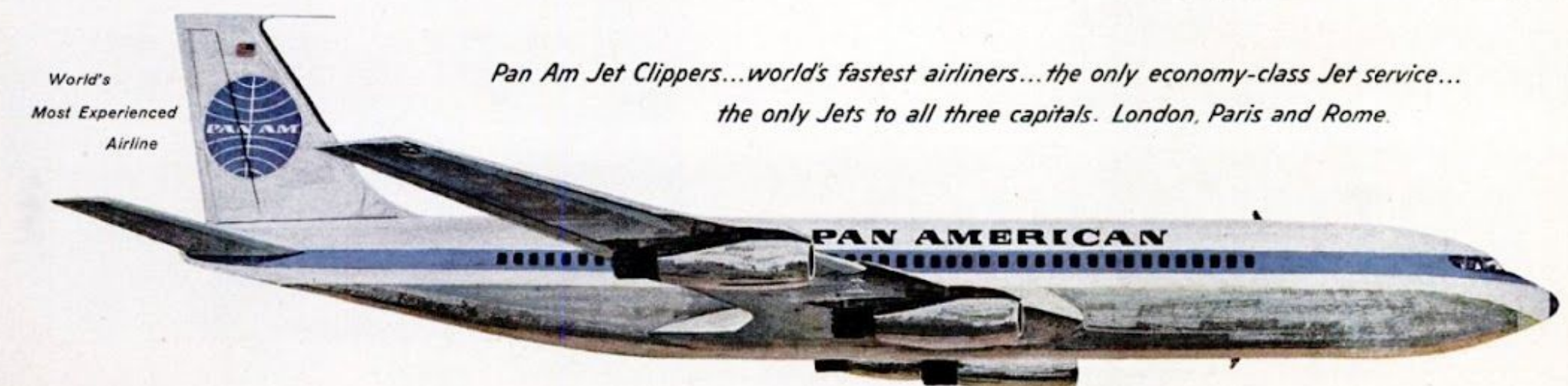
Pan Am Jets are fastest to London, the only Jets to Paris and Rome. And this summer, Pan Am is increasing its schedules to include as many as four Jet flights a day to Europe—with deluxe

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^{60†} round trip.

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

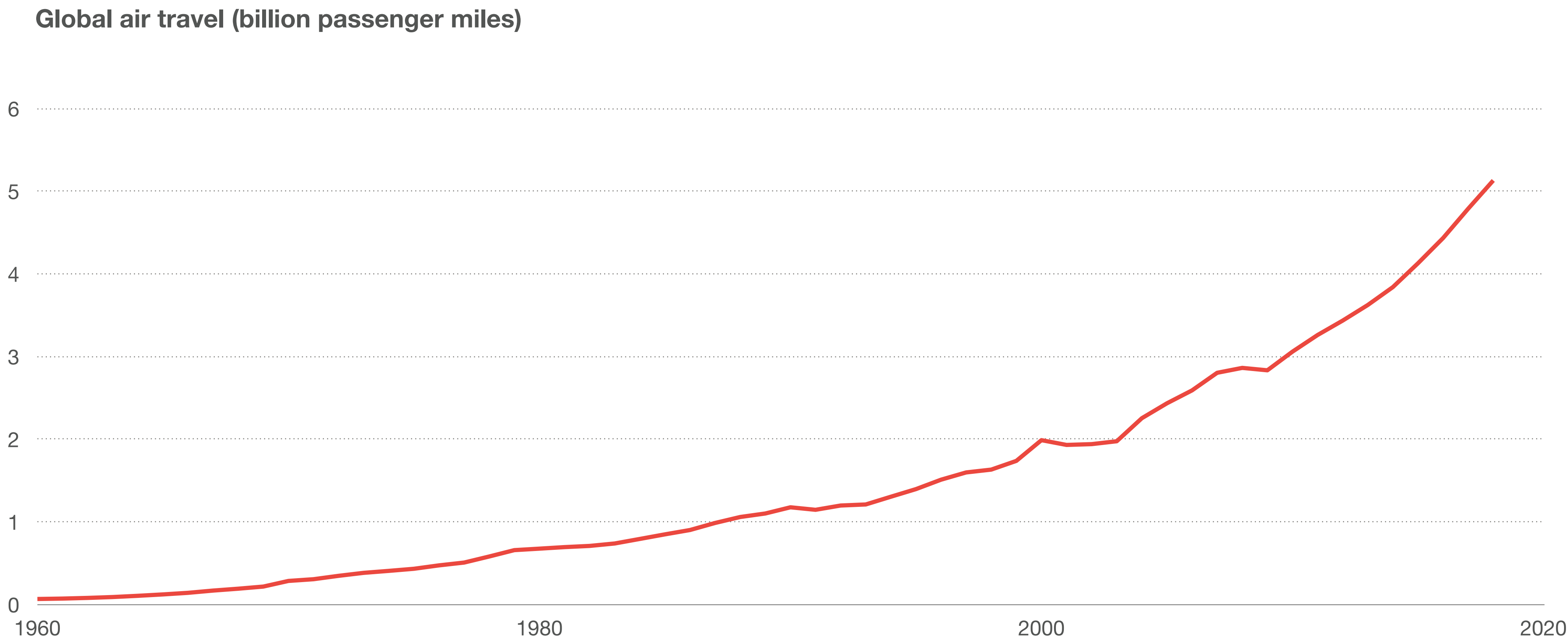
*Trade-Mark, Reg. U. S. Pat. Off.

†Fares subject to change.



But something has changed

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

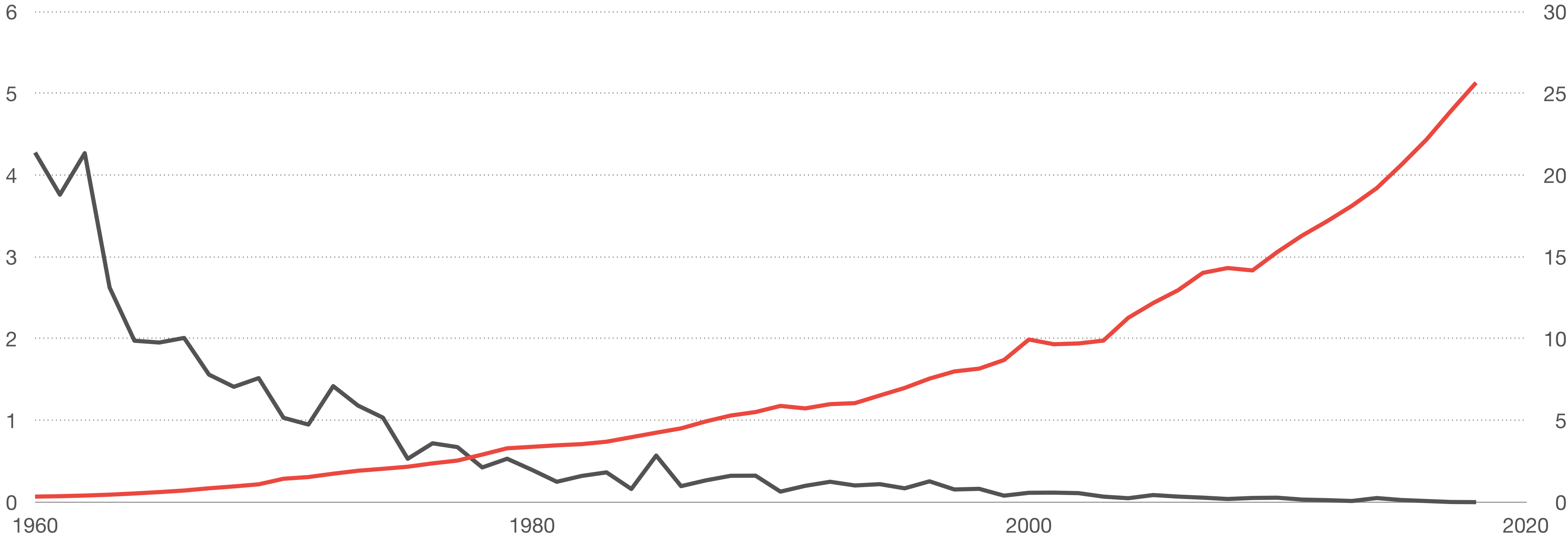


Better and cheaper (if not faster)

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

Global air travel

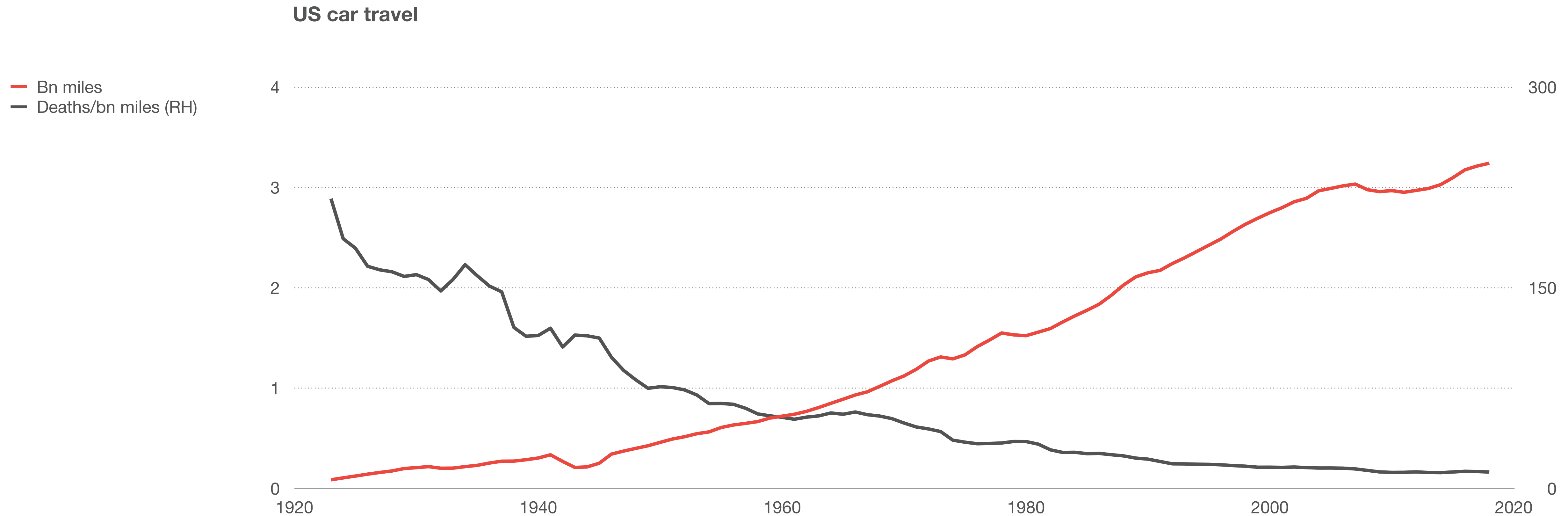
Bn passenger miles
Deaths/bn miles (RH)



Source: IACO, ASN

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



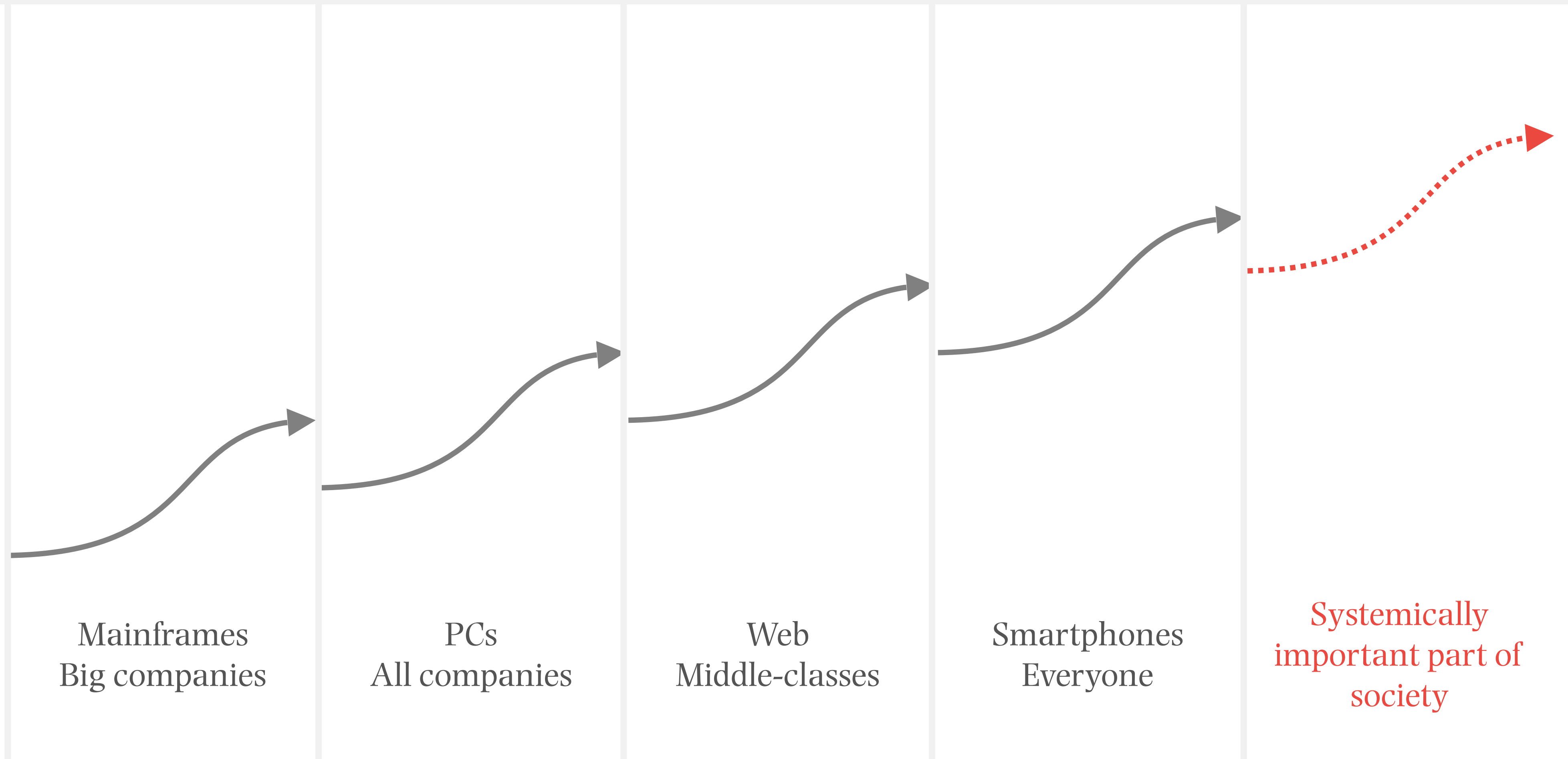
First 50 years, second 50 years

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
