



US vs. EU Broadband Trends

—
2012 – 2020

KEY FINDINGS..... 1

US VS. EU BROADBAND DEPLOYMENT :: Coverage

Households Covered with Fixed Broadband at Any Speed..... 2

Households Covered with Fixed Broadband at High Speed3

Households Covered with Fixed Broadband \geq 100 Mbps.....4

Households with Two or More Facilities-Based Competing Providers..... 5

Households with Two or More Wired Facilities-Based Competing Providers..... 6

US VS. EU BROADBAND ADOPTION :: Take-Up

Share of Households Covered with Fixed Broadband Subscription at Any Speed.....7

Share of Households Covered with Fixed Broadband Subscription at High Speed8

Share of Households Covered with Fixed Broadband Subscription \geq 100 Mbps9

Share of Households with Broadband Subscriptions at Three Speed Intervals10

Why is the US Ahead?..... 11

USTELECOM PARTNER | Arthur Menko, BPI-Telcodata

KEY FINDINGS

The US continues to handily lead the EU on three critical connectivity metrics: consumer broadband infrastructure deployment, broadband adoption and facilities-based competition.

- **Deployment:** US leads by 11 percentage points ≥ 30 Mbps; +25 pp ≥ 100 Mbps
- **Adoption:** US leads by 10 pp ≥ 25 Mbps; +21 pp ≥ 100 Mbps
- **Competition:** US benefits from nearly twice the fixed facilities-based competition of the EU overall; when comparing rural areas, the US lead extends to 7x.

NEW IN 2020: US rural deployment now leads overall EU broadband deployment, despite the added costs and challenges associated with rural deployment

- **Deployment ≥ 30 Mbps:** US rural at 91%; EU overall at 87%; EU rural at 60%
- **The US infrastructure advantage is most significant when comparing rural areas,** despite the EU definition of “rural” including more population-dense areas (which allows costs to be spread across a much larger customer base).

NEW IN 2020: US extends its lead in consumer broadband adoption at any speed, and a majority of Americans now have subscriptions ≥ 100 Mbps.

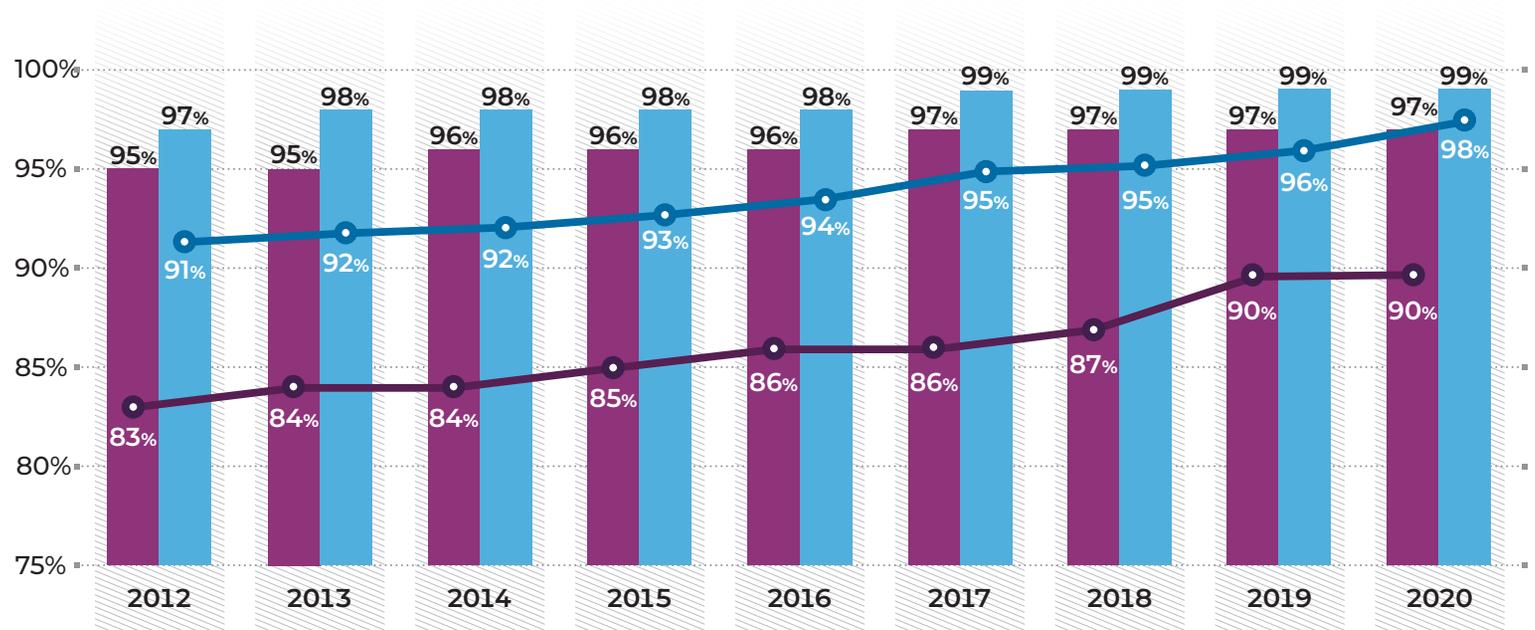
- **US consumer broadband adoption lead grows by 6 pp YOY**
 - 2019: US lead +11 pp; 2020: US lead +15 pp
- **Both US and EU see healthy growth in ≥ 100 Mbps subscriptions**
 - 55% of connected US households and 34% in EU had ≥ 100 Mbps subs in 2020.
 - YOY increases of 7 pp and 6 pp, respectively

US lead on consumer adoption likely fueled by US broadband affordability. US broadband prices are holding steady—and even declining for millions of Americans—despite rising costs for most other essential goods and services.

US benefits from a 3:1 advantage in per household broadband capex. This can be attributed to a US policy framework that encourages investment in facilities-based competition rather than heavy government regulation of services.

HOUSEHOLDS COVERED WITH FIXED BROADBAND AT ANY SPEED
 US & EU in All Areas and Rural Only

■ EU ALL AREAS ■ US ALL AREAS ■ EU RURAL ■ US RURAL



SOURCES: FCC, NTIA AND EC'S DESI DATA

The EU defines rural areas as ≤ 263 people per square mile. In contrast US rural areas on average only 17.4 people per square mile. A majority (57%) of the EU's rural blocks would be considered non-rural in the US.

KEY TAKEAWAYS

The US leads the EU in fixed broadband coverage at any speed.

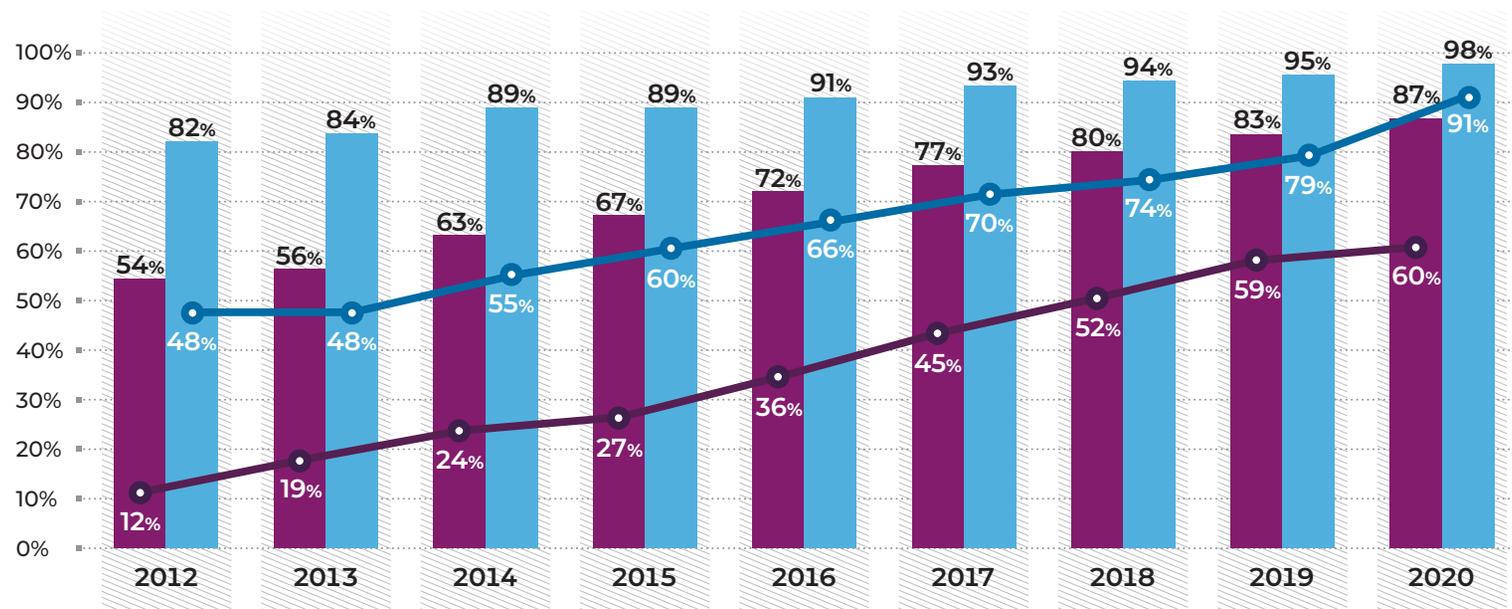
Rural coverage in the US now rivals all EU coverage—despite the fact that rural areas are more costly to serve.

The US rural edge is substantial, despite the more restrictive US definition of rural.

Any Speed is any fixed broadband speed > 200 Kbps.

HOUSEHOLDS COVERED WITH FIXED BROADBAND AT HIGH SPEED US & EU in All Areas and Rural Only

■ EU ALL AREAS ■ US ALL AREAS ■ EU RURAL ■ US RURAL



SOURCES: FCC, NTIA AND EC'S DESI DATA

US speeds: ≥ 25/3 (2012-14) and 30 Mbps (2015-2020); EU speeds: ≥ 30 Mbps down and any speed up (known as Next Generation Access).

KEY TAKEAWAYS

The US deployment lead grows when considering only high-speed offerings.

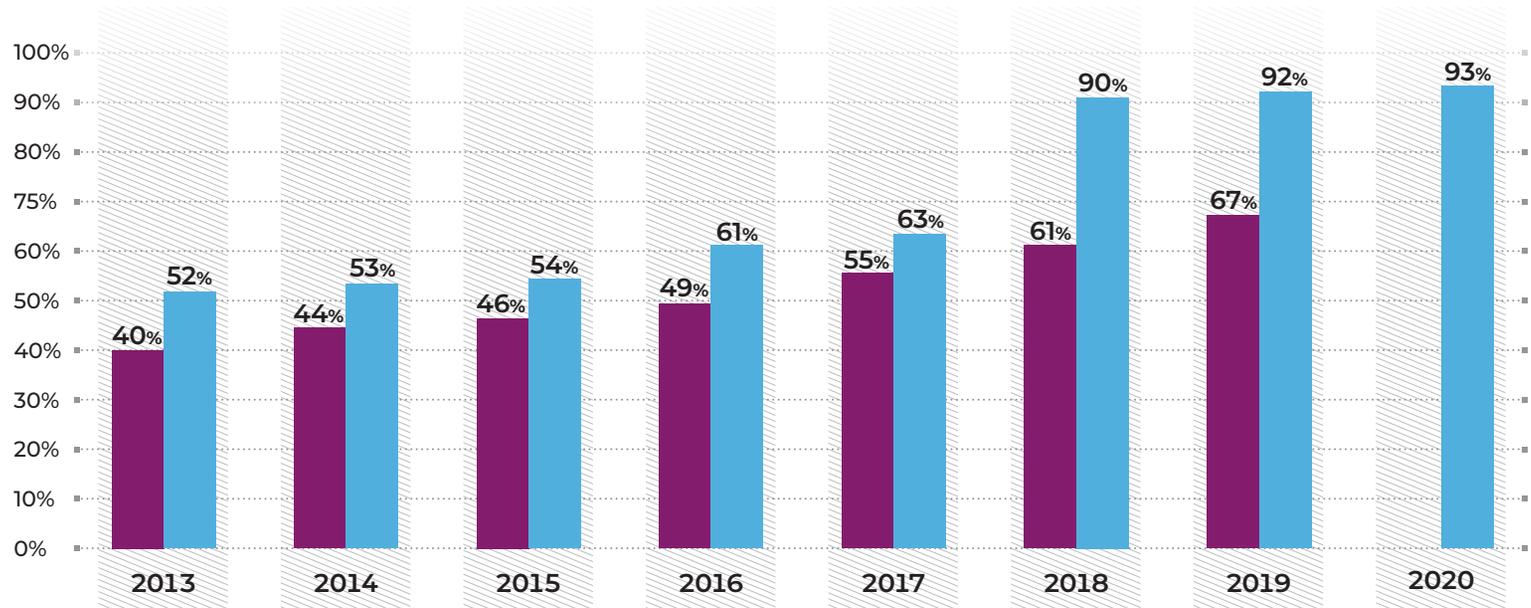
US rural high-speed coverage now exceeds all EU high-speed coverage.

US lead in 2020:

- 11 percentage points in *all* areas
- 31 pp in *rural* areas

**HOUSEHOLDS COVERED WITH FIXED BROADBAND
≥100 MBPS**
US & EU in All Areas

■ EU ALL AREAS ■ US ALL AREAS



SOURCES: FCC, NTIA AND EC'S DESI DATA

KEY TAKEAWAYS

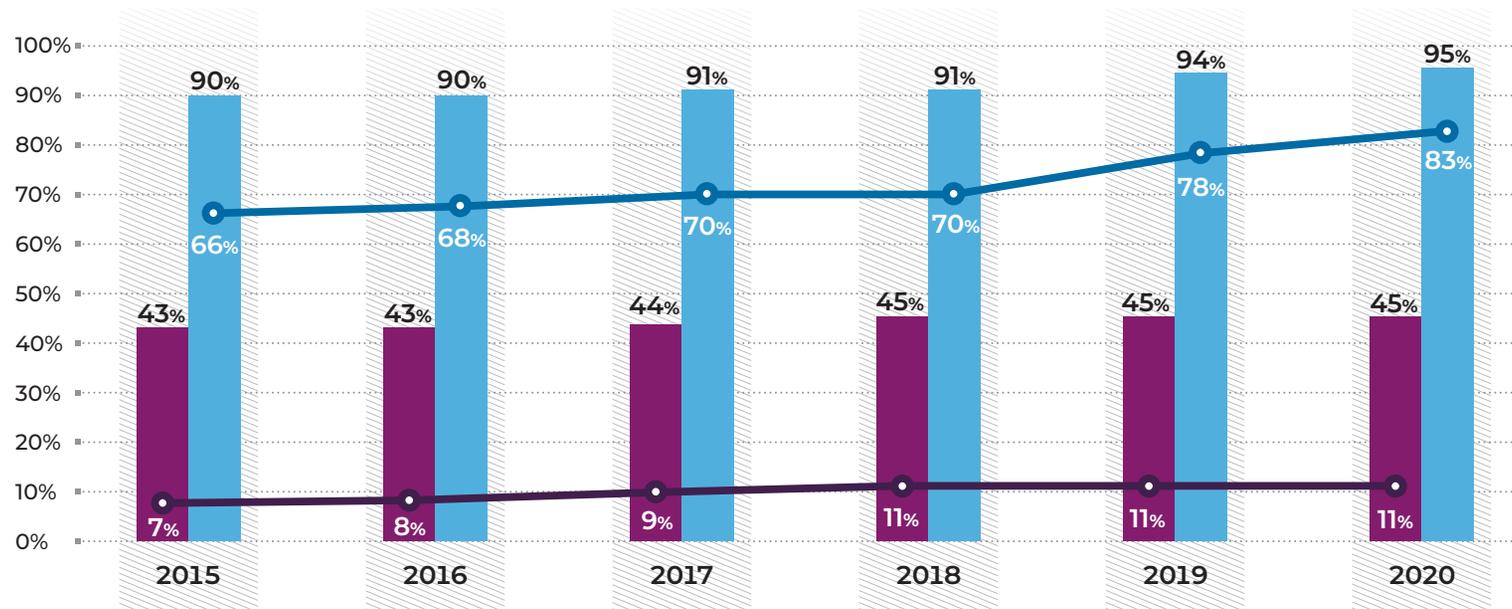
The higher the speed, the more the US pulls ahead in terms of the broadband services available to consumers.

The US lead extends to 25 pp for ≥100 Mbps in 2019 (most recent available EU data).

US coverage continues to grow in 2020.

HOUSEHOLDS WITH TWO OR MORE FACILITIES-BASED COMPETING PROVIDERS US & EU in All Areas and Rural Only

■ EU ALL AREAS ■ US ALL AREAS ■ EU RURAL ■ US RURAL



SOURCES: FCC, NTIA AND EC'S DESI DATA

US: Two or more fixed providers—any technology, including fixed wireless. | EU: A cable and traditional telecom provider.

KEY TAKEAWAYS

There is over 2x more facilities-based competition in the US than in the EU.

The US lead grows to more than 7X when comparing rural areas.

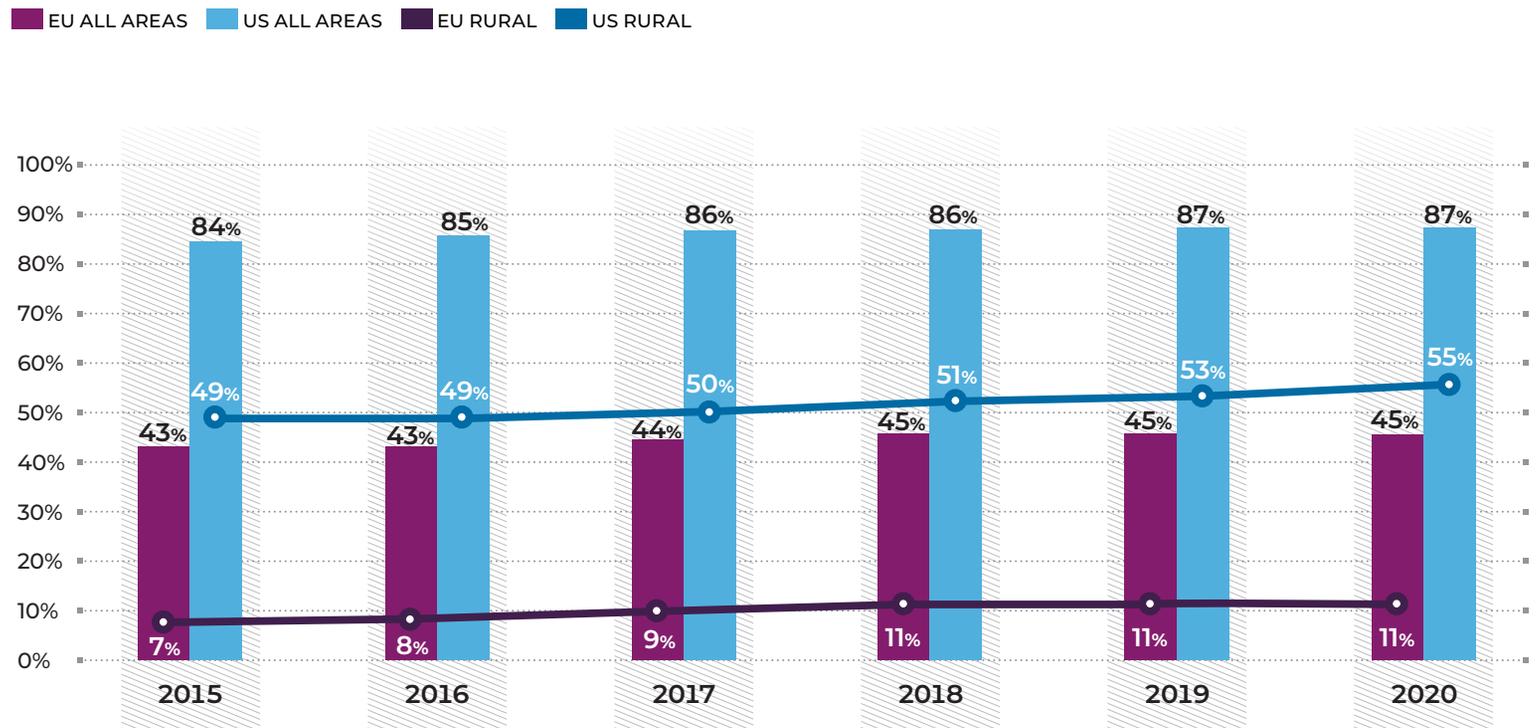
Indeed, US rural areas benefit from nearly twice as much facilities-based competition as all EU areas.

HOUSEHOLDS WITH TWO OR MORE WIRED FACILITIES-BASED COMPETING PROVIDERS
US & EU in All Areas and Rural Only

KEY TAKEAWAYS

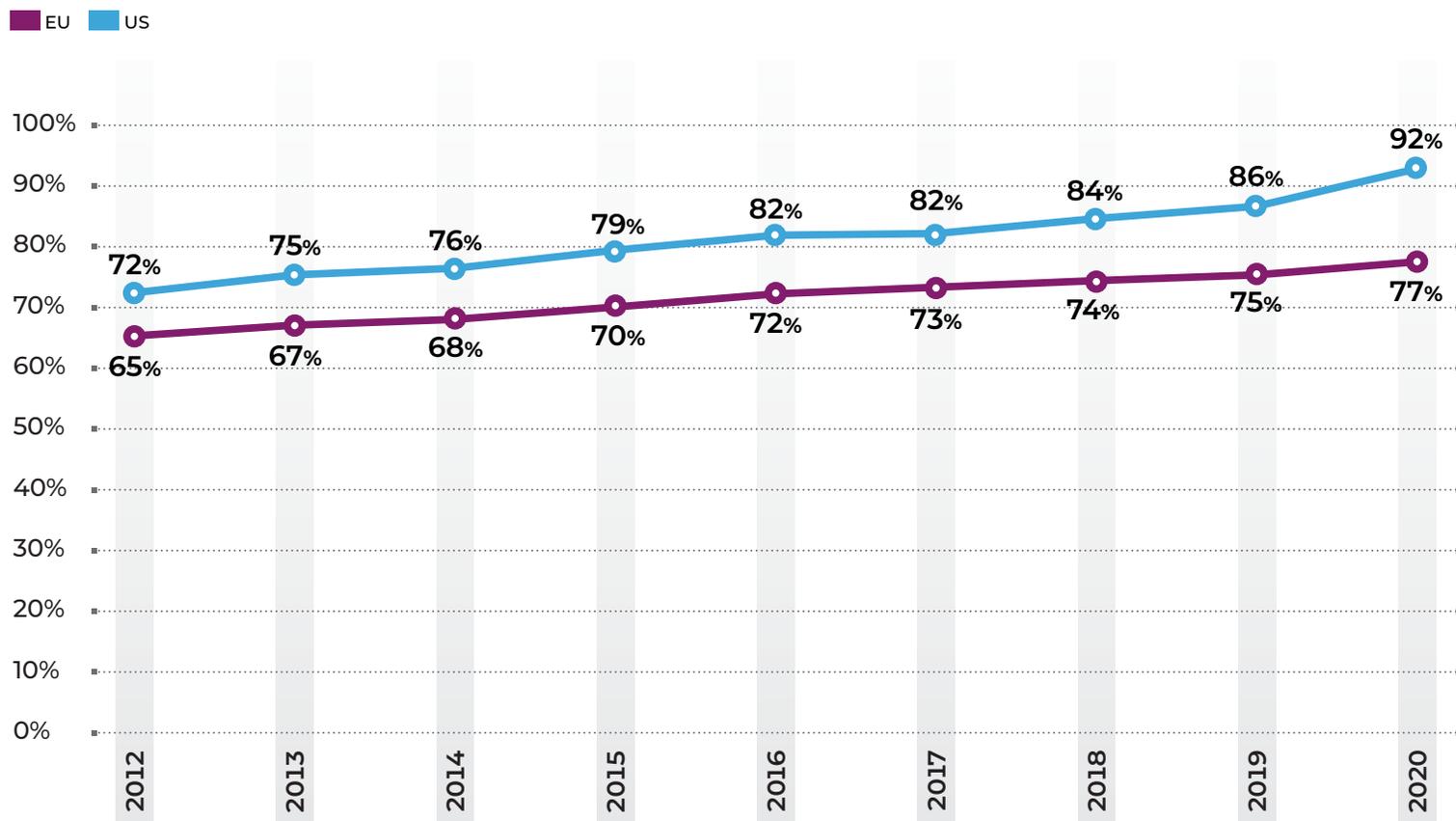
Even if wireless ISPs (WISPs) are removed from the comparison, the US lead on facilities-based competition remains nearly 2X the EU in all areas.

Even with this more conservative tally, the US lead remains greater than 5X when comparing rural areas.



SOURCES: FCC, NTIA AND EC'S DESI DATA

SHARE OF HOUSEHOLDS WITH FIXED BROADBAND SUBSCRIPTION AT ANY SPEED

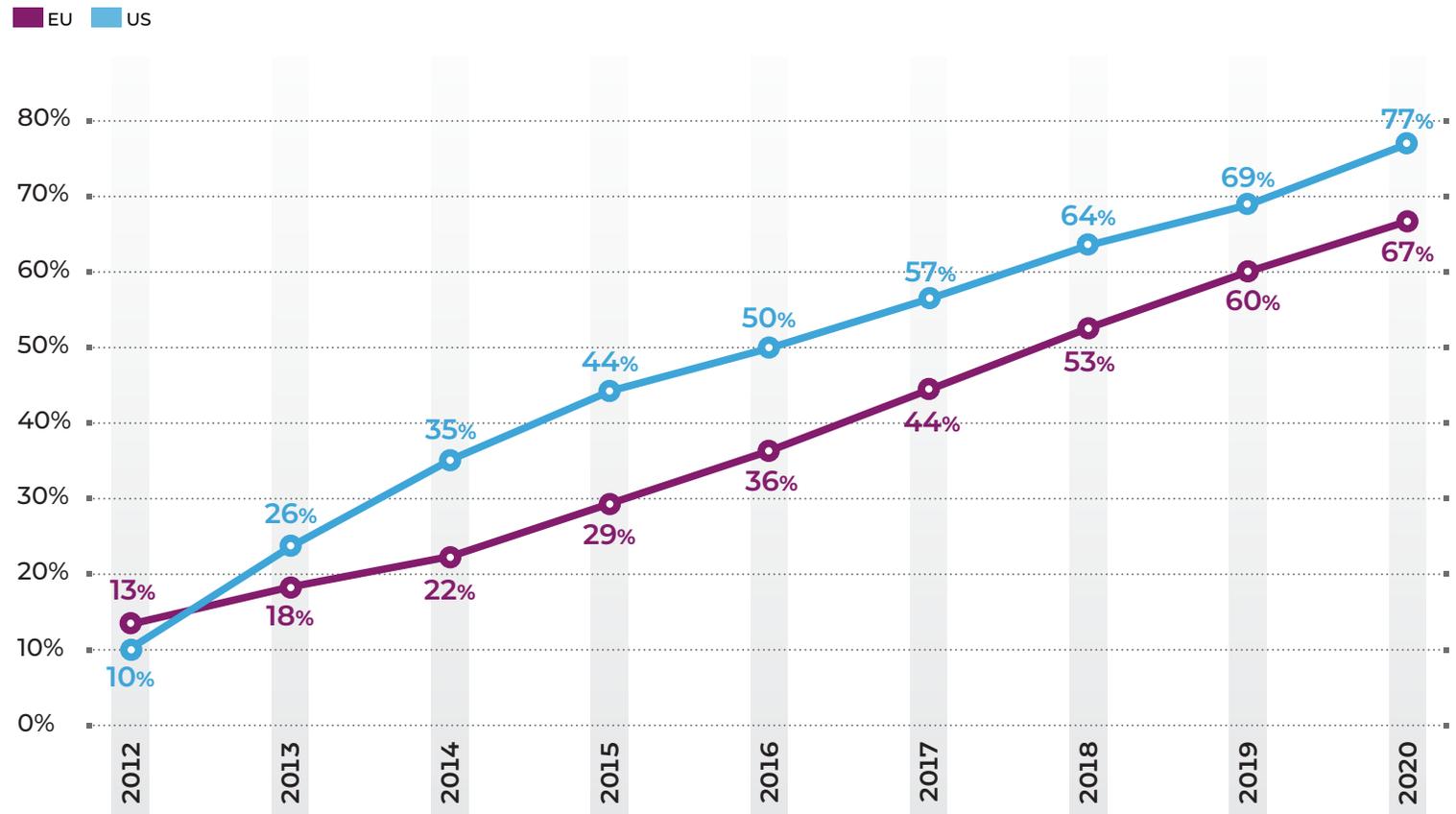


SOURCES: FCC, NTIA AND EC'S DESI DATA

KEY TAKEAWAYS

Not only do more Americans have access to high-speed broadband, but significantly more Americans have adopted service in their homes—with US take-up rates 15 percentage points ahead of EU rates.

SHARE OF HOUSEHOLDS WITH FIXED BROADBAND SUBSCRIPTION AT HIGH SPEED



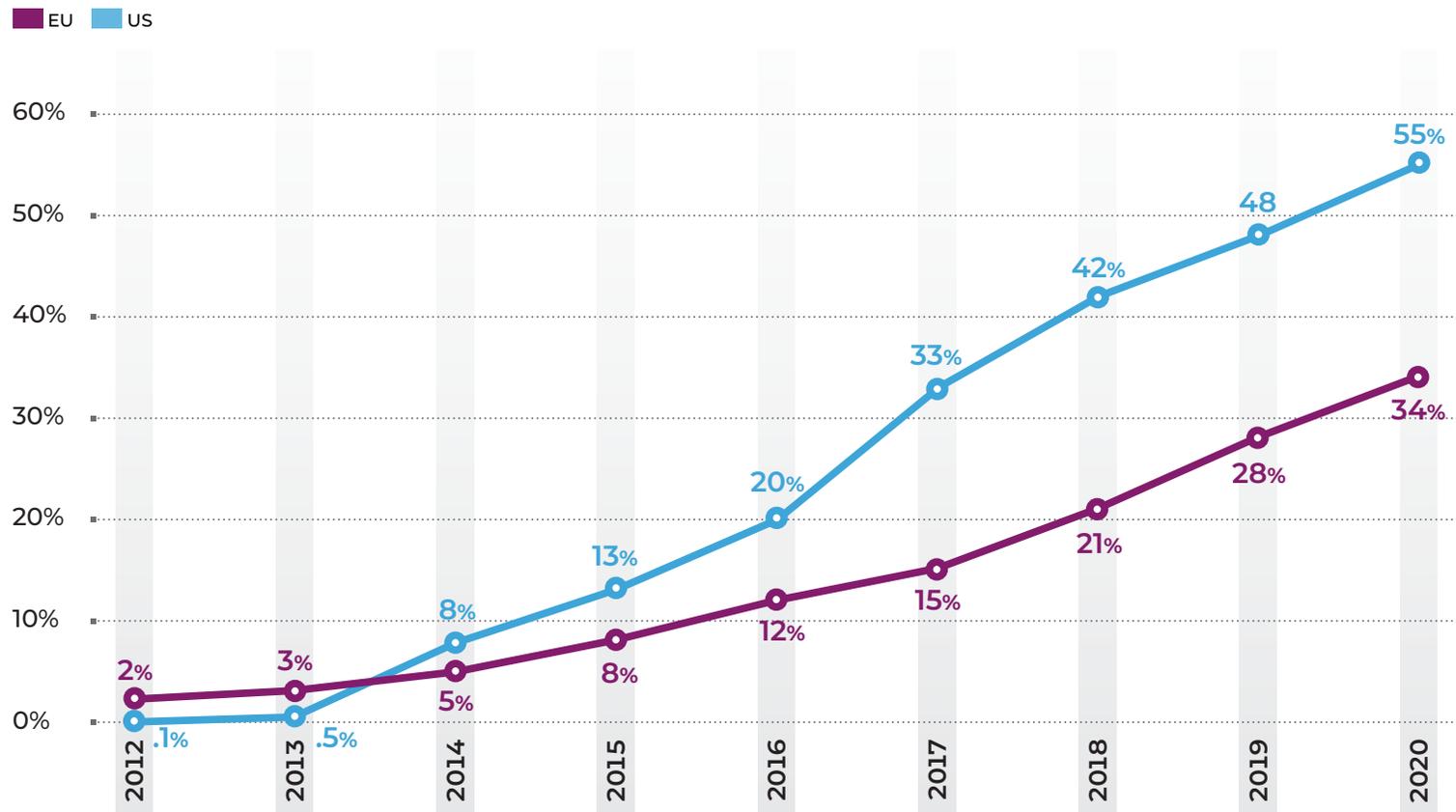
SOURCES: FCC, NTIA AND EC'S DESI DATA

EU speeds: ≥ 30 Mbps. US speeds: ≥ 25/3

KEY TAKEAWAYS

US residential take-up of high-speed broadband service is 10 percentage points greater than the EU.

SHARE OF HOUSEHOLDS WITH FIXED BROADBAND SUBSCRIPTION AT ≥ 100 MBPS



SOURCES: FCC, NTIA AND EC'S DESI DATA

KEY TAKEAWAYS

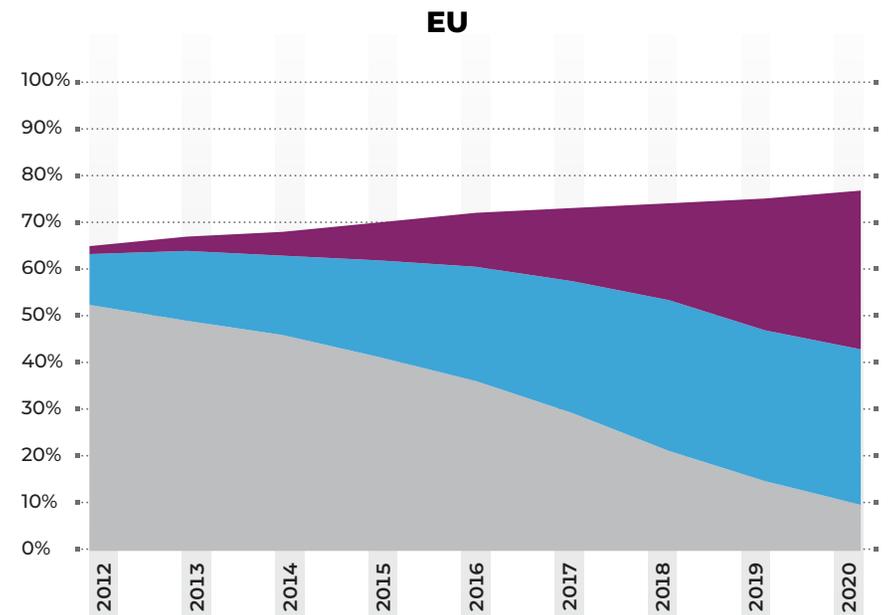
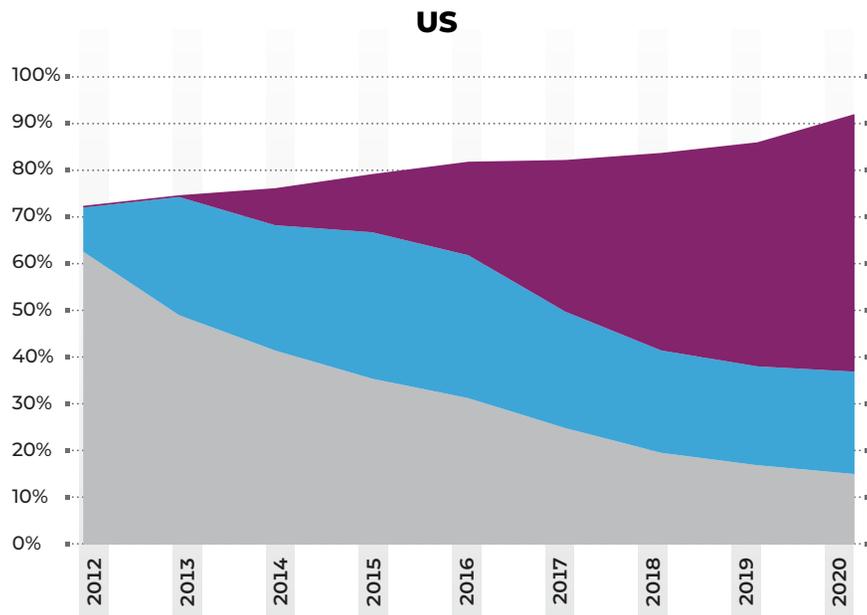
At the fastest speeds, the US has a 21 percentage point lead over the EU on broadband take-up among consumers.

SHARE OF HOUSEHOLDS WITH BROADBAND SUBSCRIPTIONS AT 3 SPEED INTERVALS

■ <25 MBPS
 ■ ≥25 MBPS & <100 MBPS
 ■ ≥ 100 MBPS

KEY TAKEAWAYS

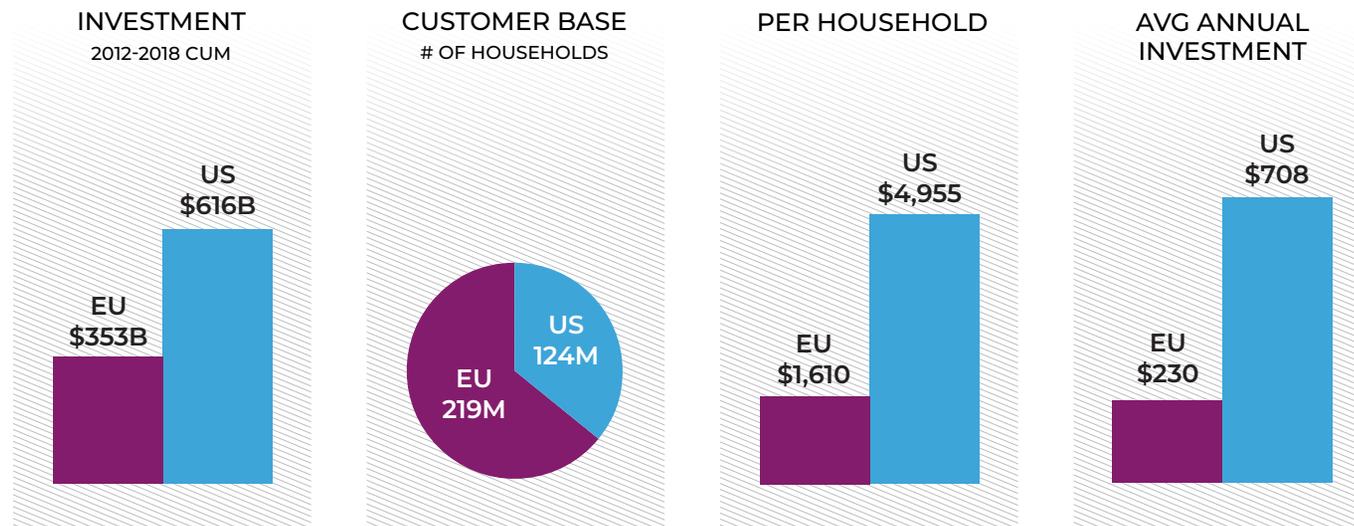
More American consumers are adopting broadband overall, and far more are choosing the highest speed service offerings relative to EU consumers.



SOURCES: FCC, NTIA AND EC'S DESI DATA

WHY IS THE US AHEAD?
TELECOM INFRASTRUCTURE INVESTMENT 2012 – 2018

■ EU ■ US



SOURCES: FCC, NTIA AND EC'S DESI DATA

KEY TAKEAWAYS

Broadband companies invest far more in the US as a whole...

US +75%
(CUM)

...Despite a far smaller customer base

US -43%
(# of households vs. EU)

...investing far more per household

US +208%
(CUM)

...every year

US +\$478 household
(Avg Annual Investment)

Denominated in 2018 US dollars. All figures are 2012-2018 CUM. Investment figures include residential, business and mobile services.

