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CS349

NET NEUTRALITY

WHAT IS NET NEUTRALITY?

- ▶ Idea that broadband Internet service is a common carrier
 - ▶ As a public utility, service providers cannot give preferential treatment to customers
 - ▶ Regulated by the Federal Communications Commission (FCC)

INSTAPOLL: IS HIGH SPEED INTERNET ACCESS A RIGHT?

- ▶ Does everyone have a right to broadband?
 - ▶ Broadband is a right and should be regulated by the government
 - ▶ Broadband is not a right but should be regulated by the government
 - ▶ Broadband is not a right but should be regulated by something other than the government
 - ▶ Broadband is not a right and does not need to be regulated by any organized body

IMPACTS OF NOT HAVING UBIQUITOUS BROADBAND?

HISTORY OF NET NEUTRALITY (1980S TO MID 2000S)

- ▶ In 1980s, Internet primarily used by researchers and developers rather than consumers
- ▶ In late 1990s, Internet becomes more pervasive in homes and businesses as broadband replaces dial-up services
 - ▶ Cable modem access categorized under U.S. law as an information service rather than telecommunications services (not a common carrier)
- ▶ In 2004, FCC Chairman Michael Powell presents "guiding principles" for the industry to preserve Internet freedom

INTERNET FREEDOMS

- ▶ Consumers should have:
 - ▶ Freedom to access content
 - ▶ Freedom to use applications
 - ▶ Freedom to attach personal devices
 - ▶ Freedom to obtain service plan information
- ▶ Presented as guidelines rather than regulations

HISTORY OF NET NEUTRALITY (MID 2000S TO 2010)

- ▶ In 2005, the FCC reclassified phone-based internet access (e.g. DSL) as an information service
 - ▶ Relaxed common carrier regulations for providers
- ▶ In 2009, Comcast settles class-action lawsuit for throttling P2P connections of users in 2007 and 2008
 - ▶ Paid \$16M across affected users and provided FCC with its new congestion management system that is application agnostic
- ▶ In 2010, Federal court overthrew FCC's cease-and-desist order against Comcast
- ▶ In 2010, FCC created first Open Internet Order
 - ▶ Restates general ideas of Internet freedoms but a compromise
 - ▶ ISPs cannot block or slow online services
 - ▶ Wireless companies can throttle services

HISTORY OF NET NEUTRALITY (2010 TO PRESENT)

- ▶ In 2014, DC circuit court ruled that the FCC cannot require ISPs to treat all traffic equally in *Verizon vs. FCC*
 - ▶ Court ruled on basis that ISPs are not common carriers
- ▶ In 2015, FCC reclassifies broadband as a telecommunications service
 - ▶ ISPs cannot block, throttle or fast lane users
- ▶ In 2017, FCC chairman Ajit Pai led “Restoring Internet Freedom” order to repeal 2015 rules
 - ▶ 23 State Attorneys General suing order as a violation of federal law
- ▶ In 2018, Department of Justice filed a lawsuit against California for creating state-level net neutrality protections
- ▶ in 2019, D.C. Circuit Court of Appeals upheld the canceling of net neutrality by FCC but stated FCC cannot bar states from adopting open-Internet protections

FEDERAL VERSUS STATE REGULATION

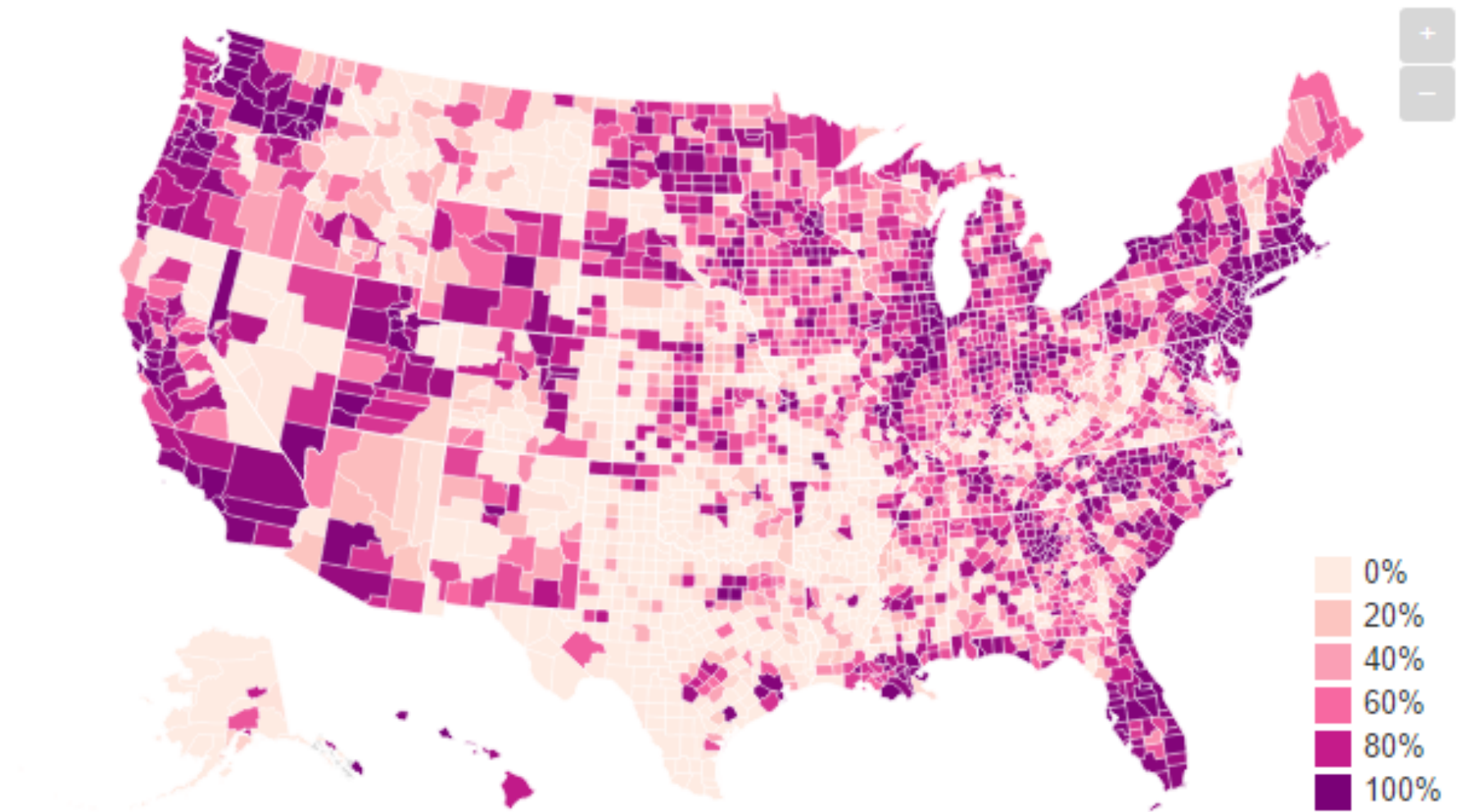
- ▶ With 2017 repeal of net neutrality, over half the states have introduced state-level bills to protect net neutrality
- ▶ Pai claims FCC has authority to preempt states and municipalities from imposing laws as broadband is an interstate service
- ▶ States can legally enforce net neutrality in role of purchasers of Internet services
 - ▶ ISPs must abide by state net neutrality regulations if they contract with any state agencies

VERIZON THROTTLES CALIFORNIAN FIRE FIGHTERS

- ▶ During the 2018 California fires, Santa Clara County Central Fire Protection District discovered data from support units to on-scene fire fighters was being slowed to 1/200th of expected speed
 - ▶ Fire fighters were on an unlimited plan but had exceeded allotment resulting in throttling
 - ▶ Fire fighters forced to purchase additional plans to continue coordinating fire suppression
- ▶ Verizon later responded that throttling was a “customer support mistake” and promised unlimited plan to first responders
- ▶ As of 2 months later, first responder plan may or may not exist, but Verizon did release an ad claiming to be the #1 network for first responders

REALITIES OF INTERNET IN AMERICA

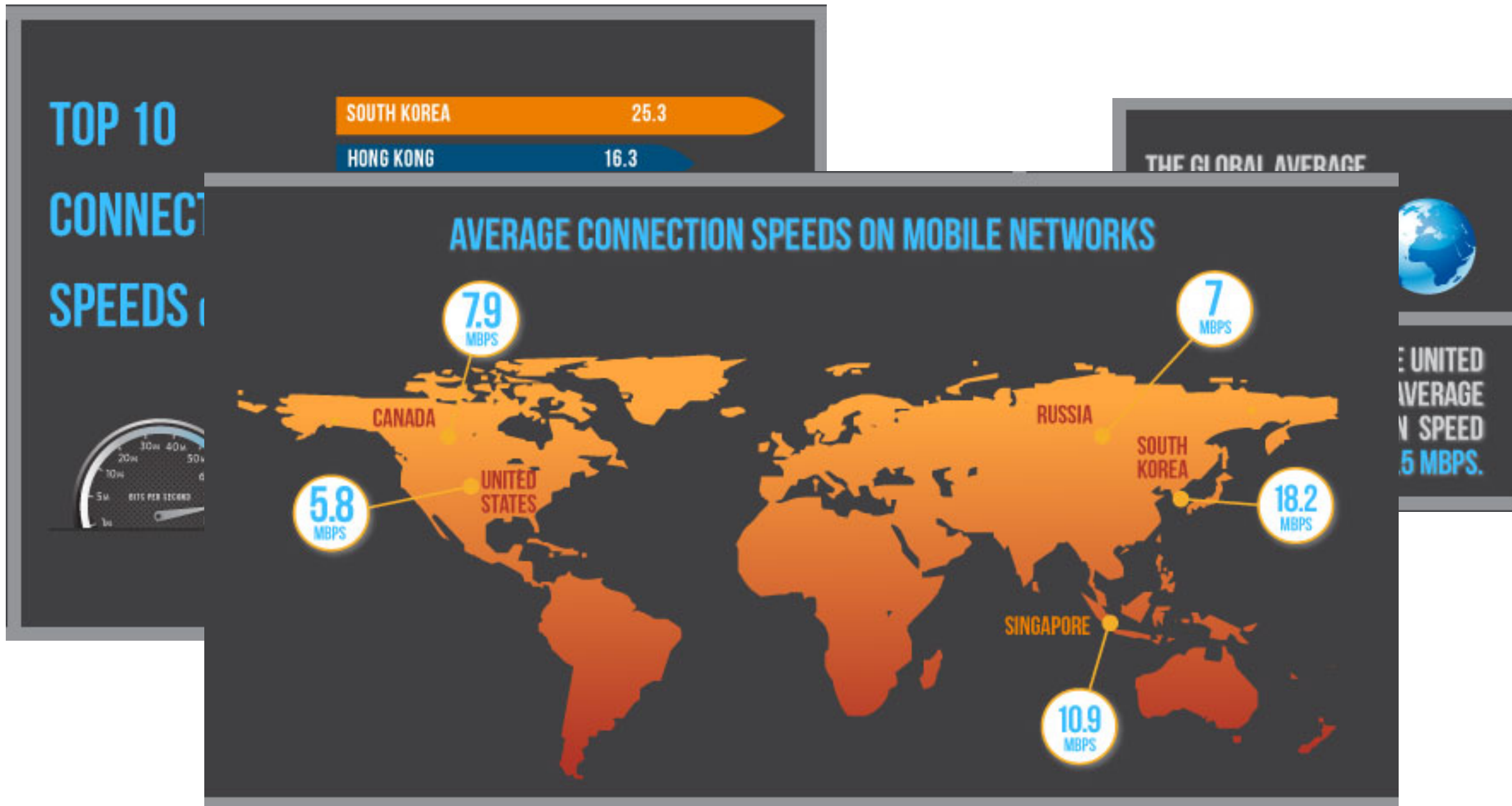
Percent of population with access to high-speed broadband (2017)



High-speed is defined as 25 Mbps/3 Mbps

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...COMPARED TO OTHER COUNTRIES



THE DIGITAL DIVIDE

- ▶ Separation of those who have access to the Internet and those that don't
- ▶ In the US, only 65% of people have broadband versus South Korea with more than 94%

DIFFERENCES?

- ▶ High population density makes it easier to reach all citizens
- ▶ South Korean government actively encourages citizens to access Internet
 - ▶ Subsidizes price of connection for low-income people
 - ▶ Programs to teach traditional non-users to access Internet and incorporate it into their daily lives and for education
- ▶ South Korea, Japan and several European countries have infrastructure-sharing to allow for broadband competition
- ▶ South Korean government prioritizes high connection and Internet literacy
 - ▶ Faster to adopt new technologies (and discard old ones)

MUNICIPAL INTERNET INFRASTRUCTURE

- ▶ Municipal infrastructure can reach underserved areas as there's lower costs and no need for shareholder profits
- ▶ In 2004 the US Supreme Court allowed states to prevent municipalities from providing telecommunication services
 - ▶ Led to an increase in ISP lobbying within states to limit a municipality's ability to create local broadband
- ▶ In 2017, almost half of Colorado counties authorized their local governments to build city-run broadband networks

THE DATA DIVIDE

- ▶ Separation of those who can access and process data, and those who cannot

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