

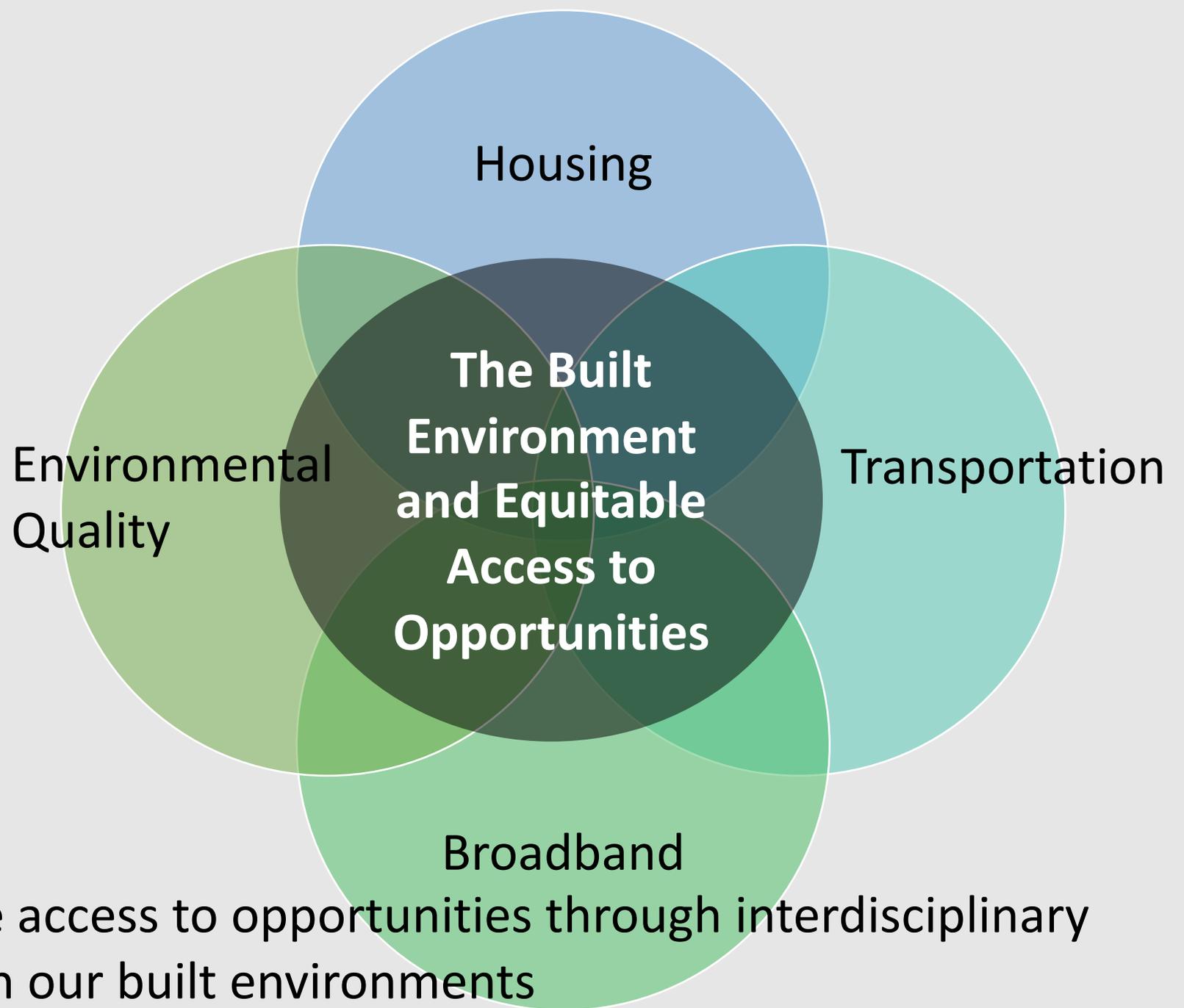
Universal Service Digital Divide, Equity, and Some Sociotechnical Systems Solutions

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Hello!

Dr. Courtney
Cronley

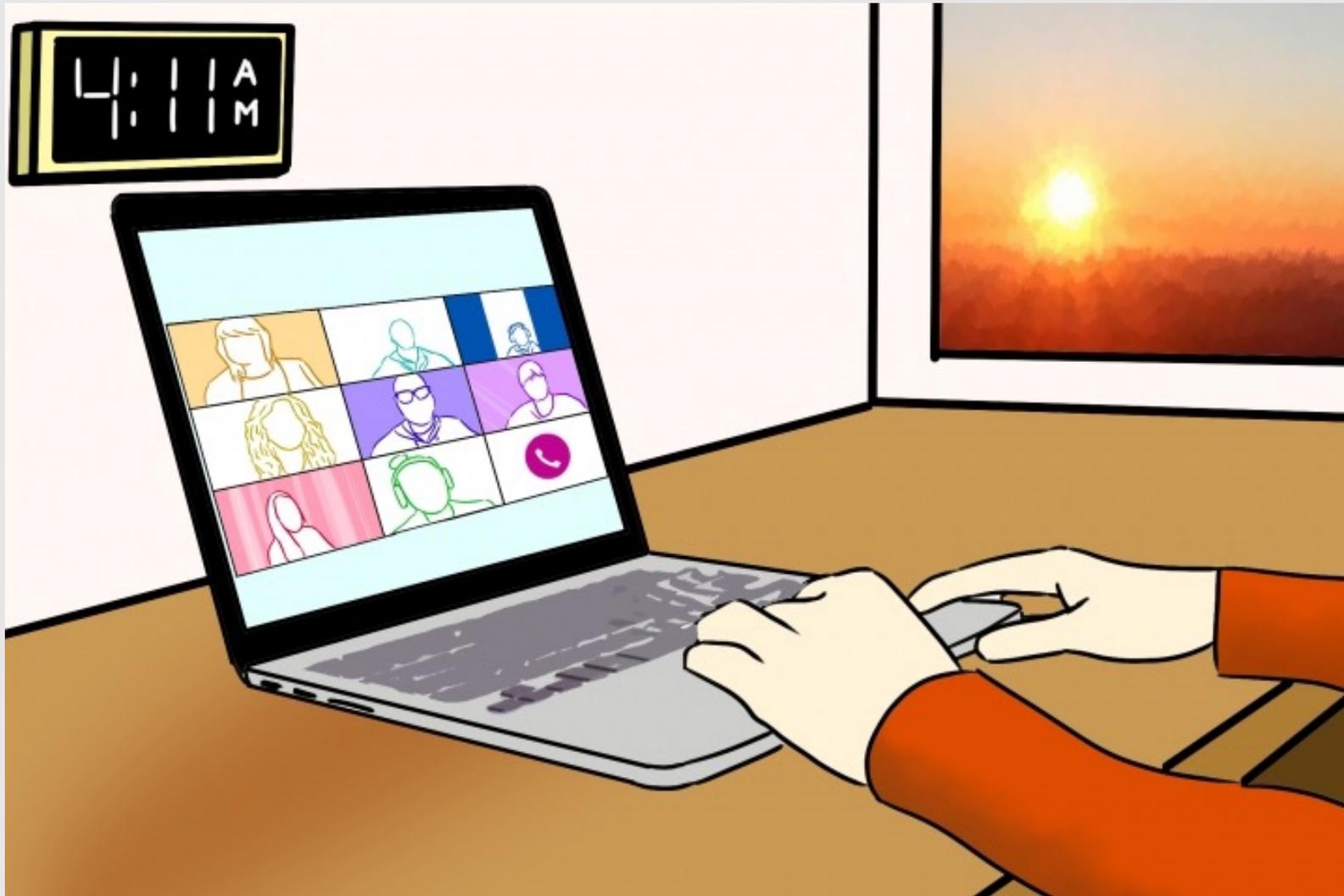


My goal: Promote equitable access to opportunities through interdisciplinary efforts to rethink and design our built environments

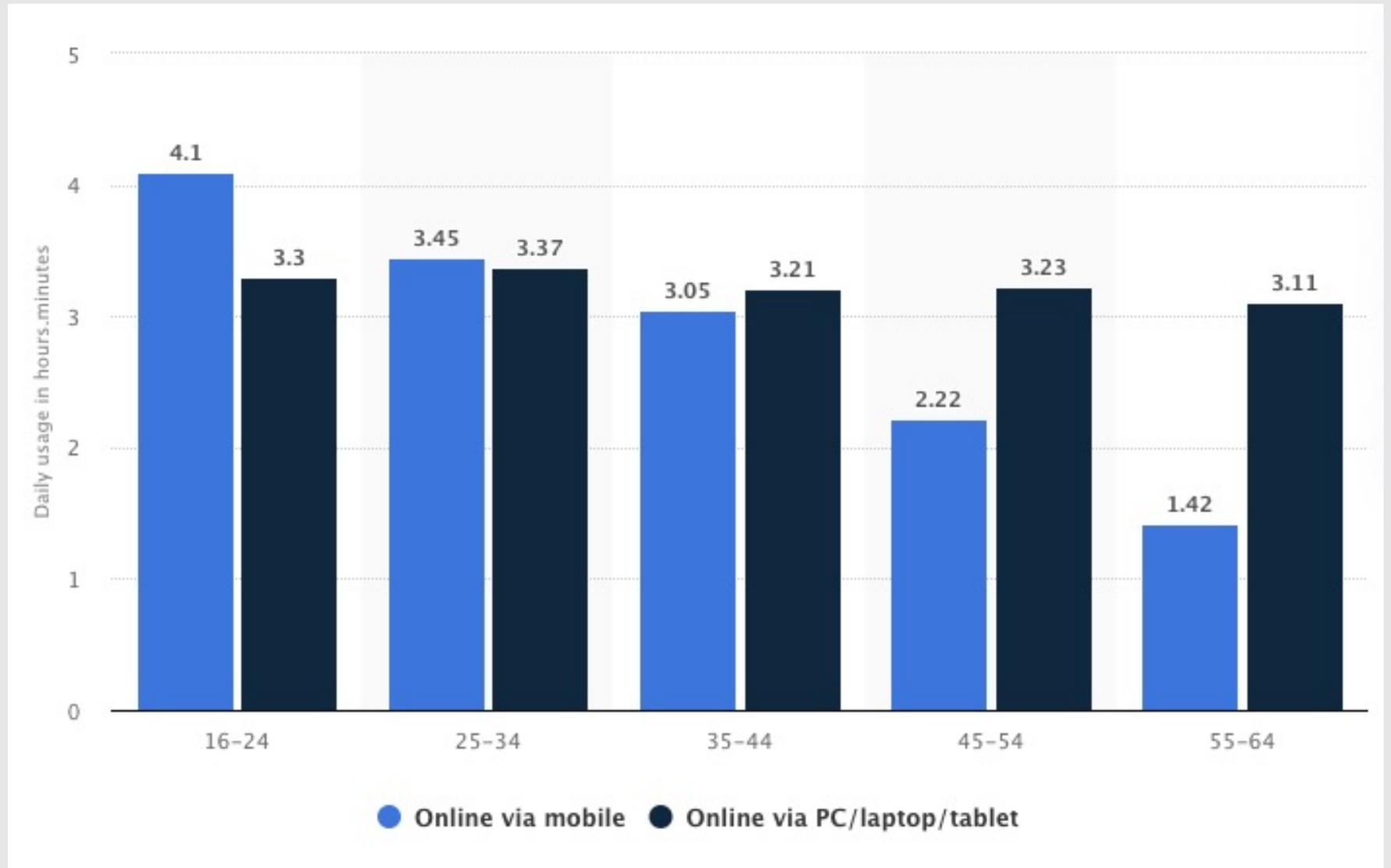
Today's Lecture

- Broadband as a public good
- How much time do we really spend online?
- Digital Divide
- Equity and Digital Equity
- Socio-technical Systems
- Ideas for Solutions

How much time do you spend online?



World wide



Source: Statistica, 2021 (<https://www.statista.com/statistics/416850/average-duration-of-internet-use-age-device/>)

Historically
telecommunications was run by
the state



At the end of the 20th century,
we saw a rise in privatization of
telecommunications



A new need for the state to
protect those aspects of
telecommunications that are
considered a public interest



In some countries, Broadband
is a part of a Universal Service
Obligation and all citizens have
a right to it, and the
government ensures/provides
the access



In many countries (the United
States included), Broadband is
only a universal service and the
government has no obligation
to ensure/provide access

***Universal Service
and Public Good***

the digital divide

internet & population



The gap between underserved members of society, who lack reliable access to computers or the Internet, often based on geographic or demographic characteristics, particularly those who are lower-income, rural, older adults, or have a disability.

Sources: Populated places data from geonames.org, internet based on anonymized IP addresses from MaxMind (both IPV4 and IPV6) | Visual: Orion Wilcox

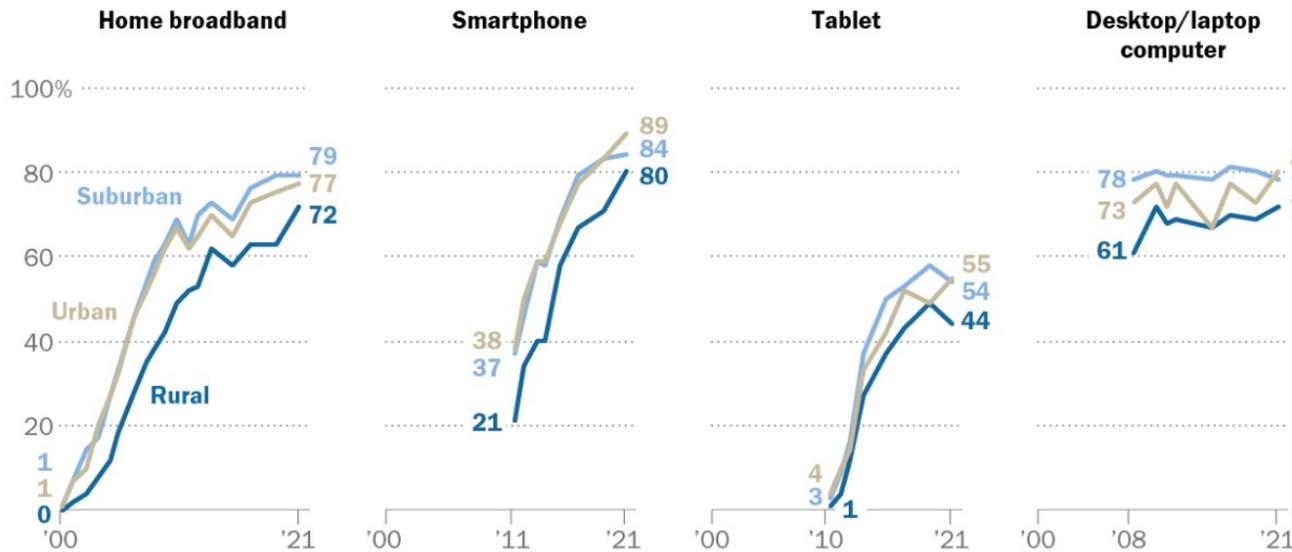
Digital Divide Stats

9 out of 10 Americans say Internet has been essential during the pandemic
 But 7% of U.S. adults (~18million people) aren't accessing the Internet

And in Rural America...

Despite growth, rural Americans have consistently lower levels of technology ownership than urbanites and lower broadband adoption than suburbanites

% of U.S. adults who say they have or own the following

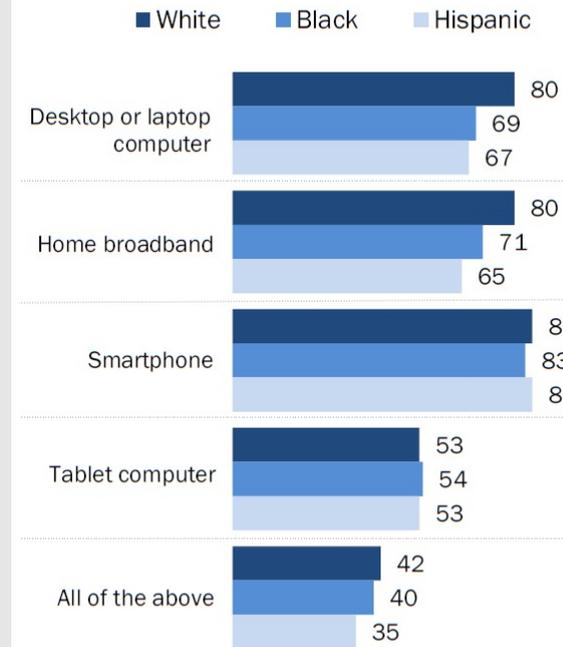


Source: Survey conducted Jan. 25-Feb. 8, 2021.

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Black and Hispanic adults in U.S. are less likely than White adults to have a traditional computer, home broadband

% of U.S. adults who say they have the following



Note: Respondents who did not give an answer are not shown. White and Black adults include those who report being only one race and are not Hispanic. Hispanics are of any race.

Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.

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And in minority communities

Why Not Connected?

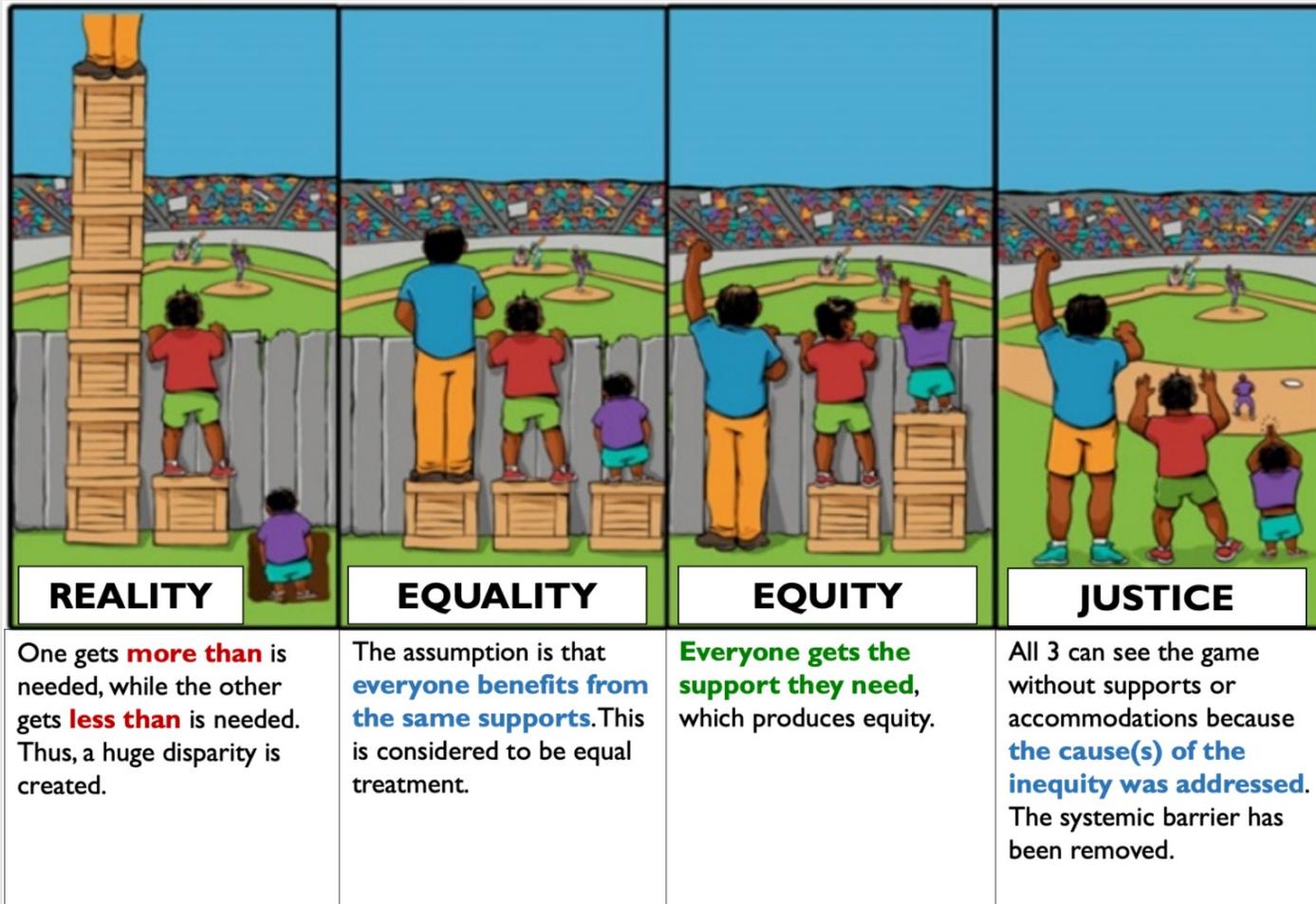
Why households aren't connected to the Internet, in relative proportions						
	2011	2012	2013	2015	2017	2019
Can use elsewhere	3%	3%	3%	2%	3%	3%
No need or interest	51%	52%	51%	60%	64%	67%
No computer	14%	12%	14%	8%	5%	3%
Internet unavailable	1%	1%	1%	3%	3%	4%
Privacy and security	1%	1%	1%	2%	2%	2%
Too expensive	30%	31%	30%	26%	24%	21%

Source: National Telecommunication and Information Administration, Census Computer and Internet Use Survey

How Does Tennessee Compare?



Equality, Equity, and Justice



- 1) Equal accessibility to destinations
- 2) Recognition of underserved populations
- 3) Increased access to opportunities
- 4) Equal distribution of benefits and consequences

Digital Equity

Equity: Allocating resources and opportunities to those in need in order to reach an equal outcome



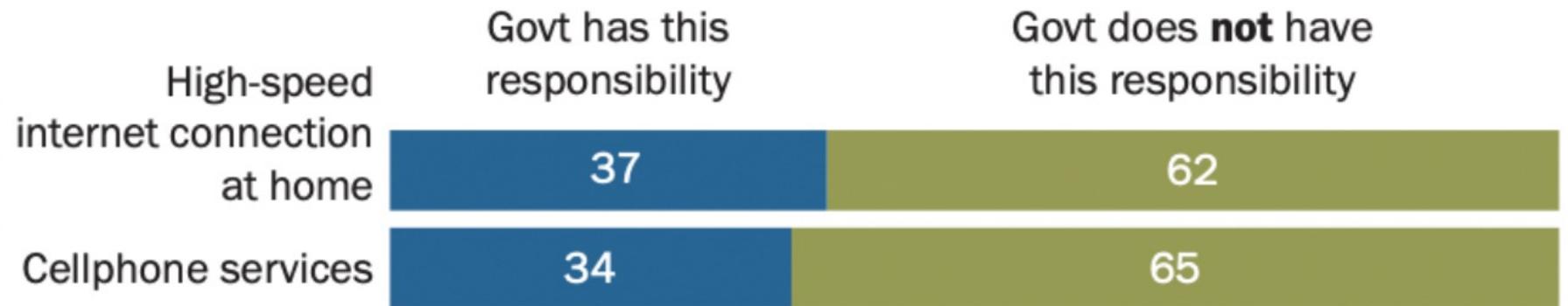
Digital Equity: Every individual, regardless of race, ethnicity, or other demographic characteristic, can access wireline and wireless services



It involves: Access to hardware and software, reliable Internet connection, knowledge of how to use technology, infrastructure investment

But Who's Responsible?

% of U.S. adults who say the federal government ___ to ensure all Americans have each of the following during the coronavirus outbreak



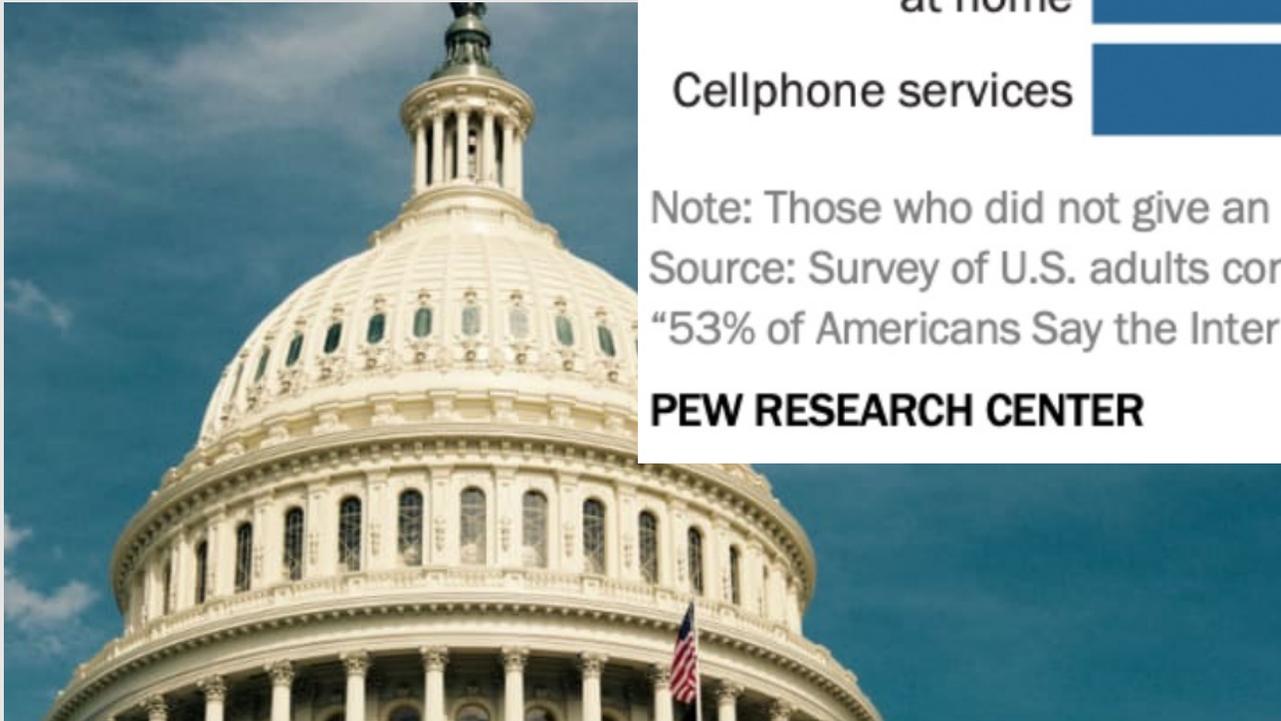
Note: Those who did not give an answer are not shown.

Source: Survey of U.S. adults conducted April 7-12, 2020.

"53% of Americans Say the Internet Has Been Essential During the COVID-19 Outbreak"

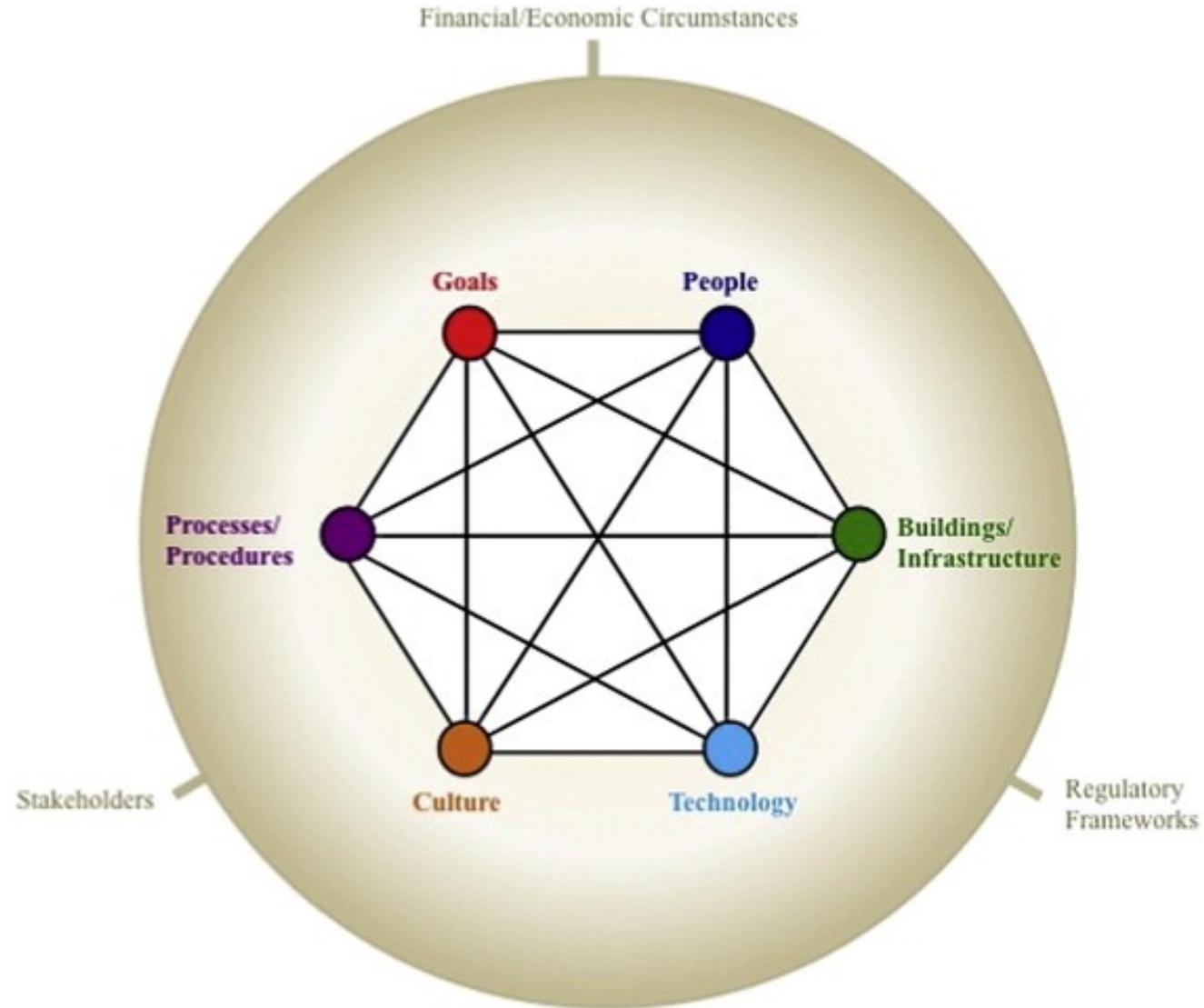
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(Remember, we're a universal service, not universal service obligation, state)



A Sociotechnical Problem

- Sociotechnical Systems – the interdependence of **technology, people, and environment** (Cumming, 1994)
- Engineers design hardware/software operates by studying and resolving technical issues
- Humans adopt and use technology according to perceived utility, ease of use, affordability, etc.
- Governments and institutions facilitate use through funding, infrastructure, regulation
- The most successful technologies are robust in technical design and implicitly or explicitly designed to facilitate human use



Some Solutions!

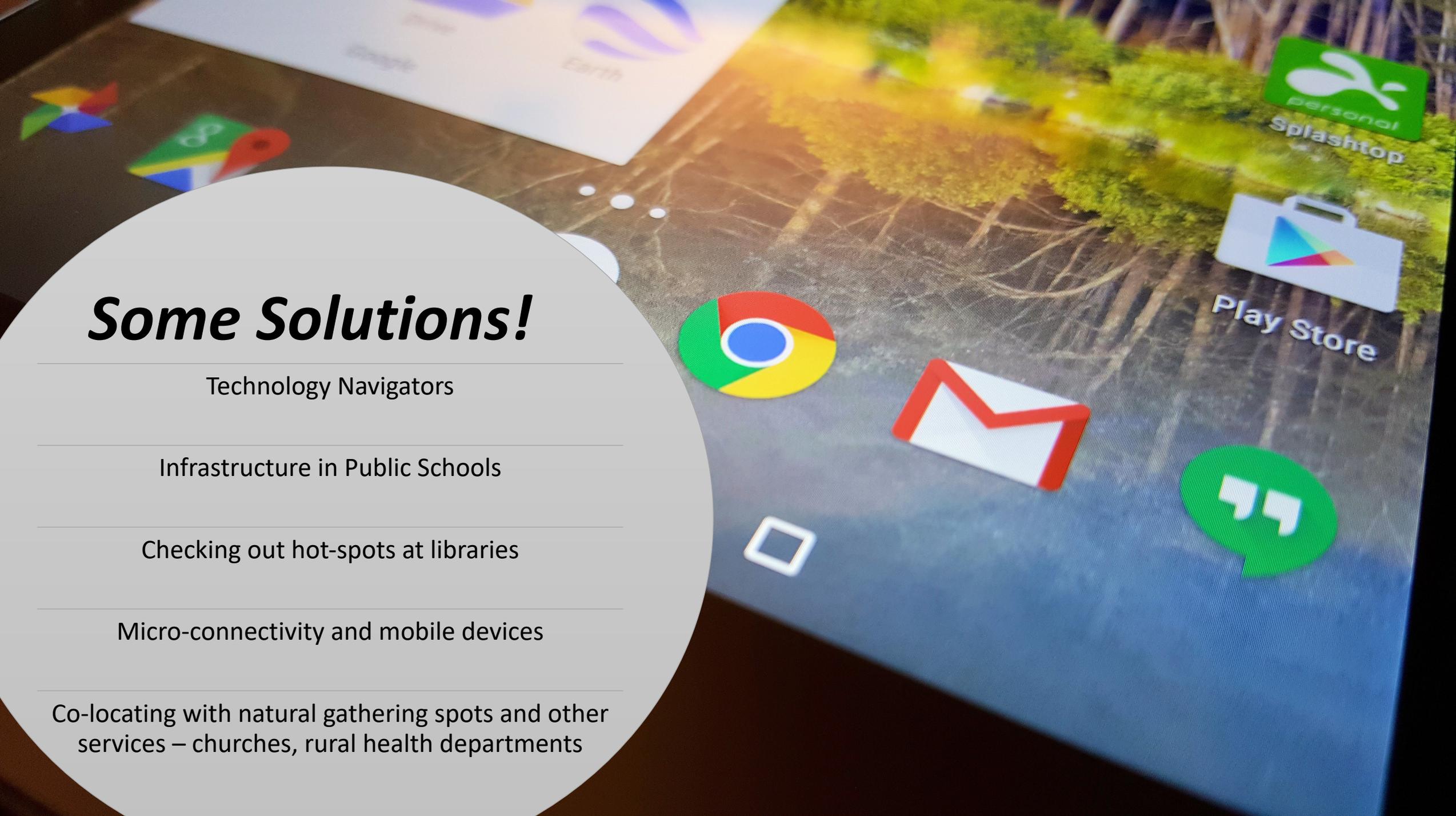
Technology Navigators

Infrastructure in Public Schools

Checking out hot-spots at libraries

Micro-connectivity and mobile devices

Co-locating with natural gathering spots and other services – churches, rural health departments



Digital Equity Act

- Sponsored by Senator Patty Murray (D-WA)
 - Included in the **Infrastructure Investment and Jobs Act**
- Equity plans and implementation for all states and territories
- Additional competitive grants for digital inclusion projects
- Evaluation and research to establish evidence base of what works best

THE DIGITAL EQUITY ACT OF 2019





Thank you!

And future
reading...

Cummings (1994)

Digital Equity Act One-Pager

Gorejena et al. (2016) A critique
and potency of socio-technical
systems theory: a quest for
broadband growth and
penetration

How To Close the Digital Divide in
the US

Pew Research Center