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A Hypothesis-Generating Cross-Country Comparative Case Study of the US and UK's Digital Divide Policies from the 1990s to the Present Day

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Statutory Declaration

I hereby declare that I have composed the present thesis autonomously and without use of any other than the cited sources or means. I have indicated parts that were taken out of published or unpublished work correctly and in a verifiable manner through a quotation. I further assure that I have not presented this thesis to any other institute or university for evaluation and that it has not been published before.

July 9th Schulman, Miller

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Abstract

The digital divide is just one of many aspects of societal inequality around the globe. Over time, digital technologies have brought significant changes to many aspects of society, from education to social interaction and economic inclusion. This paper aims to conduct a succinct cross-country comparison of the United States's and the United Kingdom's digital divide policies which will result in many similarities and differences surfacing. As a result, this paper will offer the reader several explanations as to why the similarities and differences exist between the two countries. Through a descriptive exploration of each country's digital divide policies since the 1990s, the subsequent cross-country comparison and explanations, this paper will provide a foundation for future researchers to conduct a wide variety of studies.

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Introduction

For centuries philosophers have discussed morality, systemic injustice, and societal inequality. Martin Luther King Jr. once said, “Injustice anywhere is a threat to justice everywhere. We are caught in an inescapable network of mutuality, tied in a single garment of destiny. Whatever affects one directly, affects all indirectly” (King, M.L 1963, l. 25-26). King’s argument of mutuality applies to many fields of research, especially social policy.

This paper works within the field of Digital Divide policy. The digital divide is the multi-layered challenge of access, skills, and outcomes, whether young or older adults or the unemployed or employed. Today, the digital divide’s “threat to justice” is ever-changing as new technologies get invented and more sections of society are left behind.

This paper will provide potential reasons for the differences in digital divide policy in the United States and the United Kingdom and be a centralizing paper for anyone seeking to know the digital divide policies of the US or the UK from the 1990s till the present day.

This paper will begin with a literature review of what the term digital divide means and transition to the systems considerations and the consequences and risks of the digital divide. This will provide the reader with the necessary background on the issue to understand its definitions and importance to societal equality. After laying this foundation, the reader will be informed about the current trends of the divide in each country, informing the reader about where all the policies they will read resulted for each country.

Literature Review and Theoretical Background

What is the Digital Divide?

The digital divide emerged in the 1990s as a term in academic literature. In the 1990s, researchers saw the digital divide as an "access" issue, meaning that their research focused on who had access to information and communications technology (ICT) and who did not (Hoffman et al., 2000; Dewan & Riggins, 2005). This binary classification was identified as the difference between the "haves" and "have nots" (McConnaughey et al., 1995; Wilhelm, 2011). Other discussions within the first level include a transformation into a "material" access of devices (maintaining internet usage, software subscriptions, and additional equipment that show that these other materials provide varying degrees of opportunities for users) instead of a "physical" access (e.g., tablets, laptops, desktops) of technology (Gonzales, 2015; van Deursen & van Dijk, 2018). Additionally, Van Dijk (2006) classifies four types of access problems within the digital divide: psychological, material, skills, and usage (van Dijk, 2006). Psychological access is a "lack of any digital experience caused by lack of interest, computer fear and unattractiveness of the new technology" (van Dijk & Hacker, 2000, p.1). Material access is "no possession of computers and network connections"(van Dijk & Hacker, 2000, p.1). This differs from "material" access mentioned prior, as definitions of terms within the digital divide sphere are not always identical and can even overlap. Skills access is a "lack of digital skills caused by insufficient user-friendliness and inadequate education or social support" (van Dijk & Hacker, 2000, p.1). Usage access is a "lack of significant usage opportunities" (van Dijk & Hacker, 2000, p.1). Literature within the digital divide sphere began to take on a more complex lens as Sewlyn (2004) advocated for "more robust survey-based and in-depth qualitative work" (Selwyn, 2004, p. 358). Over time, the divide expanded into a second level.

This second level of the divide looked at factors such as access to content and digital skills such as not including spaces when typing a URL and internet connection quality (Lindsay, 2005; Dimaggio et al., 2004.; Warschauer, 2003; van Dijk & Hacker, 2003). While looking at these second-level factors, scholars found a consistent difference between ages, socio-economic and ethnic groups (Choi & DiNitto, 2013; Friemel, 2014; Dimaggio et al., 2004). Within the second level, Van Dijk and Hacker (2003) identified varying classifications of skill levels needed to utilize the internet, such as strategic (using information for one's purpose and position), instrumental (the ability to operate hardware and software) and informational (ability to search for information using digital hardware and software) (van Dijk & Hacker, 2003). The varying levels of skill can lead to differences in usage which scholars also explore (Büchi et al., 2016.; Mishra et al., 2022; Min, 2010).

At the third level of the divide are outcomes. People who lack access and who lack the skills will lag behind others who have access and have the means to take advantage of the opportunities available online, which is then linked to social inequality (van Deursen et al., 2015). These opportunities online, known as capital-enhancing activities, are taken advantage of by individuals of higher social status. In comparison, people of lower social status are likelier to participate in lower capital-enhancing activities such as social media/entertainment (van Deursen et al., 2015; Witte & Mannon, 2010; Faroldi, 2022).

In addition to the three levels of the digital divide, increasing digitalization also brought new dimensions to the digital divide.

Scholars have discussed how smartphones have brought new divisions of usage between groups of people (Wenz & Keusch, 2022; Summers et al., 2018). Increased digitization of the medical field has resulted in disproportionate effects on the elderly, critical-access hospitals, and minority groups (Milstein et al., 2017; Walker et al., 2020). Furthermore, remote learning presents various challenges for students and teachers, especially those who fall behind in school due to a lack of

access to devices and teachers who need more digital skills to teach in a remote setting effectively (livari et al., 2020; Liu, 2021; Norman et al., 2022).

As the world has become more digitized, the term "digital divide" has expanded from an access issue to skills and outcomes and has come to discuss the second and third levels of the divide, expanding on just focusing on access. Digital divide literature now spans multiple policy fields from healthcare to education.

However, the literature lacks cross-country comparisons. New hypotheses and theories about the divide cannot be universalized without such comparisons. This paper will fill this gap by comparing the digital divide policies of the US and the UK over many decades.

Systems Considerations

The previous section argues that the digital divide literature has grown to encompass many issues. This section will discuss some theories of how digital divides are created.

Gonzales (2016) applied the lens of technology maintenance theory to explain the digital divide. Technology maintenance theory predicts that "as the poor increasingly have initial in-home and public access to technology, the digital divide will begin to center on differences in the ability to maintain that access" (Gonzales et al., 2016, ll. 333-335). The access being maintained are the costs of the technology, monthly payments to phone companies and internet companies, and other miscellaneous costs that can be particularly burdensome for lower-income households (Gonzales, 2015).

Gilbert (2010) proposes a digital inequalities model based on Bordieu's social capital theory and draws on the relationships between power, place, and scale (see figure 2). Gilbert explains her use of Bordieu's social capital theory which is "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships

of mutual acquaintance or recognition," as a conceptualization of technological capital as the realized or unrealized as the collective resources references by Bordieu (Bizzi, 2015; Gilbert, 2010). What results is a model that attempts to create a causal link from globalization at the top to the individual level with power relations between different social classes and races (see figure 2). Gilbert's model gives the sense of the interconnectedness of the digital divide's impact as a domino effect can be ascertained from her model.

A prominent scholar in the digital divide community is Van Dijk, and his model is summarized and visualized by Pick and Sarkar (Pick & Sarkar, 2016) (see figure 3). Van Dijk's model, like Gilbert's, intends to encapsulate the full scale and factors of the digital divide. Pick and Sarkar state that the core of Van Dijk's theory is that "inequalities in resources for the individual, which lead in turn to inequalities of access and finally to disparities in participation by the individual in society. That participation in turn feeds back to positional characteristics which forms a full feedback loop" (Pick & Sarkar, 2016). Van Dijk attributes the combination of an individual's positional and personal inequalities to inequalities in resource distribution. This inequality of resources combines with the inequality of access amongst motivational, material, skills, and usage as these accesses are done in stages that form a loop. This loop forms an overall access metric ridden with inequality leading to unequal participation in parts of society such as the economy, politics, institutions, culture, and social networks (Pick & Sarkar, 2016).

Each theory presents the digital divide as a result of existing societal inequalities further perpetuated/accentuated by the digital divide.

This paper will provide additional theoretical considerations for researchers who seek to include country based/structurally based analyses of countries and their respective approaches to the digital divide.

Consequences and Risks of the Digital Divide

The digital divide undermines workers by leaving them with a lack of access to the best digital tools for their needs, lack of access to real-time information and communication, disparities in access to data and information, and causes limited knowledge of digital literacy and data (Townsend, 2020). As a result, less digitally skilled workers are less employable and have lower earning capacities (Atasoy et al., 2021). The consequences of not being digitally skilled were especially salient during the COVID-19 pandemic.

In education, students with less access to remote learning had less ability to excel in school, known as the homework gap (Badiuzzaman et al., 2021; Mathrani et al., 2021; Crocker & Kleitsch, 2023). Policy analysts found that students experienced learning loss associated with the pandemic along with the homework gap. For instance, a researcher from Harvard found that students who spent the least amount of time remote learning during the 20-21 school year (a month or less) missed out on seven to ten weeks of math learning (qtd. In Turner, 2022). Parents surveyed about remote learning reported negative results in terms of well-being and digital obstacles for their children, such as "a lack of reliable internet at home, no computer at home, or needing to use a smartphone to complete schoolwork" (Vogels, 2021, l. 68-69; Connor et al., 2022; Iftikhar et al., 2023; Anderson, 2022). As mentioned, missing out on this time is referred to as "learning loss," and minority students were hardest hit as they had less access to devices, wifi access, and as a result, less access to remote learning (Dorn et al., 2020; Schaefer, 2021; Krauth, 2022; Kayitsinga (no date)). This is further supported by scholars finding a link between Black and Hispanic households having less wealth and, as a result, seeing increased housing instability and lower homeownership rates causing less reliable internet and fewer devices (Percheski & Gibson-Davis, 2020; Francis & Weller, 2022). Not only can Black and Hispanic households have less access to devices and reliable internet, but they are also more than twice as likely to "have canceled or cut their internet service due to financial strain than those identifying as White"

(Vogels et al., 2020; Early & Hernandez, 2021, l. 42-43). Beyond education, the healthcare industry, before and during the COVID-19 pandemic faces serious challenges in providing adequate care to all citizens.

Access to health information online can be the difference between accessing proper medical care and not. Known as health-related internet use (HRIU), scholars have found that certain groups, such as the impoverished and minority groups, are less likely to access crucial health information and services such as telehealth, this can result in worsening health outcomes (Hong & Cho, 2016; Saeed & Masters, 2021; Li, 2022). More and more scholars are saying that broadband[1] internet access is a social determinant of health, like Benda et al (2020) wrote in her article title for the American Journal of Public Health (Benda et al., 2020). US federal agencies have even showed the disparities between internet connectivity and health outcomes.

FCC's mapping of broadband health in 2017 showed that the worst connected counties have the worst access to healthcare, hospital stays that could have been avoided are 1.5 times higher in the least connected counties, and that almost half of US counties have "high burdens of chronic disease (e.g. diabetes) as well as a need for greater broadband connectivity" (FCC, 2017, l. 14).

As seen in this section, the digital divide highlights and perpetuates inequalities in several areas of society.

Current State of Digital Divide in US and UK

Purdue University's Center for Regional Development released an article titled "The State of the Digital Divide in the United States" (Gallardo, 2022). It provides many insights into the current US Digital Divide at the first level. The article discusses their utilization of the digital divide index

[1] "high-speed Internet access that is always on and faster than the traditional dial-up access. Broadband includes several high-speed transmission technologies such as: Digital Subscriber Line (DSL), Cable Modem, Fiber, Wireless, Satellite, Broadband over Powerlines (BPL)" (*Types of broadband connections*).

(DDI), rating between 0 (lowest divide) to 100 (highest divide) on ten variables divided into two groups; **INFA (infrastructure/adoption)** and **SE (socioeconomic)**. INFA variables were:

> (1) percentage of total 2021 population not using the internet at 100/20 based on Ookla Speedtest® open database; (2) percent of homes without a computing device (desktops, laptops, smartphones, tablets, etc.); (3) percent of homes with no internet access (have no internet subscription, including cellular data plans or dial-up); weighted (by speed tests) (4) download and (5) upload speeds in Megabits per second (Mbps) (Gallardo, 2023, l. 14-19).

SE variables were:

> (1) percent population ages 65 and over; (2) percent population 25 and over with less than a high school [degree]; (3) individual poverty rate; (4) percent noninstitutionalized civilian population with a disability: and (5) a brand new digital inequality or internet income ratio measure (IIR) [ratio between the share of homes making less than $35,000 per year without internet and the share of homes making less than $35,000 per year without internet and the share of homes making $75,000 or more per year without internet access]. In other words, these variables indirectly measure adoption since they are potential predictors of lagging technology adoption or reinforcing existing inequalities that also affect adoption (Gallardo, 2023, l. 20-25).

The overall DDI rating was utilized for analysis, and counties in the US were divided into three groups: low (1,031), moderate (1,031 and high (1,063).

The analysis discusses geography, demographics, workforce, households, digital distress and internet income ratio, homework, senior gap, and the digital economy (Gallardo, 2022). According to the index, 72% of low digital divide counties were urban, compared with 17.5% of high digital divide counties were urban. A larger percentage of populations in counties with a

high digital divide are disabled, impoverished, veterans, and rural; comparatively, a larger percentage of populations in counties with a low digital divide are predominantly made up of minority communities, but many low digital divide counties are urban, which have a higher percentage of minorities (Gallardo, 2022). In terms of the workforce, in high digital divide counties, 25% of children enrolled in pre-K to 4th grade did not have a computer or internet subscription, the labor force participation rate and prime work age population are lower, and the amount of people aged 25 or older that have a bachelor's degree is 20% lower than in low digital divide counties (Gallardo, 2022). Higher digital divide counties also contain more lower-earning households, more people aged 60 and older, more people aged 65 and older living alone, more households with limited English skills, a higher percentage of children who struggle to complete homework assignments due to a lack of internet access and a higher percentage of people aged 65 and older who have access to a computer but no internet and more aged 65 and older with no access to computers (Gallardo, 2022). All of this to say, it does not mean that the digital divide is not a problem in low digital divide counties. Digital divide counties have an approximately seven times higher share of lower-income households without internet access than wealthy households without internet access. Comparatively, the rate is 4.4 times higher in higher digital divide counties. There is also a divide in the overall amount of jobs as counties with a high digital divide lost jobs from 2010-2020. At the same time, there was an 11% increase in jobs in low digital divide counties. A Pew Research Center report showed that lower-income Americans have lower ownership of smartphones, desktop or laptop computers, tablet computers, and home broadband (Vogels, 2021). With lower-income Americans (US adults making less than thirty thousand dollars) owning a smartphone more than a desktop, laptop, or tablet computer, they have increasingly relied on their smartphones to access the internet; From 2013 to 2021, the rate has increased 15% of US lower-income adults who own a smartphone but do not have broadband internet at home (Vogels, 2021). Households that rely on a smartphone are more likely to have a

Black or Hispanic head of household, be headed by someone under thirty-five years old, or more likely to be making twenty-five thousand dollars or less (United States Census Bureau, 2021).

Other sources, such as the US Government Accountability Office, say that "nearly a third of Americans who do not have broadband say the reason is because it costs too much," and that about 42 million households are eligible for a discount on broadband service (U.S. GAO, 2022, l.11). Additionally, 23% of US households do not own a laptop or desktop, and 7% of Americans do not use the internet (Ezell, 2021). Hispanic and Black adults are less likely to have a traditional computer or home broadband connection than White adults (Atske & Perrin, 2021). Moreover, in 2020, 18% of people living on tribal lands did not have broadband service, compared to 4% in non-tribal areas (U.S. GAO, 2022).

As for the second level of the US Digital Divide, the Information Technology & Innovation Foundation (ITIF) produced a report titled "Assessing the State of Digital Skills in the U.S. Economy" (Ezell, 2021). The report contains an OECD PIAAC survey that found one-third of American workers lack digital skills, meaning that one out of every six working-age Americans you meet cannot use web search, email, or other basic online tools such as highlighting text on screen (Ezell, 2021).

On the third level, as more digital skills are required, the median hourly wage rises (Shilcock et al., 2023). A person who qualifies for a job with at least one digital skill could earn $8,000 more yearly than someone who does not qualify (Shilcock et al., 2023). Overrepresented groups in the US lacking digital skills are minorities. The national skills coalition found that 50% of Black workers, more than 50% of Latino workers, and 33% of Asian American/Pacific Islander workers have no or limited digital skills (Shilcock et al., 2023).

In the UK, at the first level, according to Ofcom, the UK's communications regulator, about 6% of households (1.7 million households) in the UK do not have internet access

(Digital Poverty Alliance (2023). Twenty-six percent of young people do not have access to a laptop, and smartphone-only access to the internet is 21% (Nominet, 2022; Ofcom, 2022).

According to the Centre for Economics and Business Research (CEBR), there are five areas where people with basic digital skills can benefit. These areas include increased earnings between 3% and 10% and improved chances of finding work (Serafino, 2019). According to a Lloyd Bank report, there is a greater risk of creating a greater social and economic divide as data has shown that people without digital qualifications, who are lower income and from lower socioeconomic groups, are the most likely to score lower on their index for possessing all twenty work tasks, which would further disadvantage them in career advancement (Lloyds Bank, 2022b).

Unfortunately, in the second level, in 2018, 8% (4.3 million) of UK citizens were estimated to have zero basic digital skills, such as using a search engine to look for information (Serafino, 2019). The 2022 report titled *UK Essential Digital Skills for Work* by Lloyds Bank says that one in five UK workers are unable to "use digital productivity tools..access their salary and tax information online..complete digital records on behalf of their organisation..update device software to prevent viruses and other risks..use collaboration tools" (Lloyds Bank, 2022a, p.4). The report also estimated that for labor force adults (18+ and not retired), 12% (4.5 million) lack the foundational level, 22% (8.6 million) do not have the Essential Digital Skills needed for the workplace and 8% (3.2 million) are disconnected and cannot do any of the 20 workforce tasks. Lacking the foundational level meant that an individual could not perform all eight tasks without assistance, such as "You can turn on the device and enter any account login information as required..You can use the available controls on your device (e.g. mouse, keyboard, touchscreen, trackpad)...You can open an Internet browser to find and use websites" (Lloyds Bank, 2022a, p.30). Not having the Essential Digital Skills meant that an individual was unable to complete one task within each of the five life skills categories, which were communicating, handling

information and content, transacting, problem solving, being safe and legal online (Lloyds Bank, 2022a).

Methodology

Research Design

"Qualitative research methods are often used when the focus of an investigation is on exploration, description, and understanding of a social phenomenon from the perspectives of those being studied (e.g., case study research and grounded theory)" (CIFE, 2023, p.6).

This paper is a cross-country comparison hypothesis-generating case study. This means that the paper will combine a comparison of two countries in the structure of a case study to attempt to develop "some general theoretical propositions that can be tested in future research" (Johnson et al., 2020, p.146).

The empirical section will start with an explorative and descriptive case study of the United States before moving on to the United Kingdom. These case studies for each country will cover digital divide policies from 1990 to 2022, including the COVID-19 pandemic, the changes and continuities over time, and any relevant context before the 1990s.

The paper will then enter into a comparative analysis. Out of this process, similarities and differences between their policies will emerge and serve as the foundation for the paper to discuss possible reasons for these similarities and differences. This process will spur other researchers interested in the formulation of policies, comparisons between the US and the UK, systems analyses, and the digital divide. After offering possible reasons for similarities and differences between the two countries, this paper will discuss how the COVID-19 pandemic affected its digital divide policies.

With the comparative analysis done, a discussion of the findings in the context of the theories discussed in the Systems Considerations section of the literature review will be accompanied by

limitations found during the execution of the research. The paper's conclusion will be followed by recommendations for addressing the digital divide and future research.

This research design has yet to be done before in digital divide research. This paper will expand and build upon the growing field of digital divide research and inspire other researchers to theorize about digital divide policy structure and additional factors in their creation. Here below is an illustration of the research design.

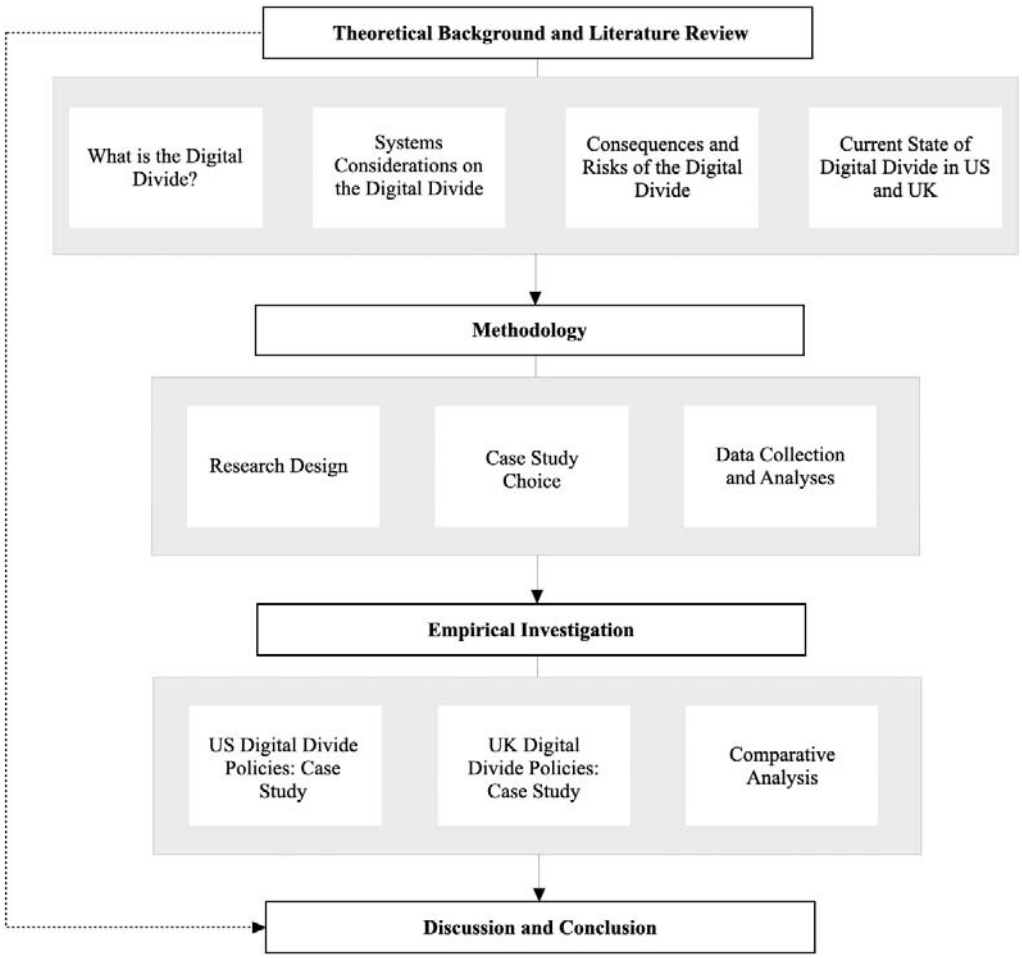


Figure 1: Research Design (Graphic produced by the author)

Case Studies

The United States of America and the United Kingdom were chosen for several reasons. Both countries are in the OECD, prominent leaders on the world stage in various areas, and two countries that have yet to be compared in digital divide policy research. These factors, coupled with the perceived ideological similarities of their governments during the COVID-19 pandemic, seemed to be an interesting and compelling case study comparison when putting it into the context of the past three decades of policy and the "black swan" event that was COVID-19.

To the author's knowledge, this type of case study has never been attempted in the digital divide field. To the degree that this paper is unique, it is bound to produce insights others can draw on and extrapolate toward other studies. Therefore, this approach provides better reflection and insights than a singular case study because the comparison aspect allows the generation of hypotheses of greater depth and complexity.

Data Collection and Analysis

This paper compiles from government documents, press releases, articles, articles from institutes, think tanks/interest groups, and academic papers. This paper compiles these materials into a concise and traceable history for both countries. These histories are then individually analyzed and compared to garner discussion and future research opportunities.

US Digital Divide Policies: Case Study

US Digital Divide Policies: 1990-2005

In 1994, the **Goals 2000 Educate America Act** was signed (Congress.gov, 1994). As a result of this Act, the **Office of Educational Technology** was created to reflect the growing importance of educational technology in US education. Technology in US education's importance is evidenced by what President Clinton said in the 1996 State of the Union:

> Our second challenge is to provide Americans with the educational opportunities we will all need for this new century...every classroom in America must be connected to the information superhighway, with computers and good software, and well-trained teachers. We are working with the telecommunications industry...to connect...every classroom and every library in the entire United States by the year 2000 (Clinton, 1996, l. 66-68).

Also reflecting the "new century" President Clinton referred to in his 1996 State of the Union address was government reports. Starting in 1995 and producing three more reports in 1998, 1999, and ending in 2000, the **National Telecommunications and Information Administration (NTIA)** produced a series of reports called "Falling Through the Net," which discussed the "have nots" in the US and the US telecommunications policy goal of all Americans having access to affordable telephone service, known as "universal service" (McConnaughey et al, 1995). These reports added tracking computer/modem ownership and other information such as income, race, region, age, and educational attainment. In 1996, President Clinton signed the **Telecommunications Act of 1996** into law expanding the traditional definition of universal service to include "affordable, nationwide telephone service" (US Congress, 1996, FCC, (no date c), l.4). The act sanctioned discounts to public schools, libraries, and rural health care providers; these discounts are known as the **E-Rate** program, which was funded by mandatory

contributions from telecom providers to the Universal Service Fund (US Congress, 1996; FCC, 2021b).

Moreover, at this time, the NTIA was managing the **Telecommunications and Information Infrastructure Assistance Program (TIIAP)**, which provided matching grants to public entities and nonprofits that were using new technology to reach underserved communities, the **Technology Opportunities Program (TOP)**, provided matching grants to nonprofit organizations to fund projects that improve public access to education and other community-based services by utilizing funds to purchase computers, software and internet access (Irving, 1999; National Academy Press, 2000, p.214). The NTIA was not the only part of the executive branch of the US government contributing to the digital divide policy of the 90s.At President Clinton's 2000 State of the Union, he said:

> we must close the digital divide between those who've got the tools and those who don't. Connecting classrooms and libraries to the Internet is crucial, but it's just a start...all new teachers are trained to teach 21st century skills, and it creates technology centers in 1,000 communities to serve adults...high-tech leaders...join me on another new markets tour, to close the digital divide...I hope the new tax incentives I have proposed [for high tech companies] will get all the rest of them to join us (Clinton, 2000, l. 369-377).

Therefore, on February 2, 2000, President Clinton unveiled a plan called " From Digital Divide to Digital Opportunities"(The White House, 2000). This plan included:

> $100 million to create 1,000 Community Technology Centers in low-income urban and rural neighborhoods, $50 million for a public/private partnership to expand home access to computers and the Internet for low-income families...$25 million to accelerate private sector deployment of broadband networks in underserved urban and rural communities (The White House, 2000, l. 50-55, 60-62).

Later that same year, President Clinton announced that over four hundred companies and nonprofits had signed a national call to action regarding digital opportunity, including federal and private initiatives to teach girls computer networking (The White House (no date)). However, digital divide policy and even the term itself would soon come into question.

With the election of George W. Bush, the new chairman of the Federal Communications Commission (FCC), Michael Powell, said this about the digital divide:

> I think the term sometimes is dangerous...it suggests that the minute a new and innovative technology is introduced in the market, there is a divide unless it is equitably distributed among every part of society, and that is just an unreal understanding of an American capitalist system...I think there's a Mercedes Benz divide, I'd like one, but I can't afford it...I'm not meaning to be completely flip about this-I think it's an important social issue-it shouldn't be used to justify the notion of, essentially, the socialization of deployment of infrastructure (qtd. In Cooper, 2004, p.5).

This statement spelled the beginning of a different approach by the United States in tackling the digital divide and it started with an NTIA report.

The NTIA released a report in 2002 titled, "A Nation Online" and this report was used to justify policies of the Bush administration (qtd. In Henry J. Kaiser Foundation, 2004; qtd. In Cooper, 2004). Specifically, President Bush's policies focused on the deregulation of high-speed internet services and trying to and successfully cut programs such as TOP and the CTC program because the "A Nation Online" report painted a rosier picture of the digital divide than the reality at the time (qtd. In Cooper, 2002). Additionally, the FCC allowed cable and telephone companies to set high prices and exclude competitors from their networks, causing most markets to become duopolies. As *Business Week* explains, "Now, most markets..consumers can get broadband only from a phone or cable company. The result is that US consumers can pay $35 or more for a 1.5

megabit-per-second connection, compared with Yahoo! BB's price of $25 for 26 megabits" (qtd. In Cooper, 2004, p.1).

Growing federal disinterest in digital divide policies was the trend during the later stages of the policies from 1990-2005.

US Digital Divide Policies: 2005-2020

In 2007, the Federal-State Joint Board on Universal Service of the FCC recommended that "universal availability of broadband Internet services" be included in the country's telecommunications goals and be supported by universal service funds, which was enacted (Federal-State Joint Board on Universal Service, 2007, p.2). This signaled a major change from the definition adopted in 1996, which limited the FCC's mission to voice telecommunications services.

The **American Recovery and Reinvestment Act (ARRA) of 2009** called on the FCC to provide a national broadband plan that ensured all Americans had access to broadband capability (qtd. In Rachfal, 2021). The FCC's plan was called *Connecting America: the National Broadband Plan,* which called broadband the "great infrastructure challenge of the early 21st century" (qtd. FCC, 2010). This "challenge" was met with new FCC rulemaking decisions in 2011, the **USF/ICC Transformation Order**, which sought to expand public interest obligations of eligible telecommunication carriers to provide broadband service as well as voice service (qtd. In FCC, 2023c; FCC, 2011). The order also created the **Connect America Fund**, which was intended to replace all existing high-cost support mechanisms, such as the Universal Service Fund's High Cost Program, and help make broadband available to "homes, businesses, and community anchor institutions in areas that do not, or would not otherwise, have broadband, including mobile voice and broadband networks in areas that do no, or would not otherwise have mobile service, and broadband in the most remote areas of the nation" (FCC,

2011, p.11). The ARRA also established and provided funds for the **Broadband Technology Opportunities Program (BTOP)** (US Congress, 2009). The NTIA administers BTOP, and it funds projects "deploying broadband Internet infrastructure, enhancing and expanding public computer centers, and encouraging the sustainable adoption of broadband service" (NTIA, 2020).

Also in 2011, lasting until 2016, the Obama administration launched digitalliteracy.gov, which was intended to act as a common space for teachers providing digital literacy training to collaborate and share best practices (Library of Congress (no date), NTIA, 2023).

By 2013, the grants and loan awards from the ARRA had been exhausted, and two federal programs remained that provided funds for broadband infrastructure, the **Rural Utilities Service Program (RUS) (US Department of Agriculture)** and the **Universal Service Fund (FCC)** (qtd. In Kruger and Gilroy, 2013; qtd. In Kruger, 2011). The RUS encompasses five programs focused on increased access and deployment of broadband to rural areas. They are **The Community Connect Program**, **The ReConnect Program**, **The Rural Broadband Access Program**, **The Telecommunications Infrastructure Program** and **The Distance Learning and Telemedicine Program** (qtd. In Rachfal, 2021). Other programs were associated with broadband or telecommunications technology and ranged from being associated with the Department of Health and Human Services to the Department of Housing and Urban Development and the Environmental Protection Agency (qtd. In Kruger and Gilroy, 2013). These programs, such as grants to develop **telehealth programs** ($6 million) received far less funding at the time compared to the **Universal Service High Cost Program** ($4.03 billion) (which was still undergoing transition to the Connect America Fund) and the **Universal Service Schools and Libraries Program** ($2.23 billion) (qtd. In Kruger and Gilroy, 2013).

In 2014, the FCC reformed the **E-rate** program, first mentioned in the previous section. The summary of an order from the FCC states, "Since its inception in 1997, the E-rate program has

helped ensure that eligible schools and libraries have affordable access to the Internet. In modernizing the program, the Order seeks to ensure that the program is geared towards meeting the broadband needs of schools and libraries in today's world of interactive, individualized digital learning" (FCC (no date b), l. 6-9). The reform included a $1 billion increase in funding (Herold, 2015). Another additional program modernized during this time was the **Lifeline program** (FCC, 2023b). The Lifeline program, first established in 1985 and administered by the Universal Service Administrative Company (USAC), provided a discount on telephone service for eligible low-income consumers. In March 2016, the FCC adopted an order that adds broadband as a service in the Lifeline program (FCC, 2016). E-rate and Lifeline reform occurred alongside President Obama's increased concern with the digital divide as he issued two memorandums in 2010 and 2015.

The 2015 Presidential Memorandum called "Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training" established the **Broadband Opportunity Council** (co-chaired by the Secretaries of Commerce and Agriculture) and included 25 member agencies (The White House, 2015b). The council's goals were to engage a variety of stakeholders to understand how the government can do a better job with expanding broadband access and adoption, submit a survey as to how federal programs could be modified to support broadband deployment and adoption, identify regulatory barriers to broadband adoption, investment and deployment. The creation of the council and two memoranda along shows a heightened rate of interest in federal digital divide policy not seen since the days of the Clinton administration. Other initiatives started near the 2015 memorandum announcement were the **BroadbandUSA** and **HUD ConnectHome** (The White House, 2015a; qtd. In Congressional Research Service, 2016).

Additionally, in 2015, the FCC released the *Open Internet Order,* which became known as net neutrality. Net neutrality rules sought to maintain an open internet that was not harmed or taken

advantage of by businesses and a place where consumers were not discriminated against. The *Open Internet Order* banned three things: blocking[2], throttling[3], and paid prioritization[4] (FCC, 2015). These and other open internet policies also applied to fixed and mobile broadband (FCC, 2015). The *Open Internet Orde*r also established broadband services be regulated like telephone services by categorizing broadband service as a Title II telecommunication service, which would allow the FCC to hear disputes previously not applicable to broadband (Reardon, 2015; FCC, 2015). With net neutrality established, the FCC seemed poised to create a free and open internet for American consumers but not for long.

In the meantime, the **Literacy Information and Communication System (LINCS)**, first created as a pilot program in 1994 in National Literacy act of 1991 to provide federal guidance for adult literacy, had already been transferred to the **US Department of Education's Office of Career, Technical, and Adult Education (OCTAE)** in 2010 was repurposed in 2016 to include a professional development center (US Congress, 1991). The professional development center was intended to provide the US adult education field with resources to improve their lesson plans and increase awareness of LINCS resources (LINCS, 2021). These resources include the **LINCS Learner Center**, the **Digital Skills Library,** and a collection of lesson plans named "Integrating Digital Literacy and Problem Solving into Instruction" (LINCS, 2023).

In 2017, President Trump appointed FCC Commissioner Ajit Pai as the chair of the FCC. As said above, net neutrality did not last and in 2017, the FCC voted and released an order called *Restoring Internet Freedom* (FCC, 2018). The order restored broadband service as an information service to catalyze broadband investment as the FCC at the time felt that the 2015

[2] "A person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not block lawful content, applications, services, or nonharmful devices, subject to reasonable network management" (FCC, 2015, p.7).

[3] "A person engaged in the provision of broadband Internet access service, insofar as such person is so engaged, shall not impair or degrade lawful Internet traffic on the basis of Internet content, application, or service, or use of a non-harmful device, subject to reasonable network management" (FCC, 2015, p.7*)*

[4] "a broadband provider accepts payment (monetary or otherwise) to manage its network in a way that benefits particular content, applications, services, or devices" (FCC, 2015, p.7*)*

FCC decision stifled innovation by increasing regulatory uncertainty and compliance costs (FCC, 2018). The order also rejected the ban on throttling, blocking, and paid prioritization and instead claims that the 2017 order covers these areas sufficiently without the ban from the 2015 order (FCC, 2018). The new rules in this order require Internet Service Providers (ISPs) to be transparent in their business practices, and the commission believed that transparency would deter negative actions against consumers (FCC, 2018). Broadband's reduced regulatory status and the US's trust in free market policies led to decreased attention to broadband-exclusive initiatives.

In 2018, The *Legislative Outline for Rebuilding Infrastructure* in America did not provide funding specifically for broadband. However, it did provide provisions for broadband investment being eligible in the Rural Infrastructure Program (The White House, 2018). At the same time, the **Consolidated Appropriations Act of 2018** provided funding for grants and loans for telemedicine, broadband, distance learning services and broadband deployment (US Congress, 2018). The **Appalachian Regional Commissions** and the **Economic Development Assistance** programs (Department of Commerce) were other programs that supported broadband infrastructure and broadband deployment (US Congress, 2018).

Up to COVID-19, the US took on an increasingly free market approach to digital divide policies regarding access. Despite this free market approach, the US did seek to improve its understanding of the digital divide. In 2019, the FCC adopted an order establishing the Digital Opportunity Data Collection (FCC, 2019). The Digital Opportunity Data Collection was established to identify gaps in internet coverage across the US by utilizing geospatial data[5] to see where there are "gaps" in coverage across the country (FCC, 2019).

[5] "information that describes objects, events or other features with a location on or near the surface of the earth. Geospatial data typically combines location information (usually coordinates on the earth) and attribute information (the characteristics of the object, event or phenomena concerned) with temporal information (the time or life span at which the location and attributes exist)" (IBM, (no date), l. 1-5).

US Digital Divide Policies: COVID-19 pandemic

In April 2020, the FCC adopted rules for the Connected Care Pilot Program, up to $100 million from the Universal Service Fund (USF) for a three-year period, which would provide "funding for selected pilot projects to cover 85% of the eligible costs of broadband connectivity, network equipment, and information services necessary to provide connected care services to the intended patient population" (FCC, 2022). Federal bills for the first time since 2009 were signed into law.

In March 2020, the **Coronavirus Aid, Relief, and Economic Security Act (CARES Act)** was signed into law. This bill created four grant programs: **Education Stabilization Fund Discretionary Grants**, **Governor's Emergency Education Relief Fund**, **Elementary** and **Secondary School Emergency Relief Fund,** and **Higher Education Emergency Relief Fund** (Department of Education, 2021). The CARES Act also contributed to programs such as the COVID-19 Telehealth Program, $16 billion from the Education Stabilization Fund for remote learning, and the FCC partnership with the Institute of Museum and Library Services to address the digital divide during the COVID-19 pandemic (US Congress, 2020). Other contributions from the FCC vary and reflect the unique circumstances of the pandemic.

The FCC granted Special Temporary Authority to allow 33 wireless ISPs in rural communities to use additional spectrum[6] to help meet increased consumer broadband demand (FCC, 2020). Increased spectrum was also allowed to service Puerto Rico and the US Virgin Islands (FCC, 2020). The FCC also waived gift rules[7] in the E-Rate and Rural Health Care programs to urge broadband providers to support remote learning and telehealth initiatives. These initiatives included non-profit institutions such as schools and libraries receiving better Wi-Fi hotspots and other network equipment capabilities. An order adopted by the FCC fully funded all eligible

[6] "invisible radio frequencies that wireless signals travel over. Those signals are what enable us to make calls from our mobile devices, tag our friends on Instagram, call an Uber, pull up directions to a destination, and do everything on our mobile devices" (Davis, 2018, l. 8-11).

[7] "gratuities, favors, entertainment, loans, or any other thing else of value" (*Gift rules*).

Rural Health Care Program services, and the application window for the services was extended along with other administrative deadlines. Other regulatory waivers and administrative waivers include waiving Lifeline Program Rules, less regulatory pressure on providers of Zoom and WebEx, and providing waivers to enable American Sign Language Interpreters to work from home, allowing them to translate messages for individuals who need the service (FCC, 2020). Not only did the FCC enact waivers and special policies during the COVID-19 pandemic they also called on companies to make voluntary pledges to help customers.

In March 2020, the FCC announced the Keep Americans Connected Pledge, and FCC Chairman Ajit Pai asked trade associations, broadband and telephone providers to take this pledge in response to the COVID-19 pandemic pledge to "1. not terminate service to any residential or small business customers because of their inability to pay their bills...2. waive any late fees that any residential or small business customers incur... 3. open its Wi-Fi hotspots to any American who needs them" (FCC, 2020, l. 7-11). Over 800 companies and trade associations signed the pledge (FCC, 2020). In addition to the pledge, Chairman Pai urged companies that had low-income broadband programs to expand and improve their capabilities, and companies without such programs; Chairman Pai expressed his wish for them to adopt such low-income programs (FCC, 2020). Because of the pledge, several companies went beyond the calls of the pledge. They provided many additional services, such as Armstrong eliminating data caps for all residential customers (FCC, 2021a).

In December of 2020, the **Consolidated Appropriations Act of 2021** established the Emergency Broadband Connectivity Fund, which mandated that the FCC create an **Emergency Broadband Benefit Program (EBB Program)** (FCC, (no date a)). This emergency benefit program provided eligible low-income households a discount for broadband service, and participating internet service providers could offer reimbursement. In November 2021, Congress created a long-term program, after EBB funds were exhausted, called the **Affordable**

Connectivity Program (ACP) (FCC, (no date a)). Along with the Affordable Connectivity Program, the Biden Administration launched GetInternet.gov, which provided citizens with a resource on how to take advantage of the ACP benefits, had federal agencies responsible for income-based programs like pell grants and supplemental security income coordinated efforts to reach out to eligible families, partnered with states and cities to text households that were eligible, and public-private partnerships like Catholic Charities USA and United Way to help with outreach and enrollment (qtd. In The White House, 2022). Additionally, the Biden administration asked private companies to commit to offering ACP- eligible families at least one high-speed plan for $30 or less per month, including no data caps and no additional fees. In response, ten-plus companies committed to this offer (qtd. In The White House, 2022).

Moving past the Consolidated Appropriations Act of 2021 and the CARES Act, a major infrastructure spending bill, the **Infrastructure Investment and Jobs Act,** and the **American Rescue Plan Act of 2021** created new opportunities for closing the digital divide through federal action.

One of the goals of the Infrastructure Investment and Jobs Act was to "ensure every American has access to reliable high-speed internet through...broadband infrastructure deployment," (qtd. In The White House, 2023, l. 29-39). The act established the **Broadband Equity, Access, and Deployment Program (BEAD)** to provide funding for broadband deployment in underserved communities and expanded the **Tribal Broadband Connectivity Program** to include the adoption of broadband service for telework, telehealth, or remote learning. The act also created the **State Digital Equity Capacity Grant Program** to provide grants to states based on their adoption of broadband, populations, demographics, and availability of broadband, established the **Digital Equity Competitive Grant Program** to support digital inclusion and promote adoption of broadband, and made permanent the **Affordable Connectivity Benefit Program** discussed prior (US Congress, 2021). These new programs for states have been a catalyst for all 50

states and territories to develop state broadband plans and digital equity plans (FCC, 2023a). These programs represent an increased federal role in directing digital divide policy and historic investment into digital divide acquiescence. Another important point is the usage of the word equity, which is the first time it appears in the digital divide literature for the US.

As discussed in the risks and consequences section, the COVID-19 pandemic negatively affected health outcomes for the people least connected. As a result, US telehealth policy for Medicare patients underwent permanent and temporary changes in response.

Permanent policies include **Federally Qualified Health Centers** and **Rural Health Clinics** that can serve as distant site providers for mental/behavioral telehealth services (Telehealth.hhs.gov, 2023). Other permanent Medicare changes include Medicare patients being able to receive behavioral/mental health care in their homes via telehealth or audio-only communication (Telehealth.hhs.gov, 2023).

The COVID-19 pandemic caused increased investment into access to broadband, caused digital equity to be incorporated into programs and permanent changes to telehealth policy.

Analysis of Changes/Continuities

In 2021, according to the US Government Accountability Office, there were 25 federal programs with broadband as its main purpose (see figure 4) (U.S. GAO, 2022). This has not always been the case.

The US government went from telephone service being the only priority of US telecommunication policy to policies including broadband access and deployment. Most US policies over the period discussed largely constituted temporary programs comprising grant and loan rewards that would run out. This would lead to only a few programs lasting for a significant amount of time or lasting from the 90s till the pandemic. Such policies/acts that still have an

effect today are the E-Rate program, TOP (now BTOP), and the Telecommunications Act of 1996.

Other initiatives included public-private partnerships and initiatives undertaken in the 90s but were largely non-existent in the 2000s, and it was not until the COVID-19 pandemic and the efforts by the FCC and the Executive branch to maintain and expand American citizen's broadband connection that public-private partnerships appeared again. One direct federal intervention into the digital divide sphere was the creation of Community Technology Centers; however those were quickly phased out in the federal budget process by the Bush administration in the early 2000s. These CTCs have not appeared again in federal US digital divide policy and only have reappeared recently in the form of Verizon partnering with a nonprofit JumpStart to open two digital learning centers in early 2022. This is a part of a larger initiative by Verizon called Verizon Community Forward, which aims to provide citizens with access to digital skills training and resources (Jumpstart Inc., 2021). Other recent direct interventions by the US government included the permanent Medicare changes for telehealth policy.

While US federal policy has changed in terms of physical access and infrastructure, US federal policy has not focused on digital skills or outcomes nearly as much. For digital skills, the Clinton administration initiated digital skill programs like the CTC, but they were phased out in the federal budget by the mid-2000s and largely not seen again. The US federal policy has not focused on the third level of the divide, outcomes.

The US does not have a comprehensive federal strategy to fight the digital divide. It chooses to endeavor in federal grants and loan programs that expire with time, and a few of these programs have lasted until now. These programs are decentralized and do not include direct federal intervention into the marketplace.

In response to the COVID-19 pandemic, the US took initiatives in unprecedented investment, steps in telehealth to combat the digital divide, and asked companies to sign a pledge to protect

consumers. These efforts largely covered the first level of the divide. As the pandemic wore on, less federal policy was passed, but it still provided large sums of money to combat the divide. US federal policy created new grant programs for states in digital equity that have spurred them to create their own digital equity offices, perhaps creating a shift in framing from digital divide to digital equity and inclusion that will move US digital divide policy towards covering the third level of the divide (Edinger and Quaintance, 2023). The COVID-19 pandemic caused increased US policy initiatives but did not change their nature. The US still used incentives instead of rules/regulations-based strategies. However, for initiatives strictly under its control, like Medicare, the US adapted to the pandemic and expanded telehealth opportunities for patients. Additionally, new grants spurred states to create their own digital equity or broadband offices to manage the grant process. These grants may not have been created if the pandemic had not been occurring.

UK Digital Divide Policies: Case Study

UK Digital Divide Policies: 1990-2005

After the market liberalization of telecommunications in the 80s, the United Kingdom's national regulator, **Oftel (The Office for Telecommunications)** was responsible for the digital TV market and internet service (qtd. In Stewart, 2011). And the Department of Trade and Industry established the IT for All Initiative to inform the public on benefits of internet usage (qtd. In Stewart, 2011). These benefits needed to be shared with all citizens and this concern was inserted into the Labour Party's manifesto.

In the leadup to the 1997 election, the Labour Party's manifesto included digital social inclusion in the form of the **National Grid for Learning Initiative** (Archive of Labour Party Manifestos, 1997). National Grid for Learning aimed to provide a:

> national learning resource to help raise educational standards...to deliver high quality educational software and services to teachers, pupils and other learners through public/private partnerships; to remove barriers to learning to ensure quality of access for all, including those in isolated rural areas, those with special educational needs or those in areas of urban deprivation; to provide an information and learning resource for teachers to improve their ICT skills (qtd. In Stewart, 2011, p.33).

Policies resulting from this included expenditures on technology and training for students and teachers, which included broadband connections (qtd. In Stewart, 2011).

The Labour Party's election win in 1997 started other additional policies such as providing £252 million to build about 700 ICT Learning Centers, which were tasked with helping develop the UK's digital skills (qtd. In Stewart, 2011). Other projects at the time include the New Deal for disabled people, which provided dozens of disabled workers the opportunity to use ICT to work,

and the "Excellence in Cities Intiative" which established 85 city learning centers for younger workers to improve ICT skills for job prospects (qtd. In Stewart, 2011). For more remote locations such as areas of Cornwall, Wales, and the Scottish Highlands, the UK invested in telecommunication networks to enhance economic integration, reduce emigration and increase access to education (qtd. In Stewart, 2011). Additionally, the UK government established a Social Exclusion Unit to provide reports on groups such as women, people with disabilities and give recommendations for the government, which was presented in February 2000 (qtd. In Stewart, 2011). Soon, the UK would increase market liberalization but would not decrease regulation.

The **Electronic Communications Bill of 1999** provided more support for digital signatures and the auction of five broadband mobile communications, which continued the trend of market liberalization (qtd. In Berg et al., 2000). Other market-led initiatives undertaken by the UK include plus £1 billion of investment into building internet skills such as university for industry, tax exemptions for loaning computers to employees, and providing 100,000 computers to lower-income communities (qtd. In Berg et al., 2000; qtd. In Stewart, 2011).

Starting in 2001, the UK required all local authorities to produce **Electronic Government (IEG) Statements** which would include plans to implement the **electronic service delivery (ESD)** of government services by the target date of 2005 (qtd. In Kuk, 2003). Alongside the IEG statements were best value (BV) performance indicators for local authorities to strive for and for the national government to monitor progress (qtd. In Kuk, 2003). The BV indicators were cost-efficiency, service delivery outcomes, quality, and fair access (qtd. In Boyne, 2000).

In 2001, the speech for the state opening of parliament by Queen Elizabeth II indicated steps to create a single state regulator for media and the communications industry (qtd. In Tempest, 2001; qtd. In BBC News, 2001). The **Office of Communications (Ofcom)** was officially established in 2003 and replaced the Office of Telecommunications (Oftel), Independent Television Commission (ITC), Radio Authority, Radiocommunications Agency (RA), and the

Broadcasting Standards Commission (BSC) (see figure 5 for UK legacy regulators flowchart) (Ofcom, 2010). Ofcom's broadcasting regulation includes content, competition, media ownership, media literacy, spectrum management, and ensuring citizens' access to communication services, including broadband (qtd. In Stirling, 2004).

In 2003, the **telephony universal service obligation** was initiated giving Ofcom the responsibility to ensure that everyone in the UK can request affordable communication services (Ofcom, 2023). Policies included in the telephony universal service obligation were "special tariff schemes for low income customers; a connection to the fixed network, which included functional internet access; reasonable geographic access to public call boxes; and the provision of a text relay service for customers with hearing impairment" (Ofcom, 2006, p.1). The special tariff schemes applied to the UK's Universal Service Providers (USPs) BT and Kingston (Ofcom, 2006).

Government oversight, including creating the super regulator Ofcom and Universal Service Providers and market liberalization, represents the UK's strategy till 2005. Like the US, the UK's digital divide policy would soon come into question.

UK Digital Divide Policies: 2005-2020

In 2009, Conservative leader, David Cameron, promised to cut Ofcom's policy making power if the Conservatives won the next election because it represented an unnecessary expenditure of taxpayer dollars and was a quango[8] (Deans, 2009). The British General Election of 2010 resulted in a hung parliament, no party received a majority, and the coalition government between the Conservatives and the Liberal Democrats (Lib Dems) resulting in the Prime Ministership of Conservative leader David Cameron (Britannica, 2023).

[8] "It is an organisation that is funded by taxpayers, but not controlled directly by central government" (BBC News, 2010).

With the coalition government in place, the **Digital Economy Act (2010)** required Ofcom to report on communication infrastructure and exercise greater power over electromagnetic spectrum access (qtd. In politics.co.uk, 2023). Additionally, in 2010, the Department for Culture, Media and Sport (DCMS) and the Department for Business, Innovation and Skills published a broadband strategy committed to several broadband targets by 2015. The strategy discusses the three phases of the **Superfast Broadband Programme**, the **SuperConnected Cities Programme**, and a **Broadband Connection Vouchers Scheme** (GOV.UK, 2015). The SuperConnected Cities Programme sought to provide UK cities with the ability to develop digital infrastructure such as wifi in public buildings and broadband capacity (qtd. In GOV.UK, 2015). The Superfast Broadband Programme and the Broadband Connection Vouchers Scheme will be explained later in this section.

There was an attempt to restrict the powers of Ofcom with **The Public Bodies Act (2011)**, which did modify some powers of Ofcom, but it did not go as far as Prime Minister Cameron's comments in 2009 suggested they would go in terms of removing regulatory power (legislation.gov.uk, 2013). Throughout this time, Ofcom will receive increasing powers, as discussed later in this section with the Digital Economy Act in 2017.

In 2014 the UK released the **Digital Inclusion Strategy** (GOV.UK, 2014). This strategy focused on "stopping activity that adds little or no value, including fragmented government spending; providing greater support to those initiatives and organisations that make a difference; creating the environment for better, stronger joint working between people, business, charities and public sector" (GOV.UK, 2014, l. 79-84). Additionally, the strategy wanted to "make digital inclusion part of wider government policy, programmes and digital services...agree a common definition of digital skills and capabilities...create a shared language for digital inclusion...deliver a digital inclusion programme to support SMEs and VCSEs" (GOV.UK, 2014, l. 92-93, 99-100,

116, 129, 138-139). Behind these summarized headlines, the report contains concrete central government action.

The Department of Culture, Media and Sport's (DCMS) **Broadband Delivery UK** (BDUK) program was tasked with achieving superfast broadband through initiatives such as the **Rural Community Broadband Fund** (RCBF) (Department for Environment, Food, and Rural Affairs DEFRA) (qtd. In GOV.UK, 2014). DCMS had a fund of £10 million to support rural areas that do not have high-speed internet access, and connection vouchers helped small and medium enterprises (SMEs) and voluntary community social enterprises (VCSE) to decrease the cost of high-speed internet, broadband, or start building capability for superfast broadband (qtd. In GOV.UK, 2014). The **Digital Deal** was a cross-department cooperation between the Department for Work and Pensions (DWP) and Department for Communities and Local Government (DCLG) to improve access and digital infrastructure in social housing (qtd. In GOV.UK, 2014).

As for digital skills, the **Department for Business, Innovation and Skills** provides funding for nonprofits doing work in this area. One of the organizations, **Go ON UK**, helps facilitate the distribution of information regarding the government's efforts to increase the digital skills of SMEs (qtd. In GOV.UK, 2014). The **Regional Growth Fund** and the **UK Commission for Employment and Skills** are additional funding resources for businesses looking to increase their digital capabilities(qtd. In GOV.UK, 2014). An executive agency of the BIS, **The Skills Funding Agency**, provides funding for adult skills through traineeships and more to increase participants general knowledge and competence (qtd. In GOV.UK, 2014).

In 2017, the **Digital Economy Act** increased Ofcom's regulation power by giving it regulatory powers over minimum broadband speeds of providers (qtd. In politics.co.uk, 2023). The act also allowed consumers to automatically receive compensation when their broadband is below the standard (Local Government Association, 2017). Increasing regulatory power over broadband

speeds was accompanied by declaring high-speed broadband a legal right under a universal service obligation (GOV.UK, 2017a). This was done despite BT's voluntary offer to deliver universal broadband. UK Culture Secretary Karen Bradley said at the time, "We are grateful to BT for their proposal but have decided that only a regulatory approach will make high speed broadband a reality for everyone in the UK, regardless of where they live or work" (GOV.UK, 2017a, l. 30-33; qtd. In Hutton, 2022).

Also, in 2017, the UK released its **UK Digital Strategy 2017** (GOV.UK, 2017b). The strategy mentions investments into "next generation digital infrastructure," such as full fibre and 5G, providing free Wi-Fi in public places like libraries as well as public transportation and UK Collaboratorium for Research in Infrastructure and Cities, which aims to increase the capability of researchers to assess digital infrastructure in the UK and to see how new technologies can improve it (GOV.UK, 2017b).

For digital skills, the 2017 digital strategy mentions establishing a new **Digital Skills Partnership,** which was an initiative bringing together public and private companies to identify digital job openings and to equip workers to attain them and the **National College for Digital Skills**, opened in 2016, which was tasked with training 5,000 students to engage in a digital career (GOV.UK, 2017b). The strategy discusses funding the **Computing at School Network of Teaching Excellence in Computer Scienc**e and **The National Citizen Service,** which help young people attain the digital skills they need to engage with the digital economy (GOV.UK, 2017b). Other programs and initiatives for digital skills mentioned were **Future Digital Inclusion**, **Widening Digital Participation**, **Digital Training and Support Framework**, **Council for Digital Inclusion**, **Small Business Research Initiative**, **Digital Business Academy**, **Data Skills Taskforce**, **Tech Talent Charter**, libraries collaborating with charities and private partners such as Barclarys and BT, digital degree apprenticeships and public-

private partnerships with Microsoft, Google, Amazon Web Services, Lloyd's Bank, Barclays, BT, HP, Accenture, Cisco, O2, Apple, Samsung, Sky and IBM (GOV.UK, 2017b).

In 2018, the UK launched the **Gigabit Broadband Voucher Scheme** and the **Local Full Fibre Networks Programme** (GOV.UK, 2018a; GOV.UK, 2018b). Under the voucher scheme, businesses or residents could utilize vouchers requested by suppliers in their area (see figure 6) (HM Government, (no date)). The Local Full Fibre Networks Programme was intended to provide "key public buildings and businesses, with the expectation that this leads to broadband providers creating additional connections to local homes and businesses" (qtd. In Jackson, 2018, l. 16-18). Beyond the 2017 digital strategy, new regulatory orders brought even more responsibility to Ofcom.

In 2018, the UK government introduced **The Electronic Communications (Universal Service) (Broadband) Order** (legislation.gov.uk, 2018b). This order added to Ofcom's designated universal service provider's regulation that they are "required to offer broadband connections and services at prices that are—(a) affordable; and (b) uniform throughout the United Kingdom, unless OFCOM have determined that there is clear justification for not doing so" (legislation.gov.uk, 2018a, 6-9). This order would be implemented by Ofcom in 2020 and will be mentioned in the next section. A new election brought an unlikely digital inclusion proposal from the conservatives, especially after their promise to cut Ofcom in the months before the 2010 election.

In 2019, the Conservative Party released its manifesto for the then-upcoming December 2019 general election (The Conservative and Unionist Party, 2019). In the manifesto, the Conservatives promised to cover the entire UK with "gigabit-capable" broadband by 2025, provide increased mobile coverage across the UK, and spend £5 billion to cover the hardest-to-reach areas (qtd. In Jackson, 2019). After the general election win for the Conservatives, **Project Gigabit** represented the £5 billion pledge from the manifesto (qtd. In

Uberoi et al., 2020; GOV.UK, 2022c). Initiatives that are a part of the Project Gigabit include **GigaHubs**, connecting public sector buildings in hard-to-connect parts of the UK, and the **Superfast Programme**, bringing higher broadband speeds to premises that still have lower than 30 megabits per second (GOV.UK, 2022c).

UK Digital Divide Policies: COVID-19 pandemic

In March 2020, major UK ISP and mobile providers met with the UK Digital Secretary and Ofcom, and they agreed to several temporary commitments due to the COVID-19 pandemic. These commitments included "working with customers who find it difficult to pay their bill...to ensure that they are treated fairly...[removing] all data allowance caps on all current fixed broadband services...[offering] some new, generous mobile and landline packages...[ensuring] that vulnerable customers or those self-isolating receive alternative methods of communication" (GOV.UK, 2020b, l. 10-20).

This was also the same month that Ofcom implemented The Electronic Communications (Universal Service) (Broadband) Order from 2018, which they decided in 2019 would apply to BT and KCom (Ofcom, 2023b).

Also, in 2020, the DCMS announced the **Shared Rural Network (SRN)** (GOV.UK, 2020e). This public-private partnership agreement was meant to provide improvements to networks in Scotland, Wales, and Northern Ireland and provide 4G coverage to all people without concern for their service provider by investing in new phone masts overseen by a jointly owned company, Digital Mobile Spectrum Limited (GOV.UK, 2020e). The targets set by this agreement are legally enforceable by Ofcom (Ofcom, 2021a). The UK government even directly stepped in for students.

The UK's **Department of Education (DfE)** provided internet access, laptops, and tablet for students and families to increase their access to remote learning and social services for the 2020 to

2021 academic year, the summer terms as well as the 2021 to 2022 school year (GOV.UK, 2020c; GOV.UK, 2022a).

For digital skills, the UK launched an online learning platform called **The Skills Toolkit** (National Careers Service, (no date)). Furthermore, the UK announced funding for digital skills boot camps expanding on pilot programs in Greater Manchester and adding new locations (GOV.UK, 2020d). Also, the DfE started offering new technical education options, T-levels, in digital subjects: Digital Support Services, Digital Business Services, Digital Production, Design and Development (GOV.UK, 2022d). Ofcom turned to auctioning off more spectrum during the pandemic.

In 2021, Ofcom auctioned off a new radio wave spectrum beneficial for rural coverage because of its low frequency (Ofcom, 2021b). Also, in 2021, Ofcom produced its Fairness for Customers Commitments Progress review (Ofcom, 2021c). This report included hopes for additional social tariffs for broadband services in response to the COVID-19 pandemic. Marc Allera, BT's Consumer Division CEO, said this in response "Ofcom's fairness principles should not be seen as the ceiling of ambition; we want to go above and beyond the guidance published in last week's review" (Coombe-Whitlock, 2021, l. 27-29). Twenty-five UK service providers released new deals for broadband plus telephone or just broadband (Ofcom, 2023a; qtd. In Digital Kent, 2023).

In 2022, the **UK Digital Strategy** was updated (GOV.UK, 2022d). The report discusses the **Department for Digital, Culture, Media and Sport (DCMS)** programme to encourage gigabit broadband investment in all areas of the UK. Beyond the 4G initiatives like the **Shared Rural Network**, the DCMS is investing in 5G with their 5G Testbeds and Trials Programme (5GTT), which is a part of the UK's 5G diversification strategy (GOV.UK, 2020a, GOV.UK, 2022d).

For digital skills, the update contains an announcement of the DCMS launching the **Digital Skills Council,** which works with private partners to improve the digital skills of the UK's

workforce (GOV.UK, 2022d). The **Digital Entitlement** and the **Claimant Commitment** support adults who are low-income and wish to increase their digital skills (GOV.UK, 2022d). The **Help to Grow: Management**, **Help to Grow: Digital**, **Digital Boost**, **Flexi-Job Apprenticeship,** and **Local Digital Skills Partnerships** are used to support businesses becoming more digital (GOV.UK, 2022d). Other policies mentioned were the **National Centre for Computing Education**, **UK Cyber Security Council,** and **Skills for Life** (GOV.UK, 2022d).

In addition to the various initiatives for digital skills, the UK created a **National AI Strategy** (GOV.UK, 2022b). The strategy included goals that could mitigate the digital divide impact of AI. Some of these goals include supporting the development of digital skills necessary for AI through the DfE's skills boot camps and ensuring AI programmes for schools are developed through the National Centre for Computing Education (GOV.UK, 2022b).

During the peak of the COVID-19 pandemic, about 71% of general practitioner (GP) consultations were done remotely (qtd. In Dennis and Parkin, 2022). At the time, Health Secretary Matt Hankock wanted all GP consultations to be done remotely by default and that it was wrong to patronize older patients by claiming they could not use the technology (Walker, 2020). However, unlike the US, there was no policy movement on telehealth regulation during COVID-19.

Analyses of the Changes/Continuities

The United Kingdom liberalized telecommunications in the 1980s, letting go of its state monopoly, but did not let go of its say in telecommunication policy. Since the 1990s, the United Kingdom has pursued state regulation of telecommunications policies. This resulted in the creation of the super-regulator, Ofcom. Ofcom received increasing regulation power over time as

broadband was added to its universal service obligation and its power to regulate minimum broadband speeds from the Digital Economy Act of 2017.

Policies focused on the framing of being digitally inclusive all the way back in 1997 with the Labour party's manifesto. Being digitally inclusive has been a main theme of the UK's initiatives as they have created many programs intended to upgrade citizens' digital skills and thus create better outcomes, affecting the second and third levels of the digital divide.

Over time, initiatives by the UK have increased in its technicality as the terms 3G, 4G, 5G, gigabit, and superfast broadband appear in its policies.

During the COVID-19 pandemic, the UK continued pursuing government regulation to solve telecommunications problems. This consisted of pressure from Ofcom on the UK's USPs, an agreement between Ofcom and service providers at the beginning of the pandemic about data caps, and the Ofcom enforceable Shared Rural Network agreement to provide improvements to networks and 4G coverage to all people in Scotland, Wales, and Northern Ireland regardless of their service provider. There was a continuation of creating a plethora of programs for digital skills, continuing from the UK Digital Strategy 2017, including the UK Digital Strategy 2022 detailing the creation of a Digital Skills Council. One change due to the pandemic was the DfE's laptop program which gave out millions of devices to the UK's schools.

Comparative Analysis

Comparison of Digital Divide policies in US and UK

In the 90s, the US and the UK recognized the increasing importance of the internet and its relation to society.

The US pursued telecommunications reform, the Telecommunications Act of 1996, to expand universal service to include affordable nationwide telephone service through the E-Rate program. The US also pursued grant matching programs under the TIIAP and TOP. These policies came at a time when the NTIA produced reports about the groups in America who were being left behind during this time of technological innovation. US President Bill Clinton also signaled the importance of the digital divide with his explicit mention of it in multiple State of the Unions.

The United Kingdom in the 90s attempted to communicate the growing importance of the internet with the IT for All initiative. The UK did not utilize the term digital divide. Instead, the Labour party's manifesto provided a clear vision for digital inclusion in the National Grid for Learning, which after Labour's electoral victory resulted in ICT Learning Centers for digital skills/access as well as the New Deal for disabled people providing disabled workers an opportunity to work utilizing ICT. Unlike the US, the UK was still finishing its market liberalization policies and, with the Electronic Communications Bill of 1999, auctioned five broadband mobile communications.

In the 2000s, the US and the UK diverged in approaching funding and regulation.

The US, like the UK, provided funding for ICT Learning Centers, but they were defunded during the budget process of the early 2000s along with TOP. With George W. Bush winning the Presidency in 2000, his new FCC Chairman declared the digital divide was a "Mercedes-Benz" divide, taking the US down a path of decreasing federal policies and intervention for a policy area

that was relatively closed according to the NTIA's "A Nation Online." The mid-2000s saw a dearth of US policies and a turning point closer to 2010. In 2007, FCC added the universal availability of broadband internet services to their universal service program and published their national broadband plan, which has not been updated since.

The UK established a super regulator, Ofcom, to regulate a broad spectrum of communication services. A universal service obligation for telephone service came in 2003, seven years after the US's. However, the UK's universal service obligation differed by offering a special tariff scheme for low-income customers, which allowed them to attain affordable internet. Like the US, the UK had a challenge to telecommunications regulation, albeit eight years later, with Conservative leader David Cameron promising to cut Ofcom if elected Prime Minister. Unlike the US, David Cameron becoming Prime Minister resulted in more digital inclusion programs and not less, and the promised cuts to Ofcom did not materialize.

In the 2010s, the US and the UK produced many digital divide policies but differed in focus.

The US employed many policies focusing on access. These policies spanned from Broadband Technology Opportunity Program to the reform of E-Rate and the Broadband Opportunity Council. The Obama-era FCC attempted increased regulatory reform with Net Neutrality, but the Trump-era FCC soon overturned this order. So, Net Neutrality's goal of an internet free of discrimination through government oversight was over. Digital literacy initiatives were limited as they consisted of compiling resources at the federal level, but no direct federal intervention in digital skills occurred.

Unlike the US, which lacked a national digital strategy, the UK continued producing them. It released a national strategy called the Digital Inclusion Strategy in 2014. This strategy sought to and made digital inclusion a government-wide initiative. Examples include the Digital Deal, a cross-departmental initiative that improved access and digital infrastructure for individuals in social housing. Policies during this time included increasing technicality in the UK's broadband

by providing funding for superfast broadband. Digital skills initiatives were plentiful including funding Go ON UK and the Regional Growth Fund. Ofcom's regulatory power increased during this time with the ability to set minimum broadband speeds and creating a legal right to affordable broadband through a universal service obligation after declining BT's voluntary offer to provide universal broadband. The UK updated its digital strategy in 2017, establishing even more digital skills initiatives. Policies in this strategy expanded upon the technicality of the 2014 strategy by discussing "next generation digital infrastructure such as 5G, and in 2018 the UK launched the Gigabit Broadband Voucher Scheme and the Fibre Networks Programme. The UK did not have the same partisan fighting regarding regulatory initiatives as the US. Comparatively, the UK's Conservative party released a manifesto for an election they eventually won that committed to providing the entire UK with "gigabit-capable" broadband by 2025 and an additional expenditure of £5 billion to cover hard-to-reach areas.

The US and the UK had ICT learning centers, policies for funding physical access to the internet, and added universal service obligations to the sections of their governments responsible for telecommunications regulation (Ofcom and FCC). However, the US and the UK, as evidenced above, differ in their focus on the levels of the divide (US focused mostly on level one, UK focused on all three levels), the technicality in broadband initiatives (US: non-specific, UK: 3G, 4G, 5G, superfast, gigabit), national plans (US does not have national plans that are cross-government and executed, UK had multiple national plans at the time with the digital strategies), US had funding drop off for initiatives like the ICT learning centers in the early 2000s while the UK did not have the same partisan divide dragging down funding for digital divide policies and the UK had consistent federal and private partnerships while the US seemingly abandoned this in their policies before the pandemic.

Plausible Explanations for Similarities and Differences

As commented on in previous sections, the US and UK's digital divide policies varied from each other but also had similar elements. This section will proffer to the reader several explanations to the contrast in digital divide policies.

Partisan control of digital divide policies seems to be the most plausible explanation. The US's policies varied differently from administration to administration. Examples of this are the defunding of President Clinton's digital divide initiatives when President Bush came into office, and the Trump-appointed FCC Chairman Pai helping end President Obama's FCC-era initiative known as Net Neutrality. The US suffers from these swings in policy as direct federal intervention is shirked for market-led initiatives and incentives. The digital divide seems to suffer from partisan fighting and ideology, resulting in a lack of policy implementation and consistency at the federal level. While the UK's digital divide policies seem to have left the field of politics and become a more bureaucratized aspect of UK policy. This is especially after the failure of Conservative Leader David Cameron to win the 2010 general election in order to cut back on Ofcom's regulatory powers. With the Conservative manifesto in 2019 mentioning a commitment to superfast broadband and the resulting policies, the UK's digital divide, but as mentioned, they use the term digital inclusion most of the time, are not dictated by the whims of changing of executive political power. So, digital divide policies in the UK have become less and less partisan, allowing them to continue to expand and add more programs for all three levels of the divide, while in the US, partisanship allows funding for access programs though sporadic and inconsistent and prevents the federal government from providing a sustained effort against the digital divide.

Along the lines of the previous sentence, the framing effect can be offered as an explanation for these differences. As is known, the way concepts are framed creates a powerful impression on the individual/group receiving it and can bias them against the concept without a full and proper

understanding. The term “digital divide” could have possibly caused certain individuals in important positions to be against engaging in policy initiatives that would help alleviate.

Utilizing language such as digital divide can cause certain individuals to respond negatively, as evidenced by President Bush’s FCC Chairman Michael Powell’s description of the term digital divide as sometimes a “dangerous” term which reflected his aversion against government policy being socialized in this area. The term “digital inclusion” because it insinuates a positive connotation could have been easier to justify in the context of party politics and policymaking. This could be why the UK did not suffer from the same partisan differences and funding gaps as the US did. The framing effect could also explain the increased focus of the UK on initiatives that focused on digital skills and helped digital outcomes more than the US did. While the US focused on the “divide” which in the US heavily focused on physical access, “inclusion” is a more flexible, as said before, a positive term that could be more easily used to justify more egalitarian policies, which would include inequalities in digital skills and outcomes on top of inequalities in access.

The UK and the US have different political systems. The United States has an increasingly powerful executive branch, increasing polarization within the electorate and a presidential election system where the candidate who wins the popular vote does not always win the election. The UK has a parliamentary system where the parties can form coalitions to govern or win outright, with less polarization and shadow ministers who can attend cabinet meetings and advocate for specific policy positions. The US system has leadership groups in Congress but does not go to the extent the UK does with shadow ministers. Since the UK system has positions that even the opposition is roughly tied with the current governing decisions, it may make collaborating on legislation and supporting government initiatives easier without being hurt electorally. Whereas in the US, it is more difficult for Democrats or Republicans to admit to supporting the opposition's policies because it could hurt them electorally or hurt their fundraising if another member attacks them from their left or their right politically. Such a

system in the US could result in party members being able to support access initiatives as they could be portrayed as value-neutral but not skills initiatives as these could be seen as "socialist" or "government overreach," which could hurt huge swaths of both parties members. These political systems do not exist without parties, and those parties could also explain digital divide policies in each country.

The US has two main parties, the Democrats and the Republicans. Increasingly, the parties are becoming more polarized, and the vitriol between both makes it difficult for legislation to be passed. This polarization could explain the many executive actions regarding the digital divide, and only the COVID-19 pandemic was able to bring the parties together to pass legislation, including digital divide policies that focused on access. In the US, it is hard to pick a policy area where Republicans and Democrats agree on the means and ends goals, and digital divide policies are no different. While the UK has multiple political parties in its legislature, the two main parties, Labour and Conservative, are not as far apart as the US's parties. Being less polarized, the UK government could work more efficiently, and collaboration between parties could be more common than in the US. US political parties also suffer from the incentive to be increasingly obstructionist, as seen by some Republican members whom former President Trump told to allow the US to default on its debt (Calia, 2023).

This section presented four explanations as to why the digital divide policies between the US and the UK differ and have some similarities in their digital divide policies.

COVID-19 Pandemic's impact on Digital Divide policies in US and UK

In the United States, the COVID-19 pandemic caused several emergency initiatives related to the digital divide. The US increased spending relating to the access problem of the digital divide to levels unseen prior to the pandemic. The US also created a voluntary pledge through the FCC

asking companies to take three pledges regarding protecting customers during the pandemic. The nature of US policies, other than the field of federal healthcare, remained the utilization of incentives for businesses like relaxing regulation and providing grants to states to fill the gap of direct federal intervention.

The United Kingdom also invested in access to broadband. However, the UK detailed many new digital skills opportunities in its 2022 Digital Strategy. Ofcom, UK's telecommunications super-regulator, was much more active during the pandemic than the US's FCC. Ofcom successfully implemented The Electronic Communications (Universal Service) (Broadband) order which mandated universal service providers BT and KCOM offer broadband at an affordable price. Ofcom is the regulatory enforcer of the Shared Rural Network Agreement (SRN). And Ofcom, along with the UK Digital Secretary, got the major UK ISP and mobile providers to commit to an agreement that included removing data allowance caps on broadband services and providing new mobile and landline packages. Whereas the US remained de-regulatory in its policies, the UK policies remained committed to federal regulation of services during the COVID-19 pandemic.

Discussion

Findings in Light of Theories/Concepts from Literature Review

The literature review discussed digital divide theories from Gonzales, Gilbert, and Van Dijk.

Gonzales's technology maintenance theory can be seen in the digital divide policies focusing on affordability. Both countries engage in a universal service initiative, albeit the UK has more regulatory initiatives than the US, and these recognize the affordability concerns for families trying to gain access to devices, broadband, and affordable digital skills classes. Under Gonzales's theory, one could argue that at the federal level, the UK is more active in preventing the technology maintenance theory from being true.

Gilbert's digital inequalities model can be seen in initiatives that seek to grow workers' digital skills as countries try to break the entrenched social capital and class system of Bordieu's social capital theory. In this paper, the UK was found to engage in many more initiatives related to digital skills and outcomes compared to the United States, which primarily focused on access-based initiatives.

Van Dijk's model, similar to Gilbert's theorization in its usage of societal inequalities, focuses on the individual's positional and personal categories combined with their resources to create a systemic digital divide loop. This model can be applied when looking at the differentiations of the policies between the two countries. The UK's policies focused on areas of access, technological characteristics of ICT and participation in society, harkening to its digital "inclusion" framing of its policies. Whereas the US, focused particularly on the material access within the model and produced less initiatives for skills and inclusion.

Each theory presents the digital divide as a result of existing societal inequalities further perpetuated/accentuated by the digital divide.

Limitations Encountered

The scope of availability of qualitative materials for each country limited this paper. Finding material especially, from the 1990s and the 2000s, was more difficult than recent policies.

The paper is limited by human error as the limited sources for digital divide policies could mean that some policies that should have been included were not, specifically US policies on the second or third level of the divide. Additionally, the utilization of government reports and newspaper articles leaves this paper vulnerable to bias as these sources are incentivized to paint a rosier or worse picture of digital divide policies, depending on their affiliation.

Conclusion

Summary of Findings

This paper undertook a cross-country hypothesis-generating case study of the United States and the United Kingdom. As a result of this study, several similarities and differences were deduced about the policies of these countries.

Both had learning center initiatives at one point in time, funded policies that increased access to the internet for all citizens, especially those in rural areas and added universal service obligations to federal agencies though the UK's was more enforceable due to the use of universal service providers and laws giving Ofcom more regulatory power.

The United Kingdom took to the digital divide from the angle of digital inclusion and had policies that focused on access (level one), skills (level two), and outcomes (level three). They utilized federal regulation to treat broadband as a legal right, used Ofcom to enforce universal service, produced national digital strategies in 2014, 2017, and 2022 to have and maintain action across the government, and increasingly advanced digital infrastructure technicality.

In comparison, the United States utilized the term digital divide and had policies that predominantly focused on access. The US increasingly took a market-led hands-off approach to the digital divide, as evidenced by the Presidency of George W. Bush and the reversal of the net neutrality initiative. Though digital divide initiatives were still undertaken, no national strategy was in place, the technicality did not change from the evidence in the literature, and funding for such initiatives was inconsistent depending on which party had control of the presidency.

From these similarities and differences, this paper offered up four explanations. The digital divide in the US seemed to have been corralled into partisan politics rendering it a casualty of American politics. In contrast, the UK's digital inclusion strategies were more bureaucratized and removed

from the partisan political realm. Using “digital divide” in the US and “digital inclusion” in the UK gave the reader a powerful insight into semantics and their possibility for influencing stakeholders efforts and reception of a topic. The different political systems were also explored as to how that could have affected policy formulation. And the parties of each country, with their respective motivations and beliefs, could have affected each country's ability to move digital divide/inclusion policies to the non-partisan realm. All four explanations were offered to the reader to help make sense of the many policies/narratives discussed in this paper.

Implications of the study for Policy, Practice and Further Research

This paper can impact policymakers as they can utilize the knowledge of digital divide policies gained from this paper for future policies. Specifically, policymakers in the US could use the lack of digital skill programs over the past thirty years as a catalyst to explore the feasibility of federal intervention in this area.

For practice, private companies, NGOs, and other non-profits can utilize this paper to increase their knowledge of the digital divide, advocacy and policies to resolve it.

In further research, more in-depth studies about particular policies could reveal complexity regarding policy formulation and execution not shown in this paper.

Recommendations

Suggested strategies for addressing the Digital Divide post COVID-19 Pandemic

The post-COVID-19 pandemic world is already seeing many changes, such as new advances in artificial intelligence and the struggle between employers and employees regarding remote work. This paper explored digital divide policies from the US and the UK. This section will provide some strategies/initiatives that could receive more funding or become national initiatives to help close the divide on all three levels. Discussed in this section will be wifi blimps/low earth orbit satellite constellations, US states deregulation, constitutional amendments and community learning centers.

Wi-Fi blimps could provide additional coverage for the hardest-to-reach areas (Wood, 2022). Wi-Fi blimps can be autonomous and provide 3G and 4G coverage for a large area (Page, 2022; Wood, 2022). The US could repurpose the surveillance balloons from the US Border Patrol and the Pentagon to serve this goal (Reagan, 2021; Harris, 2019). UK companies are already bringing Wi-Fi blimps to Zanzibar. The UK government could continue its public-private partnerships by funding these companies to utilize the blimps in the UK (Page, 2022). Similarly, low earth orbit satellite constellations are groups of low orbit (111-1,242 miles) satellites providing internet and data (Schafer). These initiatives could be further subsidized, and public-private partnerships could be created.

Specifically for the US, at the state level, 16 states still have restrictive municipal broadband legislation (qtd. In Cooper, 2023). In Montana, state laws only allow municipalities to offer broadband services if "no private internet services provider is available within the jurisdiction served by the agency or political subdivision; or..the agency or political subdivision provided

services prior to July 1, 2001" and if a private company wishes to enter the market, the law is unclear whether or not the municipality has to shut down its services (Montana Code Annotated Contents, 2021, l. 5-6). Repealing such laws would result in increased local involvement in the first level of the divide resulting in increased competition and lower prices for citizens. Increased competition and lower prices could result in higher quality service for all income levels and allow the increased discretionary spending of households at all income levels to go towards increasing digital skills. If repealment of such laws are not possible, a constitutional amendment regarding affordable internet and connectivity could be proposed and passed.

For digital skills and outcomes, according to Good Things Foundation "for every £1 invested in fixing the digital divide yields a £9.48 return" (Good Things Foundation, (no date)). So, if this is true, investment into more initiatives, such as community learning centers, to fill positions that require even just basic digital skills such as more learning centers and more nonprofit funding for digital skills training would be worth doing (OECD, 2020, l. 23-24). State-funded learning centers or even public-private partnerships with major corporations could provide all citizens with the opportunity to increase their earning potential.

Recommendations for Future Research

Researchers could look more specifically into the policy formulation processes by conducting studies looking into specific keywords in bills and seeing their success rate. This would also be a good opportunity for political psychologists to add the digital divide policy area to their theories. For more quantitative researchers, the outcomes of each country's digital divide policies can be compared with each other, and to deduce as to whose policies are better. Hypotheses such as to what degree does literacy rates affect digital skills attainment can be tested. Further cross-country comparisons can be used for political theorists studying the benefits and detriments of political systems regarding specific policy areas. These cross-country comparisons could lead to insights into the political ideologies and party affiliation factors regarding the digital divide.

While reading this paper, one can see that between 2004 and most of 2007, both countries did not engage in policies regarding the digital divide. Researchers could hypothesize why this is the case and if the iPhone release in 2007 was a factor that spurred the US FCC reform in 2007 with broadband or the US Congress in 2009 calling on the FCC to produce a national broadband plan (Verizon, 2023).

Additional research could also utilize cross-country comparisons in the future to determine whose countries' policies are "better" or more "effective," which is helpful for policymakers to determine how to construct their own countries' policies.

List of Acronyms

ACP	Affordable Connectivity Program
ARRA	American Recovery and Reinvestment Act
BBC	British Broadcasting Corporation
BDUK	Broadband Delivery UK
BEAD	Broadband Equity, Access, and Deployment Program
BSC	Broadcasting Standards Commission
BT	British Telecom
BTOP	Broadband Technology Opportunities Program
CEBR	Centre for Economics and Business Research
DCLG	Department for Communities and Local Government
DCMS	Department for Culture, Media and Sport
DDI	digital divide index
DfE	Department of Education
DWP	Department for Work and Pensions
EBB	Emergency Broadband Benefit
ESD	electronic service delivery
EU	European Union
FCC	Federal Communications Commission
GAO	Government Accountability Office
GBVS	Gigabit Broadband Voucher Scheme
GEGPA	Global Economic Governance and Public Affairs
GOP	Grand Old Party
HRIU	health-related internet use
HUD	Housing and Urban Development

ICT	information and communications technology
ISPs	Internet Service Providers
IT	Information Technology
ITIF	Information Technology & Innovation Foundation
LINCS	Literacy Information and Communication System
NTIA	National Telecommunications and Information Administration
OCTAE	Office of Career, Technical, and Adult Education
OECD	Organization for Economic Co-operation and Development
Ofcom	Office of Communications
RCBF	Rural Community Broadband Fund
RUS	Rural Utilities Service Program
SCT	Social Capital Theory
SMEs	small and medium enterprises
SRN	Shared Rural Network
TIIAP	Telecommunications and Information Infrastructure Assistance Program
TOP	Technology Opportunities Program
UK	United Kingdom
US	United States
USAC	Universal Service Administrative Company
USF	Universal Service Fund
USO	Universal Service Obligation
USPs	Universal Service Providers
VCSE	voluntary community social enterprises

List of Figures

Figure 2 (Gilbert's theory of digital divides)

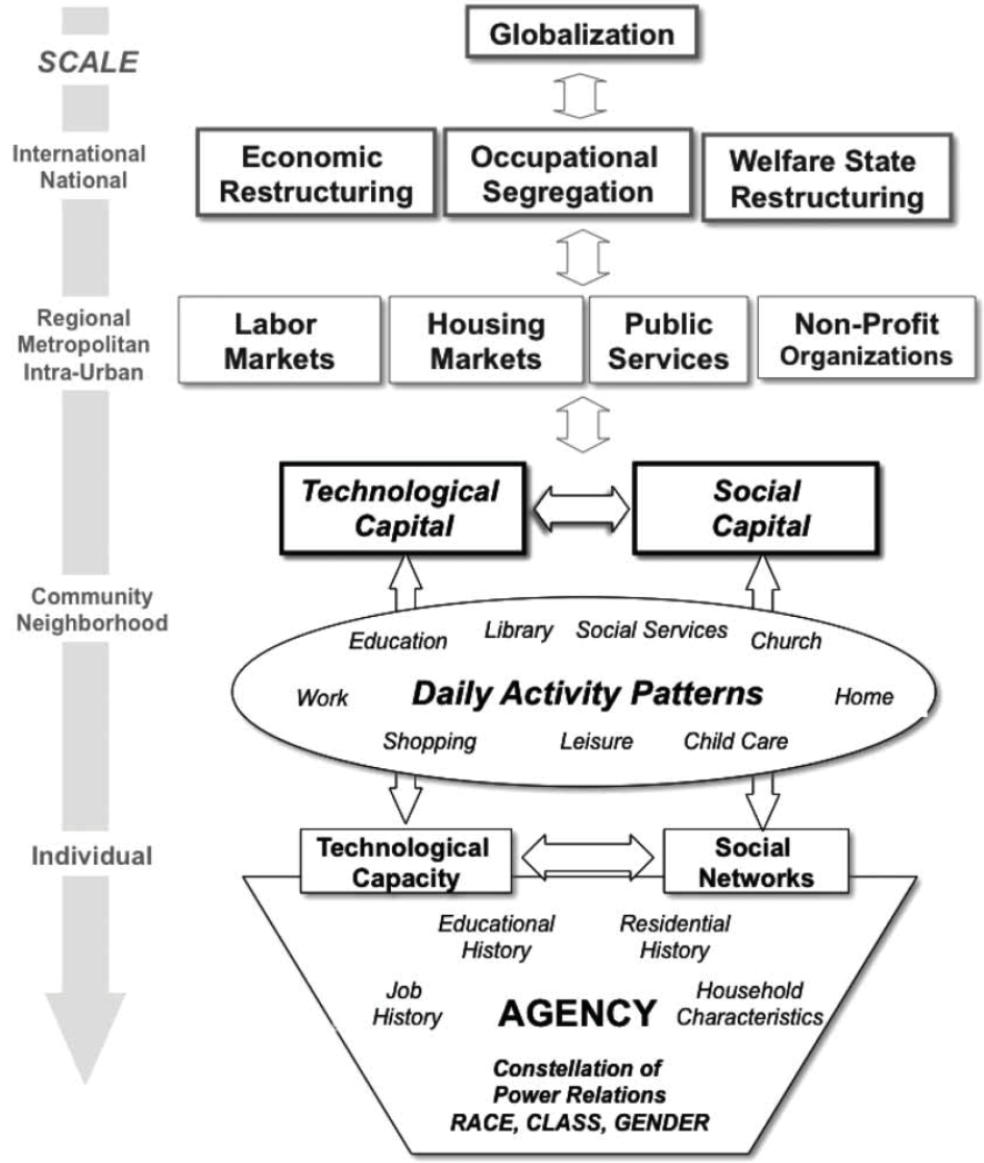


Figure 3 (Van Dijk's Theory adapted)

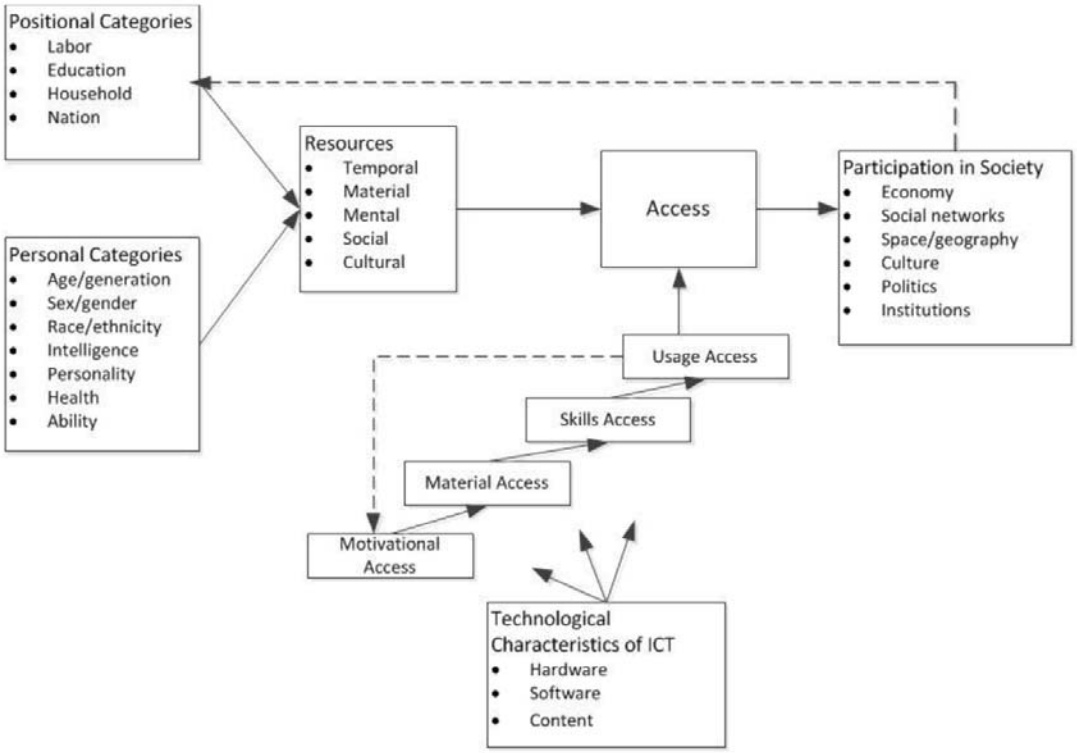
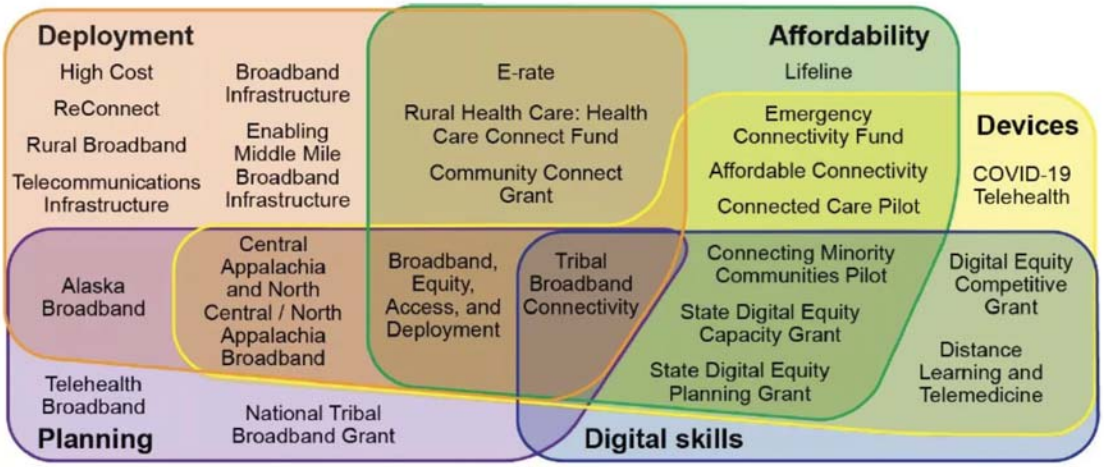


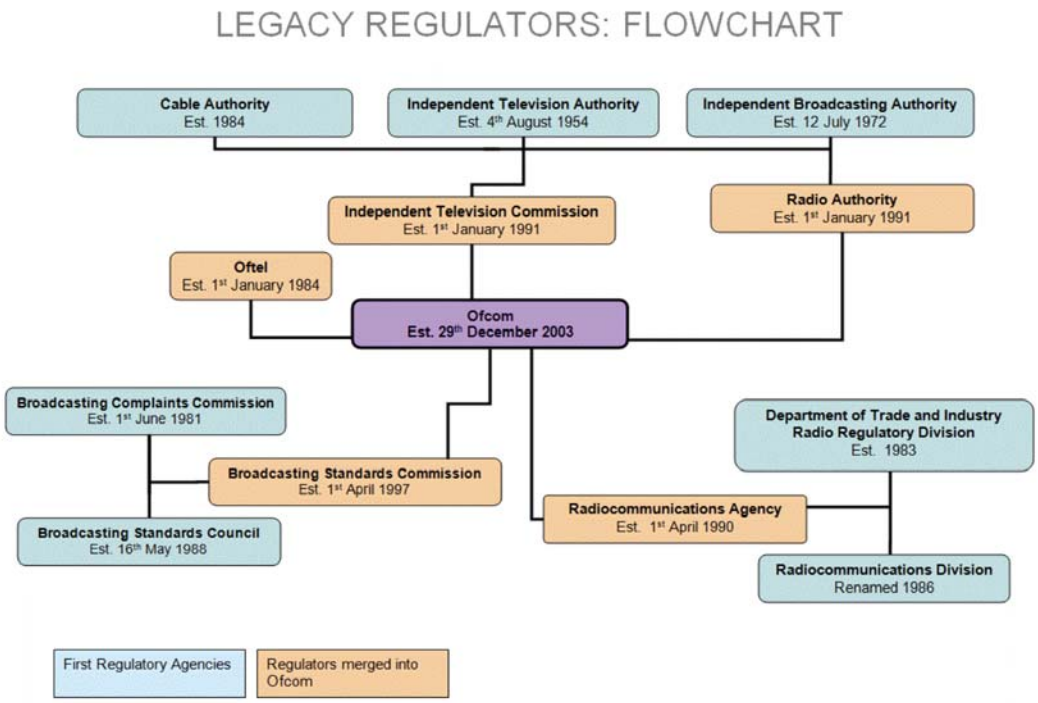
Figure 4

The Mosaic of 25 Federal Programs with Broadband as a Main Purpose, as of November 2021, by Purpose Category



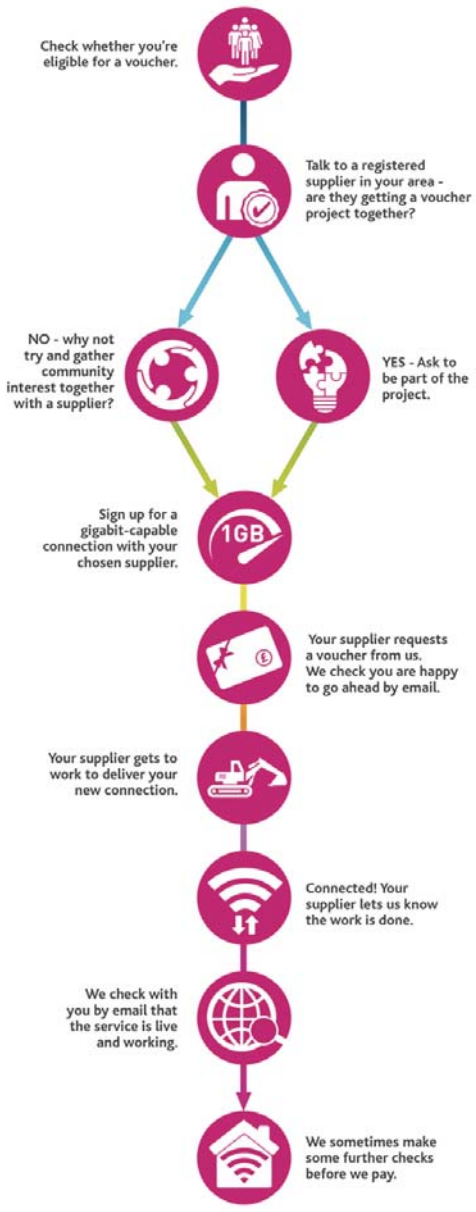
Source: GAO analysis. | GAO-22-104611

Figure 5



This diagram represents the position at 29 December 2003, when Ofcom was created. It does not include Postcomm, which merged with Ofcom in 2011.

Figure 6 (How Gigabit Broadband Voucher Scheme works)



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