

Broadband Equity: A Policy Issue

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Executive Summray

This paper explores the critical role of broadband infrastructure as a fundamental utility akin to water and electricity, asserting its necessity for modern society. Through a detailed examination of the impacts of broadband accessibility, particularly evident during the COVID-19 pandemic, the paper advocates for the reclassification of broadband to ensure it is universally accessible, highlighting its pivotal role in fostering economic growth, social equity, and community development.

In Dallas County, as in many regions, broadband has proven indispensable in maintaining societal functions during emergencies by supporting remote work, online education, telemedicine, and other vital services. The enduring demand for broadband, amplified by the pandemic, underscores the need for a robust infrastructure capable of supporting an array of online activities—from everyday transactions to cultural engagement and government interactions.

Looking forward, the paper projects an escalating reliance on broadband driven by the adoption of emerging technologies such as the Internet of Things (IoT), autonomous vehicles, AI-driven services, and expansive virtual environments. This anticipated growth calls for proactive policy measures to expand internet access and address the environmental and social challenges posed by increased digital dependency.

The paper concludes with a strong call to action for policymakers to implement strategic interventions that guarantee affordable, universal broadband access. By formally recognizing broadband as a public utility, the paper argues, stakeholders can significantly contribute to building a more inclusive and resilient digital framework, thus ensuring that broadband infrastructure evolves as a cornerstone of societal advancement and equality.

Background of the Problem

The evolution of virtual access, from its humble beginnings to its current state, is a testament to humanity's relentless pursuit of connectivity and innovation. Over the decades, we have witnessed a remarkable journey marked by transformative technological advancements and societal shifts. From the advent of dial-up internet in the late 20th century to the widespread adoption of broadband technologies in the 21st century, virtual access has transcended geographical barriers, revolutionizing how we communicate, work, learn, and interact with the world around us.

Today, we find ourselves amidst a digital revolution where the boundaries between physical and virtual realms blur, propelled by the proliferation of high-speed internet connectivity, mobile devices, and emerging technologies like the Internet of Things (IoT) and artificial intelligence (AI). This historical context underscores the pivotal role of virtual access in shaping our modern landscape, laying the foundation for a more connected, inclusive, and technologically driven society.

As of 2024, an estimated 320 million Americans, or 94.6% of the population, have internet access—a figure expected to rise to 98% by 2029. People globally are connected to the internet an average of 6.5 hours daily, and social media users have reached 5 billion. The impending widespread adoption of virtual and augmented reality technologies promises to further elevate the internet's indispensability.

However, the democratization of internet access remains incomplete. While physical presence in the United States guarantees certain constitutional rights, virtual spaces do not yet universally reflect this parity. The challenge lies in ensuring that no demographic group is disproportionately privileged or disadvantaged in terms of virtual access. The commitment to social equity must bridge both physical and digital realms, ensuring that all citizens benefit equitably from the digital transformation.

Significance of the Problem

The expansion of broadband access has been linked to long-term economic growth, but its benefits are not uniformly distributed, highlighting policy intervention. Income level remains a critical barrier to broadband access, with 48% of very low-income and 27% of low-income households lacking internet connections. Such statistics not only quantify the digital divide but also emphasize the need for targeted policy interventions to boost internet penetration among these demographics.

In Dallas, the digital divide extends beyond income to include geographic, interest-based, and infrastructural disparities. For instance, in certain neighborhoods where poverty rates exceed 35%, companies like AT&T have failed to provide the necessary high-speed internet infrastructure, even though they claim significant investments in areas like South Dallas. This neglect is mirrored by the data from the U.S. Census Bureau's 2016 American Community Survey, which shows that 42% of Dallas County households lack a fixed internet connection, a figure that starkly contrasts with national averages.

Further complicating the issue, a 2021 survey by CTC Engineering and Technology revealed that a significant portion of low-income households in Dallas County outside the city limits do not have home internet subscriptions. Additionally, subsidy programs such as AT&T Access and Spectrum Internet Assist have low enrollment rates among eligible households, indicating a lack of effective outreach and engagement. Only 20% of AT&T subscribers in an eligible income bracket are enrolled in the subsidy program. In comparison, 13% of Charter subscribers are enrolled in Spectrum Internet Assist.

The digital inequity also has a racial dimension, as evidenced by the City of Dallas Equity Indicator Report, which noted that, before the pandemic, a significantly higher percentage of Black and Hispanic households lacked internet access compared to their White counterparts.

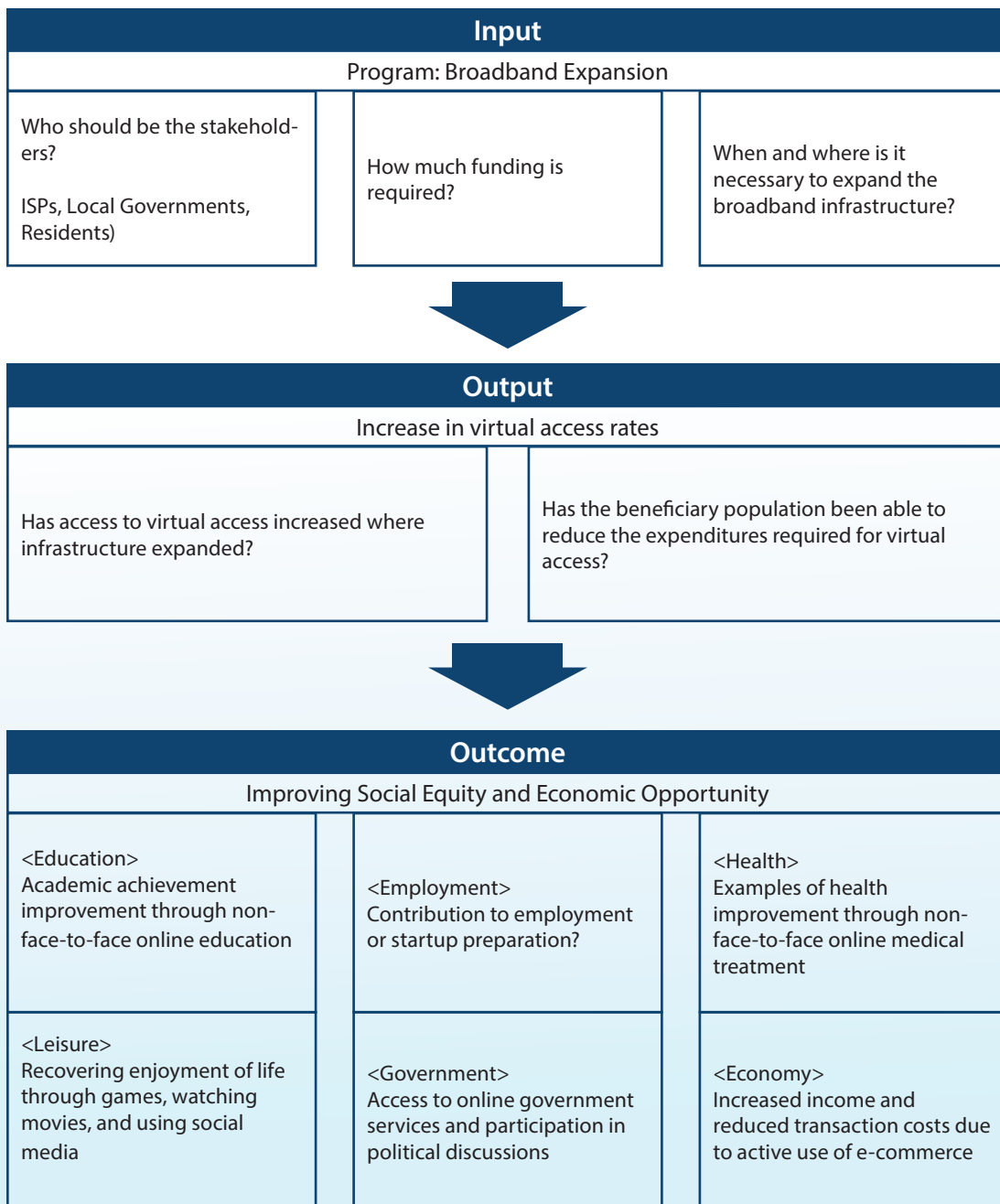
These disparities suggest a clear need for policy reform. Local governments and service providers must prioritize overcoming the digital divide, not only because internet access is critical for modern living but because failing to do so perpetuates economic and racial inequalities. The lack of internet access often forces low-income and minority communities to deprioritize this essential service due to more immediate survival needs, such as food and shelter.

Therefore, it is essential for policymakers to consider legislative and regulatory interventions that address these disparities. Ensuring universal broadband access is not just an economic imperative but a social equity issue, demanding proactive government involvement where the market has failed.

Problem and Policy Statement

Given the pervasive disparities in broadband access observed across various demographics, particularly in underserved areas of Dallas, we hypothesize that enhancing equity and economic opportunity is achievable through widespread broadband distribution. This initiative assumes that equitable access to virtual spaces can mirror the rights and privileges provided in physical spaces, thereby promoting inclusivity across socio-economic spectrums.

The proposed logic model for broadband expansion (as illustrated in the attached diagram) outlines the systematic approach from input to outcomes:



At the Input Stage, the focus should be on the foundations of the program. Here, we examine the allocation of resources, the engagement of stakeholders, and the strategic planning of infrastructure deployment. Policymakers must decide which communities to prioritize—decisions that should be guided by both equity considerations and logistical feasibility. This stage sets the baseline from which all subsequent achievements will be measured.

Moving to the Output Stage, the immediate effects of the expansion are assessed. This includes monitoring the increase in the number of households with internet access, evaluating the affordability of services provided, and tracking the adoption rates among previously underserved populations. These outputs serve as direct indicators of the program's reach and its short-term successes.

For the Outcome Stage, the longer-term impacts on the community are the focus. This includes improved educational outcomes through enhanced access to digital learning, greater economic opportunities through increased connectivity for businesses, and stronger social cohesion as more residents gain access to digital communication tools. Each of these areas requires specific metrics, such as educational achievement rates, local business growth statistics, and measures of community engagement.

Additionally, it is important to recognize the inherent time lag between inputs, outputs, and outcomes in this context. While broadband expansion can rapidly increase connectivity, the substantive changes in community development, education, and economic conditions will accumulate more gradually. This delay necessitates sustained observation and adjustment of strategies based on ongoing data analysis.

The process of disseminating actionable information through newly established virtual channels, and the subsequent decision-making based on this data, promises significant societal benefits. Over time, this initiative is expected to transform what was once a vicious cycle of limited access and opportunity into a virtuous cycle of progress and inclusion. However, recognizing the substantial investments in time and resources that such an expansive program requires, a thorough analysis of both costs and effects is essential for maintaining the momentum of change and ensuring that the benefits of broadband access are both widespread and sustainable.

Stakeholder Identification

In the pursuit of broadband equity, the diversity of stakeholder interests can both enrich and complicate the development process. As we move deeper into an era where data is as critical as any physical commodity, recognizing the essential nature of virtual access is imperative. Effective engagement with each stakeholder group is crucial to ensuring that broadband access does not become a luxury but a universally accessible service. Here, we identify the main stakeholders, their interests, and their potential contributions to the broadband initiative.

Residents and Community Organizations:

Residents, especially in underserved areas, along with community organizations, are primary beneficiaries of expanded broadband services. Groups such as the Dallas Innovation Alliance, Internet for All Coalition, United Way of Metropolitan Dallas, and Workforce Solutions Greater Dallas are pivotal. They not only advocate for expansion but also support implementation by identifying local needs and barriers to access. These organizations and residents champion the benefits of reduced geographical isolation and enhanced opportunities for economic and educational advancements through improved virtual access. Their active participation is vital in ensuring that the expansion efforts are aligned with the community's needs and aspirations.

Local and State Governments:

Government bodies play a multifaceted role in broadband expansion. While they recognize the broad benefits of digital connectivity, they must juggle this with other pressing infrastructural and economic priorities. The State of Texas, for example, has established a Broadband Development Office under the guidance of the National Telecommunications and Information Administration (NTIA). This office is tasked with advancing specific goals related to the accessibility, affordability, and inclusivity of broadband technology. Local entities like Dallas County collaborate with regional partners to craft strategies that address digital inequities, ensuring that governmental policies support rather than hinder broadband accessibility and affordability.

Internet Service Providers (ISPs):

ISPs such as Charter, AT&T, and Spectrum are critical to the physical deployment of broadband infrastructure but are often driven by profit motives that may not align perfectly with the public interest. Their strategic business decisions can significantly influence where and how broadband expansion occurs. In regions where it may not be immediately profitable to deploy services, these companies' commitment to low-cost programs and community engagement can waver, unless there are incentives or regulatory mandates. Enhancing partnerships with ISPs involves navigating these commercial priorities to align them with broader social goals, ensuring they contribute effectively to closing the digital divide. The intersection of these diverse interests poses unique challenges. For instance, ISPs' lobbying against state legislation that facilitates direct broadband deployment by municipalities can stall progress. Moreover, establishing robust partnerships early in the planning process is crucial to prevent such impasses and ensure that all parties are committed to the shared goal of digital equity.

By leveraging the strengths and addressing the concerns of each stakeholder group, we can develop a comprehensive strategy that not only bridges the digital divide but also creates a sustainable model for future technological and community development. The underutilization of existing low-cost programs by ISPs highlights a gap between availability and adoption, which can be addressed through better outreach, education, and possibly regulatory adjustments to make broadband access a reality for all.

Policy Challenges

In Dallas, the quest for digital equity is fraught with significant policy and regulatory challenges that hinder the development of an inclusive broadband infrastructure. Central to these challenges is the restrictive legal framework set forth by Section 54.201 of the Texas Utilities Code, which significantly limits the capabilities of municipalities to either provide telecommunications services directly to the public or to engage in partnerships with private telecommunications companies. This legislation effectively restricts local governments from taking proactive steps towards directly addressing the connectivity needs of their communities.

Despite legislative adjustments, such as Governor Greg Abbott's 2019 initiative allowing electric cooperatives to offer broadband services, broader state policies continue to inhibit such progressive endeavors. These legislative barriers are particularly stifling in urban settings like Dallas, where the digital divide impacts diverse, densely populated communities. The result is a stifled innovation in broadband deployment, leaving significant portions of the population without adequate access to essential digital services.

The state's ambivalent stance on municipal broadband initiatives further complicates efforts to close the digital divide. While some progress has been made in rural and sparsely populated areas, urban areas face a unique set of challenges that are often overlooked in broader state policies. This disparity underscores a critical need for policy reevaluation that considers the unique demographic and economic contexts of different regions within the state.

Navigating these policy challenges requires a nuanced understanding of both the legal landscape and the socio-economic factors at play. It is crucial for policymakers, community leaders, and advocates to continue pushing for reforms that will allow for more flexible, community-driven solutions to broadband access. Only through such sustained efforts can Dallas hope to achieve the goal of true

Consequences Forecasting

When anticipating the outcomes of legislative changes in broadband access, employing political and economic lenses provides valuable insights into the policy's implementation and reception.

Political Consequences:

Politically, enhancing virtual access can significantly strengthen democratic participation. By facilitating easier and more frequent interactions between citizens and government officials, broadband can transform civic engagement. Citizens are enabled to express their opinions and influence government policies directly from

their digital devices, without needing to physically visit governmental offices. This accessibility was particularly crucial during the COVID-19 pandemic, where virtual platforms became essential for rapid and accurate information dissemination, helping to manage public health responses and maintain governmental functions without physical contact.

Economic Consequences:

Economically, the expansion of digital platforms through enhanced broadband access redefines market dynamics by reducing operational costs and eliminating physical barriers between suppliers and consumers. This shift not only benefits businesses, which see reduced overheads and expanded markets, but also boosts government revenues through increased economic activity and taxation. However, the benefits seen from a microeconomic perspective may not uniformly translate to macroeconomic gains. Issues like net neutrality and equitable access to bandwidth remain contentious, potentially leading to digital divides where only those who can afford premium services enjoy enhanced connectivity. Moreover, the expansion of virtual spaces might not address physical infrastructural challenges as some proponents suggest. For instance, despite high internet penetration rates in South Korea, urban overcrowding persists as a significant issue. This scenario underscores the limited influence of virtual connectivity on some social and urban planning challenges.

Social and Ethical Consequences:

On a social level, while broadband expansion promises greater inclusivity, there's a risk of exacerbating inequalities if not properly managed. As demand for internet bandwidth grows, supply constraints could lead to prioritization policies that favor economically advantaged groups, undermining the principle of equitable access. Additionally, there's the potential ethical concern that ISPs might exploit these supply-demand imbalances to increase prices, further deepening the digital divide.

Predicting these consequences requires careful consideration of both intended outcomes and unintended side effects. While digital platforms offer numerous advantages by connecting people and markets, they also pose significant challenges in ensuring fair access and preventing the reinforcement of existing social inequalities. Legislators and policymakers must navigate these complex dynamics to harness the full potential of broadband expansion while mitigating its negative impacts.

Spillovers and Externalities

The expansion of virtual access is accompanied by a range of unintended effects and externalities, both beneficial and detrimental. An essential aspect of this expansion is its potential impact on environmental sustainability, particularly in terms of carbon emissions.

Environmental Impact:

Initially, the deployment of mobile broadband infrastructure can lead to an uptick in CO₂ emissions, as construction and increased energy consumption contribute to higher carbon outputs. A comprehensive study spanning 181 countries from 2002 to 2020 illustrated this phenomenon, revealing an initial surge in emissions with the rollout of mobile broadband. However, the same study indicated a significant shift over the long term—a negative correlation between mobile broadband penetration and CO₂ emissions. As broadband access becomes widespread, efficiencies gained in other sectors, such as reduced need for travel and enhanced opportunities for remote work, contribute to a net decrease in carbon emissions. This finding underscores the potential of broadband technology to support global climate change mitigation efforts by promoting more sustainable living and working practices.

Economic and Social Externalities:

While the direct benefits of increased virtual access—such as enhanced connectivity and convenience—are clear, the indirect effects can be more nuanced. One potential negative externality involves the economic behavior of households. With increased efficiency and cost savings gained from internet use, there is a hypothesis that households might redirect their savings towards investments in real estate or other assets, potentially inflating prices and exacerbating wealth inequalities. This scenario presents a paradox where the tool intended to enhance equity and access could inadvertently contribute to greater socio-economic disparities.

This potential shift in spending patterns suggests that while broadband expansion offers numerous advantages, it also requires careful regulation and policy planning to ensure that its benefits are broadly shared. Legislators might need to consider policies that encourage reinvestment of the economic gains from broadband access into community-driven projects. Such initiatives could include further broadband infrastructure development or programs specifically designed to address and mitigate digital divides, thus reinforcing the commitment to social equity.

Recommendations and Conclusions

Our comprehensive study on broadband equity has highlighted the intrinsic value of digital inclusion, demonstrating how it significantly enhances quality of life, economic opportunity, and community development. Achieving digital equity, however, involves complex, interdependent components that require robust partnerships and thoughtful legislation to endure over the long term.

Digital Literacy Initiatives

Expand Training Programs: Increase funding for digital skills training through initiatives like the Digital Navigators Program, in collaboration with the Dallas Innovation Alliance. This enhances long-term access to affordable and effective broadband services.

Educational Partnerships: Work with school districts in digitally redlined areas to integrate digital literacy into the curriculum. Offering incentives such as extra credit could encourage participation from students and their families, thereby increasing community digital competency.

Library Enhancement: Boost the Hotspot and Laptop Program at local libraries to include digital literacy workshops during evenings or weekends, aligning with the broader community goals and enhancing economic opportunities.

Strategic Enrollment Campaigns: Collaborate with entities like the City of Dallas Digital Equity Team and local nonprofits to actively enroll low-income households in subsidy programs. Utilize pop-up vans at community events to facilitate on-the-spot service sign-ups.

Tax Incentives and Device Accessibility: Implement tax incentives for households purchasing broadband-access devices and organize donation drives to provide necessary equipment to those in need.

Accessibility Expansion

Infrastructure Development: Continue collaboration with the Digital Equity Team to extend fiber networks into underserved areas, thus eliminating historical digital redlines.

Community Networks: Support the establishment of community-owned broadband networks to serve areas neglected by traditional ISPs, ensuring that high-speed internet is accessible to all.
Legislative Action:

Advocacy for Autonomy: Engage with the Texas Broadband Development Office to advocate for legislative changes that grant municipalities the freedom to provide broadband services or partner with private entities more effectively.

Municipal Engagement: Mobilize regional efforts, especially in areas with municipal electric utilities,

to advocate for state approval of local broadband initiatives, mirroring successful models like the Brownsville Co-op.

Form Alliances: Leverage the collective power of electric cooperatives across Texas to support municipal internet service provisions, emphasizing the democratic value of widespread and equitable internet access. COG should encourage the regions to partner with Texas Municipal League representatives to bring awareness to the issue of broadband equity and to garner support.

Conclusion:

In the modern world, supporting broadband equity is more than just promoting technology availability; it's a critical first step in creating fair opportunities and promoting social progress. By democratizing access to information, broadband equity allows people from all backgrounds to take advantage of the Internet's transformative potential. Ensuring fair internet access enables marginalized communities to close social, economic, and educational divides, fostering a more inclusive and just society.

Furthermore, its recognition as a public utility highlights broadband's crucial role in contemporary life. Broadband is essential for communication, education, healthcare, business, and civic involvement, like water and electricity. By classifying broadband as a public utility, we prioritize affordability and universal access while reaffirming the technology's vital role in society. This accreditation creates the foundation for sustained economic growth, innovation, and resilience in the face of new challenges, in addition to protecting digital exclusion. Fundamentally, viewing broadband as a public utility reflects our dedication to justice, development, and the general welfare of the digital age.

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