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Digital Inequality

Information Poverty in the Information Age

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"[T]he same places that are characterized by economic poverty also tend to suffer from information poverty; a pattern has developed in which inequalities in physical and electronic spaces mutually reinforce one another." – Lisa Servon, Dean of the New School for Management and Urban Policy and Senior Research Fellow at the Center for Work Life Policy

Table of Contents

Introduction: An Overview of Digital Inequality

Access to ICT is Crucial to Success

In a globalized economy dominated by knowledge-driven professions, information is the currency of the marketplace. Information communication technology ("ICT") helps determine civic, academic, and professional success (Dimaggio), from the ability to complete college applications online to emailing instantaneously via smartphone. In addition, ICT improves personal quality of life by making daily necessities, such as banking and healthcare, more accessible and convenient.

While disadvantaged groups without access to ICT are further marginalized and have correspondingly limited life chances, the reverse is also true (Warshauer). The use of ICT has been demonstrated to be a key factor in the polarization of the U.S. labor market in recent decades (Autor), and in promoting higher incomes among disadvantaged populations. From "e-patients" to "digital citizens," a new participatory class of Americans is emerging, characterized by proficiency in ICT (Smith). In their shadow, a digital underclass, unskilled in ICT or completely offline, lags far behind. In short, digital inequality helps fuel economic and social inequality.

The Obama administration has recognized this inequity by calling on the new FCC chairman, Julius Genachowski, to ensure the provision of broadband to unserved parts of the country (Lowry). These efforts are a laudable step in the right direction; however, Americans' radically different levels of ICT proficiency must also be addressed. If not, we risk subjecting our most vulnerable populations to a dangerous combination of economic and informational poverty.

How is Digital Inequality Different from the Digital Divide?

The "Digital Divide" is a term that came into popularity in the 1990s as the full potential of the internet became apparent. It captures the "inequality between the 'haves' and the 'have-nots'" measured by access to and use of technology, namely, the internet (Dimaggio). In other words, the divide was the disparity in life chances between the online and the offline realms.

"Digital inequality" is a more nuanced term that describes how technology users vary in how gainfully they employ the technology in their daily lives. Social inequality stems from this variation in use because users' degree of tech-savviness mirrors real-life racial and socioeconomic inequities. Digital inequality manifests itself in several ways, including disparities in:

- *Technical means*: Lack of access to bandwidth, computing power, etc.
- *Autonomy*: Users' independence in using technology, i.e. at home or work, during set hours or at leisure, in monitored or unmonitored settings
- *Skill*: Ability to search, download information, or otherwise locate resources online

Social inequality stems from this variation in use because users' degree of tech-savviness mirrors real-life racial and socioeconomic inequities.

- *Social support*: Access to experienced users within one's own community
- *Purpose*: Users' ability to leverage technology to improve economic gain, social capital, consumption, or entertainment (Warshauer)

This paper measures this inequality by users' access to information and communication technology and their skill using ICT ("e-literacy"). The term "digital inequality" is used instead of "digital divide" because digital inequality mirrors patterns of social inequality rather than a divide which one must simply "leap" across. ICT is computer hardware, software, and telecommunications equipment. E-literacy is defined as the knowledge of what ICT is capable of, and the ability to use ICT to achieve one's purposes.

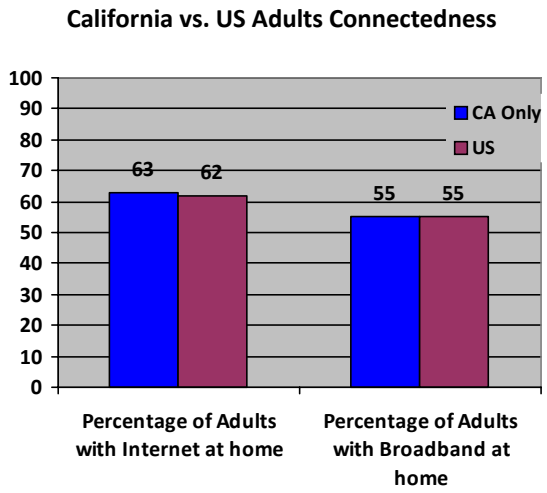
California as a Case Study

California's Diversity is the Bellwether of the Nation

Despite being home to some of the most sophisticated ICT users in the country, California's diversity serves as a trend-setting microcosm for the nation. Ethnic minorities, who currently make up about a third of the US population, are projected by the US Census Bureau to become the majority in 2042. As soon as 2023, ethnic minorities will comprise more than half of all children in the US (Bernstein). In this trend, California leads the way. The majority of California's children aged 5 and under have been ethnic minorities for several years, with over half being Latino. In contrast, almost half of the nation's children under the age of 5 are ethnic minorities, and the number is rising (Hendricks).

California's trends mirror the US: while the overall percentage of Californians who use the internet has increased since 2000 (up to 70% from 65%), certain groups continue to lag behind in internet access and use (Public Policy Institute of California, 2008).

California's digital gap breaks down along virtually the same demographic lines as the US at large. Three in four Californians use a computer at home, school, or work, a figure that has been consistent since 2000. The national figure is virtually identical. Today, Californians and adults across the nation are equally likely to have internet access at home (63% vs. 62%, respectively) and a broadband connection (both 55%) (PPIC, 2008).



What's more, Californians among all demographic groups agree that the internet is a valuable component of modern life. Nearly every Californian internet user surveyed claimed that the internet matters in everyday life, and even over half of offline individuals agreed. Mark Baldassare, President and CEO of the Public Policy Institute of California, puts it this way: "Californians increasingly see their computers and the internet as necessities, not luxuries. At a time when most economic indicators are going down, these technology indicators are going up." (Public Policy Institute of California, 2009)

Dispelling the Myths around Digital Inequality

"[E]qual access to computers and the engagement that it has made possible are not magic bullets that can turn back the tide of inequity if it is already deeply embedded in society." – Rona F. Flippo and David C. Caverly, authors of the Handbook of College Reading and Study Strategy Research

The Right Solution for the Right Problem

Before tackling solutions, policy-makers must address the correct problem. It's helpful to start by debunking some persistent myths about digital inequality, and establishing what it is *not*.

Myth 1: Solve the Problem by Getting Everyone Online

To suggest that getting everyone online is the single solution oversimplifies the problem by suggesting that the problem is purely access. It assumes that digital inequality is a pipeline problem with a straightforward solution: build more pipes. Proposed solutions to the pipeline problem include increasing broadband penetration, having local government provide community networking and Wi-Fi Hot Zones, and subsidizing network

build-out from the state and federal levels. Falling behind in utilizing broadband hurts our nation's competitive edge. The reverse is also true: a fully connected population at broadband speeds can open up new opportunities for economic innovation.

However, inequality persists even after access is obtained. As penetration reaches unprecedented levels, the old inequality of access paradigm has given way to inequality of use. Differences in access still remain, but that will become an increasingly logistical issue. Policymakers must evolve in their approaches to suit a rapidly evolving problem in which users leverage the internet in unequal ways (Dimaggio), a disparity that is nearly as old as the internet itself (Anderson).

The 1990s was characterized by users' optimism that the internet would be a great equalizing force in society. This hope had historical precedent—during the early spread of media as diverse as telephones and newspapers, proponents hailed these advances as democratizing information and communication (Dimaggio). However, the internet is far from the color-blind, classless environment early proponents hoped for. Instead, the internet perpetuates existing racial and socio-economic divisions, played out in overt and subtle ways.

Myth 2: Highly-Connected Urban Areas versus Disconnected Rural Areas

This myth assumes that the gap will close if only rural communities are brought online, namely through improved broadband penetration. While that's a start, digital inequality cannot be viewed exclusively through an urban/rural lens, given the marked disparities among technology that persist *within* these communities.

For example, in California, Los Angeles lags far behind the San Francisco Bay Area and Orange County, illustrating that not all urban communities are equally connected. Majorities in each region of California report to PPIC that they have home computers and internet access, but Los Angeles residents report lower rates of broadband connection (48%) than residents in the San Francisco Bay Area (65%), Orange County/San Diego (58%), Inland Empire (56%), and Central Valley (53%) (PPIC).

Furthermore, California's numbers suggest the severity of the rural/urban divide is exaggerated. California's rural residents are only somewhat less likely than urban residents to have a computer (65% vs. 73%), internet connection (58% vs. 63%), or broadband (51% vs. 56%) (PPIC).

Digital inequality, therefore, cannot be explained away solely on the basis of geographical differences. Its racial and socioeconomic underpinnings must also be addressed.

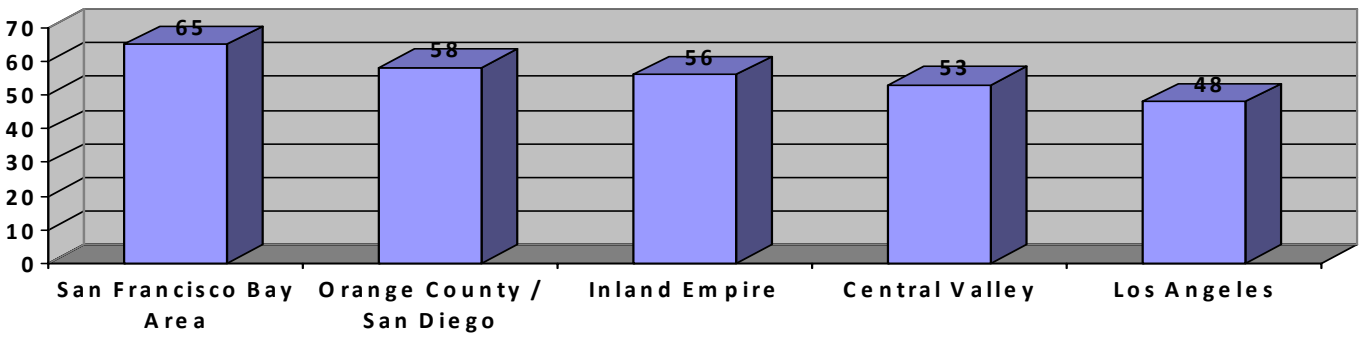
Myth 3: A Generational Divide

This myth assumes that the gap will close on its own as each generation of youth gets more and more tech-savvy. This is true in part: older generations have less familiarity and therefore less comfort with utilizing ICT. However, the reality is that the gap between older and younger technology users is only part of the story, given *which* youth are e-literate and *which* older individuals are not.

In California, we do see a degree of disparity among users of different ages. Adults under age 35 are more likely to use the internet (78%) than older adults. However, internet use has grown sharply among those aged 55 and older (42% to 58%) from 2000 to 2008 (PPIC).

California's statistics for income further complicate the picture. Among adults with household incomes less than $40,000, internet use has grown by only two percent (47% to 49%) over eight years. In contrast, almost every adult in California with household incomes

Broadband Connectedness Rate (% of residents)



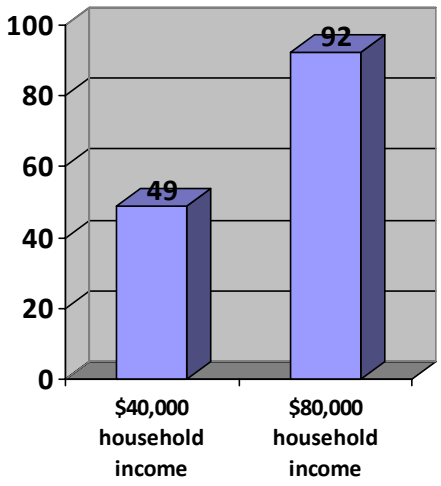
of $80,000 or more uses computers (94%) and the internet (92%)] (PPIC).

Myth 4: Some Users Don't Want to Get Connected

The difficulty with this myth is that we cannot fully know who is and is not interested in accessing and using ICT until all potential users understand what is at stake. The concept of choice cannot be addressed until potential users have *meaningful* choices to make. And meaningful choice is the product of educating disadvantaged communities in the capacity and capabilities of the internet.

This is what Eszter Hargittai, Associate Professor of Communication Studies at Northwestern University, terms the "realm of possibility problem," (Hargittai) in which you cannot want what you do not know exists. Individuals cannot make informed decisions about whether to pursue connectivity because they are not aware what the technology is capable of, or how it fits into their lives. E-literacy, then, is comprised of two parts: 1) awareness of the potential of ICT, thereby giving users the ability to make informed choices about their connectivity, and 2) the skills needed for users to put their choices into action.

Percentage of Californians Who Use Internet



Digital Inequality Deepens Social Inequality

"Pervasive social stratification is being reified in a new era. If we don't address this head-on, inequality will develop deeper roots that will further cement divisions in our lives." — Danah Boyd, social media researcher at Microsoft Research New England and a fellow at Harvard Law School's Berkman Center for Internet and Society

Disparities in Use

Once users are online, they utilize the internet in different ways. Privileged groups are more likely than disadvantaged groups to use the internet to grow their financial and social capital, creating a phenomenon that can be referred to as a 'participation gap.' As the new American "participatory class" (Fox) emerges, it is changing the way Americans approach their daily lives. Some key examples:

- *Civic engagement*: "E-citizens" tend to leverage ICT to stay informed and involved with the political process and have more civic capital than their disconnected counterparts. For example, in the 2008 election, over half of the entire American population used the internet to become involved, through mediums including blogs, social networking, online video, and email. 1 in 3 internet users, or over half of the entire adult population went online in 2008 to get news or participate directly (PIALP).
- *Healthcare*: "E-patients" go online for information, expert opinions, and peer information. They come from more privileged groups, and enjoy the benefits of being better informed about their treatment and care. California helps paint the picture: While half of all Californians say they get health information online, lower income adults (30%) and Latinos (31%) are the least likely to do so (PIALP).
- *Education*: Finally, low-income parents are less able to keep involved with their children's education. In California, more than half of parents visit their children's school websites. However, only 30% of those with household incomes under $40,000 do so, compared to 84% of those

with incomes of $80,000 or more (PIALP).

Enhancing Racial and Socioeconomic Inequities

Inequality of use is a symptom of racial and socioeconomic divides playing out in a digital realm. California provides a startling example. At least half of Californians go online to get news, make purchases, look for health information, or visit a government website. A disparity, though, is evident as Latino and low-income groups fall behind. While many groups are increasing their use and access of ICT, others' rates of connectivity are actually declining. Since 2000, computer and internet use has grown among whites and blacks.

However, among Latinos, computer use has *declined* and the rate of internet use remains static. Few of California's Latinos have computers or internet access in their homes. Less than half of Latinos have a home computer compared to about 8 in 10 for whites, Asians, and blacks. Only four in ten Latinos have internet access and only a third have a broadband connection at home. Asians, too, have seen declines in both their use of computers and the internet, although their overall usage rate is much higher than that of Latinos.

The disparity persists among socioeconomic differences. Among households with incomes under $40,000, half have home computers, but only four in ten have internet access at home and only a third have broadband. At higher income levels, overwhelming majorities of Californians have home computers, internet access, and broadband (PIALP).

Not only is race and class implicated in digital inequality, non-English speakers lag behind as well. Immigrants are significantly less likely to have access to or use a computer and the internet, and the disparity is actually increasing. Immigrants from Spanish-speaking and native households are less likely than their English-speaking counterparts to have access to or use ICT. English ability, therefore, has been positively associated with IT access and use, while limited proficiency contributes to disconnectivity (Ono).

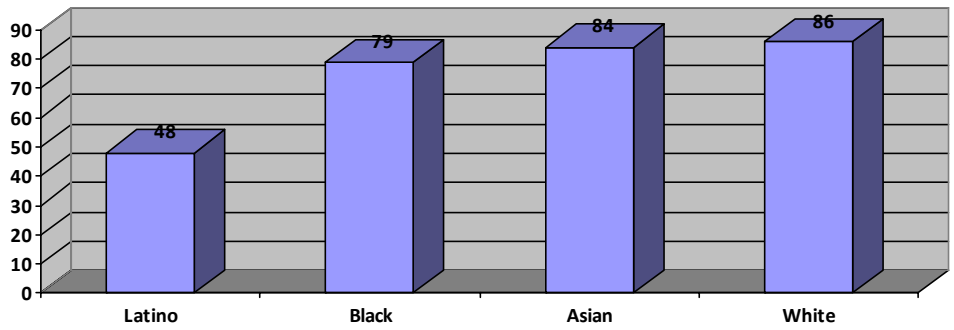
Case Study: Social Divisions and Social Networking

Consider social networking sites. In the early-to-mid 2000s, MySpace was the undisputed leader of the pack. Facebook, its modern-day competitor, began as a network exclusive to Ivy Leaguers, and then gradually expanded to all college students, and then eventually to all internet users. Despite being free and open to all users, MySpace and Facebook populations are stratified along racial and socioeconomic lines. NextGen researcher Danah Boyd characterizes certain users' migration from MySpace to Facebook as a digital incarnation of white flight. She explains, "Social media… is making the old social divisions obvious in totally new ways."

Social networking sites have, essentially, become segregated. Facebook users are more likely to be male and have completed college, while MySpace users are somewhat more likely to be female, black or Hispanic, and to have not completed college (Lenhart). Latinos are the most likely to use MySpace, followed by blacks, then further behind, by whites. And Asians, already the group least likely to be on MySpace, saw their numbers dwindle further (16 percent). Students from less educated families are more likely to use MySpace, while those from more educated families are more likely to use Facebook (Richmond). Furthermore, ComScore, a marketing research company for internet businesses, finds MySpace has younger users with lower incomes than Facebook (Hansell).

The significance of this digital segregation is as old as that dangerous maxim, "separate but equal." Whether segregated communities are real-life or virtual, legislated or de facto, they harm the individuals they touch. We see this in young people's own assessments of the two social networking sites: Myspace users tended

Percentage of CA Residents with Computers at Home



to view Facebook users benignly, or at worst, "goodie two-shoes," where as Facebook users see Myspace users as "where the bad kids go" (Boyd). Invariably, new technologies—in this case, social networking sites—shape socialization and peer relations. It should also be noted that young people do not regard social networking sites and other social media as "virtual" spaces. Rather, they are a complement to their daily lives—simply another venue of socialization, as real as campus or the mall. It follows that racial or socioeconomic separation from their peers is felt just as keenly as when it happens in the physical realm.

> The significance of this digital segregation is as old as that dangerous maxim, "separate but equal."

Next Steps: How to Address Digital Inequality

"We must link the legacy and power of the social justice field to the promise of cutting-edge technology innovations." — Angela Glover Blackwell, founder and president of PolicyLink

Educate Disadvantaged Communities in E-Literacy

Educating disadvantaged communities in e-literacy is a difficult task 1) because of disagreement as to what skills e-literacy constitutes and 2) due to the lack of connectivity these communities have with technology and institutions.

E-literacy includes the ability not just to consume internet content but to create it as well. As the internet becomes increasingly defined by user-generated content, the last component is crucial. The savviest users of ICT are not passive consumers, but display a high level of participation or engagement. Teaching disadvantaged users to generate content online has the additional benefit of making the internet a more welcoming place for their peers, since, as Professor Hargittai explains, "like attracts like—people tend to have those like them in their networks." Eric Sheptock provides an example of minority user-generated content, showing how ICT allows disadvantaged groups to effectively advocate for their communities. Though homeless himself, Sheptock goes to a public library to send email and keep a blog advocating for issues affecting the homeless (Fessler).

The second step, disseminating information and training to disadvantaged populations, needs creative thinking about how to target the touch-points these communities have with agencies and institutions that can insert ICT into their normal mode of business. The following are institutions that have the potential to help solve the digital inequality problem, but the list is by no means exhaustive.

Government Service Providers

Government entities administer important programs to disadvantaged groups—for example, Medicare from the Department of Health and Social Services—that are often the only institutional point-of-contact for highly disconnected communities. These governmental actors can integrate special incentives to encourage people to engage with them over the internet. Getting individuals familiar with the internet and comfortable making basic transactions over the medium is a crucial starting point to e-literacy (Chandler). This holistic approach combines service provision via social safety net programs with the same population's need for ICT skills and training. It is important to emphasize that these programs should only provide *incentives* to transacting over the internet and refrain from penalizing those who do not.

Regulatory Agencies

The Federal Communications Commission (FCC) is charged with regulating interstate and international communications by radio, television, wire, satellite and cable. The FCC is now led by a new chairman with a strong mandate from the Obama administration to make technology available to as many people as possible (Lowry). The FCC is on the right track by focusing on complete broadband penetration, but as the federal

agency responsible for a wide range of American media, it is critical the FCC become a stronger voice in shifting the dialogue from digital divide to digital inequality. Otherwise, the Obama administration's goals for diversity in communications technology, such as increasing the number of diverse owners of TV and radio, will be difficult to meaningfully implement. Diverse voices in media is the product of increasing e-literacy. E-literacy comes from providing disadvantaged communities with improved technology access (infrastructure) and use (skills building).

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Financial Institutions

The poor represent an untapped market for financial institutions. This population's unbanked status is also a symptom of their great disconnectivity. However, these communities have a long history of low consumer trust in these institutions (Stringer), especially as the fallout of predatory loan practices continues to be felt in low-income communities across the country. Banks, therefore, would have to make a concerted effort to reach out to these communities and make good-faith efforts to invest in them by supporting their community-based organizations and offering appropriate and attractive financial services to residents. In efforts to bank the unbanked, financial institutions can leverage this point of contact to help create a more financially and digitally literate community that will ultimately produce more stable and savvy consumers of financial products. Opportunities for financial institutions include micro-investment websites, accessible ATMs in public spaces (such as public transportation stations, county hospitals, or vocational schools), and providing ATMs that dispense small-denomination bills.

Educators

Other key players that have points of contact with disadvantaged communities include K-12 schools, community colleges, and vocational schools. With increased political support and funding from programs such as the federal E-Rate or the California Teleconnect Fund, schools are the natural partners to help create a generation of e-literate youth. Most public schools have at least basic computer and internet access available to their students. However, the curriculum, determined at the state and federal level, must reflect the necessity of skill-building. To that end, technology should be integrated into schools rather than putting it in the hands of a few by only offering tech-electives, or relying on frequently disconnected parents to step in.

Community Partners

Finally, policymakers and funders can lend their support to institutions that are woven into the fabric of life in these communities, such as churches, public hospitals and clinics, and community-based organizations (CBOs). Essentially, any institution that provides direct service to the community—whether through health care, job training and placement, or educational instruction—can integrate technology into their approach. This strategy would help build e-literacy as well as make their target populations more accessible and therefore easier to serve.

Create Content that Appeals to Disadvantaged Communities

Minority and low-income users were surveyed as to what would be "useful content" for them online. These groups expressed the desire to access locally-orientated information about 1) employment, education, business development and other information; 2) information that can be clearly understood by limited-literacy users; 3) information in multiple languages; and 4) opportunities to create content and interact with it so that it is culturally relevant. Wendy Lazarus, co-author of the study and founder of the Children's Partnership, explains those results in this way: "We found a strong desire among people for practical, local information about their neighborhoods that seems to fly in the face of the way the internet is moving…"(Taglang). In other words, underserved communities have a stronger propensity to find relevance in immediate, local issues. Municipalities, therefore, can play a crucial role to meet this demand by making their websites more inviting and user-friendly. The allocation of federal stimulus funds for this purpose

should be explored.

Target Mobile Devices

Mobile devices, much like the laptop before it, are quickly becoming crucial to connectivity today. The smartphone is playing an increasingly important role in job searches and the ability to be accessible for potential employers (Lohr). The mobile computing device, equipped with more significant computer power, is projected to become the "primary internet communication platform for a majority of people across the world" (PIALP).

In California, three out of four adults and solid majorities in all demographic categories have cell phones. Nearly six in ten Californians use their cell phones to send or receive text messages, and one in four Californians use cell phones for email or internet. However, whites and blacks are *more* likely than Asians and Latinos to have cell phones (PPIC).

Today, the cell phone, like email access in the 1990s, has become the crucial tool that it is now socially unacceptable to forgo. This understanding is demonstrated by programs such as Lifeline, which has been updated from subsidizing universal landline services for low-income individuals to subsidizing a cell phone with talk minutes. Smartphones, for their part, have become the modern-day symbol of connectedness, guaranteeing that users can be reached almost in real-time. Sales of smartphones are rising rapidly, whereas, in contrast, total cellphone sales are expected to fall (Lohr).

However, for all their potential, smartphones are financially unattainable for many Americans, especially during a recession. Even with routine discounts from wireless carriers, smartphones usually cost $100 to $300, while the data and calling service plans are typically $80 to $100 a month. Furthermore, it can be impractical to carry out large-scale projects on a device with limited capacity.

Compared with a computer and internet connection, however, a phone and service plan may present the cheaper, more practical alternative. Half of all blacks and English-speaking Latinos used their phone or another mobile device to email and access the internet. In contrast, only 28% of whites ever used a mobile device for internet access. In addition, blacks are the demographic group growing fastest in adopting mobile internet, having doubled their numbers since 2007 (Wortham).

Revamp Outdated Legislation

Another opportunity for policymakers to address the problem of digital inequality is through creative legislative strategies. As society evolves with technology, so too must legislation. A wealth of statutes exist, at the state and federal level, that were written to address pre-internet technologies, and sorely need updating to reflect current realities. Some illustrative examples:

- *The Lifeline Program of 1984*: This program was created to subsidize landlines to low-income consumers so that vulnerable individuals have access to basic communication technology for emergency purposes. This legislation is ripe to be expanded to include basic cell phone service, showing that cell phones are more necessity than luxury in today's society, in which 90% of Americans have at least one cell phone (Richtel). Senator John Kerry has recently proposed expanding Lifeline to include broadband as well, so Lifeline's role in addressing digital inequality may not yet be finished (Lowry).

- *Children's Television Act of 1990*: Enacted to promote educational and informational programming for children and to set restrictions on advertizing that children may be exposed to during viewing. FCC Chairman Genchowski has recommended revisiting this legislation with an eye toward "the quantity and quality of educational programming currently available; the ability of parents to find educational programming and other useful information; [and] the capability of new digital technologies to better inform parental choices…" (FCC, 2009).

- *Telecommunications Act of 1996:* This Act, the first major overhaul of telecommunications law in over 60 years, was meant to lower barriers to the communications business and permit any communications business to compete in any market against any other (FCC, 2008), which would supposedly provide more choices for the consumer. However, the Act did not anticipate today's reality of cable companies offering voice services, phone companies offering video services, and a host of other hybrids offered by internet and wireless services. Today, rates for services classified as "telecommunications" are regulated, whereas those under "information" are not (Tanneeru). Consequently, this has created an unlevel playing field among companies that offer essentially the same types of services and products, but are under different levels of regulatory scrutiny.

- *Technology subsidies*: California has created the California Teleconnect Fund (CTF), under the auspices of the California Public Utilities Commission (CPUC), to address digital inequality. The CTF funds discounts on telephone service and other advanced telecommunication services that provide access to the internet to schools, libraries, public hospitals and clinics, and community-based organizations. The CBOs that qualify for the program include nonprofit organizations that provide health care, job training, job placement, and educational instruction. The CTF has correctly addressed key players in addressing digital inequality, who have points of contact with otherwise highly disconnected communities. However, the CTF's funding pales in comparison to the enormity of the problem, especially in the midst of an expenditure-slashing budget crisis.

Conclusion

Today, technology is replicating and reinforcing the social inequality in our daily lives as communities of color and low-income individuals are left behind in the digital revolution. Identifying and recognizing this inequality in its digital form is critical to combating its perpetuation. As advocates for digital inclusion know, technology is more a necessity than a luxury good. What's more, it can be leveraged to serve disadvantaged populations rather than cementing the divisions in our society. Greenlining proposes a framework to combat digital inequality by promulgating e-literacy campaigns, incorporating technology into the safety net programs, promoting content that appeals to local populations, making mobile devices more affordable, and updating antiquated legislation. The gravity of this challenge is great, but it is a challenge that must be met to create a healthier, wealthier and more equitable democratic society.

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THE GREENLINING INSTITUTE

Greenlining is a multi-ethnic advocacy, research, leadership development, and public policy organization whose ultimate goal is to increase the role that low-income and minority Californians play in the civic arena in order to create equitable policies and improve quality of life for all communities.

Our mission is to empower communities of color and other disadvantaged groups through multi-ethnic economic and leadership development, civil rights and anti-redlining activities.

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