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Telecommunications Policy and the Future of Work

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The views and opinions expressed in this position paper are solely those of the author. These views and opinions do not necessarily represent those of the Open Society Foundations.

INTRODUCTION

The challenge of telecommunications policy for the future of work is fundamentally about parity between workers and employers in the information age. Mobile technology enables on-demand labor practices and ubiquitous monitoring, or can provide workers with ready access to media production tools and networks for collaboration and distribution. High-speed networks can connect industrial worksites or worker centers to data storage, software and artificial intelligence at distributed locations. Who can use these technologies and networks and to what ends is determined by threshold questions of telecommunications policy: whether deployment and management are left entirely to the private market, or if baseline levels of service and basic principles of openness and interconnection are preserved.

Media and communication have always been key aspects of labor organizing and advocacy, but the digital transformation of the economy has made them practically inseparable. If workers are not sharing a digital medium – a mobile network and a social media platform – their ability to take collective action is severely limited. Even a labor movement that is digitally networked will nevertheless be at a profound disadvantage against companies or industries that are tied into much greater Telecommunications policies currently under review at the federal level will determine the design, quality and accessibility of communications technology. Greater participation in these debates will give workers more control over the development of new technologies that are shaping the future of work.

Labor advocates can make the potential of new technology for our abilities to communicate – to gather information and to organize with other people – a central issue for telecommunications policy. The communications networks of the country are essential infrastructure for seeking redress as workers – for journalism and advocacy, of course, but also to organize, to exchange mutual aid, and to mobilize. Workers must engage in telecommunications policy debates to ensure that they can participate in the media and in the political process.

An expanded, more democratic level of connectivity and access to information and communications technology will require investments in infrastructure, education and research, but there is no guarantee that will translate into positive, sustained employment. Behind the rapid adoption of new technologies are people who mine the

raw materials, develop the software, assemble the devices, build the networks, market the products and process electronic waste. Many of these workers face poor conditions and unfair labor practices, undermining the democratic promise of the Internet.

Technological development over the past twenty years has brought great potential for workers to make and distribute media, whether collectively or individually. In this same time period, information technology has contributed to a crumbling of the traditional institutions of workers' lives, decentralizing the workplace, disrupting industries, undermining long-established worker protections and making it harder to operate in the hierarchical manner of the traditional union. So, even while the potential power of media for workers grows and the possibility of civic action increases, they have lost jobs and political power.

The combination of loss and opportunity might be merely chaotic, except that they have not been distributed evenly across society. Workers who are shut out of new technology's potential for greater communication and information are also frequently the same ones bearing the brunt of its disruptive economic force. Telecommunications policy is a key site to mitigate the harms and maximize the benefits of communications technology for all.

This paper examines the intersection of telecommunications policy and the future of work. It comes at a time when the Internet has crossed over from a novel service to a basic utility, putting pressure on regulators to update basic policy frameworks. These are urgent, fundamental questions about how we will communicate and share media for decades to come, but they often come in a jargon that combines the most esoteric language of law with the most opaque elements of technology. The challenge of this paper, then, is to offer enough detail to be precise while using broad themes that transcend the weekly maneuvers among the regulators, lawmakers, lobbyists, public interest advocates and other stakeholders who regularly fill the halls and meeting rooms of the Federal Communications Commission, the National Telecommunications Information Administration in the Department of Commerce, the Commerce Committees in the House and Senate, the public utility commissions in every state capital, and any of the other myriad forums for telecommunications policymaking in the United States. The goal is for a reader to be able to go from this paper to a specific telecommunications policy issue in the news and take a position or at least ask informed questions. As such, this is more of an expanded strategy memo for worker advocates than a research paper.

This paper begins with well-established concerns for workers about specific technologies, communications issues or workplace conditions, then finds the

connections to matters of telecommunications policy. Those concerns were drawn from interviews with a number of experienced policy experts, labor organizers and technologists, as well as from the bounty of journalism and research on the topic of technology and the future of work. The result is not a comprehensive review of the relevant trends in work-related technology nor a catalog of every telecommunications policy issue that affects workers, but a demonstration that the two topics overlap considerably. Anyone focused on one topic should be concerned with both.

The first three sections of this paper address the main areas of concern distilled from the interviews and related research: networked workers, networked workplaces, and the workers who build the networks. "Networked Workplaces" considers the high-capacity connections that will power industry in the future, and the importance of giving the public access to comparable networks through anchor institutions. "Networked Workers" focuses on consumers' access to mobile technology as the key for workers to communicate with each other. "The Workers Who Build The Networks" reviews the challenges facing workers in the tech and telecom sector. The next section of this paper reviews the relevant trends in telecommunications policy, highlighting a recent shift towards more democratic access to information and communications technology. The "Worker Values to Guide Telecommunications Policymaking" converts the points from the previous sections into a set of questions to consider when evaluating specific policy proposals. The closing summary section is more prescriptive, offering a synthesized set of goals for workers to achieve through telecommunications policy.

NETWORKED WORKPLACES

Workplace technologies are increasingly networked. Instead of a single piece of software or team of robots in one location, companies rely on a global supply chain or cloud-based applications. As a result of this trend, two arenas of technology that once were relatively distinct – the workplace and telecommunications – are now intertwined. That crosses a magic line in terms of regulation, where telecommunications policy directly impacts the workplace, opening a new front for worker advocacy. Telecommunications policy debates, especially open Internet regulations, will influence how we invest in communications infrastructure and who benefits.

A 2014 report by McKinsey, the consulting firm, says, "Today, the movement of goods, services, finance, and people has reached previously unimagined levels. Global flows are creating new degrees of connectedness among economies — and playing an ever-larger role in determining the fate of nations, companies, and individuals; to be unconnected is to fall behind."[1]

The McKinsey vision of seamless global circulation requires ubiquitous broadband to connect worksites to data, computing power and logistics. In practice, however, telecommunication networks are uneven and fraught. Different companies own different sections of the Internet. The points of interconnection are generally invisible to consumers and unattended by regulators, but are the source of significant degradation in quality for end users.[2] As we integrate the Internet into various industries, impeding the flow of information around the world will also impact the flow of goods, money and people.

The freight industry typifies the expanding notion of the networked workplace. Longshoring has steadily adopted technologies on the docks that automate systems and displace workers, but "now it's all driven by real-time data, all pushed to a back-end system developed to track from China all the way through," says Tony Perlstein, Campaigns Co-Director with The Center for Popular Democracy who worked on the docks for almost ten years. "Web portals replace marine checkers… These changes displace not just loading jobs, but also tracking jobs… People at the gate used to check in, now they have removed it from the docks and non-union truckers have to spend time in a web portal to make appointments."

One solution is to build single-purpose infrastructure or let Internet service providers and other network operators segment their networks and charge for exclusive use. Either way, each company or industry would essentially pay for its own network. Big Finance has led the way with this strategy, at first near major exchanges, then between them, to get faster access to the digital trading floor. One company dug a hole from Chicago to New York just so they would have the straightest route, allowing them to charge high-speed traders a significant premium over other routes that require three additional milliseconds for data to traverse.[3] When we build a network exclusively to serve the financial industry or the freight industry, or any other industry, we remove investment from the infrastructure everyone else uses. Residential consumers and civic institutions would be subject to large service providers that could achieve the scale required to invest in infrastructure at this scale.

The inequity of single-purpose or exclusive-access networks would contribute to a massive asymmetry between worker and corporation, and between incumbent and startup, in terms of access to information. The ability to collect, access, and act on massive amounts of data in real time opens potentially any economically productive process up to the kind of disruption that scientific management and automation brought to the factory floor in the 20th century. In the 21st century, concentrated power in the collection, transmission or analysis of data will offer the kind of leverage the 19th century robber barons derived from their control of the railroads.[4]

The regulatory framework for broadband can encourage exclusive networks that permit this kind of arbitrage based on information asymmetry. Or it can encourage coordinated investment in multi-purpose infrastructure that individuals and businesses use together, like a utility. The latter path mitigates inequity and promotes innovation because consumers and entrepreneurs do not have to invest in their own networks to communicate at top speeds. Some Internet service providers have also said regulating the Internet as a public utility will slow investment because it limits the ways they can extract rents from the broadband networks, though past research from public interest advocates rebuts this claim.[5] Recent comments from at least one Verizon executive suggest they will invest in their networks, at least in the short term, regardless of whether or not broadband is treated as a utility.[6]

Groups that would all consider themselves advocates for workers' rights have divided over this issue. The Communication Workers of America and the National Association for the Advancement of Colored People have tended to side with the incumbent Internet service providers, arguing that imposing neutrality on how network operators treat content will stifle investment, be bad for workers and slow buildout.[7] Those groups are opposed by

consumer advocates and younger civil rights organizations that are calling for the Federal Communications Commission to mandate an open Internet.[8] Russ Davis, Executive Director at Massachusetts Jobs With Justice (MA JWJ), says, "It's a constant tension where you have unions, particularly in the past when companies were seen in partnership with the companies. There has been some of that in the telecom industry." A telecommunications policy framework for workers will have to address this tension.

Media Mobilizing Project (MMP), which organizes poor and working people in Philadelphia, works at the local level to ensure Internet service providers invest in shared infrastructure. MMP's "CAP Comcast" campaign is focused on holding the cable/broadband/media giant accountable as it negotiates a 15-year franchise renewal with the City of Philadelphia. "We're using the franchise process, broadening participation in the franchise agreement to get Comcast to pay its fair share, to hold Comcast and other ISPs accountable to meeting community needs," Bryan Mercer, MMP's co-Executive Director, says. The campaign platform calls on Comcast to upgrade its networks, make broadband service affordable for all residents, fund community media training and contribute to public education as a way to offset the extensive tax breaks the company received for building its headquarters in the city.[9]

The proposed package of reforms would help more Philadelphia residents connect to each other at higher speeds with the skills to make use of those networks, which would permit workers to organize more readily regardless of whether they are security guards at a university or drivers spread out across the city. These tangible demands have engaged low-income workers on related federal policy issues, such as the proposed Comcast-Time Warner merger, the FCC's threshold speed for broadband service, and the pre-emption of state level bans on municipal broadband networks. "It's a question of policy," Mercer says. "Investment can happen in a lot of forms – it doesn't just need to be federal investment – but the public has to be stakeholder."

NETWORKED WORKERS

The ability for workers to communicate through mobile technology will determine their collective agency in the digital economy. Smartphones, social media and high speed wireless networks mean even contingent workers or those who are scattered across worksites can stay in regular contact with each other, even independent of an employer or union. Workers can increase their capacity to communicate and organize by advocating for policies that put more powerful devices with faster data speeds into the hands of more people, and that mitigate against gatekeepers or other centralized chokepoints in the networks.

“The goal is to make service affordable – smartphone, broadband,” says Marisa Jahn, Executive Director of Studio Rev. “In the absence of equitable access, what can you do?” Studio Rev has worked with domestic workers, street vendors and migrant workers to make innovative and strategic use of the communications tools they have, so Jahn sees how the current levels of access limit workers’ ability to organize. Sasha Costanza-Chock, part of Research Action Design and a collaborator with Jahn, sees a need for a national "affordable telecom" policy framework akin to how we see affordable housing. "What is the price of access to a basic basket of telecommunications services and what proportion of your income do you need to spend on it?"

The increased flexibility of network technologies does not necessarily lead to improvement in workers’ conditions. Policies that only expand access through lower costs risk exacerbating the ways mobile technology constrains workers’ freedom. It matters how people use that access and whether the technology is designed for those uses or open to modification. The question, according to Costanza-Chock, is "Who gets to decide how the technology develops and how we deploy it?"

“We are always promised that new communications technologies will increase productivity and reduce workload, but every time, that doesn't happen,” Costanza-Chock says, “We wind up with de-skilled labor working longer hours for less money. This is because we're organizing technology around a capitalist economic system. We need to organize technology around the needs of workers, not the needs of capital.”

Smartphones and wireless networks can be quite beneficial for employers. In the retail industry, "Just-in-Time" scheduling software use the ability to reach workers on short notice to hold them in a perpetual shape-up.[10] Uber needs its drivers to be responsive to calls and to surges in demand. The company's solicitation for drivers is a three-step process: "Get started. Get the app. Start driving."[11] Uber's app gives them the data they will ultimately be able to use to automate their workforce.[12] In these cases, mobile technology further exacerbate the information asymmetry between labor and industry.

For domestic workers, there may not always be malintent in the employer's management of their cell phone use, according to Marisa Jahn, who has collaborated with The National Domestic Worker Alliance to develop media projects and tech tools.[13] A parent may want a caregiver to have a phone to take and send photos or to use in case of an emergency, but then the worker may be dependent on their employer for their phone number and other communication essentials. Federal subsidy programs could alleviate that dynamic if the baseline levels of service are sufficiently robust and include broadband connections. (See discussion of Lifeline, below.) Consumer protections against caps on mobile service that restrict or charge heavy fees for data use are also essential to ensure low-income users can get the most out of the technology they have.

Even as workers become increasingly networked to each other, employers may seek ways to insert themselves as gatekeepers. According to Rich Feldman, a retired autoworker and United Automobile Workers international staff representative, many local unions across the country, from steel plants to auto parts plants are battling companies over whether workers can carry their cell phones with them on the shop floor. "Do you have a cell phone area in the plant versus some plants, they're told they have to lock it, leave it in the car." Without a cell phone, a family member or anyone trying to reach a worker has to call the plant and wait while a message is passed down from the office to the shop floor. "It's about being connected to family, as well as a tool for organizing and accountability," Feldman says. "What does it mean for a generation that has been raised on immediate access to phone that you have to be away from it for 12 hours a day?"[14]

Unions can benefit from their members' increasing ability to speak to each other and obtain information independently, but they need to adapt. "It used to take the one college-educated or compulsive person in a plant to find information about a company. Now everyone has access," says Feldman. "Some unions are having difficulty moving from top down structures to horizontal relationships," he says. "Social media has turned [the traditional union structure] on its head." Where local unions are using digital tools in effective ways is "totally

based on individual leadership and their lack of fear of Facebook, about letting go of control, [whether they see it as] a welcome tool or threat to your power... Some local unions really embrace it. They have 550 out of 720 in a private Facebook page in Greencastle, Indiana, that is monitored by leadership but open to workers to say whatever they want."

Russ Davis of MA JWJ sees social media as the new "reality of organizing... Most of the working class are on social media. The younger ones are not on email even. [But] institutions are slow to get there. There is a lag in institutions, how they communicate... Technology threatens bureaucracy, threatens unions, threatens leadership." Davis nevertheless remains hopeful about worker advocates pushing for workers to be more directly connected to each other through the Internet and social media. "The good things we can figure out to do with it will triumph."

The Internet and digital media have provided an opportunity to "amplify organizing across struggles." says Bryan Mercer of Media Mobilizing Project. The group formed in response to the absence of workers from the media. "Even in the formation of new media platforms, workers were left out," Mercer says. "Our early work represented the use of new media tools to create a platform that could unearth and share stories of what is happening to [low-income workers]."

Sitting in Comcast's hometown, the group saw growing consolidation in media and Internet service as a major barrier to workers' ability to organize. MMP formed a community board that represented various worker and low-income communities, created a website, collected stories, and made movies. According to Mercer, the organization soon realized a need to address telecommunications issues in parallel with more traditional campaigns for the rights of nurses and taxi drivers, so that those workers have the tools, skills and means of distribution to amplify their organizing.

"The question of digital inclusion is a lasting one," Mercer says. "There is a continued need for public investment in digital literacy alongside traditional literacy. There is a role for government to play." Mercer cites the need to reform the Universal Service Fund, the federal program that subsidizes telecommunications access. "We need E-rate, federal investment to offset local school's budgets. That's a big concern for working families. And Lifeline/Linkup for cell phone access. When bills add up, it's one of the first things to go, but that impacts the ability to connect to community resources or new opportunities."

MMP's policy strategy combines local organizing to meet the needs of Philadelphia residents while supporting allies in Washington, DC, that pressure Congress or the Federal Communications Commission for more favorable policies. In

2009, Congress allocated $7 billion dollars in loans and grants to increase access to and adoption of broadband. In response, MMP organized a Digital Justice Coalition with their worker and anti-poverty allies to develop a proposal, ultimately partnering with the City to bring over $18 million in federal funds to Philadelphia for public computer centers and for training in digital literacy and digital media.[15]

While the framework of the federal program emphasized increasing consumer subscriptions to Internet service providers, many of the organizations in the Philadelphia coalition layered on top of that a focus on civic engagement and building cross-sector relationships. As a policy matter, this meant asserting that video cameras might be more relevant than standard peripherals like a printer or scanner.

The Internet is increasingly mobile and this trend will continue as we network more of the objects in our world. Mobile is conducive to micro-communication or streams, like text messages or social media.[16] Mobile devices are also personal, which means a service contract for every person, as opposed to a single household account for landline Internet or telephone service.[17] So, while mobile technology offers opportunities for constant communication, people require community anchor institutions for social support and sustained collaboration.[18]

It is important that these so-called "third places" outside of work and home have network connections that are comparable to places of work. The Philadelphia coalition used its federal funding to put public access computer centers in non-traditional community anchor institutions, like a community health organization or union office, where workers may feel more comfortable than in a library or municipal recreation center.[19] As worker centers become a more important strategy for organizing contingent and distributed workers, including those centers in federal policy as sites of technology access becomes essential.[20]

THE WORKERS WHO BUILD THE NETWORKS

Advances in computers and telecommunications are driving the displacement of workers in various industries.[21] At the same time, the tech sector (computer + telecommunications) led the way in domestic job cuts in 2014.[22] This may drive down prices, which tends to drive adoption of a new technology. However, if benefits to consumers in terms of price are based on exploitation of labor in mineral extraction, in production, and in e-waste processing, or through offshoring and the dismantling of unions, then there are negative externalities consumers need to consider.

Consolidation in the industry further limits employment opportunities, especially for women and people of color. The Leadership Conference on Civil Rights (LCCR) Education Fund emphasized this point in a comprehensive platform prepared in July 2006. The primary policy recommendation was, "Support diversity in media ownership."

> Corporate media consolidation drives a focus on the bottom line rather than investment in quality journalism and entertainment. Cost-cutting reduces both the number and quality of jobs, with particularly negative impact on minorities. Weakening of ownership limits has led to massive consolidation in the radio, TV, and cable industries, with devastating impact on overall employment and minority and female employment in particular.[23]

The LCCR platform also calls for worker training, limitations on offshoring, collective bargaining rights and consumer protections.

For the Communication Workers of America (CWA), which organizes workers in the telecom industry, and allies like Jobs With Justice, the challenge is ensuring lower prices and service enhancements come from technological innovation, not from the exploitation of workers. "The technology is always changing in the telecom industry," Debbie Goldman, CWA's Telecommunications Policy Director, said." As new technologies have come into the telecom arena, whether it's wireless, cable, Internet, digital/IP, now you have a framework in which an increasingly large sector of the industry does not have collective representation for the voice of the workers … Sprint, T-Mobile, Comcast … they compete on labor costs, not innovation."

Union membership in the telecom sector has dropped by a third in the past decade, from 22.4 percent in 2004 to 14.8 percent in 2014.[24]

Verizon, whose wireline division is unionized, arbitrages labor costs and infrastructure investments across its wireless division, which is not unionized. “Verizon introducing new technologies, like the cell phone, is not a bad thing in itself, but they have consciously tried to keep their non-landline wireless … union free, then let market forces erode the union for them,” says Russ Davis of MA JWJ, which is supporting Verizon workers who are seeking a new contract.[25] The company uses federal and state regulations to charge phone customers higher rates to pay for the buildout of fiber optic lines, which it then uses for its more lightly regulated cellular towers and broadband service.[26] "Verizon has a technological agenda, but also a social agenda,” says Davis. “And they let the social agenda take precedence over the best technology. [The company’s] deeper interest is in weakening the union."

Verizon was able to sell off its less-profitable markets in New England to Fairpoint Communications in 2007, which went bankrupt soon after. According to Davis, Fairpoint is now proposing to lower pay rates for some jobs to minimum wage. Worker conditions at Fairpoint reached a point that the members of the International Brotherhood of Electrical Workers and the Communication Workers of America went on strike in October 2014.[27] The Fairpoint situation shows how, in the telecom industry, "good jobs can become low wage jobs," says Davis. By the end of 2014, the company fell below the state-mandated baseline for quality of service.[28] These are the kind of regulations Verizon leaves behind when it divests its copper lines.

Carl Lipscombe, National Coordinator of the Future of Work Initiative, sees a need for a strong baseline of worker protections, whether through state and federal intervention or through organizing and direct action. Such protections, by limiting the potential for companies to compete by depressing worker conditions, forces those companies to compete on service quality and technological innovation, which benefits consumers. The Fairpoint example shows that quality of service guarantees established through telecom policy can also provide a measure of protection for both workers and consumers – if they are enforced.

Many workers in the digital ecosystem have only minimal protections. “Guest workers who are brought to the US to work in the tech sector are afraid of getting fired,” says Lipscombe. “They're brought to the US to work for Google, Facebook, issued an employment-based visa and they're being able to stay in the US is based on maintaining employment in the workplace. They're afraid to speak out.” Lipscombe’s goal is to help these workers find common

cause with contingent workers, “to unite workers across all levels of skill.”

Some suggest that the use of guest workers contributes to the exclusion of people of color from the tech industry. "There's no talent shortage. There's an opportunity shortage," Civil Rights leader Jesse Jackson said in calling on the U.S. Equal Employment Opportunity Commission to act. “This is the next step in the civil rights movement.”[29] Women are underrepresented in the tech industry at all levels, and many face widespread sexism.[30] The ownership and employment figures in the tech industry, along with anecdotal accounts, suggest that the growth of the digital economy has undermined progress in workplace conditions.[31]

The growth in adoption of digital technology means an increase in the production of new electronics. A recent BBC report on conditions in electronics factories found forced overtime and required meetings for which workers were not paid. The investigation also found that the sources of raw materials were difficult to track, possibly contributing to illegal or informal mining.[32]

At the other end of this process is electronic waste. The United Nations estimates massive growth in the volume of e-waste, especially for rapidly developing countries; India may see five times as many personal computers in its waste stream and 18 times as many mobile phones, for example.[33] For regions without proper recycling facilities, e-waste is a source of hazardous toxins.[34] In the United States, e-waste recycling is generally well-regulated with good working conditions.[35] Moves to limit e-waste exports, whether for ethical and environmental reasons[36] or for national security,[37] could contribute to the growth of this sector as we continue to cycle through mobile phones and other communications technologies.

Community organizers in places like Detroit and Brooklyn are taking the construction of broadband networks into their own hands using low-cost wireless technology.[38] By training local residents to be “digital stewards” of the networks, they create employment opportunities and provide public Internet access while strengthening social networks within the community.[39] “If this works,” Tony Schloss from the Red Hook Initiative, which organizes the Red Hook Wi-Fi project, told The New York Times, “and the people who build it and are maintaining it are young people from public housing, that totally changes the way people think about each other and what technology can be.”[40] At their most ambitious, these projects suggest a different way of thinking about work in the digital future: that we might manage our digital ecosystem with care and intention rather than constantly disrupt and respond to disruption. At minimum, these projects show the importance of localism and workforce development to maximize the economic benefits of new networks and

produce technology that is attuned to a community's needs.

Overall, workers throughout the technology and telecommunications sectors face critical challenges. Unions and other activists are working to address these challenges, but in the meantime participants in the digital workforce continue to bear the impacts. Without correction, the growth of these sectors may extend harmful conditions for workers on the digital line, even while, at the same time, moving us towards the worthwhile goal of universal, equitable adoption of broadband. Workers can ensure telecommunications policy debates consider that tension.

CURRENT TRENDS IN TELECOMMUNICATIONS POLICY

Broadband access has become practically essential to participate in the workforce. Variation in service levels influences where businesses locate, who can take advantage of flexible work opportunities, people's purchasing decisions and the scale of their social networks. Telecommunications policy decisions have a direct effect on people's work lives.

We face a future where the capacity to transmit and process massive amounts of data equates with industrial and political might. At present, we have immense disparities in who has that capacity. These disparities are based on wealth, income, race, age, language, geography and level of formal education, and extend to all aspects of the digital ecosystem: access to media production tools, digital skills and networks. Telecommunications policy governs these conditions by shaping who uses the Internet,[41] how much data we can send,[42] even in the relative computing power of the devices in our pockets.[43]

Telecommunications policy over the past decade has entrenched great disparities in the kinds of networks people and businesses in the United States can access. The National Broadband Plan, released by the Federal Communications Commission (FCC) in March 2010, while setting universal broadband as a goal, acknowledged an enduring gap among users in terms of the speed of service.[44] The Plan called for a "universalization target of 4 Mbps [megabits per second] download and 1 Mbps upload" by 2020, as well as a goal that "100 million U.S. homes should have affordable access to actual download speeds of at least 100 Mbps and actual upload speeds of at least 50 Mbps." As the Open Technology Institute observed at the time, this combination of policy objectives would mean one portion of the country would have Internet service that was 25 times faster than the rest, with that disparity exacerbating historic gaps based on wealth, income, race and geography.[45] Some people would have high-speed fiber optics while others would have a cell phone data plan. Some would be videoconferencing while others were slowly uploading pictures.

The Plan did not specifically lay out who would be in the fast group and who would be in the slow group, but the current data offer a clear answer. Those who rely on their cell phone for Internet access tend to be people of color, to be young, and to have lower levels of formal education and lower incomes.[46]

The difference among connections is not only in the type of device and the speed of connection. The FCC had excluded wireless broadband users from some of the protections it attempted to provide wireline subscribers. Namely, wireless providers were permitted to favor some types of services over others, as opposed to wired connections where the user would choose the source and type of content to send or consume following the principle of network neutrality. As the Center for Media Justice put it, "Right now, users of mobile broadband get none of the protections provided to users of fixed broadband. Today, communities of color, America's poor, and young people are the most likely to access the Internet through their wireless device. As a result, the poorest and most vulnerable wireless users often get stuck with high bills and data plans that only give us half the Internet we need."[47]

The distinctions in speed, openness and availability notwithstanding, the cost of connectivity in the US remains persistently high by international standards.[48] Without a shift in policy, the upper speed tiers and other rapid advances in information and communications technology will be immediately available in the United States only to the wealthy, with others at baseline levels of service that rise slowly. This growing gradation may not be as stark as the on/off digital divide of the past, but the harm is even greater because the importance of digital access has gone up.

The FCC appears to be taking steps away from these policies that entrenched a digital divide. The Commission's move to set 25 Mbps as the baseline definition of broadband service shows that the earlier administration goal of 4 Mbps is defunct.[49] Not only has the Chair of the FCC pressed forward with "enforceable, bright-line rules [that] will ban paid prioritization, and the blocking and throttling of lawful content and services," he has also proposed to apply those same rules to mobile networks.[50] Contingent and low-income workers will benefit greatly from an Internet where mobile connections have the same rights as fixed connections, with a universal baseline level of service that is sufficient to exchange the full breadth of digital communication.

There is also a geographic aspect to the digital divide. Broadband is not available in many rural areas. Some mid-size or lower-wealth cities get passed over by broadband providers. Even within major urban areas, different neighborhoods can have profoundly different broadband markets: more choices in some areas than others, variations in network capacity, upgrades at different times and uneven maintenance.[51]

Despite the local manifestations of the problems of broadband access, local authority over broadband is limited. In January 2015, the White House confronted the problem with a report on "Community-Based Broadband Solutions."[52] The report highlights cities or local utilities that built networks rather than waiting and hoping for a private company to do it.[53] The FCC has signaled support for this approach as it considers pre-empting state bans on local authority to build broadband networks in Tennessee and North Carolina.[54]

Local governments need an array of mechanisms to address gaps in affordable, high-speed access. As Olivier Sylvain Associate Professor, Fordham University School of Law, writes, "Local governments have been pivotal to the development of broadband service, not as regulators, but as infrastructure owners, service providers, and incubators."[55] He calls it "the new broadband localism." In addition to building networks themselves, municipalities can remove technical and procedural boundaries for broadband deployment,[56] form public-private partnerships,[57] use zoning[58] and local economic development strategies[59] to encourage investment, and otherwise foster community-scale infrastructure.[60]

Municipal governments are pretty much on their own if they want to build new networks. Notwithstanding $3.48 billion in investments as part of the 2009 federal stimulus program,[61] federal subsidies are only available for broadband access in schools and libraries through the E-Rate program[62] and in rural areas through the Connect America Fund.[63] The FCC has recently undertaken an effort to modernize E-Rate to support wireless networking and promote more efficient, long-term investments in advanced broadband infrastructure for schools and libraries, but it remains a challenge to use these funds to cross-subsidize connectivity for residents and other anchor institutions.[64]

E-Rate is part of the FCC's Universal Service Fund, which also includes Lifeline, a subsidy of $9.25 for residential telephone service.[65] In 2008, states began including wireless service providers like TracFone in the program, so households could get free cell phones with a limited number of voice minutes and text messages, with each state determining how many minutes and other specifics of the program.[66] In 2012, the FCC undertook a set of pilot programs to apply Lifeline to broadband access for low-income citizens, but it has not built on this effort.[67] Lifeline modernization will be a critical policy debate in the coming years, both in how the FCC understands connectivity in the digital age and to set the standards for hardware and service in each state. These policy decisions will determine the minimum level of broadband service that is universally available in the United States – the baseline for participation in civic, economic and social activity.

A baseline level of universal service ensures everyone is connected, but consumers need the greatest possible range of options to ensure they can use technology to address their specific needs and goals. For workers, this is essential because they will otherwise always be dependent on major corporations to design and sell the tools they will need to use for organizing and entrepreneurship. The policies outlined above are helpful in this regard because they stimulate overall demand, keep networks open, lower barriers to entry for new companies and lower customers' switching costs, all of which tend to bring consumers a wider range of choices. Ultimately, though, people need to be able to modify and personalize whatever they buy, whether that is the ability to unlock a mobile phone from a service provider[68] or remix content,[69] issues that are governed by the United States Copyright Office, as directed by Congress. Government can also procure open source software and invest in user experience design, building flexible, responsive technology.

As the above discussion suggests, the general trend in telecommunications policy is currently favorable to wide adoption and robust use of broadband and mobile technology. However, the degradation of privacy and security has become a major impediment to adoption and innovation. As Seeta Peña Gangadharan has shown, "Digital inclusion policies designed to introduce poor people, communities of color, indigenous, and migrants … to the economic, social, and political benefits of broadband lie in tension with new practices and techniques of online surveillance."[70] Because many people in these groups are novice users and face surveillance and discrimination in other aspects of their lives, they face particularly acute harm from online surveillance. While Gangadharan focuses on commercial data collection, government spying is similarly pernicious. Nearly two-thirds of Internet users in the United States are more concerned about their online privacy since the high-profile revelations by Edward Snowden of widespread government spying; many of these users have changed their online habits as a result.[71] New calls by government leaders to install surveillance-friendly backdoors in communications technology have further worried security researchers and open Internet advocates. "It is very, very difficult to design a communications system that allows messages to be intercepted by the government but otherwise keeps them secure from prying eyes. The chance of error is high. Then, sensitive information risks falling into the wrong hands," writes Jonathan Zittrain, a Harvard Law Professor.[72] Even when not spying, government failure to protect citizens' data is also harmful: Workers seeking redress for unfair labor practices might be less likely to seek assistance online after they learn that the federal AIDS.gov website leaked users' data for years.[73]

With the notable exception of the federal government's approach to online privacy

and cybersecurity, recent trends in telecommunications policy point to increasing connectivity for workers. Future FCC decisions on the Lifeline subsidy program along with forward-thinking moves on the part of cities are particularly important sites of contention in the near future.

WORKER VALUES TO GUIDE TELECOMMUNICATIONS POLICYMAKING

Worker advocates that enter into telecommunications policy debates will be confronted with a wave of picayune details. While finding trusted counsel is a wise approach, not all worker advocates and unions agree on policy questions concerning new technologies.

For Tony Perlstein, the values to guide considerations of new technologies and telecommunications policy issues are “the public good, the common good... Measure impact on people's lives... workers' ability to feed their families, with companies that profit having accountability.” And for Rich Feldman, “The values to guide policy are values in a plant that protect people's voice: Can I or can I not say something on Facebook? Can I communicate with my family while at work?”

Sasha Costanza-Chock tries to imagine the future world implied by the policy: “We need to make sure our telecom systems support the development of the innovative, creative worker who can hack the systems that they interact with. [So I ask,] is this supporting the development of technology that is closed and proprietary and centralized or supportive of end-user innovation? Which is the future of the economy?"

Based on the analysis in the foregoing sections, the questions below are a shorthand way to evaluate what position to take on any given telecommunications issue. The answers might not be “yes” to all of the questions; they can be balanced based on one’s values and priorities.

Does the policy create opportunities for workers to communicate with each other?

- Does it make the tools and the skills for communication more widely available?
- Does it make it easier for people to switch or modify their tools or service?
- Does it connect people to each other directly or does it put the control of communication in a separate entity?
- Does it protect users’ or workers’ privacy?

Does the policy support open, multi-purpose networks?

- Will it increase connections to public spaces and civic institutions?
- Does it increase localism and community participation in telecommunications decision-making?

Do the workers in the respective industries involved have good working conditions?

- Will any new jobs created have the same or better conditions compared to current ones?
- Are there baseline service requirements?
- Does it increase transparency and data reporting to increase accountability?

SUMMARY AND RECOMMENDATIONS

Workers currently face a situation of massive information asymmetry with employers. This is the case for individuals, where employers are generally using mobile technology to create an on-demand workforce more effectively than workers and unions are using the technology for organizing. It is also the case for civic institutions, which are struggling to connect at the speeds available for private companies. Correcting these imbalances offers profound opportunities for organizing, entrepreneurship and job creation.

The goals for workers participating in telecommunications policy decisions should be to

- organize workers as a dense network, connected to each other rather than mediated through employers or service providers;
- establish broadband connections for civic institutions that are comparable to those for industry, ideally through shared infrastructure; and
- support autonomous capacity within the network, including for advocacy on matters of telecommunications policy, so networked workers can take collective, self-directed action.

Current trends in telecommunications policy offer hope for greater connections among workers and civic institutions and increased, meaningful participation in key decisions.

Advocates should establish greater connections among individuals through policies that

- lower the cost of mobile hardware and expand coverage of wireless networks;
- make technology adaptable by users; and
- strengthen online privacy.

Advocates should establish connections among civic institutions that are on par with other sectors, like advanced manufacturing, global logistics and the stock market through policies that

- promote open networks and interconnection among networks; and
- support broadband localism.

Democratizing access to networks and hardware will mean major growth in the tech and telecom sector where worker conditions are generally poor. Strong worker protections at the geographic or industry level would make it easier for

those workers to support policies that lower switching costs for consumers and promote buildout of infrastructure on a technology-neutral basis. Absent such protections or strong pressure from consumers, workers may choose to ally with particular companies based on their employment practices rather than technological innovation or other benefit to consumers.

Workers face a combination of pressures as employees or contingent workers and as consumers, organizers or entrepreneurs. Worker advocates can address these tensions and challenges through greater participation telecommunications policy in addition to traditional forums for labor disputes and workplace regulation. Telecommunications policy can also be a platform for futurecasting and technology planning, so workers can influence or manage the introduction of new technologies into various sectors. Greater participation in telecommunications policy will give workers more control over the development of new technologies that are shaping the future of work.

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