Monopoly Capital and Network Neutrality

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"It is supremely ironic that the Internet, the champion of increased consumer power and cut-throat competition, has become one of the greatest generators of monopoly in economic history."
Robert W. McChesney, Digital Disconnect (2013)

Introduction and Literature Review

Since the Internet's beginnings as a government research project, there has existed an ongoing conflict between the open system on which it was founded and attempts to create a closed system benefiting the capital accumulation process. Profit-seeking firms have emerged victorious. Through major lobbying efforts of the US Congress and Federal Communications Commission, the “cartel” of Internet Service Providers has succeeded in compromising network neutrality for wireless subscribers and securing the limited allocations of the broadcast spectrum. Incumbent carriers have, since 2002, won the rights to exclusive use of the infrastructure that delivers the Internet to homes and businesses. Competition and quality of access has languished--the monopolistic system of Internet access in the United States has taken on the behavior and appearance of the Bell System a half-century ago. The Bell System, or AT&T, operated as government-sanctioned monopoly—until its breakup in 1984 it also demanded that its technologies and platforms remain proprietary.

We should expect compromises in the neutrality of the networks we have come to depend on when the Internet and its governance are subjects of the logic of capital accumulation. Contrary to popular catechisms about the digital revolution’s potential to transform society, the Internet has not become an open system but is moving to a more closed system of profit maximization every day. As Robert McChesney commented, "What seemed to be an increasingly open public sphere, removed from the world of commodity exchange, seems to be morphing into a private sphere of increasingly closed, proprietary, even monopolistic markets" (2012: 97).

Enormous data centers comprise the physical landscape of global communication services and content delivery. A close look at macro-economic trends in this industry reveals that the Internet infrastructure is increasingly homogenized--masses of servers sit in rows of air-conditioned shipping containers--and outsourced to carriers using standard designs. Furthermore, consolidation of massive Internet service providers and datacenter firms has become the norm, as evidenced by numerous mergers and acquisitions within this market and oligopolistic competition between the largest firms. Industry data shows that the Internet infrastructure is being built well-beyond the capacity actually required, with devastating impacts on pollution rates. This paper suggests that Internet infrastructure in the United States is a speculative investment for firms with greater monopoly power, and speculative growth in this industry becomes another way of absorbing surplus capital in the global economy.

Network neutrality has both a social and economic component. In capitalist society, the concept is often promoted as a way to provide an equal footing for all players in the business of broadband delivery. As Tim Wu famously said of network neutrality and the "preservation of Darwinian competition":

> "The questions raised in discussions of open access and network neutrality are basic to both telecommunications and innovation policy. The promotion of network neutrality is no different than the challenge of promoting fair evolutionary competition in any privately owned environment, whether a telephone network, operating system, or even a retail store. Government regulation in such contexts invariably tries to help ensure that the short-term interests of the owner do not prevent the best products or applications becoming available to end-users. The same interest animates the promotion of network neutrality: preserving a Darwinian competition among every conceivable use of the Internet so that the only the best survive" (Wu, 2003: 142).

There is a distinction between groups now pressing for regulation of Internet providers as common carriers and those such as Richard Stallman who advocate for Internet access as a public resource, collectively and democratically administered by "Netizens." While many of these arguments have been debated intensely elsewhere, this paper presents current data and will help contextualize recent current events such as the Time-Warner/Comcast merger or FCC regulations that allow ISPs to create fast-lanes and bandwidth caps.

Underlying the monopolization of the Internet infrastructure is the political economy of communication. Robert McChesney, in *Digital Disconnect: How Capitalism is Turning the Internet Against Democracy*, suggests that the catechism of a free and democratic media system is only possible when that system is divorced from government intervention—that, "government involvement with media is dangerous and should be avoided at all costs. A free press is the key to a free society, and the free market is the foundation of a free press and a healthy democratic culture" (2013: 62-63). Yet government policy, hopefully arising from public debates on communication policy, has played an important part in shaping media systems. The most important of these debates for the future of media systems in the United States are the government's definitions of a common carrier—now the focus of network neutrality advocacy. If Internet service providers are common carriers, and their fundamental purpose is to move information from point-A to point-B, then the services they deliver can be regulated so that firms provide this service is a neutral manner. In this way, service providers do not meddle with the free-flow of information by prioritizing content into fast and slow lanes, or by preventing access all-together. What guides the political economy of communication foremost, according to McChesney, is the production of the public sphere—Habermas's notion of a public commons where people form belief systems and debate matters of public policy. The media system has assumed many roles of the public sphere, according to McChesney, but not without influence from both capitalist economic institutions and the government; at the same time, public debate on media policy has been too narrowly cast as a choice between overzealous government censorship or completely unregulated media markets (2013, 66).

An important question left unanswered by the present literature is the impact of monopoly capitalism on network neutrality. In countries where internet service is handled as a public utility, what differences are there in quality of access, as measured by average internet speeds and latency, and policies designed to uphold or the principles of network neutrality above? Are there qualitative

differences in the policies and practices on the issue of network neutrality between the United States and comparator countries with similar rates of growth and median income?

Internet Access and Uneven Development

The Internet is commonly misunderstood as a democratic and egalitarian network where information and experiences flow uninhibited. Technology offers the promise of deepening democracy and human cooperation, but these ideals are frequently surrendered to the whims and anti-democratic exploits of capitalist firms in charge of the Internet infrastructure. From the under-sea cables stretching thousands of miles, to countless data centers kept running twenty-four-seven, to the Internet connection arriving at the home of an ordinary user—capitalist firms, not neutral carriers, lay claim to the infrastructure of the Internet, hoping to commodify its every aspect and to profit from its growing usage.

Following a pattern of uneven development between the economic core and periphery, access to broadband is lacking or non-existent in many areas of the Global South while enormous government subsidies have supported its deployment in centers of capital accumulation. In 2014 entire regions, some densely populated, are deprived of any Internet access, let alone access that is free and democratic. The regulations of the US Federal Communications Commission have proven to be an insufficient measure against throttling of Internet connection and the privileged or prioritized delivery of content for more expensive tiers of service. Both class and race are at play in this disparity when privileged white communities enjoy uninhibited fiber-optic Internet connections in suburbia of the United States. Environmental justice is ill-served by the massive export of electronic waste from the United States—approximately 80 percent of it is received by Asia (Pellow, 2007: 191). One must ask who benefits from innovations in the development of Internet capacity if it permits the geographic movement of capital from the economic core into the Global South where a growing underclass experiences grave exploitation in remotely managed operations.

An alternative, egalitarian narrative of the Internet has been advanced by social movements aimed at protecting Internet freedom through state intervention, or network neutrality. These efforts have intervened, for example, in the United States' attempt to create a blacklist of websites using the Stop Online Piracy Act in 2011. Crypto-anarchistic movements deploy encryption to circumvent hegemonic currencies through cryptographic currencies such as BitCoin. Other efforts have been directed at expanding access for rural communities and regions that have no stable Internet presence through community-owned networks.

Monopoly Capitalism and High Technology Development

Financial crises and continuing stagnation in the global economy have provided evidence supporting the claim of political economists that capitalism's internal contradictions—namely the problem of surplus capital absorption—have driven new tendencies toward the growth of monopoly power of a shrinking number of firms and the creation of new consumer needs and economic outputs. The co-respective growth of surplus capital in the United States the burgeoning network infrastructure of the Internet must been seen in this context of monopoly capital, just as the growth of the economic surplus has accompanied the capitalist expansion of the sales effort and financialization.

In *Monopoly Capital*, Paul Baran and Paul Sweezy outline a theory of crisis formation that predicts how advanced economies in post-World War II contend with ever-increasing rates of surplus capital and declining rates of profit in traditional productive sectors, such as goods manufacturing. To avoid a crisis of under-consumption, firms in advanced economies consolidate smaller firms into larger conglomerates and mark up prices due to the collusion of oligopolies. These conditions suggest a constant state of stagnation in capitalist economies, which is confirmed by the historical economic growth of the United States, UK, and Japan. Annual percentage GDP growth, the central measure of economic health in mainstream economics, has declined precipitously over the decades since World War II; it now exhibits an anemic growth held up by speculative investment bubbles, especially in

financialization but also through military spending and the growth of automobiles, for example (Foster and McChesney, 2012). By measuring concentration ratios, or the share of large firms as a percentage of total revenues within a given industry, we can see the degree of monopolization increasing (Ibid).

Advanced economies that cannot escape ongoing stagnation have increasingly turned to moving surplus capital to financial assets when other productive outlets for investment have not provided nearly as much growth. (Foster, 2006) Stable corporations with liquidity have become targets for financiers and as a result many corporations took on debt to ward off the predation of outside investors. (Ibid.) By looking at the great increase in finance as a percentage of Gross National Product (and co-respective growth of speculation in real estate and securities) we observe that finance has shaped the corporate behavior of almost every major firm. For instance, Time Warner has purchased between $500 million and $2.5 billion in debt securities each year for the past decade (Time Warner Investor Relations, 2014). The greater role of monopoly finance capital in corporate behavior suggests that revenues of major Internet service providers are not used to expand or improve service, but rather to invest in financial instruments for pecuniary gain of shareholders.

The monopolization of communications and media firms suggest the presence of a power elite that holds tremendous influence over policy and regulations on Internet service provision. As discussed in later sections, the US Congress and Federal Communications Commission has consistently made decisions on media policy that are favorable to the interests of media barons and the consolidation of communications firms, such as the Cable Communications Policy Act of 1984 and the Telecommunications Act of 1996 which de-regulated certain aspects of the cable and telephone industry. Executives of these firms are routinely called upon to provide expert testimony in congressional hearings. The power elite is comprised of corporate CEOs and boards of directors, the boards of trustees of policy-planning networks, as well as members of the social upper-class (Domhoff 182). Non-profit associations, such as the US Telecom Association, combine expert knowledge of the legislative process to advocate for policies that benefit large firms, such as subsidies for deployment of

fiber-to-the-home and limiting industry regulations. The senior executives of major US telecom firms which sit on the boards of directors of non-profit policy organizations lend enormous influence on legislative and policy agendas. Their visible role in advancing the recent Time Warner/Comcast merger, such as in testimony provided to the US Securities and Exchange Commission, demonstrates the growing nexus between states and corporate power.

The Political Economy of Communication and Network Neutrality

Robert W. McChesney, writing on the political economy of communication in *Digital Disconnect* (2012), argues that oligopolistic behavior of firms is no different in the business of Internet service provision. Technological innovation is protected less by patents or intellectual property rights and more often by the high barriers to entry and capital requirements of markets in oligopolistic competition, where big firms can increase productivity and lower unit-labor costs. (McChesney, 2012). This behavior runs counter to earlier discourse on the democratic potential of the Internet, according to McChesney, when all too many proponents of the Internet's development suggested it would put every firm on a level playing field and competition is responsive to the merit and novelty of new technologies. Far from this capitalist utopia, the new millennium has witnessed a communication system that looks much like the 20th-century monopolies of the Bell System's telephone service. Important compromises regarding the neutrality of Internet intermediaries suggest an opposite trend—that of stifled innovation where small firms and dissident voices are left out of the Internet fast lane dominated by corporate media.

Popular discourse on the role of the Internet in society has overwhelmingly expatiated on its democratic potential, while skeptics have formed a minority. Robin Mansell has noted that the literature is divided into "celebrants" and "skeptics," the former group suggesting that "virtual spaces on the Internet are accorded near-mystical qualities" and the latter group suggesting that any democratic potential is being undermined by the monopoly power of corporations (McChesney 2013:

4). For instance, Erik Olin Wright, in *Envisioning Real Utopias*, has advocated for an institutional design that is reflective of the anti-hierarchical and egalitarian mode of interaction on Wikipedia—from crowd-sourcing policy documents to implementing national referenda (Wright, 2012: 146). Elsewhere, it is argued that the frontiers of science will be advanced through greater collaboration and online tools, suggesting "revolutions in how knowledge is constructed," according to physicist Michael Nielson (McChesney 2013: 6). Still others have cited the Internet's potential in advancing economic development and the alleviation of poverty. Countering these claims, there are skeptics who warn that the Internet can be just as destructive to human relations as it can be beneficent. For instance, the shocking ignorance of youth in matters of civics and history is for Mark Bauerlein, author of *The Dumbest Generation*, a symptom of "dwelling in a world of puerile banter and course images." (Ibid, 8) Other skeptics claim that the Internet may not usher in democratic political transformations, but rather that the Internet is easily coopted to support existing power structures—for example, censorship of the Internet in China. Psychological literature suggests that multi-tasking on the Internet has the effect of diminishing the linear thought process in individuals. Yet for both camps, celebrants and skeptics, McChesney (2013) argues that the literature has lacked a political economic context. The Internet's democratic potential cannot be understood without incorporating an analysis of capitalism.

Labor's declining share of the economic surplus and increasing burden to pay for price markups in mobile and broadband service suggest that Internet Service Providers are yet another method of extracting rent from urban centers. The extraction of wealth from the city through economic rents has been an ongoing activity to prop up stagnant economies, as Marxist geographer David Harvey has written about extensively. The gentrification of New York City and the re-shaping of Second Empire Paris are important 20th-century examples of this. In the 21st century, the manufactured needs of the personal computer revolution have imposed another economic rent in the form of Internet service. Just as the development of the automobile supplanted many public transportation systems in the 20th century, private communication networks depend on public right-of-ways and easements.

The democratic potential of the Internet is limited for individuals outside urban centers with broadband service and for people outside of the OEDC welfare states. The “digital divide” is a persistent reality, as evidenced by different rates of Internet penetration between the Global North and South. For instance, compare 2012 figures published by the International Telecommunications Union on rates of service provided between India and United States—12.5 percent and 81 percent, respectively (ITU, 2012). Between rural and urban areas in the United States, there is also inequality in rates of broadband access. A 2013 report by the US Department of Commerce, based on 2011 data, observed that 72 percent of urban households in the US have adopted broadband Internet, compared to 58 percent of rural households; of those households surveyed, 28 percent indicated that service was too expensive (US Department of Commerce, 2013). This disparity was especially evident in the rural southern-US and on the basis of median income--broadband penetration was present in 36 percent of rural US households with an annual income of $25,000 or less and 94 percent of households earning $100,000 or more (Ibid).

These figures cast doubt on the claim that service providers can mobilize capital to build up the network infrastructure. Tacit agreements between cable companies and wireless providers in the US, once archrivals competing on price and quality of service, have resulted in mutually profitable arrangements but meager investment into expanding broadband access (McChesney 2012: 112). Yet these arguments are repeated in the context of the upcoming Time-Warner/Comcast merger, without significant public debate in proposals offered to the U.S Securities and Exchange Commission. If approved, such a merger would create a de facto monopoly on cable wireline service in almost every major metropolitan area of the United States. The consequences of monopoly for consumers are a diminished chance of “catching up” with fifteen countries that provide faster access at a reduced cost per megabit and a greater cost—approximately $250 billion over the next decade, according to the New America Foundation (Ibid).

The principle of network neutrality assures that Internet providers follow a rule of non-discrimination. That is, providers are neutral carriers that move information from one locale to another. Network neutrality promotes the idea that a user should be able to access any content provider without interference in the form of blocking or prioritization of Internet traffic. In the latter case, some Internet service providers have proposed creating “fast lanes” that would provide the necessary bandwidth and access to certain websites for additional fees. This tiered system of service is highly lucrative to Internet service providers because the technology already exists to implement it. Yet it would represent a step backward from the present system of network neutrality. Similarly, there are documented examples of Internet service providers blocking peer-to-peer file sharing services.

The wired and wireless firms are not separately monopolistic, but McChesney asserts they operate like a cartel. In secret collusion, cable and wireless firms have arranged a quid pro quo--the cable providers give up their claims to the wireless spectrum in exchange for the wireless operators withdrawing from competition for wired service. McChesney cites service advertising agreements between Verizon and Comcast as recently as 2011. (McChesney, 2013: 113). Both firms continued to collaborate in 2012 when the FCC approved a $3.9 billion arrangement in which Verizon purchased the rights to parts of the wireless spectrum from several cable companies, which would double the firm's existing reach in the wireless market (Reardon, 2012).

Methods

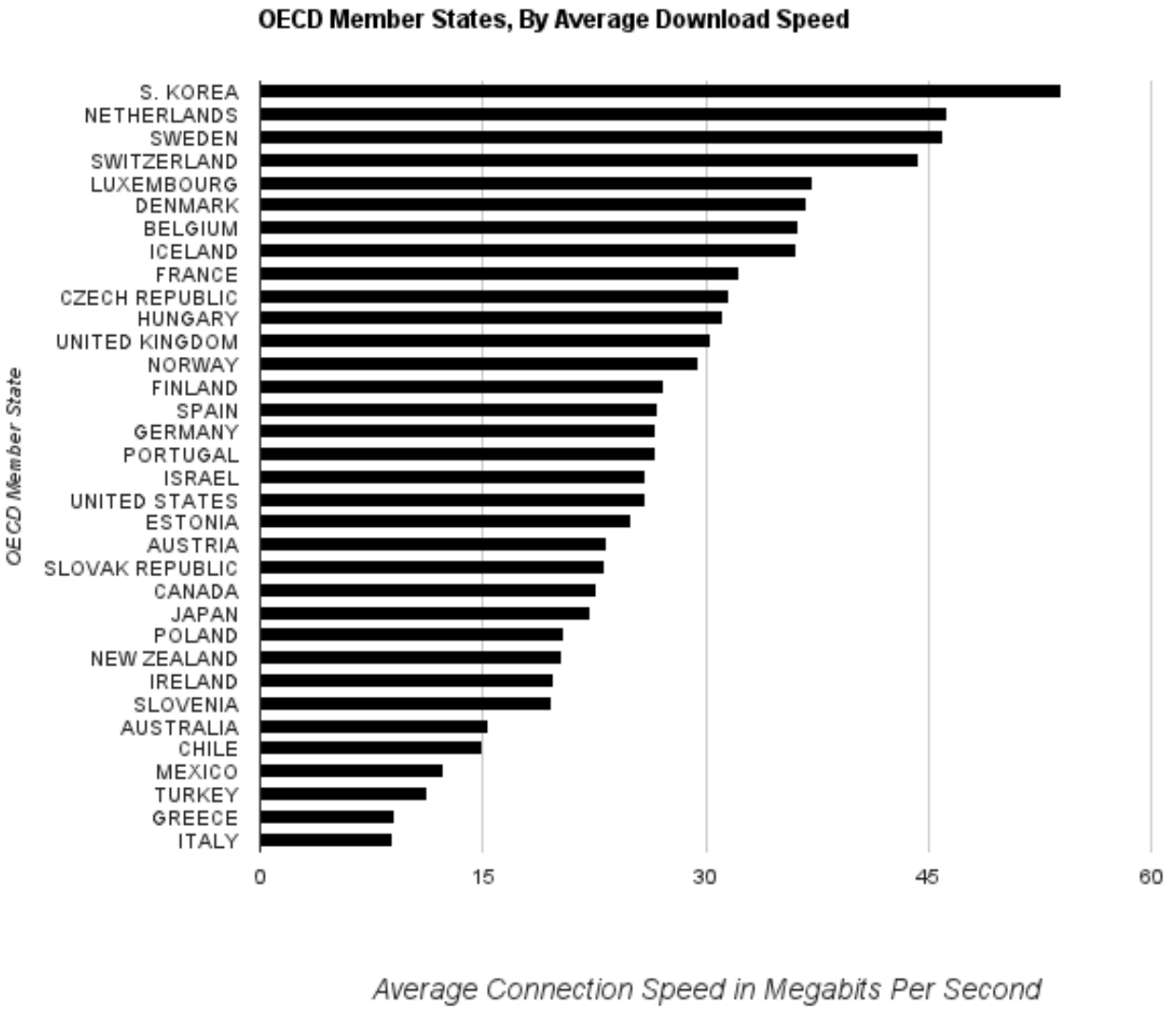
This paper has examined how U.S. corporations under the guiding logic of monopoly capitalism have failed to make investments that would improve quality of access and ensure that the internet is provided as a common service. Are other countries also subject to this same logic? How does the United States stand in comparison to countries of similar economic growth and median income?

To approach these questions, we propose to examine the United States in relation to other member states in the Organization for Economic Cooperation and Development. All of these countries have market-based economies and work together to advance favorable trade arrangements and international policies ("What is the OECD?", 2014). Using data that is current as of July 2014, each state's average download and upload speed is captured in the data below, as measured by NetIndex's large database of automated queries, and the average price per megabit is reported by on the data collection of the International Telecom Union. Following this, we provide international comparisons on network neutrality based on news reports and industry data.

Table 1. International Comparisons -- Broadband Speeds and Ranking

1. An index used as an industry standard for measuring quality of access--based on speed and latency. Source: Ookla Global Broadband, Household Quality Index By Country. Retrieved July 21, 2014. URL: http://www.netindex.com/quality/allcountries/

2-3. Average rate of download and upload in megabits per second. Source: Ookla Global Broadband, Download Speed By Country. Retrieved July 21, 2014. URL: http://www.netindex.com/download/allcountries/ 4. Average value in US Dollars per Megabit. Source: Ookla Global Broadband, Download Speed By Country. Retrieved July 21, 2014. URL: http://www.netindex.com/value/allcountries/



Finland

The case of Finland is unique in that it was the first country to declare broadband Internet access as a right for all citizens in 2010 (BBC News, 2010). At the time, less than four percent of the country's population was not yet connected to broadband (Ibid). By providing each resident with the right to access a one megabit Internet connection, Finland has taken a different approach to network neutrality, while not codifying the principles in law or regulation. Finland has backed up the commitment to universal service through an $85 million subsidy to ensure a minimum of 100 megabit

connections are offered by 2015, through wireless or wired service (Farivar, 2012). Many of the new deployments were taken up by local and small-scale Internet providers in Finland. It is noteworthy that Finland's national broadband plan far surpasses the minimums enacted in the European Union--30 megabits per person by the year 2020. The Ministry of Transport and Communications in Finland, responsible for regulation and promotion of Internet service, operates a program for expanding: "Open data, Development of cloud services, startups, green technology, new forms of working, and strengthening technology research."

South Korea

South Korea has one of the lowest broadband subscription price per megabit per second of advertised speed, with line charges: $0.22/mbit, according to the OECD Communications Outlook of 2013. Government investments in high technology were realized during a financial crisis in the 1990s (McCurry 2013). During this time, there was significant construction of fiber optic lines, particularly to the high-rise apartment complexes in Seoul where much of the urban population resides (Ibid). As a result, South Korea achieved an almost complete broadband penetration in the 2000s. In the late 1990s when demand for services provided by the Internet was increasing but Internet access from individual homes was not common, Internet cafes, or "PC bangs" that provide the general public with Internet access began to appear. The number of Internet cafes gradually increased as well as the number of online gamers. PC bangs were at the core of such a phenomenon (Chon, et. al. 2004).

The literature is sparse on the regulation of network neutrality in South Korea, but there is some evidence to suggest moderate discrimination relating to peer-to-peer usage and unstandardized traffic. The regulatory authority of the Korean Communications Commission is well positioned to enforce network neutrality because they must grant licenses to network operators.

France

An example of nationalized communications, the French Minitel project in the 1970s was designed to help connect homes that did not already have telephone service especially in rural areas (Chrisafis, 2012). The program provided a computer terminal with basic email and chat capabilities. In 1982 the Minitel was deployed for free to homes throughout France--it was the first standardized keyboard and screen combination available (Ibid).

Conclusion

Generous government subsidies and billions in annual revenues have failed to elevate the quality and value of Internet service provided by oligopolies in the United States. The results of the international comparisons show that countries with a mere fraction of the United States GDP--Finland and South Korea for instance--have made the commitments to not only creating the most advanced fiber-optic networks but also ensuring open access, by declaring access as a legal right. The quality of service indicators surveyed in this paper provide some indication of public investment because there is a sharp threshold where constructing more advanced networks is not profitable for capitalist institutions. It may be inferred that these economics constraints have contributed to the slow rate of fiber-optic deployments in the United States.

Network neutrality remains threatened and compromised in the United States as monopolistic firms are dealt favors by the Federal Communication Commission and ongoing failures to enforce anti-trust law. The Time-Warner/Comcast merger may prove to be the miner's canary of network neutrality in the United States, as the internet monopolies move to establish more lucrative relationships with content providers by providing fast and slow internet lanes, or discriminating internet traffic. These arrangements will only further the influence of corporations on the media and information that is made available in the United States.

It would be a mistake not to acknowledge the remarkable gains of the open source community over the past decades. For instance, the growth of open source operating systems in the enterprise/server market has overtaken the proprietary Windows Server, with new deployments up 12.7 percent per year, while the market share of Windows Server declined in 2013 (McPherson, 2013). Wikipedia's non-commercial success has engendered great promise for decentralized and participatory-democratic institutional designs (Wright, 2010). The open source community has grown in leaps and bounds, sometimes with the material support of corporations such as Oracle's development of the Java programming language. With or without corporations, the Internet's peer-to-peer architecture will always facilitate non-commercial collaborations in the realms of programming, content creation, and, political activism.

One of the most significant movements in the direction of open source is the proliferation of locales establishing cooperatives to provide Internet service. After all, if a town can provide community-owned electrical generation, why can't it also provide Internet service? In rural and underserved areas of the Unites States, ISPs have not deployed broadband infrastructure. In spite of President Barack Obama's National Broadband Plan, a mandate and subsidy to Big Internet, there remain communities without wired or wireless broadband, such as rural Appalachia where the first municipal broadband networks were started. More than 150 community networks exist in the United States (McChesney 2013: 119). The two most dominant models for providing community broadband are municipal ownership and employing a contractor or cooperative (Mitchell 2010: 3). The immediate impact of community broadband for individuals is more broadband achieved per dollar spent. For instance, in 2010 a 10 megabit symmetrical connection in Lafayette, Louisiana was achieved for $28.95 compared to the national average for Verizon's 15 megabit service, $55 (Ibid: 4). Yet corporate lobbyists have succeeded in putting up roadblocks in 19 U.S. states prohibiting or discouraging the creation of municipally-owned networks (McChesney 2013: 119). The telecommunications lobby, instrumental in killing the Community Broadband Act of 2007, which would have paved the way for

new projects (Ibid). McChesney has brought attention to the central role for universities in providing the expertise and existing network capacity to support community broadband projects (Ibid: 122).

The French Minitel Project

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