

Wisconsin Telecom Policy Needs Update

Regulation hampers ability of telecom providers to create and maintain jobs and opportunity in Wisconsin

By Hance Haney and George Gilder | November 2010

SUMMARY

In 1994 the Legislature revised Wisconsin's telecommunications law to permit and encourage competition as a catalyst for delivering new technologies, improved service quality and choice among telecommunications providers and ultimately lower prices for consumers.

Although the 1994 act opened the market to competitive entry, it contains significant vestiges of legacy regulation that are no longer necessary to protect consumers. They also are having the unintended effect of preventing full competition which is necessary to stimulate the deployment of new technologies. By advantaging some providers and disadvantaging others, legacy regulation acts as a restraint on competition. Ensuring that consumers reap the full benefits of competition will require the Legislature to revise Wisconsin's telecommunications law once again to remove these legacy restraints.

In Wisconsin there remain several harmful vestiges of legacy regulation.

- Pricing regulation, including hidden cross-subsidies, makes it unprofitable to serve many consumers. Pricing regulation cannot be maintained in a competitive market, where service providers can choose to serve profitable customers and ignore everyone else. Full pricing freedom should be allowed, and inflated intrastate access charges should be reduced.

- Filing requirements give rivals detailed information about a competitor's new or improved services or products. These requirements should be eliminated.
- Public Service Commission jurisdiction to act on consumer complaints can lead to inconsistent enforcement with anticompetitive consequences. PSC jurisdiction should be eliminated and consumer complaints should be handled solely within the Department of Justice's Office of Consumer Protection and/or the Department of Agriculture, Trade, and Consumer Protection.
- Service quality regulation applies only to legacy technology and results in unequal regulatory burden and skews incentives for investment. Service quality regulation – which is also largely ineffectual – should be eliminated.
- Obligations to serve, usually referred to as provider-of-last-resort, impose costs on some providers but not others and are anticompetitive wherever consumers can choose between multiple providers. These obligations should be eliminated wherever there is competition.

Wisconsin's neighbors are taking important steps to update the regulatory climate. Indiana, Illinois, Michigan and Ohio have all recently updated their telecom statutes.

Meanwhile, Wisconsin's telecommunications providers remain subject to unnecessary and anticompetitive regulation which depresses industry valuations and thus investment.

By simple reforms of outdated laws, Wisconsin can ignite a spiral of innovation and revival based on new technologies and services.

Gone is the traditional rationale for utility regulation – *i.e.*, that fixed landline telephone service is a natural monopoly. Less than 30 percent of Wisconsin lines are served by incumbent local exchange carriers subject to legacy utility regulation.

Continued rulemaking by state public utility commissions is not only unnecessary but, by distorting competition, harms consumers and limits deployment of new technologies. Even when pursued in the name of “competition,” legacy regulation restricts service strategy flexibility and creativity needed for real competition in the Internet age.

This is a moment of truth for Wisconsin. Broadband is not yet ubiquitous, particularly in disadvantaged communities and remote areas. Yet every Wisconsin resident should have access to broadband.

Broadband offers new opportunities to get a job or start a business. It is most valuable where other opportunities for wealth creation are least available, such as in disadvantaged communities and rural areas.

The state can open up new technological opportunities and economic efficiencies that promise a direct private market economic stimulus of at least \$2.2 billion over five years in the form of lower prices for voice services,

according to one estimate. According to a report by Connected Nation, Wisconsin would also experience an additional \$2.6 billion in economic impact annually from increased broadband availability and use – including an estimated 50,748 jobs created or saved per year throughout the state's economy.

Less than 30 percent of Wisconsin lines are served by incumbent local exchange carriers subject to legacy utility regulation.

Telephone companies, cable operators, wireless providers and others are all competing to be the market leader in broadband, and each firm is anxious to invest whatever it takes. But first investors must provide the funding. They will decide which, if any, firms can buy the necessary equipment and employ the highly-skilled people who can make it all work.

From a state perspective, regulation is the most critical factor affecting private investment in broadband. By removing the statewide cobwebs of regulations that afflict telecom, Wisconsin can eliminate the possibility that investment will flow to another state with a lower risk profile.

COMPETITION PROTECTS CONSUMERS

Today, incumbent telecommunications providers are facing wide-ranging competitive pressure from Voice over Internet Protocol (VoIP) providers, from cable operators, from wireless providers and from other certificated wireline providers.

Professor Alfred E. Kahn, a former chairman of the New York Public Service Commission and top official in the Carter administration, says:

The industry is obviously no longer a natural monopoly, and wherever there is effective competition—typically and most powerfully, between competing platforms—land-line telephony, cable and wireless—regulation of the historical variety is both unnecessary and likely to be anticompetitive—in particular, to discourage the heavy investment in both the development and competitive offerings of new platforms, and to increase the capacity of the Internet to handle the likely astronomical increase in demands on it for such uses as on-line medical diagnoses and gaming.¹

Cable phone service

VoIP services were offered by 10 or more providers in zip codes containing 86.2 percent of the nation's households in the first half of 2009, according to the FCC.² Only half of one percent of households are located in zip codes with zero providers.³

Comcast recently became the third largest phone services provider in the U.S.⁴ Comcast reports it has already captured 16 percent of the phone market where it competes.⁵ The company believes it can capture 20-25 percent of the residential market over time.⁶ An independent analysis has projected that cable operators can achieve a market share of 26 percent by 2012.⁷

Competitive local exchange carriers – a category dominated by cable operators providing competitive voice services, but also including other VoIP and wireline providers – are serving customers in 91 percent of Wisconsin's zip codes, according to the FCC.⁸ The FCC recently required providers to report service availability in individual Census Tracts as opposed to zip codes, and this data will be available soon.⁹

Meanwhile, competition has pushed down the rates for bundles of Internet, phone and TV service by up to 20 percent in 2008, to as low as \$80 per month, according

to *Consumer Reports*.¹⁰ More recently, the magazine reported that shopping for Internet, home phone, and TV service is increasingly a “buyer's market.”¹¹

Although VoIP at one time was not comparable to wireline service in terms of sound quality, this is no longer the case. “It's easy to take for granted the fact that Internet calls are now as clear as those on landlines,” according to a *New York Times* columnist.¹²

One study estimates that the market potential for cable voice service over the next 15 years will be 38.8 million residential and 1.6 million small business subscribers.¹³

Consumers reported spending \$39.80 per month on average for cable VoIP service, according to a leading survey, versus an average of \$51.50 per month on telephone service.¹⁴ The study projects that over a five year period (2008-2012), Wisconsin consumers will save over \$345 million in the aggregate based on an estimated cost savings of \$11.70 per residential subscription per month¹⁵ and over \$15 million in savings to small businesses over the same period (\$19.70 per customer per month).¹⁶

The study notes that these benefits are dwarfed by the indirect benefits from the competitive pressure placed on incumbent traditional phone providers by competitors. Competition forces the incumbents to cut their own prices by an estimated \$12 per month on average to avoid losing customers, according to the study.¹⁷ The indirect savings for the residential customers of the incumbent traditional phone providers in Wisconsin is over \$1.4 billion over 5 years, plus almost \$300,000 for small businesses.¹⁸

In Wisconsin, the projected savings from competition in fixed-line voice services as a result of cable VoIP equal in excess of \$2.2 billion over five years.¹⁹

If legacy telephone regulations are not reformed, both forecasted and potential future savings – beyond the

five year horizon – could be at risk. Continued regulation jeopardizes competition which leads to benefits and savings for consumers by creating artificial competitive advantages and disadvantages for providers.

Wireless

Approximately 99.6 percent of the total U.S. population – and approximately 98.5 percent of the U.S. population living in rural census blocks – have one or more different operators offering mobile telephone service in the census blocks in which they live, according to the FCC.²⁰

Almost 40% of the nation’s households had only wireless telephones (24.5%) at the end of last year or had a landline yet received all or almost all calls on wireless telephones (14.9%), according to a study conducted by the Centers for Disease Control of the U.S. Department of Health and Human Services.²¹

More than one in four Midwest adults (25.6%) lived in households with only wireless telephones.²²

Another analysis by Citi Investment Research claims that the number of households that have “cut the cord” and are wireless-only reached 29.7% at the end of June and is increasing 5% per year.²³

The *Economist* recently predicted that if consumers discontinue landline telephone service at the current rate, “the last cord will be cut sometime in 2025.”²⁴ Meanwhile, the subsidy required for landline service to remote locations and poor customers will have to rise as more of the customers who generate those subsidies discontinue their own landline service, notes the article.²⁵

The danger, says [one analyst], is that regulators will introduce new taxes on wireless and broadband services. Revenues from new services would then be used to keep an obsolete

*infrastructure alive—a recipe for lower growth. At that point, he says, the “wireline problem” really will be everyone’s problem.*²⁶

Verizon is giving up on the landline business, according to the *New York Times*.²⁷ Verizon is aiming to convert most of its landline operation to an unregulated fiber-

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based network capable of leveraging the decentralized structure of the unregulated Internet to cut costs sharply...²⁸

There is no basis for claiming that incumbent landline providers are dominant entities requiring close government scrutiny. In fact, less than 30 percent of Wisconsin lines are served by incumbent local exchange carriers subject to legacy utility regulation.²⁹ However, we predict a vocal few will continue to demand traditional utility regulation because they have a vested interest in the status quo.

The widespread availability of competitive alternatives to landline phone service limit the ability of incumbent telecommunications providers to dictate rates or terms or otherwise injure consumers. Most of their customers now have a choice of providers. Comprehensive regulation will actually do more harm than good by limiting the ability of incumbent telecommunications providers to improve their products and services and to adjust their pricing in response to competition.

Regulatory reform of landline phone service is lagging far behind wireless³⁰ and cable,³¹ both of which were

largely deregulated during the Clinton administration when they faced far less actual competition than the telecommunications providers have now.

Even in the absence of market share losses, preemption of state regulation of wireless services in 1993 came with the auctioning of additional spectrum because Congress reasonably assumed competitors would materialize. The average cost per minute of cell phone use has fallen from 47 cents in 1994 to 6 cents in 2007.³²

The elimination of cable rate regulation in 1996 occurred while cable operators still retained 91 percent of all subscribers, because Congress saw that new entrants such as Direct Broadcast Satellite service providers were attracting customers at a rapid rate.³³ Video service offerings expanded as the result of a \$145 billion investment by the cable industry between 1996 and 2009 to build out a two-way interactive network with fiber optic technology.³⁴ This investment was a direct result of regulatory reform and enabled the cable industry to become the leading provider of high-speed broadband service and pioneer combined full-scale broadband video, Internet and digital phone service packages.³⁵

NEEDED REFORMS

1. Prevent Direct Regulation of Broadband and VoIP

Wisconsin exempts wireless services from state utility commission jurisdiction,³⁶ however there is no express statutory exemption of broadband or VoIP services.

AB 696 (2009) and SB 469 (2009) confined PSC jurisdiction to “essential telecommunications services,” while exempting advanced services.

There is no reason for a utility commission to possess explicit or implied jurisdiction to intervene in a

competitive marketplace, because competition is a proven success. To the extent that competitive services are not expressly exempted from utility regulation, a state commission is a target for commercial rivals seeking protection or a regulatory advantage over their competitors.

Some might argue the PSC can play a vital role ensuring that affordable broadband is available to all. A recent U.S. Department of Commerce report noted that 36 percent of American households did not have a broadband Internet service at home, and that the most commonly cited reason for not having broadband Internet access at home was “don’t need” (38 percent), followed by “too expensive” (26 percent) and “inadequate computer” (18 percent).³⁷ One of the least cited reasons was “not available in area” (4 percent).³⁸

Traditionally, regulators have ordered firms to provide service to anyone upon reasonable request in exchange for a guarantee of profitability achieved through legal barriers to competition. A monopoly provider which is insulated from competition may equalize rates by requiring consumers who are less expensive to serve to subsidize other consumers who are more expensive to serve. These cross-subsidies make service more affordable for some by over-charging others. Cross-subsidies cannot be sustained in a competitive market.

Utility commissions also used to attempt to limit the profit received by telephone companies, such as 11.25 percent on top of reasonably and prudently incurred expenses. “Cost-plus” or “rate-of-return” regulation failed and was replaced with “price caps” or complete pricing freedom in nearly every jurisdiction.

A utility commission could also subsidize broadband by collecting and redistributing user fees, like the Universal Service Fund administered by the Federal Communications Commission. The Universal Service Fund has been criticized for years as wasteful and

inefficient. A recent report by the U.S. Government Accountability Office (GAO) notes that Congress anticipated that competition and new technologies would eliminate the need for universal service support mechanisms, but the explicit fund grew nearly 153% between 1998 and 2007.³⁹ Reform of the subsidy mechanisms has been seriously considered on many occasions but has proven to be politically problematic every time.

There is little if anything that traditional utility regulation can do to address broadband adoption challenges.

State economic development and education departments can play a valuable role promoting broadband adoption. The goal of ubiquitous broadband does not provide a justification for the PSC to retain any ability to regulate competitive communications services. In Indiana, for example, the state's finance authority determines underserved areas for purposes of that state's broadband development program.

2. Consolidate Consumer Protection

Cramming, identity theft, noncompliance with the do-not-call registry, fraud, privacy, spamming, telemarketing scams, unauthorized charges, etc., are all examples of real problems consumers face in cyberspace. Although utility regulation and consumer protection are related, a utility commission's expertise in network architecture, utility cost allocation or the principles of common carriage doesn't make it better suited to protect consumers than a state attorney general.

Utility commission jurisdiction for consumer issues is redundant since the Department of Justice's Office of Consumer Protection and the Department of Agriculture, Trade, and Consumer Protection already protect Wisconsin consumers and businesses against fraud, deception, and unfair business practices. Divided

or shared jurisdiction between multiple agencies can lead to inconsistent consumer protection enforcement according to the type of service or provider. This could have anticompetitive implications.

PSC jurisdiction to act on consumer complaints should be eliminated and handled solely by the agencies that protect against fraud, deception and unfair business practices in competitive markets.

3. Eliminate Service Quality Regulation

The PSC enforces service quality rules that are unnecessary as a result of the widespread competition that exists today in the age of fiber optics, cellphones and the Internet.

Moreover, service quality regulation is largely ineffectual. In 2000, high numbers of consumers throughout the Midwest complained of lengthy delays for new phone service or for repairs to existing service from Ameritech, the parent of Wisconsin Bell. One attorney speculated that Ameritech was pursuing a strategy of making itself an attractive takeover target by deferring investment in the network so as to conserve cash in order to improve its balance sheet.⁴⁰

Service quality regulation by the public utility commissions throughout Ameritech's Midwest service territory failed to prevent the deteriorating service quality. FCC "pro-competition" policies, which – among other things – deregulated Ameritech's competitors but not Ameritech itself, undoubtedly contributed to underinvestment by Ameritech.

The market has changed dramatically since the year 2000. The reliability and sound quality of wireless and VoIP have steadily improved even though these services are not subject to any service quality regulation. As previously noted (p. 3), VoIP calls can be as clear as those on landlines.

If service quality regulation had been applied to these emerging technologies they may not have been able to attract sufficient investment for deployment.

Providers have every incentive to compete on price and quality in the fully competitive market that exists today, provided that regulation does not deny some vendors an equal opportunity to compete.

Service quality regulation designed around traditional landline service will force incumbent local exchange carriers to operate and maintain legacy equipment, restricting their ability to adopt efficient alternatives to remain competitive. Service quality regulation therefore has the potential to be anticompetitive and harmful to consumers.

4. Eliminate Price Regulation

Requirements to offer similar terms to all customers prevents incumbents from offering volume and term discounts or other customized offerings which are necessary to retain valuable customers who contribute to the cost of maintaining service for everyone else.

The PSC is authorized to partially deregulate competitive telecommunications services.⁴¹ In 2004, the PSC suspended remaining price regulation of business local exchange service throughout all of SBC's (now AT&T's) local exchanges based upon a finding of effective competition.⁴² The following year, the PSC suspended rate regulation of residential local exchange service in the Appleton, Beloit, Eau Claire, Fond du Lac, Green Bay, Janesville, Kenosha, Madison, Manitowoc, Menomonee Falls, Milwaukie, Neenah, Oshkosh, Racine, Sheboygan, Stevens Point and Waukesha exchanges.⁴³

Pricing inflexibility makes it highly profitable to serve customers in low cost areas and unprofitable to serve customers in high cost areas. As a result, customers in high cost areas have no competitive choices, and

customers in low cost areas pay artificially high prices due to a pricing umbrella which permits competitors to charge unreasonably high prices because the incumbent is helpless to cut its prices selectively.

Pricing freedom would spread the benefits of competition in both urban and rural areas.

Allowing the market to set prices would spread the benefits of competition in both urban and rural areas. The alternative is to deny high-cost consumers of both competitive choices and ultimately the heavily subsidized service they need, as low-cost customers take advantage of competitive offerings.

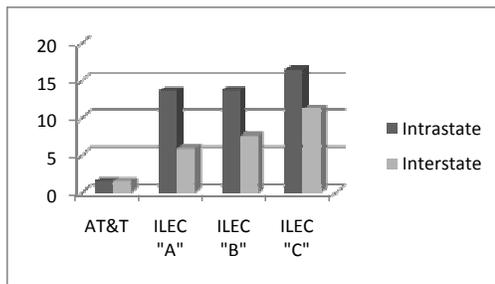
5. Require Parity Between Access Charges for Intrastate and Interstate Services

Access charges are paid by long-distance and wireless providers to local phone providers when calls are exchanged between the providers. Access charges historically were set far above cost to generate significant subsidies for local service.

Subsidies of this nature cannot be maintained in a competitive market where rivals can choose to serve profitable customers and ignore everyone else. The system is already breaking down, since VoIP and wireless calls are assessed differently than traditional phone calls and this has resulted in a lower cost and thus a competitive advantage for those services.⁴⁴

In Wisconsin, AT&T charges 1.5 cents per minute both for interstate access and for intrastate access.⁴⁵ But intrastate access charges can be much higher for other carriers.⁴⁶ Three randomly selected rural providers were each charging intrastate access rates which were twice as high as their interstate access charges.

Wisconsin Intrastate v. Interstate access charges In cents



Sources: FCC, filed tariffs

Reducing intrastate access charges does not necessarily mean forcing rural and residential consumers to pay higher prices for basic service. Indirect subsidization through intrastate access charges can be replaced with an explicit funding mechanism into which all competitors must contribute equitably and out of which any competitor who wishes to serve a high-cost area may receive adequate funding. This is the same approach AB 696 and SB 469 proposed.

Under the two bills, providers would have had six months to reduce intrastate access charges, if necessary, so they do not exceed interstate access rates. These providers would have been entitled to recover certain portions of any reduction in revenue from the state universal service fund.

Such a funding mechanism should be transitional, not permanent. This is because providers in high-cost areas in most cases can achieve significant efficiencies by utilizing alternate technologies, such as fixed or mobile wireless, VoIP or even possibly satellites.

It is not possible to preserve the status quo, nor is it desirable to postpone reform. If incumbent telecommunications providers are forced to charge or pay inflated prices, they will lose customers to lower-

priced VoIP and wireless offerings. If they are required to reduce intrastate access charges at least to the same level as interstate access charges, they can provide a more competitive offering.

6. Eliminate Filing Requirements

The requirement to file tariffs stating the rates, terms and conditions ensures that rivals receive detailed information about a competitor's new or improved products and services. This reduces the incentive to consistently offer a superior value proposition as the best defense against competitive surprises which may cause a loss in sales.

The FCC concluded during the Clinton administration that it would be pro-competitive to neither require *nor allow* long-distance carriers to file tariffs. An absence of any tariffs would increase incentives for innovation, make it easier to offer discounts and customized service arrangements as a way of retaining lucrative customers – who contribute to the joint and common costs of maintaining the network for the benefit of all consumers – and reduce the possibility of tacit coordination in price-setting.⁴⁷

AB 696 and SB 469 would have eliminated the requirement to file tariffs, but would have allowed providers to file tariffs voluntarily. Ideally, both mandatory and voluntary tariffs should be eliminated, since even voluntary tariffs allow competitors to send signals to one another.

7. Reform Obligations to Serve

Traditionally, the *quid pro quo* for a monopoly franchise was the obligation to serve anybody upon reasonable request. The federal Telecommunications Act of 1996 eliminated the monopoly franchise, but the obligation to provide basic service remains.

An obligation to serve imposes costs on some providers that don't have to be borne by others. It is anticompetitive and should be eliminated wherever the market is competitive and consumers can choose between multiple providers.

Otherwise, providers should be allowed to satisfy their provider of last resort obligation utilizing the most efficient technology. For example, there may be instances where it would be more economical to deploy wireless or VoIP rather than traditional phone service.

AB 696 and SB 469 would have authorized the PSC to grant waivers from the obligation to serve on a case-by-case basis where a provider can demonstrate that the waiver is in the public interest or that effective competition exists for basic voice service in a particular local exchange area. The bills would also have allowed providers to utilize any available technology, which actually encourages new technology deployment.

INVESTMENT LINKED TO REGULATORY REFORM

Broadband investment is vital to promote equal opportunity, create jobs in an uncertain economy as well as improve education and health care.

The Wisconsin Technology Council estimates that \$157 million in federal grants have been made pursuant to the American Recovery and Reinvestment Act of 2009 for broadband projects fully inside Wisconsin, and another \$254 million in grants have been made for broadband projects at least partially within Wisconsin.⁴⁸ These grants, which are vital in remote areas that are expensive for providers to serve, will leverage private investment by companies such as TDS, notes Tom Still, which has won 11 broadband grants to facilitate investment in Wisconsin.

Experts foresee the need for continuing massive investment by network operators in current and next generation broadband capability. The overall investment needed to make broadband at the fastest speeds (100+ MB) ubiquitous would be \$350 billion, according to FCC staff.⁴⁹

Historically, monopoly franchises ensured that investments in telephone and cable networks could be recovered. Today, with vibrant competition and rapidly evolving technology, there is no guarantee that investments in broadband will be profitable.

The investments necessary to build broadband infrastructure are "inherently risky by their very nature," according to Debra J. Aron and Robert W. Crandall, who caution that "[p]rojects with inherently significant risk, as these are, would be especially sensitive to regulatory risk."⁵⁰

"Rethinking regulatory barriers tied to the landline era are part of Wisconsin's overall effort to ensure that its telecom systems are world-class and that all regions of Wisconsin, from its major cities to its rural areas, have a chance to compete in the 21st century marketplace," according to Tom Still of the Wisconsin Technology Council.⁵¹

Legacy regulation creates artificial competitive advantages and disadvantages, because communications providers are subject to different regulation depending on the technology they use and their history. Unequal regulation restricts service strategy flexibility and creativity needed to compete in the Internet era.

Regulatory uncertainty – that is, the risk that even well-intentioned regulation can have unintended consequences – is another obstacle to private investment in broadband. According to Robert W. Crandall, Robert E. Litan and William Lehr,

*The virtuous cycle of capacity investments leading to new services and competition which in turn helps drive increased demand and traffic which in turn leads to still more investment in facilities risks being derailed if the firms investing in such infrastructure cannot reasonably expect to recover their economic costs, including earning a fair, risk-adjusted return on investment.*⁵²

Larry Cohen of the Communications Workers of America has also said, “We depend on private capital to invest in next-generation wireless and wireless networks, and create and maintain jobs in the industry.”⁵³ Citing the \$63 billion in investments made by the top network providers in 2008, Cohen noted in reaction to proposed new regulation at the federal level that it is crucial that policymakers “support the right mix of incentives to sustain and enhance these investments that are so critical to America’s future.”

Regulatory reform is necessary for broadband providers to maintain stock valuations necessary to attract sufficient investment capital for broadband expansion.

Investors funded wireless expansion by the incumbent telecommunications providers on the strength of their landline business. Now telecommunications providers require competitive market returns from both their wireline and wireless operations so investors will back their broadband expansion. Investors will back broadband if they perceive it has the potential to make money, rather than be forced to subsidize local services.

CREATE AND MAINTAIN JOBS

The main reason policymakers should undertake regulatory reform is to attract new investment to the communications sector so consumers can receive the services they want at competitive prices. New investment in telecom is necessary to deliver this result,

and the states that attract it will also reap the added rewards of job creation and economic growth.

Every \$5 billion invested in broadband infrastructure would directly create 100,000 new jobs in the telecommunications and information technology industries alone in the year in which the spending occurs, according to President Larry Cohen of the Communications Workers of America.⁵⁴

One analysis found that \$10 billion of investment in one year in broadband networks will support an estimated 498,000 new or retained jobs throughout the entire U.S. economy for a year.⁵⁵ These include direct jobs, such as technicians to deploy broadband cable and equipment; indirect jobs created to supply the materials; and induced jobs, such as jobs in restaurants and retail stores created as the newly employed or retained workers spend their paychecks.

A study by the Brookings Institution found that 300,000 private non-farm jobs are created throughout the entire economy for every one percentage point increase in broadband penetration.⁵⁶ The authors conclude that employment in both manufacturing and services industries (especially finance, education and health care) is positively related to broadband penetration.

Another study by Connected Nation estimates that just a 7 percent increase in broadband adoption – similar to the higher household broadband adoption in Kentucky versus national growth that was achieved by addressing local supply and demand issues – would create or save 50,748 new jobs per year in Wisconsin.⁵⁷

The Connected Nation Study also projects the following additional benefits assuming a reasonably-achievable 7 percent increase in broadband in Wisconsin:

- \$1,863,975,895 in direct annual income growth
- \$12,308,818 in average annual health care costs saved

- 69,731,928 in average annual hours saved
- \$615,732,922 in annual value of hours saved
- \$120,871,181 in average annual mileage costs saved
- 61,224,784 in average annual lbs. of CO2 emissions cut.⁵⁸

The total economic impact of accelerating broadband access and use in Wisconsin is approximately \$2.6 billion, according Connected Nation.⁵⁹

Regulatory reform alone can make most if not all of these benefits possible by stimulating private investment and creating competitive pressure for broadband providers to upgrade their services, reduce prices or both. Conversely, the absence of regulatory reform will make it harder to achieve these benefits through other means, such as public subsidies.

PROMOTE ECONOMIC DEVELOPMENT AND NEW EFFICIENCIES

Economists have found higher residential property values and more jobs and businesses in communities with broadband, particularly in smaller, more rural and economically distressed areas.⁶⁰ Wage and salary jobs, as well as the number of proprietors, grew faster in counties with early broadband Internet access.⁶¹

Predicted savings in health care are major and mounting as an effect of broadband diagnosis, monitoring and other services.⁶² Broadband can be used in a variety of new ways, including the monitoring of elderly, infirm, or individuals with disabilities at their current residences or less expensive community health care centers, and the delivery of medical care directly through “telemedicine,” or two-way video communication between patients and health care providers. These benefits are estimated to accumulate to at least \$927 billion over 25 years (measured in 2005 dollars), which is equivalent to half of what the United

States currently spends annually for medical care for all its citizens (\$1.8 trillion).⁶³

Estimates of the net consumer benefits from home broadband are on the order of \$32 billion per year.⁶⁴

Further deployment of broadband infrastructure is needed to ensure that all people of the United States have access to broadband capability. According to FCC Chairman Julius Genachowski, roughly 14 million Americans and many small businesses do not have access to broadband.⁶⁵ He also estimates that more than 100 million Americans do not have broadband either because they cannot afford, do not know how to use it, or are not aware of its potential benefits.⁶⁶

EMPOWER UNDERSERVED COMMUNITIES

A report by the U.S. Department of Commerce points out that broadband use at home varies significantly across demographic groups.

Persons with high incomes, those who are younger, Asians and Whites, the more highly-educated, married couples, and the employed tend to have higher rates of broadband use at home. Conversely, persons with low incomes, seniors, minorities, the less-educated, non-family households, and the non-employed tend to lag behind other groups in home broadband use.⁶⁷

A recent Pew Internet survey also finds demographic variances in broadband adoption.⁶⁸ It shows that 63 percent of white households have broadband, compared to 52 percent black and 47 percent Hispanic (English- and Spanish-speaking) households.⁶⁹ Meanwhile, it also reveals that those who have accessed the Internet wirelessly via their laptop or handheld device were 62 percent Hispanic (English- and Spanish-speaking) 59 percent black (non-Hispanic) and 52 percent white (non-Hispanic).⁷⁰

Demographics of Home Broadband Users

White, Non-Hispanic	63%
Black, Non-Hispanic	52%
Hispanic (English- and Spanish-speaking)	47%

The foregoing research tracks the findings of the National Center for Health Statistics concerning wireless substitution. It found that adults living in poverty (36.3%) and adults living near poverty (29%) were more likely than higher income adults (19.6%) to be living in households with only wireless telephones.⁷¹ And Hispanic adults (30.4%) and non-Hispanic black adults (25%) were more likely than non-Hispanic white adults (21%) to be living in households with only wireless telephones.⁷²

The popularity of mobile Internet access among minority groups is helping to “close a looming digital divide stemming from the high cost of in-home Internet access, which can be prohibitive for some,” according to a *New York Times* report.⁷³

Another recent Pew survey found that from 2006 to 2008, internet use among Latino adults rose by 10 percentage points, from 54% to 64%. In comparison, the rates for whites rose four percentage points, and the rates for blacks rose only two percentage points during that time period. Though Latinos continue to lag behind whites, the gap in Internet use has shrunk considerably.⁷⁴

Access to broadband is becoming increasingly important for employment, education, news, health care and consumer welfare purposes, as FCC Commissioner Mignon Clyburn recently noted.

In today’s fast-changing world, broadband is not a luxury; but rather, it is a necessity, a must-have. Need a job? You’ll have to go on-line for that. Want to manage your energy consumption at home? You’ll have to go on-line for that. Applying for government benefits? Before long, you will have to go exclusively on-line for that too.

* * * *

Broadband’s key promise for people of color in particular is economic empowerment. For the first time, there are no immediate and overwhelming barriers to entry for upstart businessmen and women or “cyberpreneurs.” Broadband has opened avenues never dreamed possible by those in challenged communities.⁷⁵

“We firmly believe that ubiquitous broadband access, adoption, and use, stand to be great equalizers in our society,” notes a joint policy statement of the National Asian-Pacific American Caucus of State Legislators, National Black Caucus of State Legislators, National Caucus of Native American State Legislators and the National Hispanic Caucus of State Legislators. “As such, we must ensure that Internet adoption and use via a broadband connection becomes engrained as a social, cultural norm in our communities.”⁷⁶

Every Wisconsin resident should have access to broadband. Telephone companies, cable operators, wireless providers and others are all anxious to invest in broadband if investors will provide the funding. Investors will decide whether firms can buy the necessary equipment and employ the highly-skilled people who can make it all work.

Of all the calculations that affect private investment, regulation is the most critical from a state perspective. If legacy telephone regulation is not reformed and the possibility that other market participants could face similar regulation is not eliminated, the private investment needed to make broadband a practical reality for every household is at risk.

WISCONSIN'S NEIGHBORS

Other states have made significant strides reforming outdated telecom regulation in the past year.

Indiana

Indiana legislators passed the most comprehensive set of regulatory reforms in the country and Gov. Mitch Daniels signed the bill into law in 2006. House Enrolled Act 1279 eliminates hidden subsidies in intrastate access charges, ends tariff filing requirements, permits pricing flexibility, expressly provides that the state commission does not have jurisdiction to regulate competitive services, streamlines provider of last resort regulation and assigns responsibility for consumer protection and broadband deployment to other state agencies. According to one of the bill's co-authors, Rep. Eric Koch,

We have seen expansion of rural broadband, with AT&T, Verizon, and other providers expanding high-speed Internet access to over 100 additional rural communities. More than 2,150 new jobs have been created by Comcast, AT&T, and Verizon alone. Nearly \$1.5 billion has been invested in new telecommunication infrastructure by AT&T (over \$1 billion), Verizon (\$300 million), Embarq (\$18 million) and smaller telephone companies (over \$150 million). Robust new competition has resulted in more than 35 new state video franchises being issued to seven cable companies and 10 traditional telephone companies.⁷⁷

Illinois

Gov. Pat Quinn signed legislation on June 15, 2010 which modernizes the Illinois Telecommunications Act by exempting broadband and VoIP services from utility regulation, mandating parity between intrastate and interstate access charges and eliminating regulation of telecommunications services subject to competition.⁷⁸

Michigan

Michigan updated its telecommunications laws in 2005.⁷⁹ All services except primary basic residential service have been detariffed. There is pricing flexibility for all but primary basic residential service in Michigan. And the state expressly exempts wireless and VoIP services from state commission jurisdiction.

AT&T recently announced it has invested in excess of \$2 billion in Michigan and created hundreds of new positions around the state from the time the current Michigan Telecommunications Act went into effect and video franchise reform legislation was passed and signed into law in 2006, through 2008.⁸⁰

Ohio

Gov. Ted Strickland signed legislation on June 13, 2010 which updates Ohio's telephone regulations. Senate Bill 162 exempts broadband, wireless and VoIP services from most utility regulation, authorizes the utility commission to reduce intrastate access charges on a revenue-neutral basis, eliminates most utility regulation of nonbasic telecommunications services and permits providers to apply for a waiver of the requirement to provide basic local exchange service under certain circumstances.

CONCLUSION

By simple reforms of outmoded laws, Wisconsin can ignite a new spiral of innovation and revival based on new technologies and services.

Anticompetitive tariffs, pricing regulation, hidden cross subsidies, unequal consumer protection and provider-of-last resort obligations are not in the public interest. These things prevent telecommunications providers from offering competitive services and generating revenues for broadband expansion. They serve chiefly as obstacles to investment that reduce asset values of all telecom suppliers.

Legacy regulation restricts service strategy flexibility and creativity needed for real competition in the Internet age, even when pursued in the name of “competition.”

By embracing regulatory reform, legislators will expand customer choice, decrease prices, and ignite the broadband expansion necessary to economic growth and technological progress. We recommend that state legislators give urgent consideration to the following specific regulatory reforms:

- Allow full pricing freedom and reduce inflated intrastate access charges so all providers can compete.
- Eliminate filing requirements that give rivals detailed information about a competitor’s new or improved services or products.
- PSC jurisdiction to act on consumer complaints should be eliminated and handled solely within the Department of Justice’s Office of Consumer Protection and the Department of Agriculture, Trade, and Consumer Protection.

- Eliminate service quality regulation, which applies to some providers but not others is therefore anticompetitive and harmful to consumers.
- Terminate obligations to serve, which impose costs on some providers but not others and are anticompetitive wherever consumers can choose between multiple providers.

These proposals all rest on the principle that all providers of voice services should be subject to minimum regulation which does not discriminate on the basis of technology or history, just like in any competitive market.

These reforms aren’t novel or unprecedented. In the Midwest region alone, these reforms have already been adopted in Indiana – and other neighboring states are moving in the same direction.

This is a golden opportunity for Wisconsin to open up new technological opportunities and economic efficiencies that promise a direct private market economic stimulus of at least \$2.2 billion over the five year period ending in 2012 and thereafter in the form of lower prices for voice services, plus an additional \$2.6 billion in economic impact annually from increased broadband availability and use – including an estimated 50,748 jobs created or saved per year throughout the state’s economy – according to Connected Nation. Jobs are created or saved not only in the telecommunications equipment and services, but also in manufacturing and service industries (especially finance, education and health care).

Broadband will provide unprecedented opportunities for wealth creation in disadvantaged communities and rural areas. Unfortunately broadband is not yet ubiquitous, particularly in disadvantaged communities and remote areas. Yet every Wisconsin resident should have access to broadband.

AUTHORS

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The authors have previously assessed the state of competition and need for regulatory reform in Illinois, Indiana, Ohio, Michigan and Wisconsin in a paper entitled "More Broadband, Increased Choice and Lower Prices Begin With Regulatory Reform," *Discovery Institute* (Aug. 2008) available at <http://www.discovery.org/a/7371>. A subsequent paper addresses the same issues in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee, "Stimulate Broadband and Lower Utility Bills With Regulatory Reform," *Discovery Institute* (Feb. 2009) available at <http://www.discovery.org/a/9241>. Their most recent paper, "Georgia's Unfinished Telecom Agenda: Regulatory Reform Would Grow Georgia's Economy," *Discovery Institute* (Jan. 2010) is available at <http://www.discovery.org/a/13941>.

The views expressed herein are those of the authors and do not necessarily reflect the views of the Discovery Institute or its directors or staff.

NOTES

- ¹ Remarks of Alfred E. Kahn before the Federal Trade Commission (Feb. 13, 2007) <http://www.ftc.gov/opp/workshops/broadband/presentations/kahn.pdf>. Kahn is the Robert Julius Thorne Professor of Political Economy (Emeritus) at Cornell University who has also served as chairman of the New York Public Service Commission, chairman of the Civil Aeronautics Board, Advisor to the President (Carter) on Inflation, and chairman of the Council on Wage and Price Stability.
- ² "Local Telephone Competition: Status as of June 30, 2009," *Federal Communications Commission* (Sept. 2010) available at http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db0903/DOC-301310A1.pdf (*Local Telephone Competition*) at 29.
- ³ *Id.*
- ⁴ "Comcast Now the Third Largest Residential Phone Services Provider in the U.S." *Comcast* (Mar. 11, 2009) available at <http://www.comcast.com/About/PressRelease/PressReleaseDetail.aspx?PRID=844>.
- ⁵ "Comcast Reports Second Quarter 2010 Results," (Jul. 28, 2010) available at <http://www.cmcsk.com/releasedetail.cfm?ReleaseID=493293>.
- ⁶ <http://www.cmcsk.com/phone.cfm>.
- ⁷ "SNL Kagan Forecasts Rapid Shift in Competition of Residential Phone Service," (Apr. 28, 2008) available at http://www.snl.com/SNL-Financial/Press_Releases/20080428.aspx.
- ⁸ *Local Telephone Competition*, note 2 at 30.
- ⁹ In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership, WC Docket No. 07-38, *Report and Order and Further Notice of Proposed Rulemaking* (rel. Jun. 12, 2008) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-89A1.pdf.
- ¹⁰ "Fiber-Optic Providers Are Leading Choices for Internet, Television, and Telephone Service," *Consumer Reports* (Jan. 5, 2009) available at <http://pressroom.consumerreports.org/pressroom/2009/01/consumer-reports-fiber-optic-providers-are-leading-choices-for-internet-television-and-telephone-service.html> ("intense competition for cable and satellite customers between AT&T Universe and Verizon FiOS high speed fiber providers has driven down rates for Internet, phone and TV service and is likely the reason that companies allow these savings to continue past the promotional period. In the past year, bundles of the three services have dropped in price by up to 20 percent, to as low as \$80 a month."). See also: "Price War Erupts for High-Speed Internet Service," by Vishesh Kumar, *Wall Street Journal* (Sept. 2, 2008) available at <http://online.wsj.com/article/SB122031009737388555.html>.
- ¹¹ "Save a bundle: How to piece together a great deal for TV, phone, and Internet service," *Consumer Reports* (Feb. 2010) available at <http://www.consumerreports.org/cro/magazine-archive/2010/february/electronics-and-computers/bundling/overview/bundling-ov.htm>.
- ¹² Bob Tedeschi, "Better Calling for Less, by Skipping the Cell Network," *New York Times* (Feb. 10, 2010) available at <http://www.nytimes.com/2010/02/11/technology/personaltech/11smart.html>; see also "Save a bundle: How to piece together a great deal for TV, phone, and Internet service," note 18 ("The best Voice over Internet Protocol (VoIP) services, which came from providers of all types, rivaled fiber in offering the best phone service.").
- ¹³ "Consumer Benefits from Cable-Telco Competition," by Michael D. Pelcovits, Ph.D. and Daniel E. Haar (Nov. 2007) available at http://www.micradc.com/news/publications/pdfs/Updated_MiCRA_Report_FINAL.pdf at 10, 24.

¹⁴ *Id.*, at 11.

¹⁵ *Id.*, at 29 and 11.

¹⁶ *Id.*, at 29 and 25.

¹⁷ *Id.*, at 18-19.

¹⁸ *Id.*, at 29.

¹⁹ *Id.*

²⁰ In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, WT Docket No. 09-66, *Fourteenth Report* (rel. May 20, 2010) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-81A1.pdf, at 7, 18.

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²² *Id.*

²³ Dan Frommer, "CHART OF THE DAY: Almost A Third of U.S. Households Have Cut The Landline Cord (T, VZ, S)," *San Francisco Chronicle* (Aug. 18, 2010) available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/g/a/2010/08/18/businessinsider-chart-of-the-day-almost-a-third-of-us-households-have-cut-the-landline-cord-2010-8.DTL>.

²⁴ "Cutting the cord," *The Economist* (Aug. 13, 2009) available at http://www.economist.com/opinion/displaystory.cfm?story_id=14214847.

²⁵ *Id.*

²⁶ *Id.*

²⁷ Saul Hansell, "Verizon Boss Hangs Up on Landline Phone Business," *New York Times* (Sept. 7, 2009) available at <http://bits.blogs.nytimes.com/2009/09/17/verizon-boss-hangs-up-on-landline-phone-business/>.

²⁸ *Id.*

²⁹ *Local Telephone Competition*, note 2 at 19, 28.

³⁰ Hundt, Reed E. *You Say You Want a Revolution: A Story of Information Age Politics* (Yale Univ. 2000) at 15 ("in the Omnibus Budget Reconciliation Act, passed by Al Gore's tie-breaking Senate vote, the Democratic Congress gave the FCC authority to dissolve this oligopoly by auctioning new licenses") and 98 ("by auctioning spectrum with no rules attached and preempting all state regulation, we had totally deregulated the wireless industry.")

³¹ Hundt at 170 ("Our intent was to communicate our great support for cable's investment in renovating its systems. The 1996 law had repealed rate regulation, effective in two years. That topic was behind us. Now cable had to take on the telephone industry.")

³² Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Federal Communications Commission* (rel. Jan. 16, 2009) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-54A1.pdf at 8.

³³ “Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming (Second Annual Report),” *Federal Communications Commission* (Dec. 11, 1995) (“We conclude that cable television systems remain the primary distributors of multichannel video programming services and continue to enjoy market power in local markets, although some progress has begun toward a competitive marketplace for the distribution of video programming. In the last year, DBS systems have attracted many subscribers to newly available services ... In sum, while subscribership for distributors using alternative technologies has generally increased over the last year, overall subscribership for all distributors using alternative technologies is just 9% of total multichannel video programming distributor (“MVPD”) subscribership, whereas cable systems account for 91% of the total.”).

³⁴ In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming (MB Docket No. 07-260), *Comments of the National Cable & Telecommunications Association* (May 20, 2009) available at <http://www.ncta.com/DocumentBinary.aspx?id=827> at 17.

³⁵ *Id.*

³⁶ Wis. Stat. § 196.202.

³⁷ “Exploring the Digital Nation: Home Broadband Internet Adoption in the United States,” *U.S. Dept. of Commerce* (Nov. 2010) available at http://www.ntia.doc.gov/reports/2010/ESA_NTIA_US_Broadband_Adoption_Report_11082010.pdf (*Exploring the Digital Divide*) at 5, 17.

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⁴⁰ Jason W. Gingerich, “Tangled phone lines – Service complaints mount at Ameritech,” *South Bend Tribune* (Sept. 10, 2000) (\$).

⁴¹ Wis. Stat. § 196.195.

⁴² “Petition of SBC for Suspension of Wisconsin Statute sec 196.196(1) With Regard to Small Business Customers,” Wisconsin PSC Docket No. 6720-TI-173, *Final Decision* (Jun. 3, 2004).

⁴³ “Petition of SBC Wisconsin for Suspension of Wisconsin Statute sec. 196.196(1) with Regard to Basic Local Exchange Service,” Wisconsin PSC Docket No. 6720-TI-196, *Final Decision* (Nov. 25, 2005).

⁴⁴ *See, e.g.*, Hance Haney and George Gilder, “More Broadband, Increased Choice and Lower Prices Begin With Regulatory Reform,” *Discovery Institute* (Aug. 2008) available at <http://www.discovery.org/a/7371> at 13-16.

⁴⁵ “Trends in Telephone Service,” *Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission* (Sep. 2010) available at http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db0930/DOC-301823A1.pdf, at Table 1.4.

⁴⁶ These examples reflect “total charges per conversation minute,” which include the four separate components of access charges: originating access, terminating access, switched usage and switched non-usage. Regulators choose which category to assign various costs. Sometimes regulators over-assign costs, and parties cite one or more categories of access charges as either desirable for a particular social purpose or as unsustainable in a competitive market.

⁴⁷ “In the Matter of Policy and Rules Concerning the Interstate, Interexchange Marketplace,” *Second Report and Order*, (rel. Oct. 31, 1996) available at http://www.fcc.gov/Bureaus/Common_Carrier/Orders/1996/fcc96424.txt at paragraph 53 (“The record in this proceeding supports our tentative conclusion that not permitting nondominant interexchange carriers to file tariffs for interstate, domestic, interexchange services will promote competition in the market for such services. Even under existing streamlined tariff filing procedures, requiring nondominant interexchange carriers to file tariffs for interstate, domestic, interexchange services

impedes vigorous competition in the market for such services by: (1) removing incentives for competitive price discounting; (2) reducing or taking away carriers' ability to make rapid, efficient responses to changes in demand and cost; (3) imposing costs on carriers that attempt to make new offerings; and (4) preventing consumers from seeking out or obtaining service arrangements specifically tailored to their needs. Moreover, we believe that tacit coordination of prices for interstate, domestic, interexchange services, to the extent it exists, will be more difficult if we eliminate tariffs, because price and service information about such services provided by nondominant interexchange carriers would no longer be collected and available in one central location.”)

⁴⁸ Tom Still, “While most stimulus money trickles out, broadband dollars find a faster pipeline,” *WTN News* (Sept. 27, 2010) available at <http://wistechnology.com/articles/7805/>.

⁴⁹ Commission Open Meeting Presentation on the Status of the Commission's Processes for Development of a National Broadband Plan, *Federal Communications Commission* (Sept. 29, 2009) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-293742A1.pdf.

⁵⁰ Robert W. Crandall and Debra J. Aron, Investment in Next Generation Networks and Wholesale Telecommunications Regulation (Nov. 03, 2008) available at <http://ssrn.com/abstract=1294910> at 27.

⁵¹ Tom Still, “In a changing world, Wisconsin’s telecom policies need to keep pace” (Mar. 8, 2010) available at <http://wisconsintechnologycouncil.com/newsroom/inside-wi/?ID=934>.

⁵² “The Effects of Broadband Deployment on Output and Employment: A Cross-Sectional Analysis of U.S. Data,” see note 5 at 14-15.

⁵³ Letter from Larry Cohen, President, Communications Workers of America to The Honorable Julius Genachowski, Chairman, Federal Communications Commission (Oct. 15, 2009) available at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7020142161>; see also Prepared Remarks of Commissioner Mignon L. Clyburn, note 42 (“While some government money is and will be available to help defray the cost of broadband and to support creative adoption programs, it is evident that we cannot do it all on our own.”).

⁵⁴ National Broadband Strategy Call to Action, *Communications Workers of America* (Dec. 2, 2008) available at <http://www.cwa-union.org/news/national-broadband-strategy-call-to-action.html>.

⁵⁵ Robert D. Atkinson, Daniel Castro and Stephen J. Ezell “The Digital Road to Recovery: A Stimulus Plan to Create Jobs, Boost Productivity and Revitalize America,” *Information Technology & Innovation Foundation* (Jan. 2009) available at <http://www.itif.org/files/roadtorecovery.pdf>.

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⁵⁷ “The Economic Impact of Stimulating Broadband Nationally,” *Connected Nation* (Feb. 21, 2008) available at http://www.connectednation.com/research/economic_impact_study/index.php at 8, 15-16.

⁵⁸ *Id.*, at 7.

⁵⁹ “The Economic Impact of Stimulating Broadband Nationally,” *Connected Nation* (Feb. 2008) available at http://www.connectednation.com/research/economic_impact_study/.

⁶⁰ Sharon Gillett, William H. Lehr, Carlos A. Osorio and Marvin A. Sirbu, “Measuring Broadband’s Economic Impact: Final Report Prepared for the U.S. Department of Commerce, Economic Development Administration (Feb. 28, 2006) available at http://www.eda.gov/ImageCache/EDAPublic/documents/pdfdocs2006/mitcmubbimpactreport_2epdf/v1/mitcmubbimpactreport.pdf.

⁶¹ Peter Stenberg, Mitch Morehart, Dstephen Vogel, John Cromartie Vince Breneman and Dennis Brown, "Broadband Internet's Value for Rural America," *U.S. Department of Agriculture*, Economic Research Report No. (ERR-78) (Aug. 2009) available at <http://www.ers.usda.gov/Publications/ERR78/>.

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⁶³ *Id.*,

⁶⁴ Mark Dutz, Jonathan Orszag and Robert Willig, "The Substantial Consumer Benefits of Broadband Connectivity for U.S. Households," *Compass Lexecon LLC* (Jul. 2009) available at <http://internetinnovation.org/library/special-reports/the-substantial-consumer-benefits-of-broadband-connectivity-for-us-househol>.

⁶⁵ Julius Genachowski, "Broadband: Our Enduring Engine for Prosperity and Opportunity," Federal Communications Commission (Feb. 16, 2009) available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296262A1.pdf.

⁶⁶ *Id.*

⁶⁷ *Exploring the Digital Nation*, note 37 at 5.

⁶⁸ Lee Rainie, "Internet, broadband, and cell phone statistics," *Pew Internet & American Life Project* (Jan. 5, 2010) available http://www.pewinternet.org/~media/Files/Reports/2010/PIP_December09_update.pdf.

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⁷⁰ *Id.*, at 6.

⁷¹ Note 27.

⁷² *Id.*

⁷³ Jenna Wortham, "Mobile Internet Use Shrinks Digital Divide," *New York Times* (Jul. 22, 2009) available at <http://bits.blogs.nytimes.com/2009/07/22/mobile-internet-use-shrinks-digital-divide>.

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