Let There Be Wi-Fi

Broadband is the electricity of the 21st century—and much of America is being left in the dark.

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By Robert McChesney and John Podesta

Two decades ago, the chattering classes fretted about economic upheaval rising from Japan and the Asian Tigers. They feared an invasion of cars, microchips, and Karaoke that would take away American jobs, take over U.S.-dominated industries, and shift cultural norms. In the 1990s, America responded with a boom in high technology and Hollywood exports. But a revolution is again brewing in places like Japan and South Korea. This time it's about "broadband"—a technology that, in terms of powering economies, could be the 21st century equivalent of electricity. But rather than relive the jingoism of the 1980s, American policy makers would be wise to take a cue from the Asian innovators and implement new policies to close the digital divide at home and with the rest of the world.

Most people know broadband as an alternative to their old, slow dial-up Internet connection. These high-capacity data networks made of fiber-optic cables provide a constant, unbroken connection to the Internet. But broadband is about much more than checking your email or browsing on EBay. In the near future, telephone, television, radio and the web all will be delivered to your home via a single broadband connection. In the not-so-distant-future, broadband will be an indispensable part of economic, personal, and public life. Those countries that achieve universal broadband are going to hold significant advantages over those who don't. And so far, the United States is poised to be a follower—not a leader—in the broadband economy.

American residents and businesses now pay two to three times as much for slower and poorer quality service than countries like South Korea or Japan. Since 2001, according to the International Telecommunications Union, the United States has fallen from fourth to 16th in the world in broadband penetration. Thomas Bleha recently argued in Foreign Affairs that what passes for broadband in the United States is "the slowest, most expensive and least reliable in the developed world." While about 60 percent of U.S. households do not subscribe to broadband because it is either unavailable where they live or they cannot afford it, most Japanese citizens can access a high-speed connection that's more than 10 times faster than what's available here for just $22 a month. (Japan is now rolling out ultra-high speed access at more than 500 times what the Federal Communications Commission considers to be "broadband" in this country.)

The economic ramifications are profound. "Asians will have the first crack at developing the new commercial applications, products, services, and content of the high-speed-broadband era," writes Bleha. Already, South Korea, which leads the world in the percentage of its businesses and homes with broadband, is the number one developer of online video games—perhaps the fastest-growing industry today. What's more, societies in which broadband use is near-universal will adapt to its uses much more quickly than those where access is available only to the well-to-do few.

The countries surpassing the United States in broadband deployment did so by using a combination of public entities and private firms. The Japanese built their world-class system by ensuring "open access" to residential telephone lines, meaning competitors paid the same wholesale price to use the wires. The country is also establishing a super-fast, nationwide fiber system via a combination of tax breaks, debt guarantees and subsidies. But of particular note, the Japanese government also encouraged municipalities to build their own networks, especially in rural areas. Towns and villages willing to set up their own ultra-high-speed fiber networks received government subsidies covering approximately one-third of their costs.

Unfortunately, the United States has pursued the opposite policy. President Bush has called for "universal, affordable access for broadband technology by the year 2007," and FCC Chairman Kevin

Martin claims broadband deployment is his “highest priority.” But they have made no progress toward these goals; in fact, they have rewarded their corporate cronies for maintaining high prices, low speeds and lackluster innovation. Federal policies have not merely failed to correct our broadband problems, they have made them worse. Instead of encouraging competition, the FCC has allowed DSL providers and cable companies to shut out competitors by denying access to their lines. And whereas the Japanese government encourages individual towns to set up their own “Community Internet,” Washington has done nothing. Fourteen states in the United States now have laws on the books restricting cities and towns from building their own high-speed Internet networks. No wonder America is falling behind its Asian competitors.

Despite all the opposition from telecom companies and their political allies, some municipalities are finding ways to provide broadband to their residents. Community Internet projects are already up and running in dozens of small towns and coming soon to bigger cities like Philadelphia, Portland, and Minneapolis. These cities recognize broadband as perhaps the single most important factor in transforming their local economies and the lives of average citizens. Community Internet could revolutionize and democratize communications in this country. But the major obstacle to universal, affordable broadband access for all Americans is not economic or technical. It's political.

“A birch rod in the cupboard”

The dispute over municipal broadband bears a striking similarity to the development of the electric power industry a century ago. As James Baller—an attorney who represents local governments and public utilities—first warned in a 1994 paper written for the American Public Power Association: “The history of the electric power industry casts substantial doubt on the notion that our nation can depend on competition among cable and telephone companies alone... to ensure not only prompt and affordable, but also universal, access to the benefits of the information superhighway.”

Borrowing from Richard Rudolph and Scott Ridley's 1986 book, Power Struggle: The Hundred-Year War Over Electricity, Baller showed that when electricity first became available in the 1880s, privately owned utilities marketed “the new technology as synonymous with wealth, power and privilege,” lighting large cities, businesses, and the homes of the rich. Electricity also allowed factories to stay open 24 hours a day, and led to the institution of swing shifts. But communities that didn't have electricity couldn't produce as much, and couldn't keep up with urban competitors. Rural communities were left with the choice of forming a government-owned utility or being left in the dark. Even big cities like Detroit built municipal power systems to cut prices and extend service. In response, private utility companies responded with a massive propaganda and misinformation campaign that attacked advocates of municipal power as “un-American,” “Bolshevik,” and “an unholy alliance of radicals.”

But the expansion of electricity, Baller argued, showed that the presence—or even threat—of competition from the public sector is one of the surest ways to secure quality service and reasonable prices from private enterprises delivering critical public services. FDR, he notes, called municipal power systems “a birch rod in the cupboard, to be taken out and used only when the child gets beyond the point where more scolding does any good.”

And Roosevelt picked up the birch rod himself. In 1935, he created the Rural Electrification Administration (REA), which gave loans and other help to small towns and farmer cooperatives interested in setting up their own power systems. The REA turned out to be one of the New Deal's most successful programs. Within two years, hundreds of new municipal power utilities were up and running across the country, and within 20 years, virtually all of rural America had electricity, provided either by rural co-ops or big utilities spurred to action by municipal competition. Baller concluded: “The plain, hard truth is that universal electric service would never have developed on a timely basis in the absence

of municipally owned electric utilities and rural electric cooperatives"—which still account for more than a quarter of the power in the country today.

Like the advent of electricity, broadband is transforming the daily lives of Americans. The future of U.S. communities depends upon access to advanced high-speed telecommunications services, a fact many urban policymakers already recognize. "Just as with the roads of old," Dianah Neff, Philadelphia's chief information technology officer, recently told BusinessWeek, "if broadband bypasses you, you become a ghost town."

The Philadelphia story

Last year, sensing their citizens were being stranded on the wrong side of the digital divide, Philadelphia's leaders launched an ambitious plan to blanket the entire city with wireless Internet service. To provide universal, affordable Internet access, Philadelphia plans to construct a gigantic "wireless mesh network"—a system of interconnected antennas placed on streetlights, traffic signals, and public buildings. Each of these "nodes" broadcasts a broadband signal, which connects up with other nodes to create a cloud of Internet access for PCs, laptops and wireless devices. The technology is similar to the "Wi-Fi hotspots" that have popped up at cafes and libraries across the country. Philadelphia's hotspot, however, will cover 135 square miles. No tax dollars will be used to build the system, which will be financed instead with $10 to $15 million in bonds and private investment. The city is finalizing a contract with a consortium led by Earthlink to build and run the system—and several Internet service providers (ISPs) will compete to market the service to local residents. The service will cost about $20 a month —with subsidized access for lower-income households for about $10. The city plans to deploy the first of 3,000 nodes soon and complete the system by 2007.

For all its potential benefits to the city's residents, Wireless Philadelphia was nearly crushed before it started. Last fall, behind closed doors in the state capitol, industry lobbyists slipped a measure into a massive telecommunications bill to stop municipalities from entering the broadband business. "The Verizon bill"—as it was known around the state legislature—sailed through both chambers before city officials and media advocates got wind of its contents. A last-minute compromise carved an exception for Philadelphia, allowing that effort to go ahead as planned, but the rest of the state was shut out.

Towns in states where industry lobbyists have not succeeded (yet) in shutting down municipal broadband are doing remarkable things. When three major employers in Scottsburg, Ind. (pop. 6,040), threatened to leave town because they didn't have the communications infrastructure needed to deal with their customers and suppliers, the town's mayor, Bill Graham, went to the major cable and telephone companies for help. They told him that extending high-speed broadband services to Scottsburg wasn't profitable enough. So the city decided to build a municipal wireless "cloud" using transmitters placed on water and electric towers that reach more than 90 percent of the surrounding county's 23,000 residents. "Scottsburg didn't wake up one morning and say, we want to be in the broadband business," Graham told PBS. "Scottsburg had business and industry that was going to leave our community because what we had was not fast enough." Scottsburg's investment worked—the employers stayed.

In Hermiston, Ore., fire fighters and police officers carry wireless computers that can download blueprints of a building on the way to a fire or track an accident at the nearby Army depot that houses chemical weapons, thanks to that town's Community Internet system. And Community Internet even played a role in helping the evacuees from Hurricane Katrina. With much of the communications network obliterated in the Gulf Coast Region, a cadre of volunteers converged in Louisiana, and used donated equipment to set up wireless networks, computers and Voice over Internet Protocol (VoIP) phones at more than a dozen shelters, allowing evacuees to contact other shelters to search for family members or fill out FEMA forms to get disaster aid.

The industry backlash

Community Internet has the potential to revolutionize and democratize communications in this country. And that may be the reason why big cable and telephone companies and their political allies have launched a sophisticated misinformation campaign. These companies and their coin-operated think tanks generally make three paradoxical arguments against municipal broadband. First, they contend that municipalities have no place in the "free market." Of course, the cable and telephone giants don't mention that their own monopolies—which control 98 percent of the broadband market—have been cemented with extensive public subsidies, tax breaks and incentives (as well as free rein to tear up city streets). Verizon, for instance, didn't complain last fall when Pennsylvania handed them subsidies for broadband deployment worth nearly 10 times what Wireless Philadelphia will cost. Neither did Comcast object when Philadelphia approved a $30 million grant to build a skyscraper that will house its headquarters. To the incumbent providers, "unfair competition" means any competition at all.

Opponents also warn that municipalities will "crowd out" more efficient private players. In reality, most municipal networks are a last resort by desperate local governments. Often their choice isn't between a municipal system and a private one, but between municipal and nothing. (Of course, that doesn't stop the phone and cable companies from trying to outlaw Community Internet even in areas where they don't currently offer service.) A recent study by the Florida Municipal Electric Association found "no evidence" to support the argument that municipal systems limit private investment. On the contrary, these systems appear to spur investment by bringing entrepreneurs and new competition into the market. Even threatening to build a system has a funny way of encouraging the incumbents to improve service and lower their prices.

The same critics of Community Internet claim that cities are too "lazy" or inefficient to manage complex systems and will be unable to adapt to changing technologies. But municipalities have a long track record of successfully and efficiently operating power plants, sewage systems and subways. It's hard to imagine that the broadband networks—most of which will actually be operated by private contractors—are any more complex. Perhaps the more obvious question is: If these systems are destined to fail, why are the telephone and cable companies expending so much energy trying to stop them?

The high-priced industry lobbyists and their political allies are moving quickly to write their monopolies into law. In 2005, they were able to push through restrictions in five states—though only Nebraska passed an outright ban. But eight other bills were defeated or derailed thanks to a vocal coalition of media reformers, consumer groups, municipal officials, and the high-tech industry. So now opponents are pushing legislation at the federal level to outlaw municipal broadband nationwide. Rep. Pete Sessions (R-Texas), a former executive at phone giant SBC, has introduced a bill in the House that would give incumbent providers the right of first refusal before a city or town could offer broadband service. A similar measure is buried in Sen. John Ensign's (R-Nev.) rewrite of the Telecom Act.

21st-century meal ticket

This is exactly the opposite of what the country needs. Instead, we need political leadership to build popular support for a new national broadband policy. To start, the FCC should swiftly reverse course and restore competition for broadband whether it comes from DSL, cable, power lines, or wireless Community Internet systems.

Congress could boost the speed and reliability of community wireless networks by making available more "unlicensed spectrum"—those portions of the public airwaves not exclusively reserved for government or commercial use. Exisiting "Wi-Fi" networks operate in "junk bands" cluttered with signals from cordless phones, microwave ovens, baby monitors and other consumer devices. At lower frequencies–like in the television band—signals travel farther and can go through walls, trees and

mountains. Opening up some of this spectrum would make Community Internet systems much faster and cheaper to deploy, allowing a new generation of broadband entrepreneurs to enter the market. The broadcasters are about to return a sizable chunk of spectrum as part of the digital television transition, a portion of which could be reserved for Community Internet if Congress doesn't auction it all off to the cell phone companies. Another option would be to reallocate vast, unused “white spaces” between TV channels for wireless broadband. Either way, more “unlicensed spectrum” is the key to making universal, super-fast broadband for $10 a month a reality.

Most importantly, the federal government must ensure that the cable and telephone monopolies can't crush innovative projects like Wireless Philadelphia and the emerging national movement for Community Internet. Sens. John McCain (R-Ariz.) and Frank Lautenberg (D-N.J.) have introduced a bill that would free municipalities to decide for themselves which technologies best serve their citizens. U.S. policy should create incentives for communities to build advanced telecommunications networks in hundreds of cities and towns across the country, creating robust competition for communications services, assisting small entrepreneurs through public-private partnerships, and bringing opportunity to low-income urban neighborhoods and rural communities too often neglected by large entrenched monopolies.

Without real competition or innovation, broadband deployment in the United States has stagnated. And the stakes of this misguided policy couldn't be higher. According to the Department of Commerce, 95 percent of new jobs created will demand computer skills. And a 2001 Brookings Institution study estimated the widespread adoption of basic broadband could add $500 billion to the U.S. economy and create 1.2 million new jobs per year. Simply empowering local governments and community groups, in coordination with private entrepreneurs, to provide universal affordable, broadband may be the single best thing we can do to make America the pre-eminent economy—and democracy—of the 21st century.

Robert W. McChesney is the founder and president of Free Press, a media-reform organization, and an award-winning author of eight books on media-reform issues. John Podesta is the president and CEO of the Center for American Progress, and former Chief of Staff to President William J. Clinton.