



## **PRESS RELEASE**

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### **“Stimulus Spending and American Telecom: Change to Believe In”: inCode Evaluates Telecom Provisions in the American Recovery and Reinvestment Act**

**DENVER, CO—Feb. 17, 2009**—President Barack Obama will sign into law the [American Recovery and Reinvestment Act](#) (“Act”) today. The Act seeks to stimulate the economy by providing \$787 billion in funding through infrastructure investment, tax breaks, state and unemployment aid, educational spending, and a variety of grants and loans.

The Act allocates \$7.2 billion to telecom-related programs with approximately \$6.39 billion, or 89 percent, comprised of grants and loans to promote broadband access in rural, unserved, and underserved areas. The remaining allocation funds the development of a National Broadband Inventory Map and provides grants for community programs that encourage broadband adoption and expand public computer centers.

[inCode, a telecom consultancy](#), believes that infrastructure funding will help extend the digital bridge to the estimated 25 percent of Americans living in rural communities, especially those lacking any broadband or having connection speeds less than 1.5 Mbps. Up to 10 percent of Americans lack any broadband service, but the exact number is unknown, warranting the creation of the Broadband Map. The funding also will spread the rural adoption of advanced communication solutions, such as VoIP and femtocell service, and broadband-dependent applications, such as video streaming, video conferencing, and real-time gaming.

While the funding helps improve the business cases in serving such markets, its ultimate success depends upon a host of supply and demand side factors. An inCode report, “Stimulus Spending and American Telecom: Change to Believe In,” evaluates the landscape of technologies and service providers that stand to compete here, and their potential impact on broadband adoption. Key topics of the report, available to inCode clients, include:

- Detailed Overview of the Act
- Policy Strengths and Weaknesses
- Industry Implications
- Deep Dive on Fixed Wireless Technology Options

Some of the report’s highlights are summarized below. inCode invites any representative of the telecom industry, investment community, and media to contact inCode for further discussions regarding the report.

#### **About inCode**

inCode ([www.incodetel.com](http://www.incodetel.com)) is a respected professional services organization providing comprehensive business strategy and technology consulting to telecommunications companies and leading enterprises.

inCode clients include some of the most well-known operators and corporate brands in the world. Broadband, wireless, infrastructure, device, and application companies rely on inCode to develop and implement effective strategic plans. The company also provides customized mobility solutions and integration services that help enterprises leverage telecom for competitive advantage. Founded in 1998, inCode is headquartered in Atlanta. The company has additional bases of operation in Washington, DC, Seattle, San Diego, and Toronto.

## SUMMARY OF THE ACT

### Overview of the Act

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The Act seeks to stimulate the economy and create jobs by investing in three types of programs:

- **Infrastructure Development:** Allocates a total of \$6.39 billion to accelerate broadband deployment to unserved and underserved areas. Funds will be administered by the Department of Commerce's National Telecommunications and Information Administration (NTIA) and the Department of Agriculture's Rural Utilities Service (RUS). NTIA will allocate \$3.9B in grants; the RUS will allocate \$2.5B in grants, loans, and loan guarantees.
- **National Broadband Map:** Issues up to \$350 million to the NTIA to develop and maintain a broadband inventory map of current broadband deployments across the country.
- **Community Programs:** Allocates \$250 million in grant funding for innovative programs to promote adoption of broadband service, and \$200 million in grant funding for expanding public computer center capacity, including at community colleges and public libraries.

### Key Requirements for Broadband Deployment:

- **Geographic:** RUS funds target rural areas with the requirement that 75 percent be allocated to rural areas "without sufficient access to high speed broadband"; NTIA funds will target rural and underserved urban and metro areas as well.
- **Usage:** Funds must be used for infrastructure investments; NTIA grants stipulate a 20 percent match requirement.
- **FCC Broadband Policy:** Recipients of NTIA funds must adhere to the FCC's four Internet broadband principles that "preserve and promote an open and interconnected public Internet." One principle calls for open access by stating that "consumers are entitled to connect their choice of legal devices that do not harm the network."
- The final version removed earlier provisions regarding: a) minimum speed requirements; b) percentage allocation toward wireless or wireline; and c) definitions of what constitutes "broadband", "unserved," or "underserved."

### Highlights of the Grant Program

The Congressional Budget Office estimates that only 2 percent of the funds will be spent in 2009, with another 15 percent in 2010, 20-25 percent being spent each year from 2011-2013, and the remainder between 2014-2015.

### Policy Strengths and Limitations

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The final Act succeeds in many ways versus earlier House and Senate bills, especially in allowing the market to decide the technologies and speed requirements to close the digital divide, under the scrutiny of NTIA and RUS policy officials that have experience in running such programs. Here are additional views from inCode:

## Key Strengths

- ***Creates a Much Needed Broadband Map***—Accurate statistics on broadband availability in rural areas have been lacking, which further complicates understanding the scope of the broadband challenge and developing the optimal access solutions.
- ***Establishes Technological and Service-Provider Agnostic Policies***—The final version of the Act removed earlier provisions targeting certain investments to wireless and wireline networks. The Act, for example, directs the NTIA to determine whether the broadband access needs of the area can best be served by wireless, wireline, or any other provider. inCode applauds the neutral spirit of the Act. For example, emerging wireless network technologies have increasing broadband capability yet still face limitations within in-building and high-density environments. Thus, a technology neutral approach will help the market allocate funds to the most effective networks.
- ***Proactively Pushes Funds to “Unserved” Rural Areas***—The Act specifies that the RUS must allocate 75 percent of funds to rural areas without sufficient access to high speed. This provision can help address a key criticism in the past that funds have flowed to suburban areas, or high-density pockets of rural communities.

## Limitations

- ***Does Not Adequately Address a Key Adoption Driver*** —Affordability, or lack thereof, constitutes the top reason cited by consumers who have access to broadband but do not purchase it. The Act justifiably directs the NTIA and RUS to evaluate applicants on their ability to set affordable pricing. However, certain low-density rural areas may in fact best be served by fixed satellite or terrestrial wireless services that cannot charge competitive, urban-centric prices for high-speed (up- and down-link) broadband, no matter how efficient their technology. The government may need to consider offering a special subsidy or tax credit to such consumers, especially those in low-income disadvantaged groups.
- ***Enforces an Aggressive Timeline***—The Act specifies that funds have to be allocated and used in the very near term. While this spirit serves to stimulate the economy and create telecom jobs, it may lead service providers to make short-term technology decisions that will be superseded by better technologies only a few years later. It’s imperative that key policy makers at the NTIA and RUS continually study the industry landscape, especially with regard to emerging technology developments.
- ***Lacks Precise Definition of Open Access and Net Neutrality***—The Act requires grant recipients to adhere to the principles contained in the FCC’s Broadband Policy Statement published in August 2005. This statement contains a set of principles, but does not offer guidelines on the maze of issues that telecom operators consider in managing the consumption of high-bandwidth traffic or qualifying device vendors who can use their networks. These factors will not make or break business cases for rural markets, but the FCC should provide greater transparency in these areas. Incoming Chairman Julius Genachowski, who served as a top campaign technology adviser to President Obama, has expressed support for open Internet and net neutrality protections. One of Genachowski’s priorities will be providing firmer guidelines around these policy issues; however, we do not foresee that he will favor regulations that could stymie broadband investment, especially in rural markets.

## Industry Implications

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The NTIA and RUS will develop final guidelines that address key areas as eligibility, data speeds, nondiscrimination and interconnection obligations, and definitions for unserved and underserved areas. These guidelines will influence the key winners and losers regarding government broadband subsidies.

Key views include:

- **Promise of Emerging Wireless Technologies:** A number of recently auctioned spectrum bands provide capacity and sufficient propagation characteristics (700 MHz, 1.7/2.1 GHz or AWS, 2.5GHz); combined with emerging 3G (HSPA) and 4G (WiMAX and LTE) technologies, the economics of using terrestrial wireless to serve rural areas have greatly improved since 2000.
- **Rural LECs:** Rural-based and small local-exchange providers will likely seek funding to serve the estimated 10 percent of their households customers, if not greater, that do not have a DSL-provisioned line. inCode believes they will also turn to fixed wireless solutions. This move has already started as evidenced by the recent [FairPoint Communications](#) launch of a fixed WiMAX network across rural markets in Vermont.
- **Fixed Satellite Service and Affordability:** Fixed satellite service providers have the infrastructure to deliver broadband anywhere, but the challenge has been offering a high-speed down *and* uplink service at an affordable rate. A subsidy-based program around fixed satellite should be considered for low density areas.
- **Mobile Satellite Service:** Mobile satellite providers also can instantly serve rural, but cannot deliver the speed requirements such as 3 Mbps which had been required by earlier versions of the bill. This threshold may be a barometer the NTIA and RUS use per the Act's directive in promoting "next-generation broadband speeds."
- **Cable Operators:** The MSOs have enabled the vast majority of their lines to deliver broadband. This likely explains why the cable trade groups lobbied to have funding only directed to "unserved" markets.

### **Deep Dive on Fixed Wireless Technology Options**

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A number of technology and spectrum developments have improved the economics of using fixed wireless to serve rural markets.

Key technology considerations include:

- **Technology Standard:** The competing standards for fixed wireless networks include HSPA, its 4G evolution LTE, and the mobile WiMAX standard (IEEE 802.16e.) These technologies, although optimized for mobile services, suffer no degradation in fixed deployment and offer superior spectral efficiency. While the fixed WiMAX standard (IEEE 802.16d) will help incubate the market, its long-term viability may be limited due to a shriveled ecosystem and limited economies of scale.
- **Spectrum:** The most viable spectrum bands for fixed wireless include 700 MHz, 2.3-2.5 GHz, 3.5 GHz, and AWS. They each bring tradeoffs with regard to propagation or geographic reach and cost-effective network economics to support speeds of 3 Mbps and greater, depending on the specific geography. The available technical standards and maturity in the vendor ecosystem (producers of radio modules, chipsets, base stations, etc.) stand at different stages today.

inCode has developed numerous business cases across the matrix of spectrum bands and corresponding technologies. Our proprietary models and analysis have helped major wireless operators and new entrants make key decisions about their technology roadmaps.

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