

## Government CIO pushing to expand Internet access

New technologies, ARRA funding should increase computing, Internet use

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With the Fortuño administration looking to ramp up its use of technology to cut costs and improve services, government Chief Information Officer (CIO) Juan Eugenio Rodríguez said a priority is to get as many Puerto Ricans as possible connected to the Internet.

He said that the current physical telecommunications infrastructure, too little promotion and education regarding the benefits of the Internet and limited English-language proficiency are all factors holding back getting more Puerto Ricans connected to the Internet.

The CIO said the administration, in partnership with private business, would push to put as many people online as possible.

"My job is to get Puerto Ricans on par with the rest of the world, and above the U.S. mainland, because we can," Rodríguez said. "We are an island, with limited area, so with less effort and a smaller investment, we should be able to cover more people. I know we can do this."

The island has a good telecommunications hub built by the former Puerto Rico Telephone Co., as well as Prepa Networks Corp.'s (PrepaNet) state-of-the-art, fiber-optic network built on the back of the electric infrastructure. Rodríguez said there are still areas that lack Internet access. Most of the work, he said, involves "the last mile," which involves hooking up individual locations to the island's telecommunications networks.

The island's physical topography has played a role in limiting growth, as the mountainous interior, as well as several isolated, sparsely inhabited sectors, make increasing connectivity in these areas more difficult and expensive.

Poor communities, which can't afford many of the broadband services that make high-speed Internet connectivity profitable for companies, have also been underserved. While companies have spent a lot of money and effort putting computers into people's hands, there has not been the same investment made in trying to educate people about the benefits of the Internet and computing, he added.

"Construction is expensive, and most existing service is via wire," Rodríguez said. "Because Puerto Ricans are poorer than their stateside counterparts, bringing service to many communities has not been cost effective either."

Another problem is English literacy in Puerto Rico. While Spanish (as well as French, Chinese and every other language you can think of) is used widely on the Internet, it is still an English world.

"You have to know English well to explore the Internet fully," he said.



Chief Information Officer  
Juan Eugenio Rodríguez

While many of the areas which lack broadband service are outside the metro area, there are also several communities in San Juan with the same problems. Puerto Rico's Internet penetration is about 40% of the population, but growth in this area has been slower than 5% in recent years, which is troubling because other regional competitors are advancing at a rate that could push them beyond the island's level shortly, according to an Estudios Técnicos study.

Several developments are coming together to change the current landscape in a way that will foster the expansion of broadband service on the island and dramatically increase the percentage of Puerto Ricans connecting to the Internet.

One is the large investment in new wireless broadband technologies that companies are deploying to expand telecommunications networks rather than relying on wire. This is drastically bringing down costs, Rodríguez said.

"We are seeing a huge surge in companies offering wireless services," the CIO said. "Wireless is really coming of age right now. It's blooming nationwide."

### ISLAND SEEKS \$100 MILLION BROADBAND INVESTMENT

Also, the American Recovery & Reinvestment Act (ARRA) has earmarked more than \$7 billion to foster the development of high-speed broadband Internet access across the country. Three rounds of competitive bidding for funding are taking place this year and next year to foster this growth. While the majority is aimed at expanding networks that provide Internet connectivity, there is also funding available for education and training, which is aimed at increasing Internet use throughout the population.

"We are hoping for a total of \$100 million. In order to get to that number, we have to do better than the states," Rodríguez said. While the bulk

of the funding will go directly to private firms and other groups for specific projects, the CIO's office is also consulted to ensure that the proposals are in line with state plans for expanding broadband.

"The companies offering wireless have been few and far between. Now with this, we are seeing an explosion of wireless proposals," he said.

In a first round of proposals submitted this fall, PrepaNet and its parent company applied for about \$50 million to bring broadband service to unserved rural areas, while Critical Hub Networks applied for \$26 million for the same purpose. Several other proposals sought to establish Internet computer centers to both provide access in rural communities and to provide training to residents.

### A PPP FOR HIGH-SPEED

The new wireless technologies provide Internet connection speeds that are on par with current wire-based systems, according to Rodríguez, but looking to the future the government is also considering trying to expand its fiber-optic network through "the last mile" so that individual homes and businesses are connected with fiber-optic cable.

While the cost is "very expensive," employing a pure fiber-optic network would ensure that the island would be ready to handle future computing applications and the blazing connection speeds they will require.

"Wireless has speed limitations. With fiber, speed is unlimited," Rodríguez said, adding that most systems today provide speeds of up to 10 gigabytes per second, while a fiber-optic network would provide speeds of 600 gigabytes per second.

"It's expensive but once you put fiber optic on the infrastructure, it's super scalable," Rodríguez said. "Future applications will require such speed."

Such a system would not only open up a new world of high-speed computing in Puerto Rico, it would also usher in unprecedented computer benefits by allowing the establishment of an "open-access network," where service providers' offerings are separated from the physical network. That means that consumers would have the power to switch between providers instantly, while retaining their fiber-optic connection to the telecommunications network.

"The concept is used in Singapore, Ireland, France and other countries, and it could work here," Rodríguez said.

Because of the expense of the installation, a public-private partnership (PPP) is being considered. Under such a model, the private company installing the fiber-optic lines to the home would likely lease access to the system to private operators, he said. ■