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## Keeping Up With Cedar Rapids

Tom Taulli 11.30.05, 6:00 AM ET

LOS ANGELES --- *Cedar Rapids, Iowa.* Passengers on public buses can surf the Web. Also, the bus driver can view surveillance cameras and even hit a silent alarm that dispatches video wirelessly to the nearest patrolling officer.

-- *Buffalo, Minn.* Citizens can log on to a site and request a work order (such as filling a pot hole), which is dispatched wirelessly to the nearest field worker.

-- *Providence, R.I.* Police officers and medical responders get real-time access to suspect profiles and medical records. In fact, a firefighter can access the floor plan of a building that is on fire.

Yes, it's a trend--muni Wi-Fi. This is when cities or municipalities sanction, fund, develop or even operate a wireless broadband network. And the market is expected to grow at a rapid clip. Over the next three years, municipalities are forecasted to spend \$700 million on such networks, according to a study from MuniWireless.

Even the mighty **Google** (nasdaq: [GOOG](#) - [news](#) - [people](#)) has designs on the muni Wi-Fi market. The company has made a number of acquisitions in the space and has put in a bid to provide Wi-Fi service in San Francisco.

So far, the beneficiaries of this emerging trend are major infrastructure-technology companies, such as **Motorola** (nyse: [MOT](#) - [news](#) - [people](#)), **Nortel** (nyse: [NT](#) - [news](#) - [people](#)) and **Cisco** (nasdaq: [CSCO](#) - [news](#) - [people](#)). For example, it's Motorola's MOTOMESH technology that powers the wireless networks of the cities mentioned above (there are about a dozen network deployments).

"Many, especially smaller communities, view Wi-Fi as something they must have to be competitive in today's Internet-centric and networked society," said **Mark Whitton**, the general manager of mesh networks at Nortel.

New Orleans Mayor Ray Nagin agrees. Tuesday morning, he announced that the city is starting a free wireless Internet network to help boost the city's economy.

Are there opportunities for entrepreneurs in this emerging market? **Rick Rotondo**, the director of marketing in Motorola's Mesh Networking Group, believes so. "There is a significant lack of service providers to build out these networks," said Rotondo. "There will also be much growth for applications for these networks."

Let's take a look:

**Providing Services:** Installing muni Wi-Fi systems is no easy feat. What's more, maintaining a network also has its challenges, especially as more users come on the system, as well as applications.

This is certainly a big opportunity for tech consulting companies such as [Scientel Wireless](#). Founded in 1992, the company has focused on providing wireless consulting services on such areas as police networks, intelligent transportation systems, municipal networks and so on. Services include feasibility analysis, financial modeling, product selection, installation and support services.

"We saw Internet-based wireless as a big-growth market," said **Nelson C. Santos**, Scientel's vice president of technology. "There are many cities that are growing, as seen with the boom in real estate. This puts much more pressure on them to provide more services. With new technologies, such as wireless broadband, cities can offer more service without increasing headcount."

Despite the growth, the sales cycles for cities can be long. "It can easily take a year to get a contract with a city," said Santos. "Also, if you miss the deadline for the budget process, you may have to wait yet another year."

But consulting need not be entirely labor intensive. There are companies such as [Wireless Valley Communications](#) that are developing tools to help build out muni Wi-Fi networks. Wireless Valley's founder, Dr. **Theodore S. Rappaport**, has more than 100 patents and has co-authored or co-edited more than 20 technical books. In the early 1990s, he realized that the increased number of wireless users would mean a need for more advanced network solutions.

His company's latest product is MeshPlanner. This software allows a city to visually design a network that is optimized for maximum coverage and ease of installation. It does this by assessing the environment (buildings, light poles, etc.) and performing advanced simulations.

**Providing Applications:** As muni Wi-Fi rolls out across the country, expect a proliferation of new applications. One attractive area is applications that are based on location. An example is [PanGo](#), a company founded in 1999 that uses technology developed at Carnegie Mellon University. Basically, the company can turn a muni Wi-Fi network into a location-tracking network.

"With location-based services, a city can offer a health service where Alzheimer patients wear watches with RFID [Radio Frequency Identification] tags in them so that a lost patient can quickly be found in the city," said PanGo's CTO **Richard Barnwell**. "Or you could have a child monitoring service or even an application to monitor ambulances to ensure that all the proper equipment is in the vehicles."

Muni Wi-Fi can also help connect people in a community. This is what [Meetrodution](#) does, a company that **Wendell Davis** and **Paul Bragi** founded a year ago. "I started this company because I've always found that my best connections were pseudo-random, and I wanted to increase the opportunity to experience that kind of connection," said Davis. "I wanted to have quick access to a local community, no matter where I happened to be."

The company's product, Meetro, is an instant messaging service, which can be downloaded or used with other IM services. The twist: by using Wi-Fi networks, you can locate nearby users. Uses span from networking for business to finding a date on Saturday night.

Another player is [Jambo Networks](#). The software automatically discovers other users in proximity of up to five or six blocks away.

**Charles Ribaud** co-founded the company in April 2003. Interestingly enough, his partner, **Jim Young**, was someone he had lost contact with ten years ago. "I was in a meeting with someone named Jim Young, Sr.," said Ribaud. "I vaguely remembered Jim was from Dallas, and so after the meeting, I asked the man if he had a son that went to Kenya on a National Outdoor Leadership School program. He did, and we were reconnected."

"Millions of people miss opportunities like this everyday," said Ribaud. "We wanted to create a tool to leverage Wi-Fi's ubiquity and the power of social networks to connect people with those they want to meet that are in proximity."

Now, Jambo is in discussions with several municipal governments to create a stronger sense of community and promote civic participation in their neighborhoods.

How does a company like Jambo make money? The company negotiates directly with affinity groups, such as conferences, universities, associations and municipalities, to charge on a per-member basis or some type of revenue share. The company also has a premium version of the Jambo software package.

There is also the possibility of ad models. "I expect to see advertising that is based on where you are located," said Barnwell. "This can get into interesting opportunities for more precise locationing in buildings for ads in a supermarket. So it will send ads to your handheld regarding the nearest can of tuna being sold."

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