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BY JEFFREY BURT

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Boston districts go wireless

COMMUNITY GROUPS, CITY OFFICIALS PARTNER TO BRING INTERNET ACCESS TO HIGH-TRAFFIC AREAS

BOSTON MAIN STREETS, A COOPERATIVE initiative between Boston's Office of Business Development and 19 nonprofit neighborhood groups, is overseeing the deployment of a free public wireless access pilot project in four commercial districts. The objective is to promote economic rejuvenation in areas that need it without putting any strain on the city's budget.

The installation is provided free of charge by ASCIO Wireless LLC., of Walpole, Massachusetts with equipment and services from Colubris Networks Inc., of Waltham, Mass., and Single Digits Inc., of Exeter, N.H., according to Ascio. The system offers people in the districts free Internet access while waiting for the train, dining at neighborhood eateries or sitting on a park bench.

The effort gives the city a way to promote economic development, and it gives the vendors a way to showcase their technologies, according to Boston Main Streets officials. The Roslindale Village area went live last summer. West Roxbury and Hyde Park were up and running this past fall, and Washington Gateway is scheduled for this winter.

eWEEK Senior Editor Caron Carlson recently spoke with Brian Goodman, business manager for Boston Main Streets;

City Councilor John Tobin (representing Ward 6, which includes Jamaica Plain and West Roxbury); Wallace Olsen, principal at Ascio; and Carl Blume, director of product marketing at Colubris, to see how the project is progressing.

Brian Goodman, Boston Main Streets

We've all heard people in other cities across the country express concern that

the provision of communications services may not be the proper role of government or the best use of taxpayer dollars. Have you had to confront that point of view?

No, we didn't actually put any budgetary money into this project. Everything being built has been offered in kind by the vendors, so there's no money to approve.

Have you encountered any resistance from the telephone carriers, cable companies or anyone else as you've developed this free wireless access project?

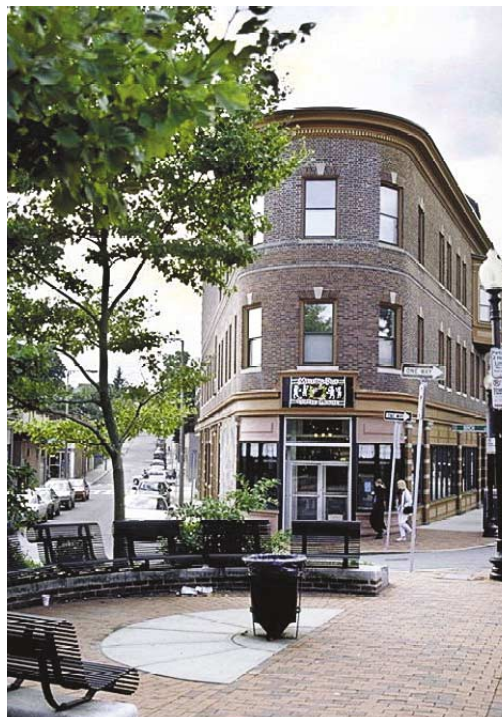
Most of the individuals who would challenge this would only go after it if we were providing a much larger service. Verizon [Communications Inc.] is a major sponsor of Boston Main Streets, and we haven't heard anything from them indicating that they are bothered by it.

Why is this project not a potential threat to large service providers, as similar projects seem to be in other parts of the country?

We are providing this free in the commercial districts only, and we're basically staying away from a lot of the contentious arguments. We thought it was an easier implementation initially to focus on the commercial districts and not get into the residential base.

This is not business-grade. It's robust enough to be useful for people who want

[CONTINUED ON PAGE G4]



Corinth Square in Roslindale Village will benefit from the free new Wi-Fi access sponsored by Boston Main Streets.

G6 LAPD TAPS VIDEO TECHNOLOGY ON STREETS

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to get out of the office and spend some time in cafes. It is not a replacement for DSL or business-grade access.

How will this system generate revenue and sustain itself?

Our system is dependent on ad revenue from the splash page for sustainability. A key part of the model we [decided] on requires us to generate significant use among the community for advertising. We'll be concentrating on building up a user base.

How did you choose Ascio and its partners?

We spoke with larger providers like Cisco [Systems Inc.] and Nortel [Networks Inc.], and they typically offer very robust systems and also very expensive [ones].

They were offering discounts on a larger, more integrated system that would work with the fire department, police and that sort of thing. The things we were considering were the cost of implementation and the ease of installation.

One of the biggest barriers to building something like this is getting access to the infrastructure needed to place the antennas. Some of the larger systems were only able to place their equipment on things like light poles, and that required more complete access to city property. This is a simpler solution.

For this project, why did you select an advertising-based model?

Originally, the model we went with was a model sponsored and supported by local busi-

ness. It proved to be very difficult because many of the businesses we serve are not the type with the money to sponsor this. The idea here is to spread some of the costs. It is a great chance to give some vendors an opportunity to build something that wasn't exorbitantly expensive and showcase their technology.

John Tobin, Boston city councilor for District 6

What public policy goals are served by the Boston Main Streets Wi-Fi project?

It should always be our mission to make the next generation better. Boston has a lot going for it because we've been able to stay ahead of the curve and evolve.

The Internet is the communications device of our generation, and if you don't have access to it, you're left behind—socially, economically, academically. We have to give all people an opportunity to get online.

Do you see it as the proper role of government to be involved in providing communications services?

I'm not looking for the city of Boston to become a utility. We have enough trouble keeping the streets lighted and keeping the streets paved. However, I do think we have a responsibility to be a convener [in making Internet access available], and I think we've accomplished that.

How have you managed to avoid the heated controversies surrounding municipal Wi-Fi projects in other cities?

Sometimes it pays not to be first. We monitored closely what Philadelphia was doing. We saw that situation, and we said that we're here to make friends and not enemies. We invited Comcast [Corp.] and Verizon to the table at the first summit. They declined to participate, but they were in the audience. I wanted to bring them to the table so they'd know there's no hidden agenda here.

What is the next step for Boston in terms of deploying Wi-Fi?

I think the next step is to do an analysis on these four projects before they bring it out to the next four or five neighborhoods. I think they are wise to start out small, rather than just going out and trying to light up the whole city at once.

Wallace Olsen, ASCIO Wireless

How did you first approach the city of Boston on this project, and what concerns had to be overcome before you could begin deployment?

We started a conversation with Boston in [August 2004]. The city wanted to go forward, but they didn't want any liability.

I don't think they knew how to fund it, who

was going to operate it, who was going to control it. We said we'd be responsible. Setting up these types of applications

doesn't take a lot of time, energy or expense. Everybody overthinks it—it makes it overcomplicated.

How much is this project costing Ascio?

Out of pocket, \$7,500—including labor and antenna cables, antennas, power supply, mounting brackets, posts, poles, things like that. [This does not include the antennas from Colubris, which Ascio also purchased.]

On a pro bono project like this, is it still necessary to develop relationships with city offices?

Yes. It allows us to have access to municipal buildings. The community center is a good place to set up because it offers services to the district.

Have you encountered any technological challenges?

In West Roxbury, we didn't have line of sight at the community center, so we're going to be deploying on a Catholic school and relaying back down to the community center.

What are some of the bureaucratic challenges you have encountered?

Waiting for "roof rights" agreements, particularly dealing with the Boston Housing Authority. They were reviewing this as if we're a cellular company. They had a 24-page contract. I had to reiterate that this is not a for-profit deployment.

[CONTINUED ON PAGE G7]



Tobin sees Internet access as a city responsibility.



Goodman said the system doesn't compete with ISPs.



Ascio's Olsen said cities often overcomplicate Wi-Fi systems.

LAPD systems keep an eye out for crime

VIDEO SURVEILLANCE, CRIMINAL RECOGNITION PROJECTS PUT TO THE TEST ON CITY STREETS

By David Spark

A DRUG DEAL IS HAPPENING RIGHT NOW IN L.A.'S MacArthur Park, and there are no cops around. But that hasn't been such a problem since the Los Angeles Police Department installed 12 surveillance cameras, said Sgt. Dan Gomez of the LAPD's Tactical Technology Unit, Office of Operations.

From a remote location, Gomez, an officer with 13 years' experience, watches the monitors: "All of a sudden, you see a drug dealer going back and forth. [You can see] where he's hiding his stash, where he's hiding his rocks of cocaine."

"In the past, you would never be able to see [all the details of a crime] because you couldn't get close enough. Now I can see it," Gomez said.

When Gomez sees a crime going down, he calls in officers and remotely guides them, step by step: "Hey, this individual just put that in his right pocket. Oh, he just saw you; he's turning. I saw him. He dropped it right by that bench."

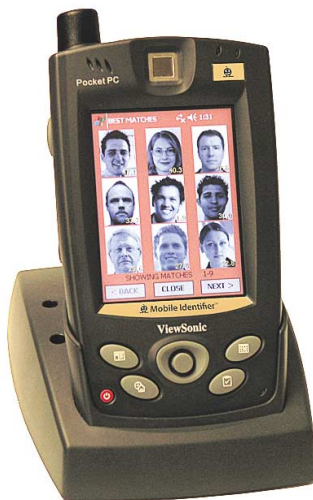
Seeing more, and communicating better, is a result of the cameras.

"Before, we might only catch the user. Well now we're catching the dealer, and we're finding where he's putting his stuff," said Gomez. "In terms of effectiveness of the arrest, it's much better than the way we used to do policing."

MacArthur Park sits in the center of the densely populated Rampart district of Los Angeles. The 40-acre park has been notorious for drug deals

and the distribution of illegal documents such as fake passports. Over the years, in an effort to reduce these activities, the LAPD has tried deploying more officers to patrol the park. Crime would temporarily drop, but as soon as those additional officers left to work somewhere else, the crime would gradually return, Gomez explained.

With instructions from



Handheld devices display nine images to match against a scanned person.



Patrol cars can scan up to 8,000 license plates per day automatically.

Chief William Bratton and Assistant Chief George Gascon, the LAPD began looking for a more permanent, cost-efficient solution. Instead of simply hiring more officers, they sought unique ways to deploy technology as a "force multiplier." In effect, said Gomez, they asked themselves, "How can technology better inform the force we already have?"

Gascon approached Hamilton Pacific—a security integrator in Pasadena, Calif., that specializes in the installation of camera equipment—for help in developing a pilot surveillance system. Hamilton Pacific, in turn, called in GE Industrial, Security in Bradenton, Fla., a larger full-service security company, to fulfill the far-reaching security needs of the LAPD, said Andrew Shephard, systems sales manager for GE Security.

In January 2004, as a test case to see the benefits of video surveillance, the LAPD's Rampart Division began installing especially rugged, vandal-resistant CyberDome Day-Nite 25X pan-tilt zoom surveillance cameras in MacArthur Park. The test case was made possible by donations from GE Security, Hamilton Pacific

and private investors, Shephard said.

"The goal [of installing the cameras] wasn't just to make arrests but ... to modify behavior," Gomez said.

According to Gomez, the impact on crime in MacArthur Park has been astounding. Compared with crime data for 2002 in that area, 2004 saw a 45 percent decrease in crime.

Now the LAPD is testing a patrol car outfitted with \$25,000 worth of technology—including in-car video recording, facial-recognition software and roof-mounted license-plate-recognition cameras.

Patrolling the streets and highways of L.A., this smart car uses infrared technology to scan the license plates of cars it passes on both the left and right. A computer in the trunk immediately runs the collected information against a database that is updated daily with plate numbers associated with stolen vehicles, felony wanted suspects and Amber Alerts.

If a passed car is a match, the officers in the car immediately see the information on their in-car notebook computer, said Gomez. Working continuously for 10 hours, the cameras can automatically scan between 5,000 and 8,000

cars per day, depending on the level of traffic, he said.

Officer Damien Levesque, who previously worked in the Rampart Division's gang unit, joined Gomez at the Office of Operations to begin testing a portable facial-recognition device called the Mobile Identifier. Levesque refers to the Mobile Identifier—which is built by ViewSonic Corp. of Walnut, Calif., with software developed by Neven Vision, of Santa Monica, Calif.—as a “traveling mug book.”

GE Security recommended that the LAPD try Neven Vision in October 2004. At that time, Neven Vision was the only provider of embedded facial-recognition software. The software could run completely on a handheld device instead of having to send an image request to a server for processing, said Hartmut Neven, chief technology offi-

cer of Neven Vision.

Levesque is the gang unit's expert on the Mara Salvatrucha gang. Knowing all the gang's members, he took the Mobile Identifier loaded with 1,000 mug shots into the field to see if it could identify gang members as well as he could.

When a suspect is scanned with the Mobile Identifier, nine possible images appear in order of best match to worst match. Consistently, said Levesque, the device correctly identified the person in either the first or second position.

Three hundred officers operate out of the Rampart district, and 12 officers work in the gang unit. Only two of those 12 are experts on a specific gang, said Gomez. Given the success of the test, “I can deploy anybody and make them a gang expert

simply by handing them the pod,” he said. “I've essentially given Damien's knowledge to officers who would otherwise not be able to make this arrest.”

The success of the video surveillance and identification pilot projects has encouraged the LAPD to look ahead to a complete build-out, Shephard said.

The department plans to build a 911 center that ties in all the surveillance cameras already installed around the city—including more than 250 cameras used by the Department of Transportation for traffic control, Shephard said.

Video from the 911 center will be pushed out to stations in specific districts. Motorola Inc. this year plans to invest \$1 million to install a mesh network in the Jordan Downs area of L.A. to

wirelessly push surveillance video to notebook computers in patrol cars, said Shephard.

Levesque said he is pushing for a complete mobile identification package that can help book suspects in the field with facial recognition, fingerprint scanning and a language translator.

“On a basic level, it costs about \$125,000 to equip, train and get an officer out into the field,” Gomez said. Video surveillance dramatically changes the learning curve, said Gomez. “I can take experienced officers and put them on this camera and as a ‘force multiplier,’ and, boy, it's just like I hired 40 experienced officers to do one job.” e

David Spark is a free-lance writer based in San Francisco. He can be reached at david@davidspark.com.

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Are you taking a chance here, from a business perspective?

Yes. Proof of concept does not exist. We're gambling. We're going to keep it going for 18 months regardless of the costs associated with it. But I can't imagine how it would ever fail.

**Carl Blume,
Colubris Networks**

How does the Boston Main Streets deployment differ from other municipal Wi-Fi projects Colubris has provided equipment for?

The business models are a little bit different. A project we did at the Resort Municipality of Whistler [in British Columbia] was to bring up a service that could be offered as a per-user fee service, whereas the Boston project is open. Boston's objective was to promote greater foot traffic within the commercial

zone. From the equipment provider's perspective, what that means is that you have to have equipment that can be customized to whatever business model is being deployed.

What equipment is deployed in each public access zone?

[Colubris'] MSC-3300 multiservice controller is installed at a central location. It has an access point installed in it as well as the access control function, which does things like authentication and providing the ad page. There are two other access points, typically [Colubris'] MAP-330 with dual radios installed on other buildings.

How did you design a network to cover the whole commercial

district of the neighborhood with just one connection?

We had to find a way to distribute the signal from a central point where the Internet connection was present. To do that, we used a wireless distribution system [WDS], which is a way of carrying an Internet signal to multiple access points wirelessly.

We installed our access controller in the location where the Internet connection was present. It is a dual radio unit—one radio provides client access to the service, and the other radio is used to create the WDS connections to other points within the village. There are two other access points installed in other buildings determined by their loca-

tion so that the entire village is blanketed by signal.

What advantages do you consider your system to offer over mesh networking?

One of the things that customers like about our solution is that the WDS links provide very predictable performance. Mesh can be less predictable when you've got one radio. Dual radios allow you to maintain full performance right out to the clients. Some of the mesh projects on the market have only one radio, and the radio has to do double duty. e



Colubris' Blume said each city poses unique challenges.

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