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## Church Builders Take a Leap of Faith

**A wireless voice-and-data LAN follows architectural/construction teams around the country.**

By Ellen Muraskin

02/06/2002, 10:21 AM ET

### The potential:

Taking feature phone functionality, message management, and network access on the road. Saving long-distance charges.

### The pieces:

- Cisco Call Manager IP PBX
- Cisco VG200 voice gateway
- Cisco 2600, 3600, 1750 voice-enabled routers
- Symbol Technologies' Spectrum 24 Wireless LAN
- Symbol NetVisionIP phones

### The Plot:

Callahan Studios, with offices in Indianapolis, IN, and Scottsdale, AZ, is a small architectural and construction management firm specializing in churches. Back in 1999, they saw the handwriting on the wall: The Y2K apocalypse was about to smite their voicemail system dead. Instead of simply replacing it, they contracted with Enterprise Unified Solutions (eUS, Indianapolis, - 317-806-4387, <http://www.enterpriseus.com/>) with a vision in mind (see [image](#)).

A former Selsius dealer and now a Cisco (San Jose, CA - 408-526-4000, <http://www.cisco.com/>) Premier partner, eUS leased Cisco IP phones to Callahan, installed them, and for two years has served as its switching and unified messaging ASP, ISP, and local and long-distance telco. eUS provides IP

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Define It

Centrex and unified messaging service to Callahan headquarters, branch offices, and remote workers at job sites around the country. They provide the phone service through clustered, shared-tenant Cisco Call Managers; UM is via Cisco's Unity product.

Wireless is an interesting piece of this story: Ron Ewing, Callahan's Vice President of Operations, reports that the firm uses a wireless 5.4 GHz line-of-sight connection to eUS's building for 11 Mbps broadband voice and data. Inside headquarters, they have 802.11b WiFi LAN. Except for a fax line, all local, long-distance, and Internet access is provided through eUS. Off-net calling goes through eUS's gateways, Cisco DT24 Plus and VG200s.

The really neat part comes in where eUS extend the "wireless" IP LAN to Callahan's job sites (see [image](#)). These sites remain operational for a typical ten to 14 months, justifying the cost of installing a two-channel BRI ISDN line to the construction trailer. Inside the trailer, a Cisco 804 ISDN router hooks up that landline to the same Cisco IP phones employees have in Indianapolis, and to laptops. All extension features and network identities are preserved. "We really like it that the smarts are in the phones," notes Ewing. Callahan personnel can simply relocate their IP phone extensions to the trailer, keeping their office extension numbers and all caller ID, autodial, and other features.

Outside the trailer, construction managers pack Symbol Technologies' (Holtsville, NY - 631-738-2400, <http://www.symbol.com/>) wireless Netvision IP phones, which carry a version of the same "smarts" as the desktop phones through a Cisco "skinny client," a joint software development effort of Symbol and eUS, says Doug Sauer, eUS President. These mobile IP phones, as well as Symbol PCMCIA wireless modem cards on laptops, radio to the wireless LAN through a two-antenna, Symbol wireless transceiver/receiver mounted on the trailer. The NetVision IP mobile phones ring simultaneously with the Cisco IP phones in the trailers.

Transport to remote sites is generally over open Internet; the ISDN router provides internal IP addressing. Other Callahan sites use dedicated T1 or, if in and around Indianapolis, wireless connectivity to get on eUS's managed IP

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ICMI/Call Center Magazine Network network. Colocated gateway POPs in other areas, (Cisco VG200 gateways and voice-enabled Cisco 1750, 2600, and 3600 routers) extend the local dial tone for Callahan and other eUS customers.

[Planning, Design, and Tuning - September 18-22, 2006](#)

The broadband connection at construction sites carries voice and all sorts of business application data. The network sees a lot of digital photo traffic, and scheduling and contract management interactivity with a Primavera server in headquarters.

When on the road but off the construction site, Callahan employees use Nextel phones for voice and VPN software to browse into headquarters' LAN. Browser-based Unity unified messaging, of course, can play them their voicemail as well as show them their email and faxes, and lets them change call forwarding. Ewing admits, though, that those on the road will commonly dial in to hear the voice messages they see listed in their in-boxes or on their Blackberry pagers.

Ewing chose the RIM Blackberry after sampling several hand-helds; he praises its intuitive ease of use, ubiquitous coverage, and notes, "It's pushing the messages to you instead of you pulling them through a Palm device." At his request, eUS integrated the Blackberry Enterprise server with Callahan's Exchange server, so that 20 roaming Blackberries can redirect, mark as read, file, and otherwise manage messages. "I see if I have email or voice; it even passes caller ID. I don't see how any corporation with road warriors can live without them."

As a bleeding-edge customer 24 months ago, Ewing reports a lot of work with eUS and Cisco went into the initial rollout. There are now many more such installations running. The past 18 months have been solid, he says, and the voice quality has been good wherever LECs have provided good broadband connectivity. The VoIP savings also cuts the long-distance bill from a typical \$12,000 to \$7,000, reports Ewing; a savings passed on to congregation clients.



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