



SERVICES

Voice over IP Gives Regional ISPs an Edge

ISPs OF ALL SIZES ARE HEADING INTO THE NEW MILLENNIUM AMID FIERCE COMPETITION AND FORMIDABLE CHALLENGES. MANAGING EXPLOSIVE INTERNET GROWTH, HANDLING MISSION-CRITICAL OPERATIONS, OFFERING DIFFERENTIATED SERVICES, AND EXPANDING SUBSCRIBER BASES TOP THE LIST.

Adding voice to an existing IP infrastructure can help regional and medium-sized ISPs—who may not own their own network infrastructures—level the playing field in a booming market.

In the global network environment, how can regional ISP players remain competitive? By taking advantage of

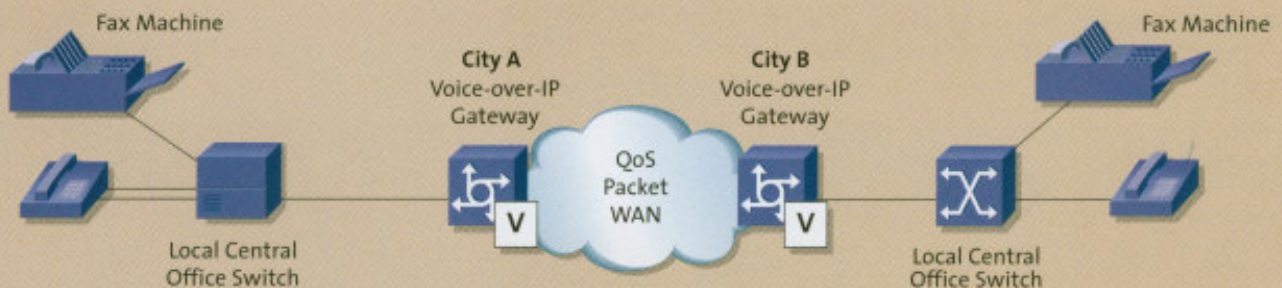
network technology they already have. Most ISP networks are constructed with IP technology and can leverage this existing infrastructure to deliver carrier-class long-distance voice and fax services over low-cost IP backbones. Subscribers use regular telephones and fax machines to communicate over a data network rather than over the public

switched telephone network (PSTN). Voice over IP not only provides additional streams of revenue, but enables new services that can help ISPs differentiate themselves from the competition.

Adding voice to a network infrastructure is no longer complex or expensive. Installing a voice-over-IP gateway with a voice/fax card requires

CARRIER-CLASS SERVICE, LOW-COST BACKBONE: In a long-distance voice-over-IP setup, access is through the PSTN, but phone-to-phone and fax-to-fax calls are routed over a data network via IP, ATM, or Frame Relay.

LONG-DISTANCE VOICE-OVER-IP NETWORK



Voice-over-IP gateway can be either AS5300 universal access server, AccessPath-VS3, or Cisco router.

only a minimal upgrade to the existing IP network and provides an ISP with seamless support for data, voice, and video applications, including Web browsing, e-mail, streaming video, and telephony.

"Our traffic went through the roof once we deployed Cisco voice-over-IP gateways," says Ofer Gneezy, President and Chief Executive Officer of VIP Calling, a leading wholesale Internet telephony service provider. "The voice quality, gateway stability, and manageability of our Cisco Powered Network are outstanding and are certainly the reasons behind our explosive traffic growth." (For a related story on VIP Calling, see page 37.)

Giving Customers What They Want

With a voice-enabled infrastructure, ISPs can add new services that appeal to their customers' growing demands for a variety of communication options. Among these services are voicemail, Internet call waiting, fax store and forward, and unified communications (which consolidates fax, e-mail, and voicemail message delivery on a single IP network).

In addition, by using their service providers for long-distance calling and for Internet access, customers can save on their monthly phone bills as well as consolidate multiple monthly bills for greater convenience. Meanwhile, customers get carrier-class voice transmission over an IP infrastructure right from their telephones.

Incremental Revenue, Lower Costs

Voice over IP integrates voice and data services across a common network infrastructure for reduced operational costs and yields ISPs incremental revenue by offering their customers a less expensive option for long-distance voice services. And the potential for incremental revenue is far from trivial. Killen & Associates, a market research firm based in Palo Alto, California, forecasts the total US revenue for voice-over-IP services at nearly US\$10 billion by 2002.

The bottom line? Regional ISPs can break into the lucrative voice services business at minimal cost using their existing IP infrastructures. Armed with this new arsenal of value-added services, an ISP can increase its revenue stream and help differentiate itself among a fiercely competitive playing field.

For more information on Cisco voice-over-IP services, visit the URL www.cisco.com/warp/public/cc/cisco/mkt/servprod/voip. ▲▲

The Packet Telephony Advantage

Before packet telephony, adding voice services to an existing infrastructure required an enormous investment in circuit switch technology—a step that most regional ISPs couldn't afford to take. Packet telephony, on the other hand, offers lots of budgetary advantages because IP networks are less expensive to build and expand than circuit-switched networks. Packet switching uses network capacity more efficiently than circuit switching, so IP networks move voice and data at much lower costs. In the USA, ISPs currently don't have to pay access charges to local-exchange carriers for routing long-distance calls through their networks, a break that results in additional savings. What's more, the low cost of adding voice-over-IP gateways to existing points of presence (POPs) makes it a budget-wise solution for ISPs that want to start small and scale upward as their revenue grows.

Long-Distance Benefits

Adding packet telephony long-distance services yields ISPs many benefits, including:

- Developing new services for existing customers
- Boosting revenue from existing POPs
- Expanding customer base beyond Internet access subscribers
- Creating new opportunities to bundle offerings across data and voice services
- Lowering IP infrastructure costs by leveraging voice compression and silence suppression

ECONOMICS OF IP VERSUS CIRCUIT-SWITCHED VOICE NETWORKS

	Cost/Minute*	Cost Savings
Circuit-Switched Network	\$0.015	
IP Network (90-ms delay)	\$0.07	51.5%
IP Network (30-ms delay)	\$0.011	25.4%
* Capital and transport costs only Source: MCI, BT Alex Brown Research, 1998.		
	Cost/Minute**	Cost Savings
IXC Network (PSTN-based)	\$0.07	
Internet Telephony Service Provider Network (Voice-over-IP-based)	\$0.048	31.4%

**Excludes access charges in both networks; includes operation, administration, and maintenance; customer service, sales and marketing, and depreciation.
Source: NationsBanc Montgomery Securities LLC, 1998.