

The Wholesale Carrier's Challenge: Managing Complexity at the Interconnect

NexTone[®] IntelliConnect[®] System Facilitates IP Interconnects for Evolving Service Portfolios

VoIP EVOLUTION

What began as an interesting use of the internet – carrying voice calls as IP packets – is powering a communications industry evolution that seems likely to accelerate for the foreseeable future. Since 1997, Telegeography has tracked an upward trend in international VoIP traffic. The Telegeography 2006 report noted that while international VoIP traffic declined in 2002 and 2003, “growth picked up a bit in 2004, reaching 35 percent.” Telegeography further noted that “international VoIP traffic grew more than three times faster than switched international traffic.” iLocus also reports that an estimated 1,079 billion minutes of VoIP traffic were carried by service providers worldwide in 2006. VoIP-to-VoIP peering has facilitated global origination and termination of VoIP sessions, and over 50 percent of the total international voice traffic in 2007 is projected to be delivered via VoIP interconnects.

As carriers pursue VoIP interconnects, they encounter specific requirements or “must-haves” to preserve their network assets for functions that are key to their commercial success. At the same time, they must normalise traffic for unimpeded session delivery and implement security solutions to protect their networks and subscribers.

THE MANDATE FOR SUCCESSFUL INTERCONNECTS

Integral to any carrier's service portfolio is the ability to deliver end-to-end voice calls. In a TDM-based world, subscribers assume that if they call someone served by a different service provider, their calls will “go through.” To deliver the same level of service to a VoIP subscriber, carriers must overcome interoperability challenges in a VoIP environment.

First among these challenges is security – creating secure network boundaries in an IP environment. Creating these secure network edges requires flexible architecture that can scale to accommodate subscriber demand for enhanced IP-based services. Baseline Session Border Controller (SBC) functionality can secure network edges, secure each IP session, provide strong authentication of subscribers, enable authorisation to use specific services, and normalise traffic to enable IP sessions to flow across peered networks. Second, each IP session must be routed to the right peering partner for termination. That is, policies

must be applied correctly by partner, subscriber, service, and network state. Third, for each IP session that traverses the network, strict accounting must be applied to mediate with partners and bill for VoIP and other rich media services.

VoIP INTERCONNECTS REDEFINED

To better address the networking and commercial requirements of the global VoIP ecosystem, NexTone has redefined interconnect functionality in three key respects:

First, separating the signal from the media stream is essential to optimise network resources. With the ability to retain control of signaling within the network core while optionally treating media at the network edge, carriers can reserve valuable bandwidth for other applications. In treating media separately from the signaling, carriers have the option to shunt aside media – for example, if the source cannot be verified as trusted, for cost-efficiency reasons, or to support equal access regulatory requirements.

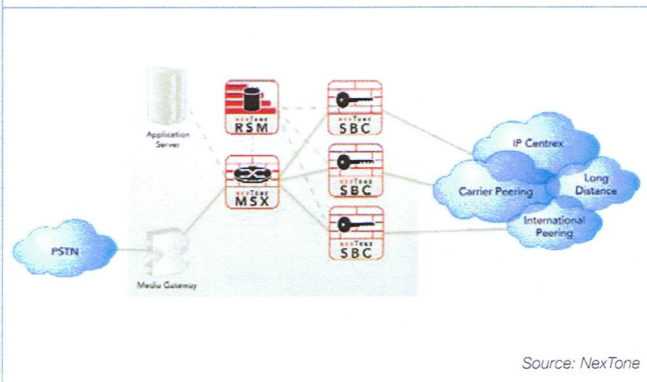
Second, flexible management of session exchanges via multiple protocols is indispensable for offering end-to-end services across disparate network endpoints. This flexibility must extend to interconnection of either a fixed or mobile network and to management of private-to-public IP addressing. In addition, management flexibility must extend in real time to application of a variety of session policies, including call routing based on least cost/best quality at a session or group level; call and session admission control; and load balancing.

Third, centralised control and detailed analytics and reporting capabilities based on streamlined collection of session detail records will permit real-time QoS and Service Level Agreement (SLA) management with partners. Coupled with these capabilities are requirements for integrating with existing OSS systems and workflows and centralised service provisioning and management.

THE NEX TONE INTELLICONNECT SOLUTION

NexTone addresses these VoIP interconnect requirements with the NexTone IntelliConnect System, a family of products that includes the NexTone SBC, Multi-protocol Session Exchange (MSX), and Real-time Session Manager (RSM), which are depicted in Figure 1.

Figure 1: NEXSTONE INTELLICONNECT SYSTEM



The NextTone SBC is a carrier-grade platform that enables delivery of IP communications across network borders while providing security, traffic normalisation – such as detection and dropping of malformed IP packets, codec policing, and voice transcoding – network interworking, SLA assurance, call admission control, and lawful intercept support. With its multi-layered security architecture, the NextTone SBC supports subscriber, network and application security and topology hiding while providing firewall and Network Address Translation (NAT) Traversal for successful session termination as well as protection from DoS/DDoS attacks.

The NextTone MSX is a policy and routing engine that enables provisioning of advanced policy-based IP-IP session routing and session-based policy enforcement with support for flexible dial plan management and least cost routing. The NextTone MSX can be implemented standalone or with the NextTone SBC.

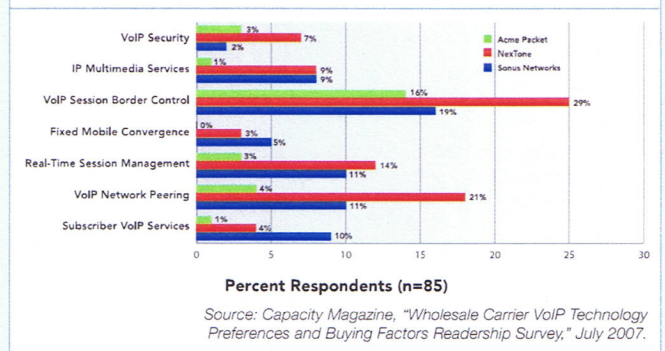
The NextTone RSM provides session-layer visibility in real time via QoS metrics analysis, route analysis, and dynamic policy management. Additionally, the NextTone RSM provides traffic profiling, re-routing and adaptive routing options, customised alarming, least cost routing options, reporting based on session detail records, and centralised management of NextTone network elements, including the NextTone SBC and MSX.

UNDERSTANDING WHOLESALE CARRIER VoIP TECHNOLOGY NEEDS

NextTone has designed the IntelliConnect System to support the IP Multimedia Subsystem (IMS) standard, but this development takes place within a global framework of increasing VoIP interconnects. To better support wholesale carriers' requirements for VoIP interconnect-enabling technology, NextTone continually reviews market needs and preferences. In November 2006, Capacity magazine conducted a reader survey for NextTone. Respondents were not aware of NextTone's sponsorship. The survey consisted of 12 questions. Respondents from Africa, Asia Pacific, Canada, Europe, Middle East, and the United States answered questions regarding their business or industry sector, buying factors and familiarity with available VoIP products and services. The survey in its entirety is found in the resource centre at www.capacitymedia.com

In one survey question, respondents were asked to select the

Figure 2: WHOLESALE CARRIER VOIP TECHNOLOGY PRODUCT/SOLUTION CATEGORY RATINGS BY COMPANY



appropriate product or solution category that applied to three listed technology providers. Capabilities associated with the NextTone SBC, MSX, and RSM products were included in the survey categories. Response results are shown in Figure 2. In most categories, NextTone was perceived as the leading provider. Nearly one-third of those who responded to the question recognised NextTone as a leading provider of VoIP session border control solutions for security; slightly over one-fifth of respondents recognised NextTone as a VoIP network peering solutions provider; and NextTone had the highest recognition among respondents in the category of real-time session management.

KEEPING PACE WITH THE VOIP EVOLUTION

Additional recognition of NextTone's IntelliConnect System support for VoIP interconnects is borne out in a recent report by J. Arnold & Associates (June 2007) in which the analyst indicates that over 50 percent of the world's international VoIP traffic flows across NextTone's platform.

As carrier VoIP traffic grows both with the transition from TDM to VoIP and direct sales of VoIP services, the need for high quality interconnects becomes increasingly important. Selecting the right platform to address the security, routing and session detail requirements is a critical a step in the transition process. ■

ABOUT NEXTONE

NextTone develops intelligent session management and interconnect systems for service providers that want to expand their reach and accelerate VoIP and multimedia revenues. NextTone's IntelliConnect System provides the visibility and intelligence needed to exchange, optimise, secure and bill for voice and multimedia sessions across diverse IP and IMS network boundaries. More than 550 service providers and enterprises worldwide use NextTone's IntelliConnect System to manage technical complexities, optimise business economics, and remove partnership hurdles.

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