

iCore CIO Symposium White Paper

**“Selecting the Right Hosted VoIP Provider:
Five Essential Criteria”**

Introduction

As the pace of business accelerates, companies in the small and midsize business (SMB) market are looking for ways to improve customer service and heighten employee productivity and mobility, while keeping a lid on capital and operating expenditures. Internet-based telephony, or Voice over IP (VoIP), offers great promise to smaller businesses looking for ways to level the playing field with even the largest of competitors.

Because it enables businesses to converge disparate voice and data networks into a single network, VoIP can deliver substantial savings, while significantly enhancing employee performance. To date however, adoption of this technology has been primarily limited to large enterprises. But that's changing. New VoIP service providers have entered the market and begun offering solutions that are ideally suited to the SMB environment. In particular, hosted VoIP holds great promise for smaller businesses, because it delivers the advanced technology and significant cost savings one would expect from IP telephony, while obviating the need for extensive in-house expertise.

In essence, the hosted VoIP vendor becomes a company's sole communications provider (for local and long-distance calls, Internet access, etc.), delivering these services over a converged voice and data network. With hosted VoIP, customers should expect to receive:

- a complete managed service
- ease of operation and maintenance
- high Quality of Service (Qos) for both voice and data
- a rich set of available features and options, including unified messaging and low-cost voice and video conferencing

Market research firm InfoTech expects hosted IP telephony revenues in the US to grow from \$310 million in 2005 to \$5.9 billion by 2010.¹ And smaller enterprises are expected

¹ "Hosted vs. Premises IP Telephony," *Business Communications Review*, 11/05.

to play a significant role in that growth: InfoTech expects SMB spending on all Internet phone systems, equipment, and services to more than quadruple to \$8.9 billion by the end of this decade.²

SMB buyers should exercise caution, however, when selecting a hosted VoIP service provider since not all are created equal. What is needed is a true partner committed to delivering the highest possible Quality of Service for voice and data across a converged network. At the same time, the provider should be expected to deliver such services for 25% to 40% less than the cost of traditional voice and data networks.

How exactly can a CIO, IT director, or other decision-maker in a small or medium-sized enterprise ensure they are making the right decision when selecting a hosted VoIP provider? Below are five key criteria executives may use when evaluating providers of hosted VoIP services...

Criteria #1: Robust, Vendor-Managed Approach to Hosted VoIP

To begin with, SMBs should evaluate only those hosted VoIP providers offering a carrier-grade service architecture. Consumer-oriented VoIP services from companies such as Vonage simply cannot reliably deliver the QoS levels required by most businesses. As Figure 1 illustrates, consumer-grade VoIP services use an "Internet-unmanaged" approach, which means they transmit voice and data through the router at the customer premise, across a T1, and directly into the public Internet.

[Insert Figure 1]

In contrast, a carrier-grade hosted VoIP provider takes a far more secure and reliable approach, as shown in Figure 2.

² "Managing Technology: Is Talk Cheap?", *Wall Street Journal*, 9/25/06.

[Insert Figure 2]

Under this model, the service provider routes calls and data from the customer premise over a private, dedicated line into the provider's Network Operations Center. From there, secure and fully redundant connections are used to send data transmissions ([B] in the diagram) to the Internet, and voice transmissions ([C] in the diagram) to the traditional phone network, or PSTN (Public Switched Telephone Network). This approach ensures the highest possible Quality of Service levels for both voice and data transmission.

With hosted VoIP, IP phones and voice-optimized routers and switches are the only equipment housed at the customer premise. The service provider owns and manages all the necessary network equipment, which it hosts in the Network Operations Center. By partitioning this equipment to serve multiple customers, the service provider should be able to offer a feature-rich set of services for a very reasonable price.

The Network Operations Center itself should offer industry-leading levels of security, power availability, continuity, redundancy, and network management, including all of the following:

- fully redundant connectivity to/from the operations center into the PSTN and Internet (with multiple OC-12, DS-3, 100MB Ethernet connections to major carriers)
- carrier-grade data security: management of server security patches and fixes and associated issues of version control, regression testing, and OS/application version compatibility
- hardened physical construction, designed to withstand fire, flood, earthquake, etc.
- multi-level physical security features and a rigidly controlled operating environment
- full business continuity/disaster recovery capabilities

- fail-safe network architecture design: fully meshed network with completely redundant systems for call management servers, voice mail, voice gateways, conferencing, and firewalls
- highly reliable power systems with built-in redundancy to guarantee continuous operation

Criteria #2: Comprehensive Network Monitoring & Management

Another key characteristic SMB executives should look for when evaluating hosted VoIP providers is the vendor's ability to remotely monitor and manage customer premise IP equipment in real-time – all the way to the IP phone. (Under the "vendor-managed approach" to hosted VoIP as illustrated in Figure 2, the service provider manages the IP equipment housed at the customer premise).

Unfortunately, a number of vendors "manage the connection" only to the router at the edge of the Wide Area Network (WAN); after that, it's up to the customer to find and resolve any problems that may occur with equipment inside the Local Area Network (LAN). For Ken Strohschein, senior vice president and CIO of Lumber Liquidators and an iCore customer, working with a hosted VoIP partner who regularly provides remote monitoring and management of IP equipment within the LAN proved to be "a huge benefit."

Like most small and medium-sized enterprises, Lumber Liquidators has a limited IT staff, making it impractical for Strohschein to provide in-person tech support at the company's 94 store locations. Now, iCore can remotely manage any necessary firmware upgrades to store-based IP equipment, notify Strohschein when he's reaching 100% utilization of bandwidth on a particular pipe – even send an alert if a specific IP phone gets unplugged (and potentially stolen from a store).

In addition, SMBs should be sure their hosted VoIP vendor provides administrative web portal access, so the customer can make their own moves, adds, and changes through an easy-to-use point-and-click interface (thereby eliminating what has historically been

one of the biggest ongoing expenses for dynamic businesses using traditional phone systems).

Criteria #3: Unwavering Commitment to QoS

Another key differentiator among hosted IP telephony service providers is the degree to which a firm is committed to delivering exceptional Quality of Service – in terms of both voice and data. SMB executives should select a VoIP partner whose service offering leverages a robust packet-switched network to carry voice and data traffic over the Internet Protocol without any noticeable degradation in quality. In fact, it should be the vendor's explicit goal to provide the same level of QoS over VoIP that has traditionally been available only through the PSTN.

Why is Quality of Service so crucial? Because, particularly when it comes to voice transmissions, every millisecond matters. While we may not mind so much if it takes four seconds to open a Microsoft Word document, we certainly will notice if even half a second of a phone conversation is lost.

For many CIOs and IT directors of small and midsize businesses, VoIP implementations may well represent a Pandora's box of technologies they've never had to deal with before, such as network traffic issues, QoS levels, voice router and switch configurations, etc. As Ken Strohschein observes, "With phone conversations added to the mix, it's a whole new ball game. Now our IT department isn't just charged with having a good network, we have to have a *perfect* network."

SMBs need a hosted VoIP provider with the technical expertise to optimally set router and switch configurations to ensure that voice packets get transmitted faster than data packets. This traffic optimization will minimize latency, packet loss, and overall degradation in voice quality, while still protecting the performance of the data network.

In addition, CIOs should ask how voice calls are terminated to the PSTN (see [C] in Figure 2). Does the IP telephony vendor default to SIP (Session Initiation Protocol) or does it rely whenever possible on the older PRI (Primary Rate Interface) mechanism from traditional telecom? Many hosted VoIP providers default to SIP, in order to trim

their own operating costs – even though that can mean sacrificing some voice quality at the customer’s end. It is also important to determine whether a prospective IP telephony partner regularly oversubscribes ports to keep their own costs down, even though – again – this means sacrificing customer QoS levels during times of peak usage.

For example, a typical small company with 40 employees is likely to need one T1, or port, leading from their customer premise to their vendor’s Network Operations Center ([A] in Figure 2). Since this company would pay for 1.5 meg in bandwidth, it seems reasonable to assume that they will be allocated 1.5 meg not only between their premise and the Network Operations Center, but also between that operation center and the Internet ([B] in Figure 2), and the PSTN ([C] in Figure 2). Unfortunately, this is not always the case. In order to cut their own costs, the service provider may well allocate only 1 meg of bandwidth on pipes heading out of the Network Access Center.

Before making a final selection, IP telephony decision-makers within small and midsize firms should first confirm that their would-be VoIP service provider does not make a practice of oversubscribing ports.

Criteria #4: End-to-End Provider

In order to ensure success from start to finish, SMBs need a hosted VoIP provider who won’t just ‘walk away’ once the system’s installed – they need a vendor who will deliver true end-to-end services, including:

- direct sales of best-in-class hardware and services
- experienced system design and configuration
- reliable cabling and installation
- skilled customer provisioning (ordering of circuits, line number porting, etc.)
- friendly and knowledgeable on-site end user training
- immediate 24/7/365 customer support

Sometimes with larger vendors, it can seem as if it just isn’t in their DNA to focus on what an SMB customer needs in terms of a specific, creative solution.

The ideal end-to-end hosted IP telephony vendor should provide a managed service specifically designed for the SMB market. This service should include local and long-distance service, high-speed Internet, and unified messaging, while offering clients total reliability and total flexibility. By allowing SMBs to rely on one vendor for all their business communication needs, end-to-end providers enable their customers to stay focused on their core competencies, and on growing their own bottom line.

Ken Strohschein of Lumber Liquidators sums up the benefit of working with an end-to-end provider in this way, "The iCore folks who came to the table to propose a solution for us, are the same people I was on the phone with yesterday discussing a resolution to a service issue..."

iCore's willingness to take on the entire project 'from soup to nuts' was especially important to Strohschein. "Our stores were a disaster from a wiring perspective," he explains. "We had to completely replace the existing hardware, and rewire all 96 stores. iCore helped us design a very unique hardware solution – one that could be successfully replicated across every store."

"VoIP may be iCore's core competency," he continued, "but it's just one part of the total solution they delivered to Lumber Liquidators; they upgraded our data network, too, which was just as important to us."

Criteria #5: A “Future-Proof” Network

By selecting a hosted IP telephony provider that has invested in an industry-leading Network Operations Center, SMBs can readily leverage new technology as it becomes available, while remaining shielded from typical QoS and/or technology obsolescence risks.

Because in a hosted VoIP environment, all networking equipment is housed within the service provider's operations center, new features and technologies – once they've been thoroughly tested and vetted – can be easily added to the IP telephony platform and rolled out to customers. This can be done without any "truck rolls" or installation of additional business premise equipment.

In addition, by selecting a carrier-grade hosted VoIP provider, SMBs can significantly decrease their risk of technological obsolescence 1) since the amount of business premise equipment is greatly reduced under the hosted model, and 2) since the risk of obsolescence has effectively shifted to the hosted IP telephony provider (i.e., because they now own and manage the voice servers).

Perhaps most importantly, with its fixed monthly charges for voice and data, hosted IP telephony makes it possible for SMBs to accurately plan and budget for the future, which can be absolutely crucial to a growing business. As Ken Strohschein puts it, "of all the reasons why we chose iCore, their support for future growth and future planning was the most important criteria of all."

"Lumber Liquidators plans to open 60 stores in the next two years," he explains.

"Assuming we stick to that plan, all I'll have to do is increase my throughput with iCore (which is a simple thing for an IT guy like me to deal with)."

"I get it all with iCore, and it's all in one phone call."