



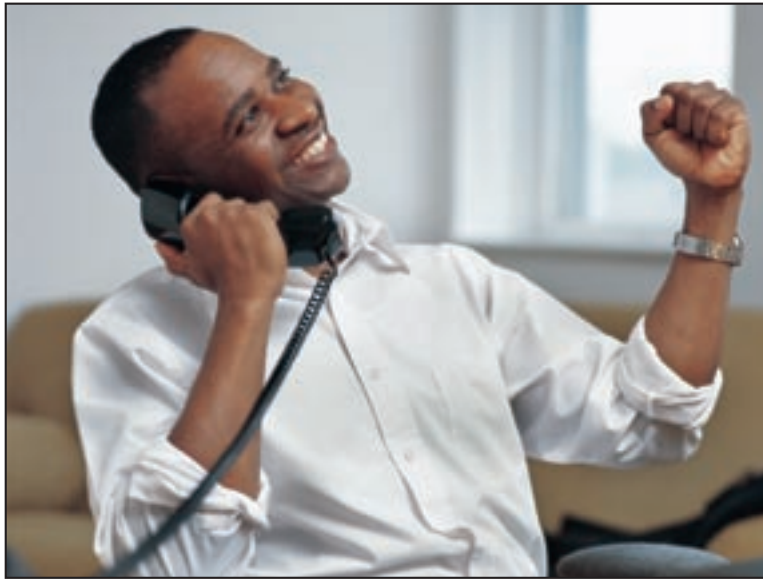
Skype, Vonage, Net2Phone, Etc.

To be or not to be any more than a residential secondary line service.

By Bruce Bahlmann, CEO ■ *Birds-Eye Network Services*

Certainly, telephone companies are just as serious about Voice over Internet Protocol (VoIP) as broadband enabled VoIP companies such as Skype, Vonage, Net2Phone, etc. and most are rolling out some form of VoIP or have plans to roll it out. While it may be said that traditional telephone companies find themselves behind the technology curve in some ways, their bread and butter service—POTS (Plain Old Telephone Service)—works, it is reliable, and it can absolutely sell as the only true “life line” service.

Unlike the broadband VoIP alternatives mentioned, traditional telephone companies are making real money by deploying VoIP to small businesses, more often over reliable, redundant fiber connections and using commercial grade VoIP endpoint equipment. In contrast, broadband VoIP is primarily accepted as a “residential



subscribe to one of these broadband VoIP services.

Unintended “Benefits” of Mobility

Broadband VoIP is easy to install. Simply plug into your broadband (DSL/Satellite/cable) modem and your connected within a very short time. Some broadband VoIP offerings (like Skype) use a Personal Computer (PC) so there is nothing additional to

this equipment could be easily stolen with potential consequences equivalent to someone stealing your cell phone. Since this equipment is not fixed to a particular street address such a service is not only quite mobile but also problematic when it comes to supporting 911. Emergency 911 calls generally require complete address information be associated with your phone number to permit help to quickly reach you. Since these end user

devices are often tucked out of site (under a desk, on the floor, or in the basement), an unassuming user may need to make an emergency call from such a phone not knowing the difference between your “mobile” broadband VoIP phone and the actual landlocked POTS phone—the results of such a mistake (if made public) could easily influence law makers to prevent such possibilities in the future.

“There are a number of different single points of failure associated with broadband VoIP...”

secondary line service” meaning, it is okay to use as an alternate phone line but you wouldn’t want to bet your life on it working when you need it. There are actually quite a number of operational knocks against deploying this technology residentially that I will bring to light here. Some of these may be painfully familiar to you if you

buy. However, nothing prevents you from disconnecting that same VoIP end user device (if there is one), and re-establishing service some place else (e.g. a friend’s house), thus allowing you to enjoy the same service over different Internet connections. This unexpected benefit has serious drawbacks that will be explained later. Similarly,

Broadband Exploits

Broadband VoIP is susceptible to bandwidth issues and today’s Peer-to-Peer (P2P) applications are wreaking havoc on previously reliable broadband connections making it difficult for external broadband VoIP providers to maintain consistent service. P2P is just the latest of many exploits of broadband to come, so we have only seen the first barrage of broadband bandwidth exploits. Like viruses, worms, and spam, broadband exploits



would you prefer to use: a local regulated telecommunications company or a stealthy Internet startup. What is to prevent others on the Internet from listening in, or more importantly, how will local authorities with the need to keep tabs on questionable individuals be able to listen in. In the US, the FBI is seeking to require all VoIP service providers to reconfigure their services for compliance with the Communications Assistance for Law Enforcement Act (CALEA). Childs play for traditional phone company VoIP offerings to adhere, but a complete nightmare for non-regulated broadband VoIP providers. For all we know, the next major terrorist attack is probably being planned and coordinated through unregulated technologies such as these. So if broadband VoIP wants to be more than a “toy”, it must adhere to the same legal compliance as any other major telecommunications carrier. The height of such hurdles for an Internet startup without an official place of business goes beyond comprehension.

Competition for Bandwidth

The competition for bandwidth represents an evolving issue for broadband VoIP that is just beginning to rear its head. Such an issue arises as broadband Internet providers decide

have infinite possibilities so any service that depends on consistent available best-effort bandwidth will never be a highly priced or valued service. Interestingly, Skype is based upon P2P technology.

Single Points of Failure: Take Your Pick

There are a number of different single points of failure associated with broadband VoIP, all of which can hang the end-point equipment and require it to be rebooted (a fine kettle of fish if you're trying to call in an emergency). Unlike telephone companies

demands also have a battery backup. Since Skype runs on a PC it would additionally require an Uninterruptible Power Supply (UPS). In fact, even when all customer presence equipment is backed up with a battery there is no guarantee that the rest of its delivery network equipment will be available during an outage. Retail availability is also an issue as spare parts, service, repairs, etc. are scarce, not to mention the fact that residential VoIP equipment remains fairly basic as vendors wait for more widespread adoption before they invest more money in-

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providing VoIP to business customers using fiber and redundant equipment, residential broadband is littered with multiple single points of failure. It is just too costly to make local loop and or last mile connectivity redundant. These single points of failure vary as different VoIP equipment vendors are matched with varying broadband Internet providers. Another limitation is that not all VoIP end equipment has battery backup capability, and even if it does, not all current broadband mo-

novating and creating better, more reliable hardware.

Question of Security and Trust

Not all broadband VoIP companies should be taken seriously. Some broadband VoIP companies don't have any company contact information and others (like Skype) don't even list an actual office address or official place of business. If you needed to place an important phone call or discuss a confidential matter over the phone, which

to launch their own broadband VoIP that replicates voice services, features, and pricing currently offered by today's broadband VoIP providers. In a free market environment, broadband Internet providers should expect to get whooped by broadband VoIP providers as their pool of potential customers will represent a mere fraction of those that broadband VoIP enjoy. However, an interesting thing happens when a broadband Internet provider offers VoIP. They provide their service

using a Dynamic Quality of Service (DQoS) feature, thus enabling their VoIP service to traverse the network within protected/reserved bandwidth while broadband VoIP is relegated to the remaining best effort bandwidth. Essentially, broadband Internet pro-

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viders will exploit DQoS to effectively trump the voice services offered by current broadband VoIP companies. One notable obstacle of VoIP helping broadband VoIP is that DQoS is not yet tried and true. Essentially, it is at least a year or two away from delivering the kind of reliability that ATM has enjoyed now for years. In the mean time, nearly all VoIP offerings

are provided over best effort networks. If all things were equal, one should still expect broadband VoIP companies to prevail. But somehow, these broadband VoIP services seem to get the short end of the stick, just enough bandwidth to work but not reliably,

and perhaps just enough resistance for customers to get interested in these services, but not overly excited.

Frankly, I believe that a major oversight of the likes of broadband VoIP providers like Skype, Vonage, Net2Phone, etc. is that they all went into this business thinking that bandwidth was there for the taking so why not exploit it and make money off

it. Clearly, they have made progress (especially Skype which rocks!), but their future remains uncertain due to the fundamental flaw in their business logic that didn't occur to them. Bandwidth is already being exploited so what bandwidth remains may not reliably sustain the services they are trying to provide. I'm afraid that broadband VoIP will never be more than what it currently is, a residential secondary line service and a cheap alternative to paying full price for additional phone lines. The traditional telephone companies really have nothing to worry about, especially considering the way they are cleaning up on VoIP business services. After all, that is where the money is, right? ■

About the Author

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