Worried about VoIP quality? Re-think ADSL

By George Golding

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New wireless and fibre options can greatly improve reliability at good prices and let's face it, the company that cannot communicate effectively will not last long in any competitive business climate, let alone today's.

No Internet, no business

Businesses are increasingly dependent on Internet-delivered (cloud-based) IT and communications services today, including Voice over IP (VoIP). In such circumstances, reliable Internet is a must, or your business will simply grind to a halt.

Aware of this, VoIP customers often cite connectivity as their biggest concern. Frequently reported technical issues with ADSL have only deepened their fears, and so the answer is to look beyond using ADSL alone.

The role of ADSL

It must be noted that ADSL is a good technology that has done much to popularise broadband. Even today it holds its own among more up-to-date connectivity options.

However, an ADSL link is only as good as the local exchange. Poor ADSL service is often caused by an exchange that is either over-subscribed or under-maintained, causing outages or quality problems like jitter, delay or dropped voice packets.

Good ADSL, bad ADSL

There are good areas for ADSL and bad ones. Some have a rich supply of ADSL bandwidth via well-maintained local exchanges, while others have too many users 'contending' for the same bandwidth and poorly maintained infrastructure.

So how do you overcome this? Ensure you're in a good coverage area (this goes for any form of connectivity). Free tests on sites like www.speedtest.net (line throughput) and www.pingtest.net (quality) give an instant indication of speed and quality of lines.

Secondly, always have 'failover' (a backup line) - but never from the same provider or, naturally, using the same technology.

Better new options

Thirdly, ADSL is not the only option. Without detracting from the contribution of ADSL over the years, numerous new wireless and fibre connectivity options are emerging to offer great quality, copious, non-contended bandwidth at a small premium. These include WiMax from Neotel, fibre from Neotel and Telkom, and a range of wireless connectivity providers such as Snowball, Vlocity and TWK.

- **WiMAX** offers high-speed connectivity over long distances. It compares favourably with ADSL and fibre in price and performance, without suffering the contention of ADSL or the infrastructural investment of fibre.
- **Fibre** - Fibre rollout is speeding up, and uptake among businesses and affluent communities is causing prices to fall. As competition increases, fibre offers increasingly well-priced, high-performance options too.
- **Wireless** - The number of wireless providers in SA is growing. Some of the bigger providers offer direct VoIP-dedicated links into national fibre networks such as ECN's (also VoIP-dedicated). Others link to providers offering 'breakout' onto fibre networks. The low cost and minimal infrastructural disruption of wireless allows providers to pursue low-population areas.
- **3G** - The cellular providers offer high throughput at competitive rates, but due to the inability of 3G to handle more than one stream of data (two calls or a call and browsing simultaneously), it must be used in conjunction with a quality of service tool like ViBE (see further down). To use ViBE, 3G users need an unrestricted APN to allow a VPN tunnel through its firewall.

Comparison between broadband access technologies					
Technology	Line speed	Up/downlink speeds	Bandwidth package	Considerations	Price (+/-)
ADSL Broadband	4Mbps	640Kbps/4Mbps	50GB	Reliant on exchange (contention, maintenance)	R2600
Wireless Broadband	2Mbps	2Mbps/2Mbps	Unlimited	Breakout onto fibre backbone	R2699
Wireless Voice Link	512k	512k Diginet Replacement	Unlimited	Voice only links directly link into dedicated VoIP networks bypassing all shared networks.	1350
WiMAX Broadband	5Mbps	2Mbps/5Mbps	Unlimited	Broadband link, new technology	R2300
Fibre	2Mbps	2Mbps/2Mbps	Unlimited	Broadband link, new technology	R3050
3G	Varies per provider and location	Varies per provider and location	Depends on package and provider	Broadband Link	Varies per provider

Source: Webafrica.com, Snowball.co.za, Neotel

Quality vibe

Even with quality technologies like these, uptime can never be taken for granted. As with ADSL, having redundancy or failover with all these, especially 3G, is wise. In fact, because of their cost-effectiveness, an ADSL line or 3G connection is most appropriately used not as primary, but as secondary (backup) line to these other providers.

However, if ADSL has been the cause of complaints, and 3G can't handle more than one voice stream, how can they be an option even as backup? The answer is to combine it with a technology like ViBE by VoIPex, a de facto quality-of-service

standard with VoIP providers.

ViBE works on multiple levels to overcome quality and capacity issues:

- It streamlines data traffic by stripping out unnecessary data
- Using VPN technology, it 'insulates' voice packets within a non-dedicated data line to block out interference from other data
- By a technique similar to 'ADSL bonding', it pieces a complete VoIP stream together out of voice packets from two redundant links if one goes down or both have quality issues

3G, like ADSL, can be much improved with ViBE and VPN technology. With ViBE and an unrestricted APN, VoIP on 3G can handle up to five concurrent calls. ViBE creates a single VPN link, managing multiple calls within it but seeming like a single thread.

Take two

Depending on your financial profile and throughput requirements, a variety of primary and failover connectivity options exist that can give you the assurance that the Internet won't fail your business.

While ADSL continues to make sense in certain circumstances, a range of new connectivity options like fibre, WiMAX and wireless are challenging the copper technology's once uncontested birthright to rule the connectivity landscape.

Euphoria Telecom

Founded in 2010, Euphoria Telecoms provides Voice over Internet Protocol (VoIP) communication services to small and medium enterprises in South Africa. Euphoria powers businesses with its core offering - Euphoria Express PBX - a hosted PBX phone system that provides customers with the quality, security and reliability of traditional PBX phone systems, with more features, greater flexibility and considerable cost savings. For more information go to www.euphoria.co.za.

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