



## CONNECT 4

### SHARA EVANS puts her questions to our exclusive four-man panel featuring:



Rob Pierce, MD, ANZ,  
LG-Nortel



Brad Dolphin, CEO,  
ValueNet



Tim Watson,  
CEO, Activ



Ray Smith, GM ANZ,  
Samsung Comms.

#### QUESTION 1:

There are tens of thousands, if not hundreds of thousands, of small to medium sized businesses with legacy phone systems that they own and are happy with. What added value makes the upgrade to IP telephony worthwhile?

**RP** While telephony has continually evolved over the past 100 years, only in recent years has this change become revolutionary. The march to voice and data convergence has been relentless – a new technology ready to assume the space of traditional telephony and bring businesses some significant benefits and added value, including:

- True mobility for all staff. WiFi handsets sharing generic

access points with other devices on the LAN, softphones or videophones installed on laptops or PDAs connected simply as extensions to the office system. Or indeed remote teleworking solutions for employees working from home – either by fully-fledged remote services gateway (providing them with local PSTN redundancy), or an IP handset simply plugged into an ADSL modem.

- Managing devices on your LAN/WAN has always been part and parcel of the IT world, but not necessarily the telephony world. The move to IP telephony has given network administrators much more scope to manage the telephone system via smart admin tools, either over a web interface or the LAN. Moves, adds and changes may be made without the need for third party involvement. Relocating an extension is as simple as moving the phone – everything else happens automatically within the IP phone system because the phone's embedded MAC address is assigned the extension number and feature set.
- Networking between offices has never been more powerful. Centralised attendant, centralised voicemail, or redundancy in the case of a service failure are all benefits of the converged world. Call savings are possible as long-distance VoIP calls can transit-off at a local exchange and inter office calls be transmitted over the existing data links. Call centre overflow to remote agents maximises staff utilisation for national or global companies.

**BD** If people are truly happy with their phone system then they are unlikely to need or want to upgrade to IP telephony. What we find is that there are generally one or two fundamental problems businesses would like to solve with a new phone service, often including:

- Moving office.
- Outgrown existing system and have had a shock at the upgrade costs involved.
- The need to achieve some real business efficiencies.
- Customer service.
- Disaster recovery planning.
- Mobile work force.
- Seasonally growing or shrinking their business.
- Need to integrate multiple sites, or add additional sites.

Although solutions to some of these problems are not specific to IP telephony, the need to upgrade their old system enables these businesses to evaluate additional benefits IP telephony can provide, and in particular, the benefits of a fully managed (hosted) service. Hosted IP telephony adds extra value by seamlessly enabling additional features and functionality across multiple sites. This simply cannot be replicated with traditional PSTN or IP-PABX solutions.

Other benefits that are derived from a move to IP include the potential to establish a converged voice and data solution leading

to ongoing efficiencies because:

- No longer need separate voice, data and VPN services – they can all be combined into one access product from one service provider. No longer do you have to call and manage multiple service providers.
- With the move to IP, voice can now be managed by an IT person where previously this would involve a call to your PABX provider.

**TW** IP telephony reduces your voice total cost of ownership and offers many new productivity features.

Combining your data and voice requirements into a single network reduces capital and maintenance costs. VoIP reduces or eliminates your line rental costs (up to 30 percent of most SMB phone bills) and call costs.

IP telephony has software roots and was built with software applications in mind so the features available with an IP-based solution will exceed that of a traditional solution.

**RS** At Samsung we are finding that the majority of customers who are implementing IP telephony are doing so to achieve additional flexibility and applications that their current legacy telephone system cannot provide. The clear benefits of IP telephony are organisational flexibility, reduced office space, reduced call costs and overheads, improved mobility and work/life balance for staff.

One of the main IP solutions delivered by Samsung will enable remote sites, (remote branches or staff), and mobile staff, to be connected to the office telephone system as if they were internal extensions. Remote/home workers, for example, can plug an IP handset straight into their broadband service and the IP handset will be treated by the head office communications system just like any other extension. Unlike legacy telephone systems, there is no distance limitation to how far IP extensions can be located from the main telephone system, down the street or on the other side of the world.

Smaller branches or sites, that have traditionally required their own legacy telephone system, can now be provided with IP extensions from the main site allowing these extensions to be fully integrated into the main office system, providing access to all the telephone functions that internal users are used to – from simple call forwarding and transfers to advanced features such as centralised operator services, voicemail, automated attendant and call distribution.

By providing a Windows-based softphone on a PC, road warriors that regularly work away from the office can enjoy the full functionality of their normal desk phone on the move.

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QUESTION 2:

Most vendors offer other solutions in addition to the “pure IP” option. What do you believe influences a business customer’s choice between traditional environments, hybrid systems and pure IP telephone systems?

**BD** The buying decision between these is usually determined by a business’s ‘problem space’ and their business outlook. Some companies do not have a high demand for added functionality and predominately make more outgoing calls. In this case, a free PABX and cheap calls can be a hard number to beat.

Hybrid systems generally are a compromise in one area or another, and are usually associated with adding VoIP connectivity between multiple sites while maintaining traditional PSTN connectivity elsewhere.

The choice of a pure IP solution, which we define as IP on the LAN and IP on the WAN, is more likely to be chosen by businesses who are keen to embrace the new world and have sufficient knowledge so that the full benefits of a pure IP solution can be realised.

A further consideration is opened up by a pure IP solution that is fully managed i.e. no on-site hardware for call control or PSTN gateways. Some businesses immediately see the benefits of this; others are still comfortable to see the ‘grey box’ on the wall in the kitchen.

**TW** The feature set. IP telephony may offer new features but the customer may not need them and they will have to buy new handsets which is often the biggest cost.

A hybrid solution spreads out the cost and offers some IP-based advantages early on to those in the business who would most benefit (e.g. sales teams).

**RS** Ultimately the decision to implement pure IP system or a hybrid system will depend on the individual customer requirements. For that reason Samsung OfficeServ 7000 converged communications systems can be configured for a pure IP environment, (that is, all users have IP extensions connected via a LAN/WAN) or as a hybrid system, which is a mix of traditional digital/analogue extensions and IP extensions, as well the option to provide data switching, routing and security features. For greenfield sites this ‘all in one’ solution can provide all the voice, data and IP capability in the one converged platform.

Recent independent surveys have shown that the majority of small business customers are implementing a hybrid solution, rather than a pure IP solution.

The reasons for this is that with hybrid solutions customers can achieve the benefits of IP without the cost and perceived risk of a total forklift upgrade often necessary to implement a pure IP solution, to ensure quality of service is achieved. Most existing customers already have an existing voice cabling and LAN infrastructure, so there is not necessarily an advantage to moving to pure IP. In these cases customers tend to prefer lower cost digital telephony for the majority of users and use IP for specific applications, i.e. remote sites or users.

**RP** Customer’s requirements differ greatly and it is these requirements that can determine the type of telephony solution they may opt for. A customer may require certain applications or technologies that only are available with pure IP telephony, such as advanced multi media applications. A customer may be moving to a greenfield site and thus take advantage of reduced cabling infrastructure costs. They may wish to manage one network – data and voice or simply take advantage of the end of lease, or end of life of the current phone system.

There are also businesses where the need to change is not so compelling, such as small single-site businesses or those with little dependence on technology. Such organisations can still take advantage of the IP revolution by IP-enabling their existing system, or by installing a modern hybrid system.

QUESTION 3:

What features are customers likely to lose if they seek a multi-vendor solution rather than a single vendor solution?

**TW** Probably not much in the IP world. As the standards mature, interoperability of different vendors’ equipment is not that difficult. Protocols like SIP are making this happen with traditional PBX vendors now offering SIP capable iPBXs.

**RS** A single vendor solution is designed so that all the components are fully integrated, fully tested and fully compatible to deliver a full feature set. This eliminates any possibility of compatibility issues with multi-vendor solutions and the loss of advanced features not supported by all vendors.

The other, often not recognised, advantages of a single vendor solution include a single provider of technical expertise, project management and a single point of responsibility for problem solving. Consistent management interfaces also ensure the whole of life costs should be lower.

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**RP** Customers with multi-site locations considering a multi-vendor solution need to assess their telephony requirements and particularly the interoperability of these systems. Choosing different vendor solutions for each of their sites will minimise the features available across the network and possibly introduce compatibility and demarcation issues. Only basic features as specified in the generic protocol, such as call forwarding or call transfer, may be available and multi-vendor solutions may add significant cost and resource time to IT departments. A single vendor solution reduces network complexity and management costs.

Having single vendor solutions across multi-sites provides staff with a common feature set. Paging or transfer functionality, for example, is the same on site A as it is on site B. Staff can move across sites without the need for retraining or desktop familiarisation.

**BD** This really depends on what type of service they are looking for. In the case of some IP PBX systems, you now have choice of different vendors' handsets that are "keyed" to the specific vendors' PBX. However, non-proprietary systems can allow components to be reused in other vendors' solutions should you wish to change or update in the future.

Installing a multi-vendor solution could also force the business to take responsibility for the overall integration which can be an expensive exercise if this isn't a core part of their business.

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#### QUESTION 4:

What's the role of the hosted IP telephony (IP Centrex) service? And, what criteria should businesses use to decide between a hosted service and an in-house telephony system?

**RS** Hosted IP telephony or IP Centrex does have advantages for some customers. It particularly suits companies that have a large number of small sites wanting unified operations with limited requirements for sophisticated networking between sites. Sites can be quickly built since the programming is mostly in the hosted IP provider's core equipment. Once the WAN service is installed then it is possible to provide fast installation of on-site equipment by unskilled staff, or even the customer themselves. Hosted solutions also have the immediate financial advantage of reduced capital expenditure.

However, in-house telephony systems offer most small to medium business customers a number of advantages. While the initial capital outlay for a hosted solution may be small the whole of life costs tend to be higher. The freedom of choice between carriers to

ensure the most cost effective call costs is lost. Hosted solutions generally offer a reduced feature set compared to those available on in-house systems and the changes in the feature set are often controlled directly by the provider. Businesses prefer the flexibility of customising their own feature sets, which is readily available with in-house systems.

The majority of customers also require the enhanced features of today's in-house telephony systems including wireless voice and data, computer telephony integration to the desktop, choice of handset types and options for remote working. The other significant disadvantage of hosted solutions is the WAN link is a single point of failure. If this connection goes down then all the hosted users are off the air.

**RP** Hosted IP telephony provides an alternative to traditional in-house telephony. Historically driven by carriers and pitched at large enterprise, hosted telephony brings some advantages to businesses: no capital costs, single service level agreements and hosted management.

Deciding between hosted services and in-house telephony is not a difficult decision for SMEs. The majority of SMEs in Australia choose in-house telephony solutions for a variety of reasons. In-house telephony solutions can easily be integrated with customer-unique applications. Customers have a choice of carrier, (they are not just confined to the IP Centrex provider's own network) and have greater flexibility specifying a system to meet their own business requirements.

Highly sensitive organisations often feel more secure if their in-house system resides on their own network rather than hosted externally.

In the past, moves, adds and changes to Centrex solutions have been sluggish and convoluted. While large enterprise can often find a work-around for this situation, SMEs seldom have this luxury.

**BD** Being a provider of a fully managed hosted IP telephone service, ValueNet firmly believes this is the future for service delivery. Having said that, we see the industry in a transition phase where some businesses see the immediate benefits of a hosted system, while others still see a benefit in owning their PABX/IP PBX, having proprietary handsets, having multiple providers for voice and data, having multiple maintenance contracts and not knowing whether to call the PABX supplier or their service provider if they cannot receive calls.

Businesses see the key benefits of a hosted solution as:

- Significantly reduced capex costs.
- No ongoing maintenance cost on hardware.
- Ability to provide true voice and data convergence.
- Businesses spread over multiple sites can be configured as one virtual site providing equipment and operational savings.



- Superior performance and flexibility in terms of disaster recovery.
- Single point of call for service support .

**TW** IP Centrex is the easiest solution to buy. Just choose your handset and you pay a monthly fee for each user. No matter how many offices you have, they are linked to a centralized PBX. You can implement the same capability in-house as well, but it would probably cost more and take longer to implement.

The criteria should be based on convenience and cost. If there aren't any 'must have' features with an in-house solution then outsource it.

QUESTION 5:

What role can VoIP trunks provide in conjunction with an in-house telephony system? Can internet-based VoIP services safely be used for VoIP trunks? How can voice service quality be guaranteed using internet-based services?

**RP** VoIP trunks simply provide additional connectivity to the world. They can be employed as "tie-lines" enabling inter-system connection utilising direct or leased data lines, or SDSL (or at least BSDL) services. They can provide a very economical means of linking small systems or remote offices together. Provided a substantial ISP hosts the services – preferably one that uses its own infrastructure, and thus controls the quality and reliability of service – reliability should be reasonable.

Modern encryption techniques employed by leading CPE equipment suppliers ensure that voice transmissions over the internet are secure. However, voice quality is another matter. While the installation of devices such as switches supporting quality of service can be controlled within an office environment, once the data leaves that environment there are no guarantees. Even if the ISP offers VoIP graded services, packet loss or congestion can occur almost anywhere on the web. However, this situation is improving quite quickly as the web expands and capacity exceeds demand.

**BD** A number of providers are offering cheap calls via VoIP trunks. This service is usually promoted as an add-on to an existing service where the legacy phone system is used for calls requiring a toll quality service and the VoIP trunk for calls that can tolerate variable quality, for example between branches.



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This can be a useful product for businesses that are looking at cost savings as the absolute key driver and their current call cost is the only problem with their existing telephone service.

Due to its inherent design and underlying technologies, nothing over the internet can be guaranteed. Some calls may be perfect while others may not; and therein lies the problem. Guaranteeing every call as toll quality requires a substantial increase in investment from the service provider – which may not necessarily translate into the cheapest call costs on the market.

**TW** VoIP trunks to a packet switched network will work seamlessly on business grade internet links if the ISP specifically supports VoIP. Many business ISPs are looking at doing this and some do already.

The ISP's network either trunks VoIP traffic to the PSTN network or routes it through to another user on their network. They cannot control VoIP to VoIP quality outside of their network.

**RS** VoIP trunks can be used to offer lower cost links to the carrier's network, resulting in significant savings in overall communication costs. Multiple voice channels can be provided over a single IP connection resulting in direct savings on line charges in addition to lower call charges. For multi-site businesses with high call traffic between sites or calls between charging zones the use of VoIP trunks or tie lines for toll by-pass can also result in significant savings.

If the internet-based VoIP services are secured appropriately then they can be used for VoIP trunks. At present business grade voice quality cannot be guaranteed when the VoIP traffic is sent via the internet. When all major ISPs are able to offer class of service control for customer traffic through the internet then business grade quality of service for VoIP may become a reality.

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QUESTION 6:

What criteria should SME customers consider when choosing a service provider for VoIP trunks or hosted IP telephony services? How do business customers ensure they have number portability when choosing a VoIP provider? What pitfalls should a business customer watch out for?

**BD** When making a decision about VoIP in general, and specifically about which provider, you need to clearly understand what your problem is with your current system. For example, not being able to add new handsets because the PABX has reached capacity; you require more flexibility in call flows to provide improved business efficiencies, to support mobile workers or to improve customer experience when calling the business.

Once the problems are clear, you can set about choosing a provider. Ask your intended provider to explain what services they provide in the following areas:

- Presales support. Are they willing to come in and provide a no obligation evaluation of your current systems and propose ways to improve business call flow?
- Get the provider to explain how they guarantee call quality
- Are any legs of a voice call going via the internet or on a shared link without any quality of service support?
- Will the provider provide any service level agreements?
- Does your provider take full responsibility for the service?

This is especially the case when a VoIP trunk or hosted service is provided over a third party (or existing) DSL service. The VoIP provider may refer you back to this provider if you experience voice quality problems.

**TW** SME customers need to ask the right questions of their intended VoIP or hosted IP telephony provider. Availability, reliability and quality are the keys to success. SMEs may find that some service providers offer attractive solutions that are based on public internet access services, but we believe that this form of connectivity is unreliable and unpredictable.

Solutions should be built upon private network infrastructure – which allows for the implementation of quality of service in order to provide predictable call quality, performance and reporting for the customer’s sites, as well as consistency through our network. Businesses need also be aware that VoIP may require integration and hardware expense.

**RS** The major considerations SME customers should consider prior to selecting a service provider for VoIP trunks or hosted IP telephony services are:

- Does the service provider’s network support QoS throughout the network including connection between the customer’s site and the service provider’s core network?
- Does the IP connection between the SME customer’s site and the service provider’s network have sufficient capacity to handle the voice and or data traffic required?
- Does the service provider provide a written service level agreement (SLA) consistent with the customer’s requirements?
- Does the service provider’s SLA guarantee number portability at the conclusion of the contract term?
- What, if any, back up is provided in the event of a major failure in the service provider’s network?

Written guarantees from reputable service providers should ensure a positive and cost effective VoIP experience.

**RP** Czech novelist Milan Kundera said: “There are no small parts, only small actors.” When it comes to choosing a service provider for VoIP trunks or hosted IP telephony services it’s best to stay with a large act. Use a provider, who will provide SLAs and has core internet access with redundant network infrastructure. Generally ISPs, carriers or Telcos that provide, maintain and utilise their own infrastructure are a good starting point.

Our best advice indicates that, as service providers purchase blocks of (in-dial) numbers in a given location, at this time, number portability cannot be guaranteed between providers. However, the larger the provider, the greater the chance of securing portability.

If you’ve determined that the use of VoIP services can save you money and improve business efficiency, it’s important to remember that you are running a business and as such, should employ business-grade services. There are many grades of DSL services from a host of providers. If you purchase the absolute cheapest service, chances are that’s exactly what you will get.

Finally, from a health and safety perspective, insure that remote sites have a local line and that the system software will force

“000” calls out on the local line. This is essential for correct CLI/ call trace and thus services dispatch address in the case of an emergency.

## QUESTION 7:

**What capex items should SMEs include in their budget when adding a VoIP system to their LANs?**

**TW** IP handsets, switch upgrades. Activ believes that one expense often neglected within the migration from traditional PBX systems to VoIP systems is the cost of integration – particularly with hybrid systems that perform traditional and next-generation services.

**RS** The additional capex items required depends upon whether a pure IP implementation is proposed. In this case the SME would need to ensure the budget is available to purchase QoS capable LAN switches which preferably support power over Ethernet. In a multi-site implementations QoS enabled routers and WAN will be required. UPS backup for the LAN switches should be a strong consideration.

**RP** Specifying requirements when implementing a VoIP solution is just as important as choosing the actual VoIP system. It is vitally important that exhaustive research is undertaken on your network requirements in the form of a comprehensive network audit and that no shortcuts are taken when building or readying your network for a VoIP solution.

Important capital expenditure items SMEs need to consider in their budget range from:

- Cabling (minimum of Cat 5E) capable of supporting the delivery voice and data throughout the building.
- LAN switches that support QoS, VLAN and PoE.
- Routers.
- Intra or interoffice bandwidth upgrade.
- Access Points supporting 802.11a/b/g allowing WiFi handsets or indeed PDAs loaded with softphone software to operate in conjunction with other wireless devices in the office, such as laptops.
- Uninterrupted power supplies.
- Extra cabinet space for VoIP system.
- Increased internet services with SDSL connection.
- Hardware costs for a new pure IP telephone system or;
- Hardware costs to IP enable an existing system if this is the selected option.

**BD** This will vary from business to business, depending on the actual implementation. In many cases, the real ‘gotchas’ occur in year two when the maintenance and support cost of modern IT hardware and software hit home. In some cases, the hardware vendors make more profit out of the ongoing support costs than they do upfront.

## QUESTION 8:

**Service bundling: what services should customers try to bundle with their VoIP service? Are there any services that should not be bundled with a VoIP service?**

**TW** Business grade private networks. Activ has developed much of its VoIP and IP Centrex offerings around quality of service, which allows predictive call quality and control from the handset through the WAN across the core to the handset or to PSTN handoff.

Collaboration with the desktop will be the next phase – allowing our customers to easily integrate common messaging or even their proprietary applications and services into their telephone and/or IP video infrastructure.

**BD** This primarily comes down to what link is used to connect the business to the service provider and how the service provider manages the various services on this link. Many providers of VoIP have no control of the traffic on this link and therefore cannot prioritise real-time critical packets such as voice over general internet browsing and email traffic. In a fully managed network where the service provider has full control of all elements of the service (access circuit and backbone network) there are no services that should not be bundled with VoIP.

**RP** Bundling of services from a single carriage or service provider has proved to be both successful and cost-effective in recent years. Customers can maximise discounts in this way but again need to ensure that the provider is utilising substantially their own infrastructure and thus able to exert direct control over all, or at least critical, services.

Any pay-out figures for early termination need to be high lighted up front. Service level agreements should be a standard part of any contractual arrangements, including services bundling.

Certainly from an accounting perspective, the “one-provider, one bill” principle (or at least the minimum number of accounts) makes managing a company’s communications costs much more efficient.