

C ip pbx

# IP PBX



**Is it true that an evolution or revolution IP PBX strategy appears to be dependent upon individual PBX vendor build architecture or are they building in line with strategy? Chicken or egg? Comms Business talks to the main players.**

**2003** looks set to be a pivotal year in the mass-market migration to converged communications. Some people would say that we have already witnessed the death knell of the traditional PBX – the majority of telephone systems sold this year will be IP enabled PBXs, or pure IP-PBXs. But more importantly, the number of companies who implement IP Telephony will accelerate this year as the ‘next-wave’ of IP-PBXs, become available.

In a few years time when we reminisce about the twilight years of TDM based telephony, we’ll all come to agree that 1998 to 2002 was the ‘proof-of-concept’ phase for IP Telephony. At the start of that period, we had IP features grafted onto TDM platforms, hybrid IP/TDM systems and, from a few enterprising US start-ups, LAN based telephone systems. By the end of 2002, the start-ups - NBX and Selsius - had been relegated to the footnotes of history, having been acquired by 3Com and Cisco respectively, whilst IP Telephony

and its benefits had been proven and accepted by all. What hasn’t moved on are the architectures employed by these first generation systems.

On one hand we have IP-TDM hybrids. Developed by companies, whose history and revenue streams are steeped in traditional telephony, these products are a logical progression from the last generation of pure TDM PBXs. These systems offer support for IP Telephony alongside TDM connections for analogue and digital phones and trunks. The advantage of this approach is that the ‘old’ half of the system is readily understood by the existing telecoms channel – supplemented by IP Telephones that look and feel like traditional key sets.

As in most things, the strength of this approach can also be its weakness. The benefits of convergence range far wider than having digital phones that plug into the LAN. TDM based systems, by their very nature, do not scale as well as IP, whilst in a multi-site network, each PBX is

still managed as a separate entity. Indeed for many of these hybrids, the IP and TDM halves are effectively separate when it comes to configuration and management.

Although the existing ‘pure’ IP based systems tend to be server based, their architecture bares a great similarity to mainframe computers. The intelligence within these systems is centralised, with remote sites relying greatly, and in some cases totally, on equipment located at the head office for call routing decisions.

This makes total system management far easier, however, it does mean “beefing” up the core servers, by duplicating hardware and software, known as clustering or mirroring, as system failure at the central site results in loss of service for all offices. With little or no voice processing functionality at the outlying sites any problems with the IP WAN link to the central site, will result in a drastic reduction in PBX functionality, or less extensions and/or trunks being supported, or worse no service at all!

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Phil Watts, Marketing Manager of Samsung tends to agree, 'The pure VoIP PBXs currently on offer use first-generation technology that is still comparatively expensive, and tends to lack the breadth of convenient features that users have come to appreciate. Many of the new IP applications are not yet proven and network services that make the prospect of VoIP so alluring are not yet in existence.'

Dimension Data is a leading global technology company that develops and deploys bespoke IP voice and data networking solutions. Senior consultant Simon Boyle comments, 'As a systems integrator one of the key issues we see when implementing IP telephony networks is the degree to which the LAN and telephony system are integrated. This is just as important as having the latest functionality on the handsets.'



*Phil Watts of Samsung*

In our opinion Cisco has a clear lead in LAN technology and equally a clear lead in integrated IP telephony solutions. Cisco has introduced core telephony functionality into its routers; this greatly improves telephony resilience for wide area networks. Imagine a head office, incorporating the call manager servers and a number of small remote offices, where the local handsets rely upon the central call managers for call control and management. In the event of the remote office losing connectivity with the head

office, the local router now has sufficient call manager functionality to allow the local handsets to continue operating. This is a very cost effective way of giving each remote office voice resilience.'

### SO WHAT LESSONS HAVE BEEN LEARNT OVER THE PAST FOUR YEARS?



*SpliceCom Maximiser*

Robin Hayman is Product Management Director at SpliceCom, 'An IP Telephony architecture is infinitely more scalable than one based on TDM. Whilst screen based IP handsets deliver far greater business benefits than traditional digital phones, they do so at a price. Not every employee will require such a device on their desktop, which means that there will still be a major requirement for traditional, low cost analogue handsets for many years to come. The same holds true for ISDN trunks, broadband, in its many various guises is not yet ready for 'prime-time' when it comes to switching voice calls. Centralised management of a single system that encompasses all users and sites, results in great cost savings, however, centralised call processing introduces certain weaknesses, albeit ones that can be overcome technically, at a cost, 21st Century IP-PBX design will take the proven strengths of the existing proof of concept systems, whilst eliminating the weaknesses.'

Analogue Phones and ISDN trunks will be supported via IP connected modules. This allows them to be placed exactly where required on the LAN network, reducing cabling costs. It also allows low cost analogue phones to be "energised" by using them in conjunction with voice applications, which can be run on desktop

or laptop PCs. A single system database is used for configuration and management, however, rather than taking the "Big Iron" mainframe approach, the distributed decision making capabilities of peer-to-peer computing or the IP routers that form the Internet are models that allow greater flexibility, whilst lowering costs. Replicating the single system database and distributing this to smaller Call Servers on each site, provides the basis for greater scalability by allowing call routing decisions to be made locally. Resilience is greatly increased to the point where cost-effective systems can be constructed with no single point of failure, and remote survivability becomes inherent to the overall system. This is the approach we've taken at SpliceCom with maximiser - a true 21st Century design.'

### IS A MIGRATION STRATEGY THE BEST WAY FORWARD FOR THE ADOPTION OF VoIP?

Marc Nackaerts, Product Manager at Ericsson Enterprise told Comms Business Magazine, 'A migration strategy is in many cases the cheapest and has the fastest return on investment. Migrating prevents you from fork lifting your complete voice infrastructure. Enterprise have different needs which require different cost effective solutions; it is not always the case that you reach the most cost effective solution with a pure IP installation. Having a migration strategy allows you to implement the new technology at your own pace starting at the less critical areas. This means that you safeguard your business from any unexpected problems.'

Once the implementation proves itself you can then move on to the more business critical areas. This is important so as to avoid a delay in communication - receiving or sending an email with some delay will probably not harm anybody, but losing the ability to make a phone call in a crisis situation could be a matter of survival.

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### WHY HAS TAKE UP OF IP PBXs BEEN SO SLOW?

Marc Nackaerts, Product Manager at Ericsson Enterprise 'First of all because we are introducing a new technology to transport voice. Compare it with the migration of analogue voice to digital voice during the 80's. This migration took quite some years before the mass market started to change over from analogue voice communication to digital voice communication. Secondly, introducing VoIP is not merely replacing or migrating the voice infrastructure, but in many - if not in most - of the cases, the data network also has to be adapted to guarantee optimal voice quality and reliability. This requires a substantial investment, so the return in investment will take a long time. Finally, the economic downturn we have all felt in the last two years had a huge impact on the take up. This had not only its effect on the IP PBX market but also on the sales of the traditional voice equipment.'

### KILLER APPLICATIONS FOR VoIP?



Ascotel IntelliGate

Tim Wells, Market Manager at Ascom, 'Many telephone system enquiries that our dealers are selling to believe that they must have full VoIP capability when in reality many are just standalone applications with no remote sites or homeworkers. Whilst the benefits of VoIP are being extolled heavily in the press, whilst it potentially offers significant cost savings and improved communications for

multi-sited companies, today it is not for everyone and certainly is not a key driver of the market. Return on Investment (RoI), real benefits and the complete system wrap offered by resellers are what today's customers are demanding. It is, however, very important for customers looking at new systems that they can implement VoIP should they need it today or in the future.'

Ascom has introduced the Ascotel IntelliGate Voice Server which they say can offer customers the best of both IP and conventional PBX technologies and a clear migration path.

One of the key and as yet virtually unexploited markets for selling VoIP applications is to companies that have staff regularly working from home. In many cases the homeworker is set up working remotely and independently of their head office on an analogue, ISDN or ADSL line, often recharging costs back to their company.

Tim Wells, 'By using an IP Terminal such as our IntelliGate Office 35IP handset linked via ADSL with an appropriate VoIP router with QoS and Firewall the homeworker can now be linked permanently to their office and enjoy similar PBX functionality as their head office colleagues. This would include features such as extension status, team keys, desk to desk dialling and speed dial access for example.'

The benefits to the company are significant: Cost savings are obvious, reduced phone bills as all calls are over the ADSL with fixed known monthly costs - all individual bills will then be handled through HQ with total cost control - no multiple business phone bill expense claims.

Do not underestimate the influence of factors such as centralised budgetary controls, call logging, call barring and management on decision makers.

Tim Webb, General Manager, Toshiba Telecoms says they are an evolutionist, 'Full voice and data integration using

server based systems and IP signalling across networks for both voice and data will may take some time. As there is no clear 'killer application' the adoption of integrated solutions will be built on the sound business case for general applications such as CTI, ACD and Unified Messaging. At this time 2007 is as good a date as any to point to, for the general adoption of IP telephony.



Toshiba Strata

Customers will listen to the business case for IP rather than adopt the technology for its own sake. At Toshiba Telecoms we are providing an IP enabled solution with the new Strata CTX system that meets the customers business needs with the reassurance that IP is built into the solution when they need it.

The experience of our channel partners is that this is what the market wants right now and Toshiba Telecoms is able to meet that need. In particular SME customers want a telephony service based on proven technology that works. Until the technology of converged solutions achieves plug and play simplicity, SME customers will be deterred from adopting integrated solutions.'

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*Samsung's Media Gateway*

Phil Watts of Samsung echoes this saying that 'at present, For single-site operations, VoIP on the LAN is currently a trade-off between limited functionality benefits, cost and reliability, and as such appeals chiefly to habitual early adopters. As technology evolves, benefits will increase, cost will fall and reliability will improve to the point where VoIP is the only game in town. But what can VoIP offer today? VoIP offers the clearest benefits to multiple-site organisations linked by a WAN. IP voice traffic can be transmitted toll free over leased data links, allowing free phone calls between remote offices and even individual remote workers. Cost savings can even be made on calls to an external number local to a remote office: least-cost routing software simply sends the call toll free over the leased line to the remote office, which forwards it to the recipient for the cost of a local call.

In this more established application of VoIP, IP transmission occurs only between remote sites, with traditional circuit switched transmission taking over between the phone system and the desktop. Besides the WAN links, the only requirement is a VoIP option or upgrade, as offered by most manufacturers of

recent 'traditional' phone systems. Samsung even offers a 'media gateway' module that adds VoIP functionality to any legacy telephone system without the need for a 'fork-lift upgrade', i.e. the additional time, expense and inconvenience of replacing the whole IT and telephony infrastructure.'



*David Dyer of Siemens*

Dave Dyer, channel marketing manager, at Siemens Communications, has recognised the small and midsize enterprise (SME) market as a key area where IP take-up is increasing and has developed products to deliver market leading, flexible, cost effective solutions that budgets can afford and that offer real returns on investment.

'When it designed its IP architecture, HiPath, Siemens recognised that not all customers would want to make the immediate step to totally IP-Based systems and designed platforms to offer an evolutionary approach to Convergence. Customers can evolve their existing technologies to take on IP at their own pace, thereby maximising on the value of their existing investments, whilst deploying and realising the benefits of convergence in line with their own needs.'

The HiPath range includes a number of different, highly flexible platforms that can be adapted to suit the needs of individual customers. This portfolio includes a pure IP Softswitch (HiPath 5000) should the customer wish to take the step to pure IP. It also includes HiPath 3000. HiPath 3000 is designed for the SME customer base, and over 20,000 UK companies in this sector have a system which they could switch to IP tomorrow and when they do, they will be able to retain the value of their HiPath 3000 system as it will function as a survivable media gateway in a pure IP converged network. All Siemens' Applications and Workpoints will interwork with each other so if a customer does want to move to a pure IP Softswitch (HiPath 5000), they don't need to change all of their phones/Applications – a huge cost consideration.

This approach is clearly seen in the convergence applications that are available today for another of Siemens' own PBX communications server, the Realitis DX.

Dyer explains, 'Realitis Xpress and Realitis IP Trunking offer DX customers a full convergence solution – which most importantly builds on the existing Realitis/iSDX, and offers full DPNSS functionality. This convergence capability is further enhanced by the latest DX software, Revision 8, which offers customers a cost effective, data centric style of upgrading their Realitis/iSDX systems.'

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### STATE OF THE MARKET

Nortel has been moving to a more channel focused strategy in recent times. We spoke to their Paul Roe, Solutions Marketing, IP Telephony for EMEA, who sees the IP PBX market divided in to three distinct areas.

1. Convergence, 'all in one box' solutions for SME's up to 200 extensions.
2. IP Enabled PBX systems, such as their own Meridian 1
3. Pure IP PBX.

Roe says that currently up to one third of all Meridian 1 systems installed in the UK have been upgraded to IP Telephony capability. 'The drivers for this are being able to link sites together over data networks, which according to some surveys saves some 30% on operational costs and connecting homeworkers via broadband. Organisations such as Vertex, an outsource call centre company report a 15% productivity improvement in remote call centre agents.'

According to Nortel smaller companies are taking the lead in delivering customer service to their customer with adoptions of new technology driving this forward.

Roe, 'There is a need for features, functions and applications. People are being told to buy IP solutions, as they are a panacea. This is not the case, IP in an enabling technology, there is no point buying IP PBX if you have to sacrifice functionality.'

So, what is happening in the market for IP PBX and LAN Telephony? Kevin Winstanley, Managing Director of specialist convergence services company ANS, is pretty close to the front line, he says the iPBX market is really hotting up especially in the voice channel.

'2003 has certainly started with a bang in terms of interest and general buoyancy throughout all IP Telephony product sets. ANS as an expert in this area, has been



Kevin Winstanley of ANS

incredibly busy fulfilling Mitel training and support requirements via our partnership with Nimans whose dealer take up has been incredible and again have seen a noticeable increase in V5/6 IP sales of the Inter-Tel Axxess, which are being installed in some new and fundamentally more complex IP networks.

The make or break for IP Telephony comes down to experience. Dealers need to get understanding of packet switched networks, some dealers are still clinging to the belief that its just another flash in the pan and TDM based PBX systems will be around for years to come, I'd go as far as to say that they really need to get with the program. As yet, there is still a significant lack of interest from the data VAR's, but believe me they are a sleeping tiger. Once they decide to get into the market, then competition is going to be fierce.

The world is an ever changing environment and even more so in technology areas, the advent of IP in the voice world is just an extension of the rapid growth already seen in the data arena and will undoubtedly lead to a faster technology turnaround and a greater degree of applications integration. 2003 will be a benchmark year and I think the start of much bigger things to come.

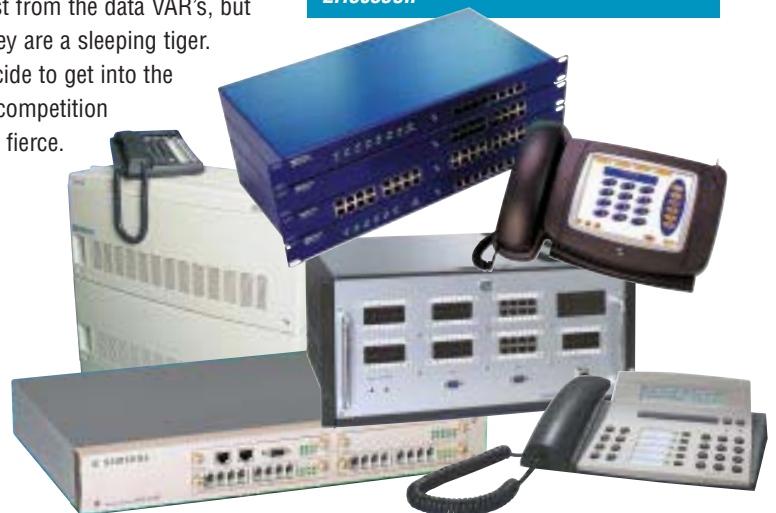
The rise in interest coming into this year is incredible. The business models we have developed in association with our partners means 2003 will be about concentrating our efforts on increasing dealer knowledge and developing new business with a true IP mindset, exciting times ahead!

### FINALLY

The market for the traditional PBX is declining, however, companies do not want to throw out their faithful system for a new product just yet. Vendors need to offer the market the right choice, products that can be installed to meet needs now, and upgraded to meet foreseeable and unforeseeable needs in the future. With budgets being tight companies need to know that their IT investments are safe.

#### More Information:

SpliceCom  
Siemens  
Ascom  
Ericsson



March 2003