Meeting the challenge of voice services

Executive Summary

Making the most of convergence to bridge the gap between IT networks and traditional telephony. This white paper is aimed at IT support companies who are considering expanding their portfolio to provide converged voice and data connectivity.

Nick Goodenough
Partner Service Manager
White Paper – Rev 1
Spitfire Network Services
March 2013

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Introduction

Traditionally there has been a clear divide between the supply of data network services and voice telephony. Two distinct channels to market have been established to address the supply of these technologies to customers. The growth of VoIP technology over the last decade has led to predictions of voice and data convergence but this has been a surprisingly slow burn. Today there is still a clear divide between IT network support companies and telephony service resellers. But the growth of unified communications has fuelled customer demand for one supplier to meet all their business communication needs.

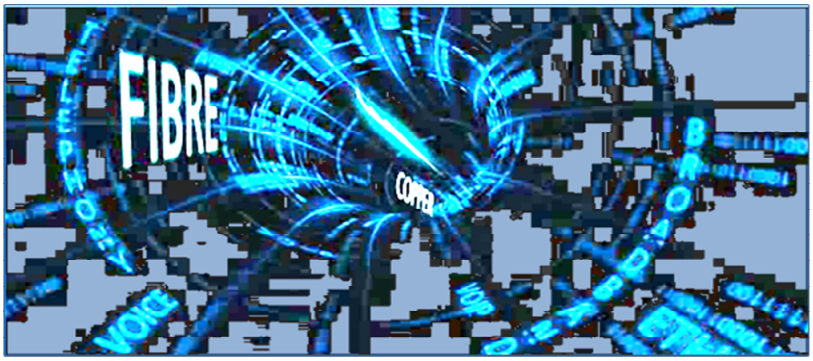
Connectivity options

While all businesses now depend on their Internet connection, there is also a growing diversity in the type of Internet provision that best suits a company's needs. A 'one size fits all' approach is simply not sophisticated enough to meet the complex requirements of business customers in today's market. With the growth in cloud applications there is an ever greater demand for reliable bandwidth with low contention, packet loss, latency and jitter, so there is a need to match customer requirements with the right connectivity option.

There are customers that have a need for raw speed and uncontended bandwidth for applications such as video conferencing and live video streaming. Some customers require a symmetrical circuit such as SDSL or Ethernet because they are uploading large amounts of data as well as downloading, for example for use with a VPN (Virtual Private Network). A growing number of customers require disaster recovery back-up for their Internet provision because this is now essential for their commercial activities. The increasing use of SIP Trunks is also driving the need for secure, reliable and high quality broadband connections.

To meet the diverse needs of business customers a broad range of broadband services and connectivity options have evolved including ADSL, ADSL Annex M, SDSL, VDSL2 "Fibre Broadband" and Ethernet over copper and fibre. A whole spectrum of contention rates are available including one to one. There are also low cost back-up services providing customers with a resilient DSL broadband connection for applications where constant broadband connection is essential.

Being able to offer a wide portfolio of broadband and connectivity solutions allows IT service providers to beat competitors for business Internet accounts.



Ethernet provides a dedicated high speed, uncontended symmetrical bandwidth connection for internet or site-to-site access over either fibre, copper or FTTC (Fibre to the Cabinet). Fibre Ethernet is definitely the gold standard of high quality internet connectivity and is something IT service providers should recommend to any business that depends on its internet connection as it has unsurpassed reliability and can be provided as 10Mb, 100Mb or 1Gb circuits.

Copper Ethernet is provided using EFM (Ethernet in the First Mile) technology. This uses multiple copper wires to provide resilient, high speed Ethernet circuits at speeds between 1Mb and 35Mb with the same guarantees as Fibre Ethernet. A failure of one copper wire may result in a reduction of bandwidth but will not result in a circuit failure. Copper Ethernet is significantly less expensive than Fibre and as it uses existing copper cables into the customer's site, it is quick and inexpensive to install.

A new version of Ethernet uses FTTC (Fibre to the Cabinet) technology to provide fast Ethernet circuits at prices even lower than Copper Ethernet. This is called GEA (Generic Ethernet Access) and provides speeds of 2, 10 or 20Mb. GEA uses a single copper pair so is less resilient than Copper EFM or Fibre circuits but has fast repair times and similar performance guarantees to the more expensive versions of Ethernet.

Ethernet is excellent for providing secure and stable internet connections making it the best solution where a customer is accessing applications and data in the cloud.

Ethernet circuits can be used not just for Internet connections but also for linking multi-site operations where it is ideal because it uses the same network technology as a local area network. Consequently extending a customer network to the wide area over Ethernet can be done without additional routers or IP addressing – it's a 'plug and play' solution. This also makes Ethernet comparatively cheap compared to other solutions for dedicated internet access or WANs.

Ethernet has the advantage that it is much cheaper than using conventional dedicated leased line circuits, but is also a more robust and reliable infrastructure than a VPN (Virtual Private Network) over Broadband which utilises the public internet. Ethernet can also be deployed as part of a larger data networking solution in a state of the art MPLS network.

Connectivity resilience

Events both natural and man-made over the past decade must have convinced even sceptics that business continuity planning is as essential as premises insurance to ensure a business can survive the unforeseen. Disasters do not even have to be of earthquake proportions to stop a business in its tracks as winter snows and summer floods have demonstrated.

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With the range of comms business continuity solutions now available, there is no reason why a business should not be operating with full connectivity for Internet and telephony within minutes of an emergency. Disaster recovery is an important consideration for all customers and the channel should always encourage customers to factor in business continuity solutions into any comms deployment.

There are low cost back-up services providing customers with a resilient DSL broadband connection for applications where constant broadband connection is essential. These usually use different exchange equipment, but provide the same IP addresses for easy failover, for applications where constant broadband connection is essential. Larger customers tend to take advantage of the multiple failover options with Ethernet, including from Fibre to Copper EFM or GEA, whilst the most resilient solutions use two Fibre circuits connected back to different exchanges with fast, fully automatic failover between the two.

SIP Trunks replace ISDN

The increased bandwidth and reliability of Internet circuits has led to their deployment for Voice over IP telephony as well as for data applications. SIP stands for Session Initiation Protocol – in any voice comms session across a network there has to be a set of protocols for establishing and ending the call. SIP is the industry standard for control of call setup and management functions for VoIP calls across an IP broadband connection. Developed to exploit the full potential of VoIP and with the transition from circuit switched telephony to VoIP, SIP has become the dominant standard for managing phone calls and increasingly video calls.

The term 'SIP Trunk' has evolved in the telecoms industry to describe any service provided by an Internet Telephony Service Provider (ITSP) to enable customers' SIP controlled VoIP traffic to connect with the normal public switched telephone network (PSTN). SIP Trunks now provide an alternative to using conventional analogue or digital (ISDN) lines to connect a private phone system to the PSTN for voice communications. Instead an IP phone system can use a SIP Trunk enabled Internet circuit.

" The key determining factor in the quality of service for SIP Trunks is controlling all aspects of service provision and delivery."

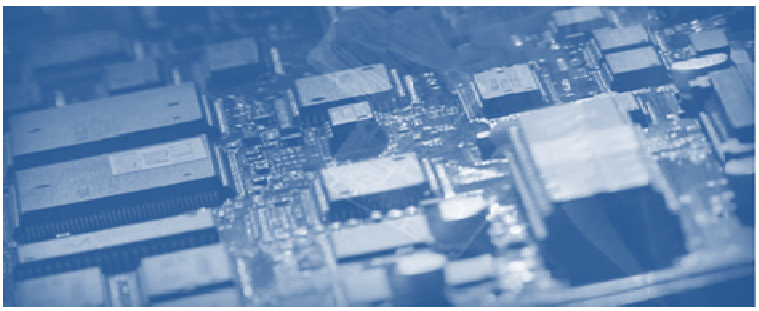
As an ISDN replacement SIP Trunks typically offer business quality, secure telephony at less than one third the cost of the monthly rental of an equivalent ISDN service. Of course an appropriate Internet circuit must be used to ensure that call quality does not suffer, but when the cost of a dedicated voice approved circuit, or additional Ethernet bandwidth is included the saving is still around 50 per cent. Consequently installations of SIP Trunks exceeded the installation of new ISDN circuits for the first time at the end of 2012.

The key determining factor in the quality of service for SIP Trunks is controlling all aspects of service provision and delivery. Rigorous testing combined with dedicated, voice approved circuits (those offering sufficient guarantees covering latency, packet-loss and jitter) and call termination over a secure network infrastructure (that does not break-out onto the public internet) are the crucial factors in ensuring call quality and customer satisfaction.

SIP Trunks are ideal as a disaster recovery solution. Any number on the network can be forwarded to any other location – as long as it is connected via a SIP Trunk or a normal telephone line.

In the event of a failure of the main site, calls can be forwarded to home telephone numbers, mobile or other sites – or a combination of locations/numbers, with failover happening automatically to pre-programmed numbers.

When migrating to SIP Trunks it is possible to port existing phone numbers from BT and most other operators, so that businesses can continue to use existing numbers. SIP Trunk providers can also supply telephone numbers from geographic areas all over the UK and route them to a SIP service, enabling businesses to set up virtual office numbers anywhere in the country. This frees businesses from the need to establish conventional office premises with associated travel costs.



Hosted telephony

The development of high-speed and reliable Internet connections means a new generation of hosted IP phone services are now available offering a high level of flexibility and financing benefits over acquiring customer premises equipment. Hosted telephony requires minimal capital expenditure because billing is based on a monthly service charge which is tax deductible, whereas capital expenditure is only partially tax allowable. Consequently costs are estimated to be about 50 per cent less than a conventional on-premises phone system.

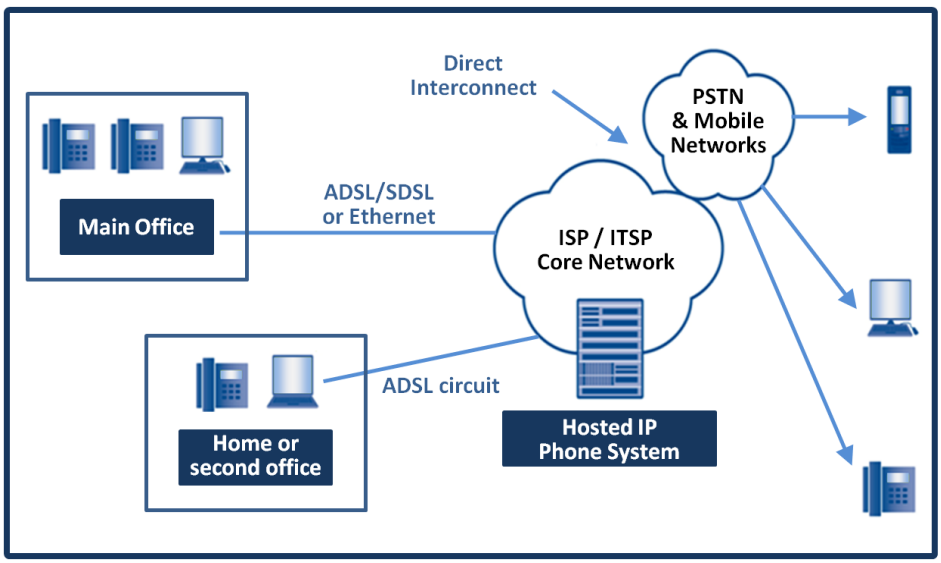
This makes the service an extremely cost-effective solution for business start-ups and small businesses that are growing and anticipate moving premises or are spread over multiple sites. For larger enterprises hosted telephony is also an ideal solution. Larger businesses benefit from the disaster recovery potential of hosted telephony, because if it is not possible to operate from the normal premises, staff still have access to a hosted telephony service from another location.

" A key differentiator in service providers is that a business Internet Telephony Service Provider can offer an end-to-end service that is not routed over the public internet, to guarantee quality."

In operation hosted IP phone services offer all the features and functionality of a conventional phone system such as extension dialling, call transfer, call forwarding and so on, but have a number of additional benefits. The system can be configured via the internet, allowing change of feature set-ups as required, without incurring any engineering charges. Other functions such as voice mail, auto-attendant and conference call functionality are usually available, sometimes at an additional service charge.

For the increasing number of organisations where individuals want to work remotely (usually at home), hosted IP phone systems provide the means of presenting a professional face to the outside world without the need for a dedicated business premises. Staff working remotely from home have full access to phone system functionality, just as if they were in the office. Hosted IP is also ideal for multisite operations such as retail branch networks because colleagues can call each other using abbreviated extension numbers and without incurring public network charges. They can also transfer external calls, forward calls to other extensions and so on, whilst softphones and mobile app's allow remote workers to stay connected using their laptops, tablets or smartphones.

The main resistance to hosted telephony is around quality of service.



Ethernet combines with SIP Trunks or Hosted Telephony to provide customer's with a highly reliable converged circuit which can be used to carry both voice and data, whilst allowing the customer to benefit both from the higher speeds and reliability provided by Ethernet over conventional Internet connections, but also from the cost savings which come from eliminating traditional ISDN lines.

Conclusion

The rapid growth in cloud services means that IT service suppliers must offer external connectivity and hosted services to remain competitive as a single source supplier to their customer base.

IT service suppliers that want to offer network services to their customers need to partner with a competent network solutions provider. For the channel partners a good business network service provider is one that offers business class service and support based on performance SLAs. Business customers do not want to wait 10 minutes to report faults to someone on another continent whose grasp of English is elementary and who is doing no more than follow a script.

The ability to offer a comprehensive network service portfolio coupled with business class service and support levels are key to success for the channel. And as any chain is only as strong as its weakest link, IT service providers should partner with a network services provider that can offer true end-to-end network solutions.

The Spitfire advantage

Established in 1988 Spitfire is a leading business ISP and ITSP employing around 100 staff and with an annual turnover of £20 million. Spitfire is one of the largest independent voice and data solution suppliers in the country, providing carrier network services and ISP connections to over 300 channel-partners and their customers from offices in London and the Midlands.

Spitfire's Authorised Partner Service aims to enhance the range of services offered by IT service suppliers. For channel partners Spitfire provides ongoing monthly commission paid automatically on all services including very generous call commission on SIP, with no minimum targets, sign-up costs or monthly fees.

There is now a wide diversity of connectivity options for the channel to offer their customers. With the growth in cloud applications there is an ever greater demand for reliable bandwidth with low contention and jitter, so there is a need to match customer requirements with the right connectivity option. To help our channel partners and their customers to find the optimum connectivity solution for customer needs we have produced a series of video presentations. These are available on YouTube or at www.spitfire.co.uk

Because matching customer needs to the right connectivity option is critical to customer satisfaction we hold frequent partner training days and other events including seminars. We will also provide sales consultancy support if requested by our partners to ensure that their customers receive the optimum connectivity option. Where our channel partners need assistance with deployment and implementation we can also assist.

As one of the few ISPs and fixed line operators to offer a SIP Trunk service, Spitfire offers a complete end-to-end SIP service via our own IP and TDM infrastructure. Spitfire can provide a direct connection between the customers' premises and Spitfire's core network over the UK's widest range of SDSL, Annex M, ADSL or Ethernet circuits.

Because Spitfire is a business ITSP our SIP Communicator™ hosted telephony is designed as an end-to-end service to guarantee QoS by using a range of available circuit options from Ethernet to ADSL. We also offer subsidised circuits for our SIP Communicator customers allowing us to deliver real value for money.

In terms of approach a lot of network service providers have very impressive online partner portals and glossy sales manuals, but they pretty much leave the channel partner to get on with it. We offer a much more personal service with a dedicated Partner Account Manager available to meet our partners or their customers as required. Our training is completely flexible, with a choice of formal training courses or one-to-one briefings to suit our partners' requirements. We back everything up with documentation and we are always available at the end of the phone to answer questions, no matter how simple or complex. All SIP Communicator™ and SIP Trunk installations are fully project managed, so that we tie the various components and party's together to ensure that implementation is well co-ordinated and trouble free.

We normally offer a commission rather than a reseller model to our channel partners. This means Spitfire takes all the financial risk with the customer and the channel partner simply collecting their monthly commissions. For channel partners making the move into broadband, SIP, hosted telephony and other network services we can make it a smooth, pain free transition.

If you are interested in partnering with Spitfire, please call us now on 0800 319 6500 or email partners@spitfire.co.uk

About the author

Nick Goodenough is Partner Service Manager at Spitfire Network Services Limited, a leading UK ISP and ITSP.

He is responsible for the management of Spitfire's Partner and Channel relationships. Nick has fifteen years' experience of providing voice and data solutions through the channel and manages Spitfire's Partner Service team account managing Spitfire's channel partners.