



# Convergence – The Business Impact

Date: November 2005

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Version: 1.0

## Introduction

The communication market is complex with many mixed messages around. It can be difficult to get your arms around the various areas and really understand the options; let alone pin point what is best for your organisation. It is critical to understand what technology will allow you to deliver your business goals and then to deliver a credible business case.

Stepping back and putting the market into context allows you to get to the root of the issues. Once this is done, clarity can enable decisive business decisions to be made in context.

Tiscali has pulled together a series of questions and put forward options to consider:

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## Convergence – What can you do with your IP Infrastructure?

Convergence is talked about in many ways by various people, all giving a particular focus or spin, depending upon where they stand. Sometimes the language or messages used can confuse.

- Equipment Vendors talk about the applications that run over IP networks - IP Telephony (the application to deliver VoIP), Contact Centre solutions or Unified Communications.
- Service Providers talk about IP networks and how to ensure they are configured to run the range of applications available from the vendors – e.g. Remote working solutions.
- Resellers, Virtual Network Operators and System or Network Integrators talk about how they can design, source, implement and manage a total solution for a customer, bringing in the business benefits for individual elements or a total converged solution.
- End users are asking questions over the business benefits of Convergence (mostly VoIP) and wondering when and how to take advantage of the various options.

At the end of the day the big questions are:

1. Are you making the most of your current IP network?

IP networks are for the most part used to carry pure data, but what about time sensitive data, voice and video? To manage these successfully over an IP network there are three considerations that require evaluation:

- Bandwidth – Deploying greater bandwidth in conjunction with managing and differentiating the Class of Service (CoS) can ensure that your services are run at an acceptable level. This can be expensive, and is akin to throwing money at the problem.
- Access medium - The majority of the cost of traditional networks remains at the “access” level. Therefore traditional networks have been limited to large sites, permanent sites, high data centric organisations and big budgets. This has left many remote sites or employees relying on costly dial-up solutions (PSTN/ISDN). These separate networks limit corporate wide applications and efficient working. An IPVPNs can address this with remote sites/employees accessing over cost effective secure and private DSL lines.
- Quality of Service - QoS is used to prioritise delay sensitive and real-time applications (e.g. voice) across the same network infrastructure as lesser prioritised traffic. Now that QoS can be managed over ADSL (broadband) lines an organisation can cost effectively deployment of business applications across an entire organisation.

2. What impact do you want to make on the business - What applications do you want to deploy, over what timeframe?

A key consideration is what business benefits and new ways of working you want to get from convergence. Convergence allows any organisation take full advantage of resources and applications that they may already possess, simply and in new and efficient ways including:

- Collaboration and more efficient data sharing capabilities
- VoIP solutions
- Remote/flexible working solutions
- Virtualised contact centres
- Disaster recovery solutions





## The Business Benefits of Convergence

Senior executives are challenged with maintaining (or even reducing) costs, complexity and risk, whilst at the same time increasing innovation, capacity, employee productivity and security. Convergence has a major role to play in delivering solutions to these key issues – with real business benefit:

Reducing	Increasing
<ul style="list-style-type: none"><li>• Costs</li><li>• Complexity</li><li>• Risk</li></ul>	<ul style="list-style-type: none"><li>• Innovation</li><li>• Capacity</li><li>• Employee Productivity, Business Continuity &amp; Security</li></ul>

- Reducing Costs:

The benefits of convergence are much deeper than reduced call charges or IP transported inter-site voice calls, at no extra cost. A multi-location business can address their 'Total Cost of Ownership' (TCO) model through reduced connectivity and infrastructure costs. There is a double impact here. Firstly an immediate boost to the bottom line quickly followed by new business opportunities delivered through application and capability deployment - creating value.

- Reducing Complexity:

One Voice and Data network is easier to manage, particularly for connectivity from a main site to smaller sites and remote employees. A converged network with Quality of Service (QoS) through to the edge of the network where employees and customers are reduces complexity and gives businesses cost effective and easy to manage VoIP. Additionally, being based on an IP infrastructure all the applications as well as the core network can be managed from one point reducing TCO and IT resource requirements.

- Reducing Risk:

One converged network Service Level Guarantee (SLG) can ensure that the parameters used to measure the quality of prioritised traffic (voice) are maintained to a similar level to standard PSTN traffic. The SLG can incorporate all connections within the network guaranteeing the quality through to each end connection including the remote office or employee's home.

- Increasing Innovation

A converged network can enable greater flexibility. Infrastructure changes made quickly and in line with business objectives – with pace. Convergence allows businesses to support their strategies and objectives by deploying 'Applications over IP' across their organisation, rapidly.

- Increasing Capacity:

Given a limited ICT budget, convergence allows a business to increase the reach and capacity of their network – efficiently. Business can now augment their network architecture and through reduced costs, increase the availability of access to the corporate LAN.

- Increasing Employee Productivity, Business Continuity & Security:

Convergence helps increase staff productivity as well as maintaining security through the efficient utilisation of the network. Remote sites (and employees) can take advantage of all the data and voice applications that traditionally have only been available to the large site – at a favourable price point and on a 'fast' connection (similar to an ASP model). This speeding up of processing times reduces employee idle time. The wider availability of applications leads to businesses being able to benefit from flexible working, cross team collaboration and greater employee empowerment – whilst aligning to the latest EU legislation and working time directives.

Additionally Business Continuity and Security are increasing business concerns. With the flexibility and rapid deployment of alternative connectivity (or cost efficient redundancy options now open) disaster recovery plans can be reviewed and costs savings made at the same time as increasing back up and increased contingency levels.





## Remote/Flexible Working

There are many pressure points on businesses to enable their employees to work remotely – efficiency, cost control, legislation as well as employee pressure.

The overarching objective for anyone looking to deploy remote/flexible working solutions is to develop a cost effective Teleworking environment, encompassing solutions for all types of home worker, whether working from home, mobile on the road or working from remote locations.

That said, any solution must satisfy fundamental business requirements at the same time as empowering and enabling the employee.

### Business requirements

Given the current economic backdrop, businesses have a difficult Information and Communications Technology (ICT) balancing act. The challenge is to achieve more, with less. At the same time many organisations do not have a formal policy for remote working and have a myriad of ways that employees communicate when out of the office. This can lead to staff inefficiencies (e.g. productivity), hidden costs (e.g. unnecessarily high mobile phone bills) and pressure on critical support resources.

### Employee benefits/requirements

Line of Business Managers are requiring that employees have access to all the functionality that staff enjoy in the office, whilst away from it. In particular cost effective access to the following:

- Core business applications such as desktop applications (e.g. Outlook), functional applications (e.g. sales, HR), ERP (e.g. SAP or Oracle), company proprietary applications and sales and marketing data and applications.
- Content and Multi-Media including content management, document management and video/media streaming.
- Contact Centre and Teleworking applications including thin client and ASP applications (e.g. Citrix), training services, data sharing and virtual contact centre solutions.
- Collaboration applications, video/audio conferencing or e-learning facilities.
- Unified Communication applications

### The Solution

The ideal solution is to have a packaged solution that gives the business full visibility of the total cost of ownership, full management of users (moves and changes), transparency of usage (to control costs) whilst furnishing the employee with full and secure access to the company network and a full suit of communication options.





## Virtual Contact Centres

There are currently 2.2 million Teleworkers in the UK and this number is growing on average by 13% each year.

Working from home can be mutually beneficial, especially in the Contact Centre industry. Employers can control costs, gain efficiencies and improve staff retention rates at the same time as satisfy the new legal regulations. Employees can benefit from a more flexible approach to working.

Many of these 'Teleworkers' are virtual call centre agents and as such they need to be included within the Contact Centre environment just as they would be if they were located in the same physical building as the rest of the team.

Remote agents require access to the same resources as their office bound colleagues. Access to real time applications and mission critical information is required at the same level of service as they would have within the traditional call centre environment. They also need to be treated as part of the team for all internal communications and training; on an equal footing to maintain team motivation and continuity.

The Contact Centre manager needs to manage these agents effectively along side traditional staff by leveraging existing ACD and CRM applications. For example call queuing, skills based routing and call vectoring services should not be affected and management statistics, reporting and supervisor training functionality should seamlessly include all agents. Additionally incoming call data still needs to be integrated with business applications with continued central management of the Virtual Contact Centre as a whole.

### The solution

To achieve this, a robust networking environment is required with equipment and technology physically housed at the Contact Centre and agents simply connecting from wherever they are - whether working from home, mobile on the road or working from a remote location.

In the past deploying a network that could do this was expensive, prohibiting effective remote agent connectivity. QoS (Quality of Service) based IPVPN networks have been used by companies for a number of years. However, the technology has not been cost effective for smaller sites and remote employees - the expense of leased lines. In recent years DSL or Broadband networks have increased in popularity for LAN connectivity - Primary drivers being low costs & fast deployment, but they have had limited support for voice and latency dependant applications. Additionally there are a number of service providers such as Skype who promote VoIP solutions, but these are of limited use to Contact Centres because they do not integrate to applications and the call quality is questionable for a business application.

Recent technological advances however, mean that networking and VoIP services can now be deployed securely and reliably over Broadband. QoDSL IPVPNs from Tiscali can be used to deploy a virtual Contact Centre environment delivering all the associated business benefits - now within your budget with a QoS enabled DSL line starting at £50 per month per Homeworker

QoDSL is a unique market proposition in the UK from Tiscali offering a service level guarantee (SLG) over both contended and non contended DSL connections. This service is ideal for any business that is looking to develop a virtual call centre as it enables you to equip remote staff with a reliable and cost effective connection and VoIP service.





## VoIP – the Quality Issue

In the late 1990s Voice over IP (VoIP) was seen as a disruptive new technology that had the potential to radically change voice telecommunication. VoIP is now a mature, proven technology which is becoming increasingly common as businesses seek to benefit from the lower infrastructure and communications costs and productivity-enhancing call services that VoIP can provide. Frost & Sullivan projects that VoIP traffic will account for about 75% of the world's voice traffic by 2007.

To understand VoIP it is necessary to examine how voice calls are carried over conventional telephone networks. Fixed line voice traffic is carried over a physical network using a series of protocols collectively referred to as circuit switching. The circuit is an individual channel created by electronic switches creating temporary connections linking the two callers. This channel stays in place for the duration of the call. Internet Protocol (IP) is a networking protocol which breaks down information into discrete blocks known as packets, which are sent across a network separately, often taking differing routes. A conversation carried over an IP network is therefore broken up into many packets which are routed separately to their ultimate destination and then re-assembled.

Many large organisations have already deployed VoIP solutions on their internal networks. IP phones are used to convert voice signals into digital data packets and route them to the destination telephone and standards-based call servers (known as “soft” pbxs) and voice gateways are used to connect calls to the public switched telephone network (PSTN).

In this new era of convergence, a business must ensure that any solution delivers existing functionality (at a comparable level of service) whilst exploiting all the associated opportunities that voice and data over one (IP) environment can deliver – for example VoIP solutions and presence management. At the same time any solution must be future proofed to ensure investment is fully leveraged in the long term.

A business must correctly balance the business/employee benefits against all the potential issues, namely:

- Voice and data quality – telephone calls and latency dependant data traffic require an assured level of quality to be adopted by business. Whilst Voice over the Internet is starting to take off down to the potential cost savings (e.g. Skype), many users do not talk to customers over such a service. Voice calls over an IP infrastructure (e.g. an IPVPN) is a business grade alternative and a broadband connection (QoS enabled) to a VPN can enable this extremely cost effectively.
- Cost savings - The benefits of convergence are much deeper than reduced call charges. VoIP allows a multi-location business to address their ‘Total Cost of Ownership’ (TCO) model through reduced connectivity and infrastructure costs. There is a double impact here. Firstly an immediate boost to the bottom line quickly followed by new business opportunities delivered through application and capability deployment - creating value
- Business continuity concerns – an IP based infrastructure is flexible and can be rapidly and dynamically adapted in the event of an incident.
- Security – The network must be secure from external factors. It traffic is to travel over the Internet it must be protected and made secure. Alternatively it can be carried over an IPVPN within a companies control.
- Intelligent presence management – The emergence of SIP is set to revolutionise the way that people interact, and with what device. Having a communications service centred on IP allows a business take full advantage of the flexibility that this delivers





## QoDSL - What is unique about Tiscali's proposition & why is it so special?

### Summary

In March 2005 Tiscali Business Services launched QoDSL; a unique market proposition in the UK offering a Service Level Guarantee (SLG) for Quality of Service (QoS) over both contended and non contended DSL connections. No other Service Provider can provide QoS on contended DSL services – a true USP.

Businesses have benefited from QoS services over fixed line services for some time, but Tiscali now offer QoS at a price point that was previously out of reach for this type of service - revolutionising the way businesses of all sizes can utilise DSL connectivity.

The Tiscali Business Services website ([www.tiscali-business.co.uk](http://www.tiscali-business.co.uk)) contains a series of case studies that show how businesses are using this technology to reduce connectivity costs at the same time as running quality based VoIP solution and other solutions requiring guaranteed levels of quality (guaranteed latency, jitter and minimised packet loss) e.g. video streaming & IPCCTV.

### Why is this technology innovative?

QoDSL offers the only cost-effective method of guaranteeing the reliability and level of quality required to deliver many of the long-promised benefits of broadband. These benefits were previously only available to those businesses that could afford the significant costs of running leased line networks.

There are three key innovations behind this technology:

#### 1. Tiscali's Core network (Cisco Centric)

Tiscali Network architects, working hand in hand with Cisco Technical Architects, embarked on a 9 month project to re-engineer the Tiscali MPLS core network of MGX ATM switch technology and Cisco 7200s to deploy the latest Cisco 10000 architecture. Following this optimal deployment of the Cisco hardware, and working in conjunction with Tiscali's network management capability, this new architecture performs the following key functions - VP Shaping, VC Grooming (ensuring maximum use of incoming STM-1s) and to control fair use policy to provide effective traffic management.

Tiscali's Cisco centric network provides bi-directional QoDSL (both upstream and downstream)

#### 2. Tiscali's DataStream solution

By offering BT's DataStream product Tiscali is able to guarantee the quality of service and ensures that each connection (regardless of speed or contention ratio) gets a guaranteed minimum throughput, determined by the service class - irrespective of the VP congestion or other service classes on that VP.

#### 3. Service development

Working with both Cisco and BT and utilising the controls within our DataStream network, Tiscali is able to provide a commoditised VPN product optimised for convergence. Although optimised for VOIP traffic, QoS can be utilised for any application requiring guaranteed levels of quality. QoDSL enables business solutions such as Voice over IP, Teleworking, video-conferencing, virtual call centres and real-time information delivery. Until the advent of QoDSL from Tiscali, these solutions, which offer significant cost savings, enhanced business processes and improved customer support, were beyond the reach of many small to medium sized companies and organisations with remote offices or workers.

