



Converged Applications on your existing TDM Infrastructure

*Business applications that will improve your communications
without the cost and disruption of changing to IP Telephony – unless you want to!*

White Paper

Abstract

Most vendors insist that you need IP Telephony to gain the benefits of unified communications, tele/home working and wide area call centres and to take advantage of new features like video support and telephony presence. This is simply not true!

TeleWare provide Business applications that will improve your communications without the cost and disruption of changing to IP Telephony – unless you want to! This paper provides information on how you can utilise existing infrastructure and benefit from integrating voice with business applications without the disruption of moving to VoIP.

The goal of TeleWare's intelligent communications solutions is to protect your investment, reduce costs and improve your communications.

It should be clearly understood by businesses that IP Telephony is not the prerequisite that enables these new applications - they can equally be delivered on today's traditional TDM architectures, in most cases with a more proven track record, and businesses should not feel pressurised by application requirements to jump straight to IP Telephony, but should migrate at the right time in line with their business strategy and based on infrastructure Return on Investment (RoI) - not to be confused with the application RoI that can be achieved without the change to IP.

The Challenge

Many companies today are trying to create a balance between retaining and improving their competitive position by using communications technology to provide quality customer service. Like any business asset the need to make the most of their current communications infrastructure, ensuring protection of their investment. The protection of investment which covers the existing hardware and software systems as well as other important aspects such as the amount of end user training and system management time required.

The vendor market has pushed VoIP as a solution to provide cost savings and an ability to differentiate against the competition, largely on application deployment and integration. What started as an application to route calls has lead to a host of business applications to store, forward, translate and interact with all manner of voice, text and even video. But are these applicators dependent on VoIP? IP is an enabler but it is not a pre-requisite to delivering many of the services that are associated with converged telephony. What are the pros and cons of the latest VoIP technologies, and how can senior IT practitioner's best build the business case for VoIP networking?

The business case for VoIP should, therefore, be related directly to the Return on Investment (RoI) of carrying voice and data traffic on a single infrastructure and be considered separately to the RoI for deploying converged business applications.

Applications often marketed as being associated with IP, such as the unified mailbox, email integration, voicemail, unified communications, IVR, text to speech, personal numbering and a host of others, can equally well be deployed in a TDM solution. 'Killer' business applications include:-

Mobility applications for the

- Home worker
- Road warrior
- Virtual team/organisation
- Lone worker
- Field Worker

Messaging Applications such as:

- Voice Mail, Video Mail and Fax Mail
- Unified Messaging
- E-mail Notification by phone
- Voice Mail notification in the data inbox

Call Centre Applications such as:

- Home Agent
- Multiple office location working
- Integration into other business applications
- Off-network working, including fixed / mobile integration

IVR Applications such as:

- Auto-Attendant / Speech Recognition services
- Data Capture and Enquiry systems
- Dynamic changes to IVR directory content
- Automated response such as fax back services

- Use of Voice Activated Directories

Business Process Integration Applications such as:

- HR systems
- CRM systems
- Customer database information

TeleWare has provided these type of applications in a TDM environment for over 10 years. TeleWare provides these applications across the range of vendors' PBX solutions. The option and choice for the customer has now been extended to include IP-PBXs and TeleWare's own SIP based softswitch which provides a stable platform for migrating to a full or hybrid VoIP infrastructure. The TeleWare architecture ensures compatibility between the suite of TeleWare products and the range of equipment, infrastructures and networks that businesses have deployed. Any changes required to interact with each vendor's proprietary solution, a new technology or new standard (such as SIP), need only be applied in the Runtime to be made available to the suite of applications. A additional benefit of a software based core means as new technologies or standard such as SIP are introduced, modification to the runtime need only occur once to allow compatibility for dependent applications.

A company can deploy TeleWare applications in their existing TDM network architecture, over IP or in a hybrid solution dependent on their own business drivers and assessment of risks and costs to the business.

Considering the Rol

Backbone IP networks and what is now referred to as IP Trunking was the original proving ground for the benefits of IP. Many organisations have deployed IP Trunking / VPNs and these solutions can be proven by a simple cost calculation to save the business money – this is simple accountancy. The carriage of telephone calls and data on a single IP link can save money when compared to the costs of separate links for voice and data. Call charges today have become steadily lower and most organisations are now paying a single rate for all UK calls. Bandwidth has become cheap and can be considered as a commodity item.

However, an IP Trunking solution is very different to deploying IP Telephony on-site. IP Trunking creates relatively little change in the network. The PBX can be left in place along with all existing on-premises infrastructure such as cabling and telephone handsets. Users do not even have to know the route the calls are taking so perceive no change to the network.

The advantages of delivering these applications on your existing infrastructure, rather than on a new IP Telephony based architecture, must then be considered. These, essentially, revolve around cost saving and system stability.

Let's focus on a few of the major benefits that have been highlighted as being the so called "silver bullets" of what is sometimes called Voice over IP but is more accurately called IP Telephony.

Cost Justifying IP Telephony

The Return on Investment (RoI) of IP Telephony is justified by

- a. WAN Cost Saving from routing voice over existing IP national or international connections
- b. Hardware Cost Saving from single Infrastructure and branch office working
- c. New Applications.

Let's examine each of these independently.

WAN Cost Saving

WAN cost savings were the original justification for Voice over IP– passing calls over common voice and data links for local or international connections, with gateways to the circuit switched PSTN provided cost savings compared to traditional lease line networks between sites.

WAN cost saving can extend to Toll Bypass opportunities where calls are routed over the internet or private connections to avoid PSTN charges. Although these solutions often offer non-business standards of service quality and voice quality.

Most businesses today have already optimised their networks fully in these areas, either internally over leased lines, or externally through carrier selection.

Single Infrastructure Cost Saving

The cost advantages of a single infrastructure to deploy, support and maintain are certainly reasons for implementing IP Telephony if a business is relocating to a new office or “green field” site whether it is a headquarters or branch office site. The benefits include a single network infrastructure, centralised equipment and management. However, there have been a number of studies that have shown there is no great cost saving over a traditional circuit switched solution. The justification is that this is where technology in “heading”.

The cost of leasing a point-to-point network link between sites has been reduced considerably as a result of increased competition. If you are delivering voice over an existing data network then you save money by not having an additional voice network. This argument is true for green-field sites or for companies that are upgrading or building new remote locations. But can this be cost justified where you already have a functional telephone system with the associated infrastructure?

Example: you have a sunk investment in a traditional PBX, you have staff that sit at a desk all day. What is the benefit of swapping out the PBX to an IP Telephony system that delivers telephone calls to the same desk? In fact there are costs involved that need to be justified.

The first major cost is the upgrade to your Local Area Network switches to deliver Quality of Service(QoS) and, possibly, power over Ethernet (PoE). QoS is required for voice over data networks because you cannot loose or delay packets of data in a voice call like you can when sending data as, by the time you regenerate the voice packets, the real time conversation makes no sense as it distorts and fragments words.

A second major capital cost is the purchase of a vendor's IP Telephony system and that vendor's handsets. Many vendors have a strategy of mid-priced PBX's that require extravagantly priced handsets (from the same vendor) to enable more advanced features. This is the vendor's strategy to provide "lock-in" to their products and services.

A third area of expenditure is in updating your infrastructure in line with a revised security strategy as now you have access to the public network via the Telephones on your data network. Furthermore, with the addition of voice to the data infrastructure, the throughput of all devices such as routers, switches and hubs, needs to be reviewed and devices with more throughput need to be provisioned.

There is no specific order of events as stated above, you are likely to have to look at this all at the same time. The question this poses is where is the Rol in this scenario? The justification is the potential for new IP based converged applications.

New Applications

The industry has delivered such a compelling story around VoIP that many companies believe that you can only get access to exciting new converged applications that deliver immediate business benefit if you migrate to IP Telephony. This is basically not true. TeleWare has been delivering many applications to major blue chip organisations across all the major traditional PBX's since the mid 1990's. We can demonstrate immediate business benefit and our customers can use them exactly the same way when they choose to migrate to IP Telephony, but as part of a migratory strategy, not as a leap of faith.

Not only can TeleWare deliver the applications in both traditional and IP Telephony environments, but we can do this simultaneously and offer a migration path with feature transparency that allows the Customer to choose when, with what and how they migrate to the IP Telephony world. Flexibility and freedom of choice is what this is all about when you are responsible for such an important part of your company's business. You can have features such as Microsoft Outlook integration, virtual presence, wide area contact centres, location independent working *today* without needing to go to IP Telephony.

Business Solutions

New advanced features deliverable today over either a IP or a TDM solution include unified communications, voicemail, email integration, IVR and a host of other applications. Examples include:

Personal Numbering

Each user is given their own unique Number that is treated as their virtual telephone number. Irrespective of a user's current location, callers always dial the user's *intelligent Number* and the application software routes calls to the telephone at which the user is currently registered. The user can pull the calls to wherever they are in the world, on whatever device or network they are on – traditional PBX extension, IP-PBX extension, mobile or even standard public network landlines such as at home or in a hotel room. intelligent Numbers normally have DDI (Direct Dial Inbound) capability. Alternatively, incoming calls can be put through to an intelligent Number by the switchboard operator.

TeleWare client Simon Marlow, Nationwide Building Society commenting on Personal Numbering: “...Being able to receive telephone calls effectively and efficiently, irrespective of current work location, is critical to the successful implementation of Changing Workstyles.”

Unified Communications

Unified Communications is about the ability to integrate Personal Numbering, fax, emails, instant messaging and voicemail into a single methodology and technology platform. Although this may consist of several applications, each uses a common core technology and methodology to ensure compatibility and a single training scheme for staff.

TeleWare client Paul Foode, United Utilities commenting on Unified Communications: “Our TeleWare platform will allow us interoperability across our existing voice network and any future converged voice/data networks, making the migration and transition as smooth as possible.”

Wide Area Contact Centre

One of the fastest growing requirements of the UK call centre industry is the ability to support wide area call distribution. This is driven by the industry’s increased use of home-based staff and geographically dispersed virtual teams. For call centre managers accountable for performance levels, this presents additional challenges.

In the call centre, statistics packages can provide a wide range of management information relating to call flow, including data on routing, queuing and other services used. Real-time information on queue lengths, answer times and agent availability, for example, is available on display wallboards, via browser or on a networked PC. Where required, the Call Recording application can be provided and is especially useful for recording calls received by staff working from home or other locations remote from their main office location.

TeleWare client Owen Williams, Knight Frank, commenting on Wide Area Contact Centre: “The introduction of the TeleWare system has been a great success. Within the first 3 months of operation over 85% of calls to the Helpdesk had been answered first time, by one of their consultants, despite the number of calls almost doubling.”

TeleWare client Richard Rankin, Computacenter, commenting on Wide Area Contact Centre: “Introduction of TeleWare systems was key to meeting our various SLAs with customers, requiring that calls are answered within as little as 8 seconds, whilst controlling our overhead costs.”

Business Process Integration

Increasingly, the telephone is the most common point of contact between business, supplier and customers. Examples of BPI include:

- bringing the calling customer and the company's data records for the customer together at the point of need.

- using the telephone keypad to interact with backoffice business applications, e.g. account balance enquiries, parts ordering.

Interactive Voice Response

IVR solutions are often used by organisations of all types to allow calls to be routed to the correct department or person. IVR systems provide a balance between customer service and reduced costs of operators whilst allowing out of hours operations to be provided.

Jonathan Green at Red Funnel, a customer of TeleWare, commented on IVR:
"TeleWare's IVR solution complements our existing travel centre operations to ensure calls from customers are handled as quickly and as efficiently as possible. The operation of the system is readily adapted to meet the changing seasonal demands of Red Funnel's business and the system can be easily expanded to cope with future demand as the business continues to grow."

Flexible Working

The ability to share the data network with voice traffic has many advantages in terms of both reduced cost and flexibility. With a converged IP based infrastructure, telephony applications can be more readily deployed to home workers and remote offices.

IT Managers can now make such applications available to staff at any location on the corporate network or, using VPNs (Virtual Private Networks), intranets or the Internet, to staff at any remote location. For example, using IP Telephony, staff working from home over a broadband connection can benefit from the same communications services as their office-based colleagues using devices on the existing TDM network.

TeleWorkers benefit from Convergence

Over two million people in the UK today are tele-workers using a home PC and telephone to work. This figure is set to rise following the introduction of the 2003 Employment Act which gives an employee the right to request to work flexibly, including home working, to which an employer must give due consideration. Today, many organisations are already benefiting from implementing home working strategies, with telephony applications delivered on a converged IT/Telephony network providing the communications solution to support their home workers. Convergence allows teleworkers to listen to emails over any phone, check voice messages from any PC, see their colleagues' availability, receive faxes at any fax machine or on their own PC and take their calls wherever they are. You can do all of this and more with TeleWare Unified Communications - a solution that helps control and manage staff contactability and efficiently and flexibly handle the many different types of message that are received every day.

Customers who have implemented home working report a significant enhancement in employee productivity, increased job satisfaction, better retention of employees, along with reduced sickness

and absenteeism. Recent studies by a major UK vehicle recovery company, the AA, found that flexible working call centre agents were up to 50% more productive, while the much larger Strategic Workstyles 2000 project reported productivity improvement of 45% and a reduction of 2 days per year in absenteeism and sickness for tele-workers.

Conclusion

The market will go all IP eventually. It is not a question of 'if' but a case of 'when'. The investment to be made by enterprise and carrier markets will be massive, but it will be extended over 20 years. Certainly, it can accommodate the expiry of the normal PBX lifetime. Delivering converged applications over your existing PBX provides protection of investment, while still achieving business flexibility and customer service. More importantly, it allows you to migrate to IP Telephony when you are ready and driven by the network architecture benefits. An open systems based, applications-led approach can also keep technology options open – customers are given the choice so often denied them by proprietary vendors.

The simple truth is that the business benefits of converged applications can be achieved in either the IP or TDM world and the business case should be driven by return on investment and not technology.

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Headquarters/Registered Office

TeleWare plc

TeleWare House, York Road, Thirsk,
North Yorkshire, YO7 3BX, UK

T: +44 (0) 1845 526830 F: +44 (0) 1845 522165

Europe Middle East and Africa Sales Office

TeleWare plc

1 Shenley Pavilions, Chalkdell Drive, Shenley Wood
Milton Keynes, MK5 6LB, UK

Asia Pacific Regional Sales Office

TeleWare NZ Ltd

Level 8, TeRenCo Finance House, 86 Victoria Street,
Wellington, PO Box 1956, New Zealand

T/F: +64 (9) 360 6881

Registered in England No 4756742

E: enquiry@teleware.com

W: www.teleware.com