

Technology Audit

Networking and Communications

TeleWare plc Intelligent Communication Solutions

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Abstract

TeleWare supplies applications for location independent working, improved telephony productivity, and telephony business continuity, which based on a common architecture and provided as packaged and customised software. The applications offer local and wide area communications functionality to enterprises, improving collaboration between individuals and teams, and supporting new working practices. TeleWare uses a software approach to the problem of a converged communications infrastructure, which enables organisations to continue to use existing equipment that is based on circuit-switched networks whilst gaining the benefits that converged applications bring, such as personal numbering and virtual team working. The company has some innovative solutions, particularly in the concept of a Software Development Kit (SDK) that allows customers to embed telephony services into call-flows to enable smooth application and telephony integration. It has not overlooked the issues of usability and places much emphasis on the provision of training and consultancy services, either by itself or via its business partners, to ensure that customers gain rapid benefits from implementing a converged solution. All in all, TeleWare is a worthy player in the increasingly competitive communications solutions market, with a different approach to many of the better-known names. By continuing to highlight real life examples of the benefits that its solutions bring to its customers, it should be able to gain more recognition in the marketplace.

KEY FINDINGS

Key: ✓ Product Strength ✗ Product Weakness *i* Point of Information

✓	The solution is based on open standards, enabling interoperability between traditional and IP infrastructures.	✓	Hosted services available.
✓	Common user interface.	<i>i</i>	A SDK enables custom applications to be developed around a telephony solution.
<i>i</i>	Runs on Microsoft Windows operating system.	✗	In an increasingly competitive market, TeleWare is one of the smaller vendors.

LOOK AHEAD

TeleWare continues to invest in the development of new communication services, exploiting its common platform.

► FUNCTIONALITY

Product Analysis

Increasingly, companies are looking to make the most out of network and voice infrastructure investments. A significant component today of any business is its network, forming the foundation on which many critical business applications are based. An area of focus for many organisations is how to exploit the potential benefits of Voice over IP (VoIP). If we look at most established business organisations we see that they have all evolved in a similar fashion in technology terms. The backbone of a company's communication system for the past 50 years has been the Private Branch eXchange (PBX), controlling a traditional telephone network. A PBX would route calls, perform directory look-up, and possibly store voice messages, all controlled using telephone communication standards.

The deployment of computer technology into the workplace has introduced data communications as part of the equation. E-mails are now the lifeblood of most organisations, and are an important vehicle for the flow of information within an enterprise. The rapid introduction of the mobile phone, both for voice and transmission of data, is quickly changing how organisations communicate with staff, partners, and customers. These technologies require integrating into the overall infrastructure.

In many organisations these disparate services are running in infrastructure silos. This plethora of independent equipment is a costly and diverse environment to manage and support. Skills need to be maintained in both voice and data technologies, and integration can be difficult. Managing a communications infrastructure is a complex and expensive operation, but whilst most organisations understand the implications of controlling outbound communications, what is less often understood is that incoming calls and other communications also cost money.

Analysis of customers deployments shows that prior to implementing a TeleWare solution only one in five calls resulted in the caller getting through to the person they needed on the first occasion, the rest of the time they were forwarded to voicemail or the caller hung-up. Following implementation this improved to one in two calls getting first time resolution. The solution recognises that telephone calls are generally made to people, rather than to telephone numbers, even if the caller does not know exactly whom they need to speak to when they make the call. Call abandonment was also reduced from one call in every seven to one in twenty.

This improvement in productivity is achieved by a combination of intelligent call routing and virtual contact centres, enabling a team of staff to collaborate on providing better service regardless of location. Many contacts can be handled automatically, and TeleWare's solution includes the ability to create automatic data feeds into applications so that users only need to input information once.

A solution, such as that provided by TeleWare, has direct benefits for professional services companies, where hot-desking is commonplace, and allows an increase in billable time as less time is spent retrieving calls from multiple services. It also reduces the telephony infrastructure without relying on a sole hardware vendor, and can enable buildings to support a much larger number of staff than the physical telephones available.

Product Operation

TeleWare provides a suite of products that can enhance organisation-wide communication, as well as supporting flexible working. The company's solutions cover a range of applications, including office applications, development tools, and infrastructure. The Intelligent Communication Solutions are based around industry standard hardware and operating system (currently Microsoft Windows). The architecture is built in a multi-server, scalable manner, with one or more communications servers supporting network

connectivity, application servers supporting desktop integration, and file servers supporting the underlying storage and database functionality.

Fault tolerance and reliability is provided for by building in an element of redundancy, allowing replication and duplication of key servers. A fault tolerant file server can be used to support 'non-stop' database services. The provision of personal numbering automatically provides an element of improved business continuity. For example, where an office is near to a potential security target and tends to get evacuated when there is a bomb threat, personal numbering allows the staff to log on from elsewhere, or from a mobile phone, and take customer calls that way, as long as the servers are still functional.

Office Applications

TeleWare provides a number of different application modules as part of intelligent Office. The suite includes telephony services such as personal numbering with team call ability, voice/fax mail, unified messaging, desktop services, management reporting, call recording, and telephone conferencing. The suite can be implemented in a conventional PBX or in a converged infrastructure. All features and facilities are available in both, with applications accessible to the PBX, IP PBX, and mobile environments simultaneously.

The company claims to have been the first vendor to introduce an entirely end user device independent intelligent Number - this allows staff to be allocated one number, which is like a virtual number. When this is dialled, the system automatically routes the call to the telephone (or device) where the user is currently registered, which can be at a remote site or even a mobile phone.

TeleWare's intelligent Messaging Centre supports a single inbox for voice and video messages, faxes, and e-mails. It integrates with all the leading e-mail environments, including Lotus Notes, Microsoft Outlook, Novell GroupWise, and HP OpenMail. As well as unified messaging, the company also offers the concept of integrated messaging based on a message warehouse. This provides an e-mail notification that the user has received a voice mail for example, but it does not attach it. The user then clicks on a link in the e-mail to retrieve the message from the TeleWare message warehouse, or sends it to the user's registered extension, which may be either a telephone or a PC.

Another component is intelligent Conferencing, where there is no theoretical limit on the number of parties in the conference, subject to the available resources within the TeleWare platform. Along with an application to support for the lone worker that was originally developed at a customer's request, and which uses the application development and integration features of the solution. For example, if a remote worker is out on site at a job that should take two hours, if they do not then check in by phone at the end of that time an alert is raised. The intelligent Contact Centre enables groups of geographically dispersed employees to function as one contact centre.

Development Tools

Butler Group feels that the integration capability, combined with direct data input to databases provided by the intelligent AppBuilder suite is a key strength. Functionality also includes an enhanced Interactive Voice Response (IVR) solution, intelligent voice response, and applications development tool allowing drag-and-drop functionality to create call-flows that enables customers to modify call handling, in order to adapt to changes in business needs.

The TeleWare high-level programming language enables rapid application creation and integration with existing applications and call-flows. TeleWare has further developed its language into a full SDK for improved applications development, it runs in Visual Studio, and is based on the C language family with added verbs, such as 'make call'. The intelligent SDK enables the customer to design forms to enable, for example, a voice call to add data directly to a database for future interrogation, and allows smooth integration of voice with applications, such as Customer Relationship Management (CRM).

Infrastructure

The main infrastructure components include a softswitch, mobile network integration capability, and a presence engine:

- intelligent Exchange - a software-based Session Initiation Protocol (SIP) softswitch that provides the backbone for IP communication solutions including support for IP-based phones, iX-Fone softphone application, and the iX-Console for operator control features.

- intelligent Mobile Networks - allows enterprises to integrate cellular telephony with the enterprise PBX or IP-PBX infrastructure, exploiting the ubiquitous mobile handset in order to support an integrated IP wireless solution for employees whilst in the office environment.
- intelligence Presence Manager - enables presence awareness for fixed line TDM/IP, and mobile, along with instant messaging within the network.

The TeleWare solution supports a standard range of management features including historical reports, a real-time console, and system logs. This includes simple Network Management Protocol (SNMP) integration, allowing the use of any SNMP-compliant network management system. The TeleWare Information Management System is a comprehensive reporting tool, based on Crystal Reports, which can run on historical or current data, with log files being created every four hours.

When designing the infrastructure the company created TeleWare runtime, which is an intermediate software layer between the operating system/drivers and TeleWare applications. The applications execute on this runtime layer, which enables them to remain unaffected when new devices, operating systems, or drivers are required. Infrastructure changes only impact the runtime layer, lowering the maintenance requirements, both for TeleWare and for customer developed applications. If required, customisation and new application building can be achieved by using development tools available from TeleWare.

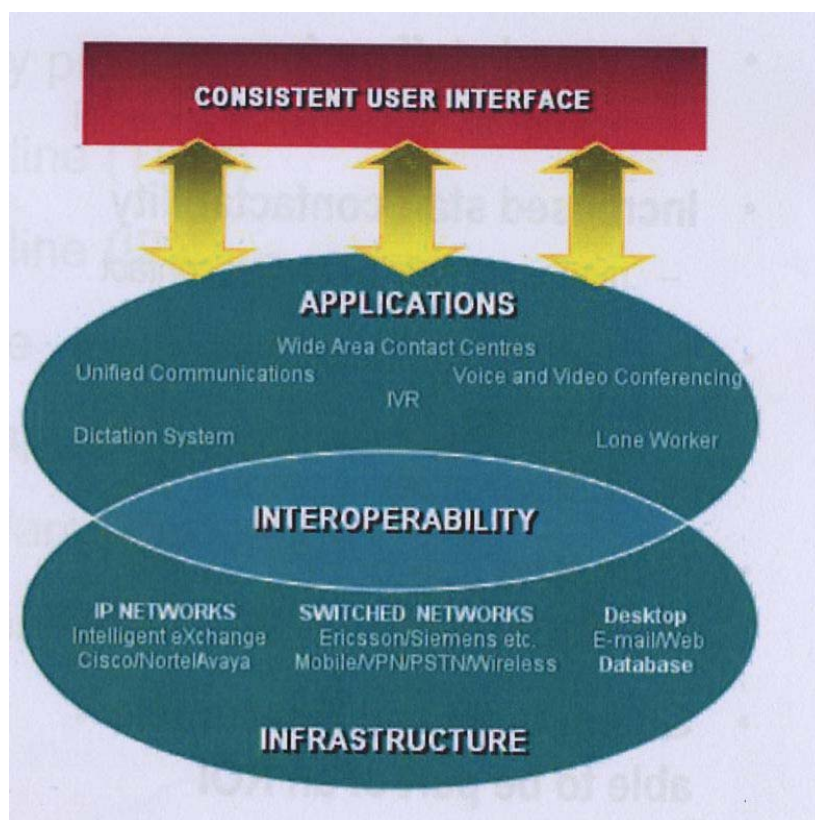


Figure 1: Intelligent Communication Solutions Architecture

Product Emphasis

TeleWare supplies applications for location independent working, provided as packaged and customised software based on a common architecture. The applications offer local and wide area communications functionality to enterprises, improving collaboration between individuals and teams, and supporting new working practices. They provide a uniform user interface regardless of device type over a range of communication infrastructures, including traditional, IP, and mobile. Interoperability and the use of open

standards are key design principles included in the solution for the provision of flexible communication services and a migration path from current infrastructure to an all IP environment.

► DEPLOYMENT

TeleWare's solutions are based upon Microsoft Windows operating system and SQL Server database, along with network cards from Aculab when required. TeleWare solutions are not technically dependent on any specific hardware, and are based on open standards. However, the company does recommend hardware that has been tested by them and which meets CE mark testing requirements.

The company supports a wide range of standards both in terms of voice and data protocols to enable integration with third-party applications and also to integrate with existing systems. These include telephony standards such as DPNSS and QSIG, and IP protocols H.323, H.450, and SIP. TeleWare's solutions enable customers to migrate from a traditional telephony network to a converged voice and data network without significant loss of functionality. The platform provides a gateway between the IP world of H.323, H.450, and SIP, and the traditional telephony world of DPNSS/DASS/Q931 operating over PBX, VPN, and PSTN networks. E-mail integration is possible using both IMAP4 and SMTP protocols, enabling most common e-mail applications to be integrated with the communications infrastructure.

A wide range of endpoints or devices are supported, including Windows-based PCs, Windows-CE handheld devices, feature phones that support XML or HTML, standard mobile phones or telephones, SIP, H.323, or H.450 devices, and TeleWare's own soft phone, the IX-Fone. This means that users can use devices that they are already familiar with as they move onto a converged solution, potentially encouraging take-up of the new technology. TeleWare provides support for Presence and Instant Message capability through the XMPP and SIMPLE standards.

The average time to deploy TeleWare solutions is between four and six weeks, although when using a hosted service this can be less than 24 hours. The company offers the system as a complete turnkey solution, including maintenance, which can reduce the need for specialist telecommunications skills if these are not available in-house. Implementation can be highly modular, enabling only the required applications to be deployed, and providing simple deployment of future applications. TeleWare provides a range of support, which is also available through partners, for whom there is a 3-tier accreditation program - Bronze, Silver, and Gold.

Recognising that this type of solution can have a major impact on organisations, TeleWare offers a range of training and consultancy services, including training in etiquette for users that are inexperienced in handling newer forms of communication. Training is provided for end-users, on a 'train the trainer' basis, and also for system administration. A minimum of two days training is included in all TeleWare systems, and is usually carried out on site, the company also provides an annual 'health check' where additional training may be identified.

► PRODUCT STRATEGY

TeleWare has historically focused on providing communication solutions for large organisations, mainly because the interface cards that were necessary for software-based telephony made high demands on the hardware and specially designed ruggedised hardware was required. However, over the last few years the solution has run on industry standard hardware and this has reduced the cost of entry. The company now has a multi-tiered sales strategy, including direct sales, channel partners, telecommunication companies, and system integrators. Channel partners for systems include Bailey Telecom, BT, Damovo, Logicalis, and Siemens. Channel partners for hosted services sales include Interoute, Global Crossing, Datasharp, and TouchDown Offices.

The company supplies small, medium and large enterprise customers worldwide with Intelligent Communication Solutions, which can be provided in a number of ways to meet differing customer's needs, such as on-premises products, managed services, or hosted services.

For the SME market, TeleWare applications are available through TeleWare Hosted Services (THS) offered by Service Providers and associated resellers offering value added services, including enhanced features, such as billing, reporting, and auto-provisioning capabilities, to the full spectrum of enterprise and public sector customers. The solution is available in a modular manner, and customer's only need to licence the components deployed and for the required number of users.

Alternatively, TeleWare Application Services (TAS), an Application Service Provider (ASP), can provide services based on Intelligent Communication Solutions. TAS supports BT Featurenet, as well as independent corporate and public service customers. Over 20,000 connected users take advantage of services, such as personal numbering, auto attendant, unified and integrated messaging, and IVR.

Ofcom recently confirmed that it has awarded TeleWare a licence for wireless spectrum to be used on a low-power basis. This award of spectrum opens up new opportunities for the company to provide fixed and GSM mobile integrated networks fully supported by TeleWare products. The company has set up a new subsidiary company, Private Mobile Networks Ltd., to further exploit the spectrum. The solution enables companies to integrate cellular telephony with the enterprise PBX or IP-PBX infrastructure. At the heart of the offering is the Private Mobile eXchange (PMX), exploiting the existing mobile handset in order to support an integrated IP, wireless solution for employees whilst in the office environment. This avoids the need to utilise Wireless LAN (WLAN) infrastructure and new phones with multi-wireless technology capability.

► COMPANY PROFILE

TeleWare is a privately owned company originally founded in 1991. The company has around 100 employees, mostly in the UK, with a significant number involved in Research and Development (R&D). The company is TICK IT ISO9001/2000 certified, and has been awarded the Investors in People UK national standard for employee training and development.

The TeleWare Group of companies provides products and services based on the TeleWare applications developed by TeleWare Plc. to meet the requirements of various target markets. The TeleWare Group consists of TeleWare Plc, TeleWare Hosted Services, TeleWare Application Services, and Private Mobile Networks Ltd. The company's suite of applications is delivered as On-Premise solutions, Managed, or Hosted Services to small, medium, and large Enterprises, along with Service Providers.

A large proportion of sales are in the UK, although there are customers in New Zealand and Australia. TeleWare's customer base covers a number of blue chip national and multinational organisations in a variety of sectors, including over 23% of the FTSE 100 and approaching 21% of the top 1000 blue chip national and multinational companies. The company has over 250 customers, which includes Advantica, British Airways, BT, Computacenter, East Sussex County Council, Knight Frank, Nationwide, PricewaterhouseCoopers, and United Utilities.

► SUMMARY

It is becoming increasingly important for IT management to lay the foundations for making possible the availability of common communication services, either by infrastructure upgrades and new applications or through Managed Services. Over the next three years, Butler Group recommends that organisations evolve to the use of a converged IP environment and integrated communications.

Whilst there is probably no 'killer application' as such, other than possibly voice, it is the combination of various technologies and applications enabling innovative and compelling services that is valuable. However, presence functionality is seen as a key enabler, as is SIP, which will have far-reaching implications for enterprise communication provision. The productivity gains possible with making available personal numbering or being able to see someone's availability and context should not be underestimated. The TeleWare software-based solution utilising industry standard hardware is worth consideration when organisations decide to migrate to an all IP environment and evaluate the various alternatives found in the marketplace.

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