white paper

dimension data

Making Your Move

The migration from legacy TDM to IP Voice

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Most organisations have already embarked on the migration from legacy voice systems to IP telecommunications environments. While some are at the planning stages of that journey, many others have begun their second migration – IP telephony to unified communications and collaboration. Advances in communication technology are constantly challenging today's IT leaders to provide up-to-date infrastructure that is reliable, secure and flexible and can support the requirements of their organisations – today and in the future. At the same time, customers, business partners and employees are demanding modern communication tools that keep them connected anywhere, anytime and on any device.

The migration from legacy TDM to IP Voice

Unified Communications and Collaboration (UC&C) technologies meet these needs and provide the foundation to improve and innovate an organisation's communication capabilities in the future. In particular, businesses around the world are integrating IP telephony into their day-to-day operations and enjoying major results such as reduced costs and risk, improved mobility, increased efficiency and a higher level of internal and external connectivity. With industry analysts predicting that by 2012, companies will be paying at least 20% more for telephony than they do today, the opportunity to reduce telephony costs while enabling your employees to enjoy anytime, anywhere connectivity is a compelling proposition. For these reasons and more, leading industry analysts predict that the adoption of Voice over Internet Protocol (VoIP) will continue to increase significantly year-on-year, with a compound annual growth rate of 17.3% forecast until 2013.

The move from legacy voice systems to IP-based communication environments is a multi-year journey for most organisations, and one which has often been delayed or stalled by the global recession. The pace at which it is accomplished is driven by an organisation's IT priorities and business strategies and depends on several factors. Initially, an organisation must review the size and complexity of their existing voice infrastructure and data network and qualify and quantify where the hardware and software is in its product lifecycle. This visibility into existing infrastructure is critical as many traditional telecommunications systems will be nearing the end of their lifecycle and will be largely unable to support real-time collaborative traffic. When assessing whether to repair, replace or update, the majority of organisations see that the opportunities presented by UC&C are too great to be ignored.

Organisations that provide collaboration capabilities to their increasing mobile workforce and diverse geographic spread can realise organisational cost savings, productivity boons and competitive advantages. Furthermore, businesses are looking to attract and retain top talent, and in today's generation of tech savvy consumers, the organisations that promote a culture of modern, advanced technology capabilities may prove the deal-maker or breaker with these employees.

Other factors that need to be considered are the topology, capacity and quality of the Wide Area Network (WAN) and whether it supports centralisation, the maturity of the IT department in supporting a converged environment, and what strategic business transformation imperatives may be enhanced by integrating communications into business process.

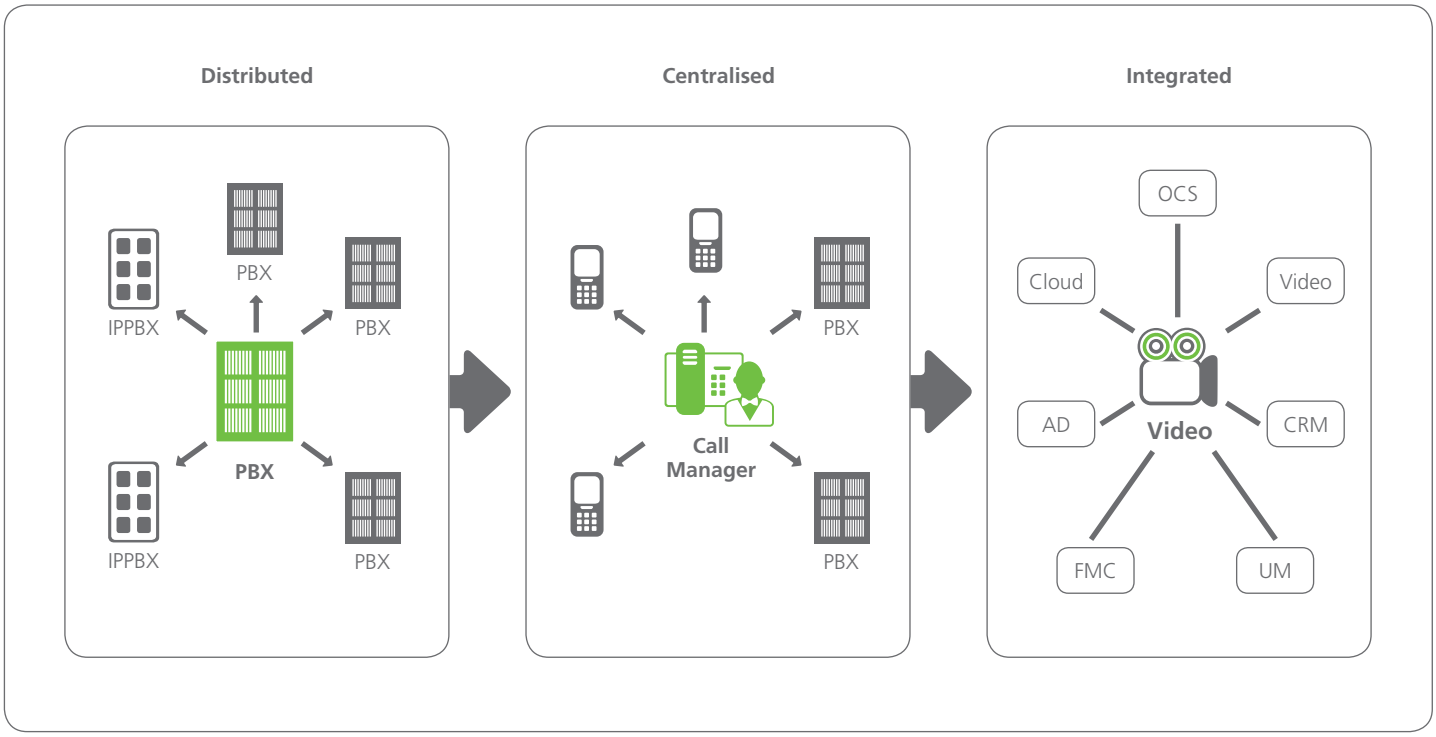
A Phased Approach to Migrating to Unified Communications and Collaboration

Whilst the pace of migration may differ from organisation to organisation, in general there are three phases in an organisation's transition from legacy voice to IP communications. The first box in **Figure 1** shows a typical distributed voice infrastructure characterised by a mix of TDM PBX and IP PBX and in many cases multiple vendors and voice mail platforms. These environments are characterised by a lack of centralised support and the disparate voice platforms are typically deployed with little regard for integration into the other systems.

The second phase shows a centralised IP telephony environment where the organisation has deployed voice and data architecture with the capability of handling call processing and messaging in a central site (typically a data centre or large office location) and consolidation or updating of the existing infrastructure. A combination of end points (TDM and IP) may remain at this stage but all support will now be centralised and most of the smaller locations will no longer require onsite management. Organisations will begin to see a lower operational cost at this point and enhanced features provided to the end users including mobility and unified messaging.

The third phase depicts an organisation that has integrated various forms of communications – voice, video and conferencing – with their business applications including active directory for Rich Presence status and CRM for communicating with customers, clients and business prospects. In an integrated architecture, organisations can take advantage of hybrid solutions like call control and messaging on premise in their data centre and web collaboration and conferencing hosted in a vendor's cloud. This approach provides the client with a variety of communications options and the best operational model available for each one (insource or outsource).

Figure 1: Three Phases of Legacy Voice to IP Communications Migration



[See Addendum for additional details on Distributed, Centralised and Integrated Environments]

Saving communication and collaboration costs

A number of examples of technology-enabled cost saving have been mentioned. Commercial approaches are also valid and can achieve significant savings, often in the range of 20-30% of the overall telecommunications spend. They are often categorised under the banner of TEM (Telecommunications Expense Management) and there are various mechanisms involved. The first is evaluating current contracts and invoices (across all services – wired and wireless; data and voice) to determine: where rates are above benchmark for the geography and re-negotiating contracts to achieve short term savings; which mobile contracts are not on the optimal rate-plan; unwarranted charges (rates above contracted tariff, billing for services that had been cancelled), raising billing disputes and negotiating refunds; underutilised services and reducing associated contract value.

The second step is to evaluate usage by user, in order to identify abuse and take appropriate corrective action. The final mechanism is to improve service lifecycle management and implement TEM as an ongoing process to ensure that new services are optimally contracted for; unused services are cancelled and the billing terminated; the invoice validation and payments approval process is improved to avoid late payment penalties; and ensure above savings are consistently retained.

With all of the potential cost-savings approaches available, how does an organisation know which ones to choose? Which mechanisms will yield the best return on the investment made? What about alignment and support for current and future business needs?

Best Practices for Managing Communication Services

Dimension Data recommends a three-phase approach to managing communication services: (1) Communications Infrastructure Baseline, (2) Communications Infrastructure Management and (3) Communications Infrastructure Migration.

The Baseline Phase should provide organisations with a strategic road map for managing their communication services and an inventory rationalisation of their communications infrastructure.

The Management Phase focuses on two key areas for organisations to better manage their telecommunications inventory: (1) Management of network, voice and visual communications environments. (2) Management of telecommunications expense, inventory and life cycle.

Figure 2 – Commercial benefits of UC&C

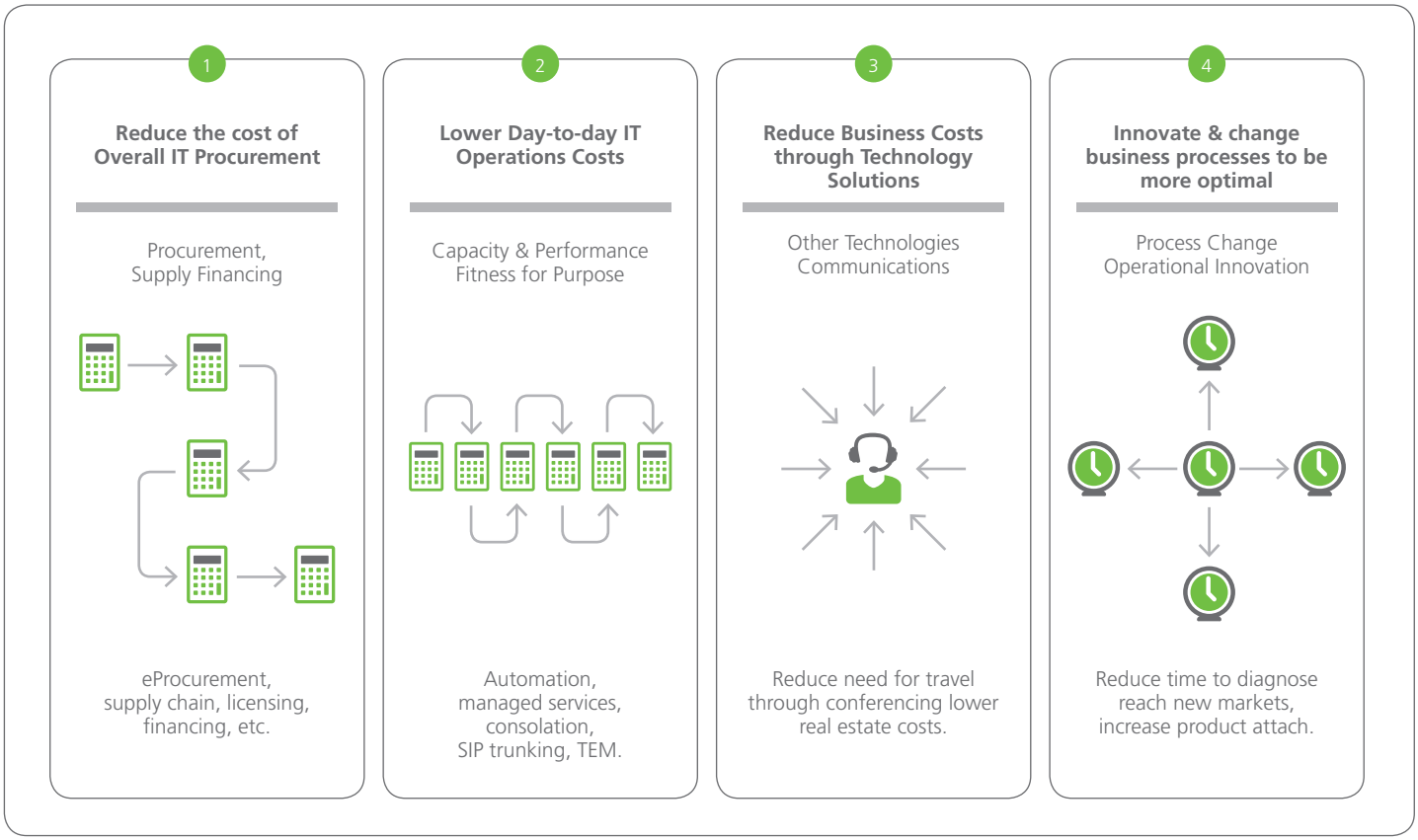


Figure 2: Puts the business issues in context. Both point 1 (reducing the cost of overall IT procurement) and point 2 (lowering day-to-day IT operations costs) are direct cost savings for the IT organisation. Point 3 illustrates that UC&C also has a role in reducing business costs such as travel and real estate and may align with organisational objectives such as reducing carbon footprint. However, if they are available to the organisation, the business benefits of point 4 (innovation and business process improvement) can dwarf the savings of the first three points combined!

The Migration Phase includes areas of how organisations can better optimise their telecommunications inventory: (1) Migration to Converged Communications; (2) Migration to SIP Trunks; (3) Strategic Sourcing.

The reality is that making an informed decision requires a good deal of clarity and visibility. On the business side, these should start with the organisational strategy, objectives and needs and then work down to details on the role of UC&C in achieving and supporting the strategy and objectives. Dimension Data recommends strategic and business-focused assessments like their Unified Communications and Collaboration Development Model and 'How Do You Meet?'.

In summary, it's critical for organisations to take a strategic view of their communication services (IT and telecommunications infrastructure) and how they maintain the inventory and manage the costs. By developing a multiphase approach with proper visibility into current state inventory, organisations can migrate to a communication platform that supports unified communications and collaboration and ultimately improves delivery of communication services across the enterprise.

Addendum

Distributed TDM Voice

Traditionally, voice deployments have been decentralised, with one or more PBXs (private branch exchanges) per site. The estate is normally multi-vendor, and will most probably consist of a mixture of technologies. In these cases, IP Telephony (IPT) is usually procured tactically and early deployments continue to follow the decentralised model, despite the fact that IPT and associate voice applications such as voice mail and conferencing allow for a different architecture.

The business implications of a decentralised model are that every site has to be separately managed and administered, causing operational headaches when it comes to new users, MACDs or software upgrades. While some technology-enabled cost optimisation may have been implemented – for example, PBX tie-ins or IP voice over WAN – it is typically inconsistent and only across a few sites. Simply put, this is an expensive, inflexible and inefficient model. Nevertheless, for organisations who feel that they are not in a position to accelerate their technology migration, the consolidation of maintenance contracts and outsourcing to lower the cost and increase the consistency of management are some of the practical cost saving and optimisation alternatives that they could consider.

Centralised IPT

In this case, IPT separates the signalling and voice/media paths allowing for the centralisation of call processing (and other UC&C applications) with only phones, survivability applications and – if required – gateways at the sites. The move to a more centralised IPT environment allows for centralisation and simplification, and promises a host of management and operational advantages. From a scale perspective, fewer resources can manage the same amount of capacity, and because a single 'pool' suffices, any unused capacity can be spread across multiple sites or geographies.

Simpler administration is another key advantage; a single dial plan for the entire organisation allows for all new users and all MACDs to be performed on a single system (with scale allowing for higher degrees of automation), and there will obviously be fewer software upgrades to manage.

The advantages extend beyond operations and management. For end-users, extension mobility is available between sites, allowing them to log in as themselves from any phone in the organisation, increasing contactibility, saving on roaming costs and improving the accuracy of cost allocation. Sites with legacy PBXs, which need additional capacity, can be provisioned from the centralised system - the alternative would be to spend money adding capacity to a PBX with no architectural future or prematurely replacing the PBX. In terms of feature supplementation, sites with legacy PBXs which need additional features for specific user groups (such as road warriors, hot-deskers or teleworkers) can provision these users from a centralised system. This is infinitely preferable to leaving the users without the features they need to work optimally, or again, prematurely replacing the existing PBX.

Two recent technology developments from mainstream vendors greatly simplify achieving the advantages that a centralised IPT model offers. The first of these are session managers, which reduce the time and effort needed to consolidate diverse estates into a cogent infrastructure and session border controllers (SBCs) which can be used to solve multi-vendor signalling interworking incompatibilities. The second development is the virtualisation of real-time applications, which allows for more elastic growth of centralised hardware.

There are, of course, certain implications of centralisation and consolidation that should be given due consideration before migration. Perhaps most important is the fact that the system now becomes much more mission critical, with many more users relying on its performance and availability, and the consequences of failure much more widespread and weighty.

Consequently, on top of architecting for redundancy and resilience, attention must be paid to management processes, and in particular the incident-problem-change-release cycle, which needs a high degree of attention and discipline.

Integrated UC&C

The centralisation of call processing infrastructure and other applications is a necessary step to makes UC&C integration tractable. Integration is expensive, not only initially but also in terms of the ongoing costs; for example, every software upgrade of an individual application requires compatibility testing with a number of other applications. It's important, therefore, that the number of interfaces are minimised, which is patently not the case in the Distributed TDM phase

Why integrate then? Integration is essential to realise the full benefits of UC&C and allows the full benefits of productivity and communication-enabled business processes to be unlocked. There is, however, no single vendor that currently offers a true end-to-end UC&C solution and given that most organsiations have existing investments which they need to leverage, a best-of-breed approach will be with us for some time yet. Integration to directory applications, unified messaging and IM and presence are obvious candidates, although integration to CRM systems, fixed-mobile convergence applications and others should also be investigated as they offer the potential to drive transformation or tangible business benefits. This results in a potentially complex eco-system of integrated applications. It's not just mission critical, it's specific to the organisation, making the discipline and maturity of management even more important than in the Centralised IPT phase.

Another crucial component of integrated UC&C is resiliency; not only is the infrastructure more resilient in this model but the business is more flexible and ready to respond to natural disasters, pandemics or catastrophes. For example, when a widespread blackout hit the United States in the Northeast a few years ago, those companies that had an integrated UC&C strategy were able to maintain their business by rolling mission critical contact centres to areas of the country that weren't affected by the power outage or using virtual agents in their homes.

Finally, true IT Governance is possible with an integrated UC&C platform. In this model, IT and business units cannot make their own decisions about technology as these are interwoven in this collaboration architecture. Most importantly there is clear accountability and less finger pointing for the individual components of the architecture.

Figure 3: Convergence of Voice and Video

The other point to note in the image above is that consumption models will change and organisations will have more flexibility in terms of how they buy. Today's predominant model of capital expenditure on infrastructure will be supplemented with utility pricing models, delivery out of a public cloud and hybrid scenarios.

Convergence of Voice and Video

For organisations who wish to remain agile and competitive, it's clear that the move to a centralised, consolidated, simplified and virtualised UC&C infrastructure is inevitable. From a purchasing perspective however, many organisations treat voice and video as silos, despite the fact that there is a significant overlap between the two technologies. They both require call processing, directories, management and real-time network capabilities, and the question begs therefore, why duplicate the effort and expense of doing this by treating them as silos? Why have a conference phone and video conferencing unit - which has excellent voice capabilities - in the same meeting room? Why keep two directories updated? Why invest in two sets of management tools or in two managed services providers? Why have the complexities of upgrading (or patching) two sets of call processing infrastructure? Why partition voice and video separately on the network with two call admission control regimes (and the potential of unused capacity on the one and congestion on the other)? Technically, the move to SIP as the preferred video protocol means that very soon it will no longer be necessary to do so.

From a vendor perspective, the boundary between voice and video is increasingly opaque; for example, the modern high-end phones come video-enabled and most smartphone vendors and carriers have video capabilities, or at least will in the near future. The consolidation of voice and video applications into a converged infrastructure is as inevitable as the centralisation, consolidation, simplification and virtualisation of voice infrastructure.

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