Catalyst for Change

*Digital Transformation Strategies Driving Network, Telecom Upgrades*

Despite the longevity and success of IP telephony, nearly half of companies (and more than half of large enterprises) still operate age-old TDM PBXs, which are costly to maintain and inflexible when it comes to innovative communications strategies. Many companies don’t replace this gear or move to cloud services until the equipment is at or beyond end of life, and they no longer can find replacement parts! Digital transformation initiatives are giving IT leaders a catalyst for upgrading this infrastructure.

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Executive Summary

To benefit from the value of digital transformation, companies first are addressing their foundational communications infrastructures. That means replacing costly, old TDM with IP-based capabilities, as well as investing in Unified Communications and Collaboration (UCC), which Nemertes Research has found is the leading technology correlating with success in digital transformation. Additionally, by moving to a cloud communications service, IT organizations can shift headcount from keep-the-lights-on functions to more strategic roles that ensure digital transformation success.

Only then can technologists bring to fruition the brilliant ideas that emerge from digital transformation initiatives—ideas like embedding sensors and apps into products, improving internal processes by digitizing inefficient paper processes, or bolstering customer experience through the use of video and Web Real Time Communications (WebRTC, an open-source project that embeds voice, text, and video capabilities in Web browsers). These efforts simply will not succeed if they’re relying upon aged infrastructure.

But convincing assertive and impatient business leaders that their great ideas may need to wait—albeit temporarily—is never an easy conversation. Today, 45% of companies still operate old TDM PBXs in some (or even all) of their locations, and among large organizations, that percentage climbs to 54%.¹ And although most organizations are evaluating cloud services for IP telephony and Unified Communications, the majority still operates on-premises systems.

Nemertes recently completed research focusing on digital transformation and enabling technologies. Learn how IT leaders are leveraging these initiatives to get funding and support for telecom and network upgrades.

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¹ All data on IPT/UC costs, architecture from Nemertes UC Total Cost of Operations research, 2016
The Issue
To prepare for the burgeoning focus on digital transformation, companies must evaluate their foundational technologies to ensure they can address business demands. UCC is a core area of focus, based on our research. Even though some companies may have innovative ideas—and indeed, even formal innovation programs—they maintain aging, costly TDM infrastructures that will make these innovations difficult to achieve, if not impossible.

In this report, we will examine the following:

- Digital Transformation’s Foundational Effect – To support innovative digital transformation initiatives, companies must have secure networks with appropriate levels of security, as well as integrated communications capabilities
- Status of today’s infrastructure supporting telecom and UCC – An alarming percentage of organizations still have aging TDM infrastructure in place, which prevents them from leveraging the benefits of IP and architecting an integrated communications service
- Costs of operating TDM vs. all IP infrastructure – Nemertes UC Total Cost of Operations research documents higher operational costs for those who still have TDM operating in their networks.

Digital Transformation’s Foundational Effect
Nearly 70% of organizations have some sort of digital transformation initiative underway.² The extent of the initiative—and the success—varies. But the wheels are in motion to leverage technology to improve products, processes, or experiences. The ultimate goal is to derive some value, whether it be improved productivity, better customer experience, increased revenue, or cost reduction.

Today’s digital initiatives include:
- Improving the customer experience through the use of technology
- Replacing paper processes with digital processes
- Identifying workflows to digitize; analyze resulting data to improve business
- Embed technology into products and services sold
- Leveraging emerging technology to become lean, agile, responsive, and customer centric.

² All data on digital transformation from Nemertes Digital Transformation and IT Futures Research, 2016
In most cases, though, the imagination is running much quicker than reality. An automotive manufacturer may want to add a mobile video app for customers to interact with the contact center—ultimately improving customer experience. Or an investment bank may want to embed WebRTC into a browser so high-value customers can obtain presence status on their financial management team—improving customer experience that results in increased revenue. Or, a retailer may want to add virtual whiteboards and team chat to its collaboration arsenal—reducing travel costs and improving employee productivity when evaluating the winter clothing line.

All of those examples are great transformative initiatives. But they risk failure without the proper foundational technologies. An under-engineered network will result in disappointed customers trying to conduct a video with the auto manufacturer. A weak security strategy could open the door for customer privacy violations for the investment bank. And the merchandisers at the retailer will abandon the new collaborative technologies without the right UCC architecture and interoperability.

Technologies Behind Digital Transformation
In conducting our digital transformation research, we asked nearly 400 companies three questions about technologies:

1. Which technology is the most vital to your digital transformation initiative?
2. Where do you plan to increase spending in the next year?
3. Which technologies do you use or plan to use in the next year?

Figure 1: Most Vital Technologies
Based on our research, foundational technologies, such as security, network infrastructure, and UCC, are most vital to digital initiatives for most companies. (Please see Figure 1.)

We then correlated the technology questions with a subset of the research participants to meet criteria to be considered “successful.” During the next year, successful companies will increase their spending on foundational technologies, including UCC, WAN services, WAN infrastructure, data center infrastructure, and Infrastructure as a Service. (Please see Figure 2.) These will support future apps for wearables, IoT, APIs, and ultimately virtual/augmented reality, artificial intelligence, and cognitive reasoning.

Given that successful companies plan to increase spending on UCC 72% more than unsuccessful companies, it’s safe to say many organizations are behind when it comes to replacing aging infrastructure with the latest and greatest communications and collaboration capabilities.

**Figure 2: Success Correlations: Technology Spending**

**Today’s Infrastructure Supporting Telecom, UCC**

Despite the fact that companies have documented benefits from IP telephony for more than 20 years, most companies—and particularly large enterprises—continue to operate a mixed environment that includes TDM and IP.
Among those who use some IP telephony, 45% operate a mix of IP and TDM, and 31% have on-premises deployments that are fully IP. (Please see Figure 3.) Among those with larger (5,000+ employees), more distributed, and more complex environments, 54% are running a mix of IP and TDM. Among that demographic, the estimated timeframe for full IP deployment for 24.4% is not expected to happen until 2017 to 2025. “We may or may not ever get there,” says the IT director for a transportation company.

During interviews with hundreds of IT professionals over several different research projects, Nemertes has characterized the following inhibitors for full IP deployments:

- **Awareness** – IT leaders may not be aware of the benefits of moving all communications to the same IP platform. Not only do operational costs drop, but feature-functionality improves when all employees are using integrated communications.

- **Budget** – Several IT leaders could not justify the budget required to “fix what isn’t broken.” TDM is working and continues to be supported, so no need to rock the boat, so the conventional wisdom goes. Only when the equipment becomes end-of-life and the company can no longer find support or spare parts does budget become available.

- **Ability to change infrastructure** – In some cases, organizations cannot upgrade their infrastructure. For example, installers may not be able to penetrate the stone walls of old buildings on university or corporate campuses to upgrade cabling. Or in other cases, such as when installations must require overtime pay, it may be cost-prohibitive to perform the upgrades.

- **No user demand** – Some organizations require documented user demand prior to spending money to add a new technology. Because they don’t know what they don’t know, employees can’t attest to the value of moving to an all-IP environment from a functional TDM world—and IT cannot get budget approval.
Though there are many reasons to move to an all IP environment, most IT leaders say the catalysts for change so far have been very tactical: equipment end of life, consolidation of disparate equipment, or ease of maintenance and troubleshooting.

But increasingly, business unit leaders—and their demands for digital transformation initiatives—assume a modern, well-managed communications infrastructure that integrates with collaboration and enterprise apps. When TDM is part of that picture, such an assumption is incorrect.

Not only are digital transformation initiatives compelling catalysts for updating any remaining TDM infrastructure into new IP systems or cloud-based services, the cost savings is another driver.

**Cost of Operating Hybrid TDM/IP vs. all IP**

Nemertes has been conducting research on the Total Cost of Operations for IP telephony and UCC for 11 years. Over that time, we have found those who move to an all-IP environment find compelling cost savings in all metrics. Nemertes gathers metrics in the following manner:

- **Capital cost per endpoint**: Includes PBX, endpoint devices and licenses, servers, other hardware. In some cases, bundled licenses include certain UC apps
  - = Capital costs / number of endpoints (handsets, softphones, etc.)
- **Implementation cost per endpoint**: Includes staff time and third-party consultants and integrators
  - = ((Staff time * loaded hourly rate) + third-party costs) / number of endpoints
- **Operational cost per endpoint**: Includes staff time, equipment maintenance, third-party managed services, training and certification
  - = ((Number of FTEs\(^3\) * average annual loaded salary) + equipment maintenance + managed services + training/certification) / number of endpoints

We then segment this data by the type of deployment cited—all IP on premises, a mixture of TDM and IP, and cloud. Overall, organizations save 8% on their total first-year costs for IP telephony when they move to all IP. This includes capital, implementation, and operational costs for all companies, all sizes, and all vendors. The total median cost per end unit is $734.68 for those still running a mixed environment, compared to $676.64 for those running all IP. (Please see Figure 4.)

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\(^3\) FTE = Full-Time Equivalent
Segmented by size, the total cost savings is 9% for rollouts with more than 1,000 endpoints, but more importantly, the ongoing operational cost drops by 21%.

Extrapolated out by thousands of locations (as well as even one year, if not multiple), the cost savings becomes very compelling.

Drilling down further into the components of the costs, it’s clear that across each metric—capital, implementation, and operational—organizations save money in an all IP environment. Though many organizations reduce staff when going all-IP, the most significant cost savings comes from equipment maintenance (48%) and training (26%) reduction. Though the actual number of FTEs drops by 42% on average, the salaries tend to be higher for those managing IP vs. those managing TDM. As a result, the total compensation costs for the IT staff are the same or slightly lower in the research.

### Conclusion and Recommendations

IT leaders have a bevy of options for upgrading their TDM infrastructure to IP, ranging from various on-premises solutions to public cloud, private cloud, and hybrid on-premises/public/private cloud solutions.

Our research documents that companies experience significant success with a cohesive, integrated communications and collaboration strategy—improved employee productivity, bolstered customer satisfaction, and reduced costs. All of these benefits help support digital transformation initiatives—driven at most companies by C-level executives.

Unfortunately, despite these improvements, IT leaders still are challenged to get budget approval to upgrade the equipment. And in some cases, even if they get the budget approval, they have a long list of priorities and cannot start the upgrade project in a timely manner.

To address these challenges and leverage the benefits of a TDM upgrade, Nemertes recommends the following:
• Gather use cases that support digital transformation initiatives. Indicate why an aging telecom and collaboration infrastructure will inhibit those projects
• Get buy-in for TDM upgrades from business-unit leaders, who may be able to fund some of the initiative
• Evaluate both on-premises and cloud solutions. Depending on your company size and degree of distribution, you may find cost savings moving to the cloud—and you can eliminate the day-to-day responsibility for the services. Those employees can shift to more strategic initiatives supporting digital transformation
• Once you have upgraded your infrastructure, make sure you have a solid User Adoption and Awareness (UAA) program in place to ensure employees and customers actually use the new technologies you have rolled out.

About Nemertes Research: Nemertes Research is a research-advisory and consulting firm that specializes in analyzing and quantifying the business value of emerging technologies. You can learn more about Nemertes Research at our Website, www.nemertes.com, or contact us directly at research@nemertes.com.