



The Hidden Costs of Telephony Networks

Discover new cost efficiencies and boost enterprise productivity with SIP trunking

Introduction: Strike gold in your own networks

At a time when management is demanding maximum efficiency from every department, the hidden costs of traditional TDM (time division multiplexing) phone networks are coming to light. Unfortunately, traditional networks are location-oriented, need physical provisioning, maintenance, and management at the site of the voice access lines—making these traditional systems inherently inefficient and costly.

SIP (Session Initiation Protocol) trunking is an intelligent, IP-based platform for next generation collaboration that can provide cost savings opportunities and deliver a new level of enterprise efficiency. SIP trunking takes advantage of IP broadband connectivity to combine multiple voice circuits with data networks to reduce the inefficiencies of TDM networks. A recent study estimates companies that adopt SIP trunking save 26 percent from what they now pay for TDM trunks.¹ With SIP trunking, you can deploy as many phone lines as you need, when you need them, and allocate that phone capacity across various locations. SIP trunking also enables a variety of business enhancing applications and services that can boost your efficiency and deliver a competitive edge.

Understanding the high cost and inefficiency of TDM

TDM is a port-based technology that delivers service at each location through fixed-line provisioning. With TDM, the trunks (or individual phone lines) require proprietary line cards that terminate the phone company's dial tone at an organization's on-premise equipment. This adds expenses for your organization in three key areas:

- **Start-up Costs:** Customer premise equipment (CPE) requires hardware engineering, purchase, and installation—all coordinated before a business turns on or uses the lines.
- **Dial Tone:** Every location needs dial tone, which entails ongoing expense for phone line services.
- **Equipment Maintenance:** TDM requires ongoing costs for hardware maintenance and support.

True cost of over-provisioning

In addition to these expenses, most organizations over-provision by installing additional phone lines or trunks to handle expectations of increased call volume during peak calling times. For example, retailers may increase trunks for an expected surge in calls during holiday periods, and financial organizations may provision more lines in conjunction with major promotions. Some enterprises buy excess capacity at the time of the initial purchase, either to avoid potential delays when new promotions arise or as a cushion against anticipated fluctuation or growth. Adding to the complexity of this problem of unused line bandwidth is that many companies leverage dedicated digital lines for long distance inbound and outbound calling traffic. These organizations must not only account

How to spot TDM network inefficiencies

If your organization experiences any of the following, you may want to consider SIP trunking.

- Standalone, non-networked phone systems in branch, regional, and satellite offices
- Several remote offices, each with its own phone system
- Uncertainty about how many circuits to order or how much they will actually be used
- Unawareness of your trunk utilization
- Inability to quickly or easily make moves, adds, or changes to your phones
- Reliance on on-site technicians
- Inability to reallocate circuits as needed
- No access to such services as unified communications, collaboration, conferencing, and centralized call processing

for the call capacity that must be supported by local lines but they must also factor in the capacity that is necessary to support long distance lines. Taken together it is easy to understand why many organizations have an excess capacity of call paths, driving up the cost of maintenance and service fees to support those systems.

Added expense of moving, adding, and changing TDM phone lines

The expense of TDM goes beyond the number of phone lines that sit idle. Due to the fixed nature of TDM line configurations at each location, organizations will need on-site technicians to make system changes, such as adding phone lines or fixing problems. These additional resources can quickly add up for an organization with multiple branch locations. And because centralized management is not possible with a traditional TDM network, business opportunities may be lost due to the coordination and configuration challenges involved in executing multiple local service orders, and added expenses associated with understanding rate structures and billing issues across multiple TDM providers may also be incurred.

Discover new cost savings opportunities and boost efficiency with SIP trunking

With SIP trunking, you can turn your standalone TDM network into a more efficient, interconnected system capable of giving you visibility across the entire network. SIP trunking enables new business-wide dial plans and trunk-sharing features that let organizations efficiently leverage economies of scale for multiple remote offices. SIP trunking delivers cost efficiencies in the following ways:

- **Centralization:** Centralizing services at a few points enables economies of scale.
- **Consolidation:** Utilizing the data network to reduce the number of physical ports you need plus a centralized architecture that requires fewer devices to deliver a consolidated network.
- **Simplification:** Capacity management uses the scale of the entire enterprise rather than focusing on each site individually. The IP trunking platform automatically handles on-net calls and uniform rate structures and billing are simplified by working with a single national or global provider.
- **Right-sizing:** SIP trunking offers bursting, which lets the organization exceed its allotted circuits during peak periods. (Not available from all carriers.)
- **Reliability:** SIP Trunking can be automatically re-routed to a failover location in the event of an outage at the primary location.

SIP trunking eliminates the need to physically deploy extra—and often idle—TDM circuits in each location. Central handling of such activities as moves, adds, and changes with the click of a button helps reduce costs while enabling a much more responsive and efficient organization. For example, by implementing IP telephony and SIP trunking, enterprises are experiencing up to a 75 percent reduction in telecom trunking bills compared to those with traditional TDM systems.²

Transform your phone networks to collaboration platforms with Verizon IP Trunking and Cisco

As a SIP trunking provider for hundreds of organizations on both a regional and international basis, Verizon operates one of the largest wholly-owned global IP networks in the world, connecting 150 countries on six continents. By teaming with Cisco, a leader in collaboration and integrated Borderless Network elements such as multipurpose routers, intelligent PoE switching, and in-depth security, Verizon can provide organizations with an end to end solution. Verizon delivers the advanced SIP network as well as the intelligent integrated devices, professional integration and managed services that eliminate the need to purchase numerous appliances from various service providers.

Verizon and Cisco developed an integrated architectural approach that helps you manage the ongoing costs of running the network while simplifying the administration of these interconnected devices. By provisioning logical circuits and easily allocating services through an integrated router, the joint Verizon-Cisco SIP solution helps organizations recoup the SIP trunking investment. This investment also leads the way to the creation of an intelligent network platform, which provides simultaneous delivery of unified communications, collaboration, conferencing, centralized call processing, and more.

Verizon Business is evolving to an everything-as-a-service (EaaS) model in which cloud-based, converged solutions are delivered with built-in security via managed and professional services over the company's global IP network. Verizon is assembling the key components of that unique and powerful approach to serving enterprises, and this latest expansion and enhancement is another step in that evolution. The EaaS platform—with Verizon's global IP network and data centers as its foundation—is at the heart of the company's strategy.



The combination of SIP trunking from Verizon Business and Cisco enables the following capabilities that control costs, boost telecommunication efficiency, and increase business responsiveness:

Leverage resources for improved capacity management

With the introduction of shared trunking technologies, such as Verizon Burstable Enterprise Shared Trunks (BEST), enterprises can leverage idle port capacity in one location to meet peak busy hour requirements at another location. With bursting, Verizon dynamically monitors the use of concurrent call ports across all locations and allows a location to “burst” over the quantity of lines ordered for that location as long as ports are idle at other locations and the company has sufficient bandwidth. Through BEST, an office that becomes suddenly busy can instantly take advantage of capacity not currently in use in the concurrent pool of call paths. And by delivering virtual calling paths into IP-based call control like the Cisco Unified Communication Manager, you can remotely program and administer the network.

Consolidate service providers to increase economies of scale

While organizations have been consolidating their long distance service providers for years to gain cost savings, consolidating the local dial tone has been a challenge. This is because regional providers must tie local voice numbers to actual local phone lines. To solve this, SIP trunking allows local phone numbers to be integrated into the provider’s national SIP trunking system, enabling organizations to narrow their cumbersome collection of local service providers down to a single provider relationship and apply economies of scale to the cost of telephony services.

Increase traffic visibility and control costs

As organizations centralize and consolidate services, they can reduce the number of vendors they use and free up in-house resources to focus on key business issues instead of vendor management. Web interface capabilities developed by Verizon contribute to this simplification. A user-friendly web portal allows organizations to activate, deactivate, and customize services as needed, including modifying speed-dial numbers, changing passwords, and updating profiles. The web interface also enables flexible near real-time reporting: this means users can gain valuable insights into traffic and control costs by creating web-based reports that provide detailed utilization information.

Utilize convergence to drive greater efficiencies

With SIP trunking, a business can combine voice and data services on the same access link to capture the operational efficiencies of convergence. This is possible because SIP trunking carries voice traffic more efficiently than traditional circuits by using packet-based technology that enables the immediate allocation of resources when needed. By improving the underlying network transport with application compression that utilizes services such as Cisco’s Wide Area Application Services (WAAS) and Verizon’s WAN Optimization Services (WOS), even more efficiencies can be realized. Organizations can better control voice communications expenses through their choice of local and long distance service plans that meet their varying needs around the globe.

Reduce premise equipment footprint and maintenance costs

The IP architecture of SIP lets organizations reduce the footprint associated with TDM voice architecture through convergence and consolidation. Working closely with Cisco, Verizon Business has developed and tested an efficient SIP trunking interface that enables direct provisioning of a SIP trunk into the Cisco call control platform called Unified Communications Manager. This helps reduce or eliminate expensive TDM gateways and legacy analog/digital line cards that increase the equipment footprint. Reducing this footprint is possible thanks to both the simplicity and scale of IP interfaces and to Cisco’s Integrated Services Router (ISR) G2. According to Cisco, the ISR G2 can generate TCO savings of up to 70 percent.¹ Integrating the management of IP PBX with that of the enterprise WAN and LAN delivers productivity-enhancing applications, streamlined operating expenses, and outstanding network management.

Eliminate per-minute charges

Through IP telephony, Verizon Business eliminates additional per-minute calling charges for business-to-business calls between locations with the Verizon VoIP IP Enterprise Routing (VIPER) solution. Customers can use VIPER to help reduce US domestic long distance, international, and European national per-minute monthly usage charges. As Verizon adds new customer locations to its VIPER



community, your company can call those locations (and vice versa) with no additional per-minute usage charges. This capability happens automatically when an organization enables the VIPER feature. You don't have to pre-define or update a list of numbers, and you won't need to incrementally increase hardware or software.

Leverage SIP trunking for flexible provisioning and bandwidth management

With SIP Trunking, businesses are constrained only by the inherent limitations of the data circuit and data equipment. As long as the circuit and equipment have been engineered to handle increased capacity, a central operator can initiate the actual process of adding or subtracting call paths without requiring a technician to make physical changes at the location receiving additional capacity. While increasing capacity may still require engineering and service order work in some instances, companies will gain flexibility and the ability to respond to change quickly and efficiently.

Real world savings and ROI for organizations large and small

Working with Verizon and Cisco, NorthEast Community Bank (NECB) replaced its outdated TDM lines and TDM PBX system with a state-of-the-art SIP trunking and Cisco Collaboration solution in just over a weekend. The Verizon SIP trunking system immediately made inter-branch communication easier, and bank officers could get extensions in their homes, so officers could ensure customers got the attention they needed. NECB also discovered that the new bandwidth enabled the bank to send cancelled checks to the Federal Reserve electronically, saving an estimated \$75,000 per year in physical check courier costs. The bottom line: overall NECB telephony costs also dropped significantly.⁴

SIP trunking provides cost savings opportunities for larger organizations as well. For example, a community banking company introduced a Verizon BEST solution and was able to replace 39,000+ lines with a shared pool of 8,000 concurrent calls. With approximately 3,000 sites, the company went from an average of 14.3 basic-telephone-service or PRI channels per site (with already one T1 data line per site) to 2.9 pooled paths per site.⁵

Conclusion:

SIP trunking enables organizations to gain new efficiencies from their voice networks, take advantage of a wide range of applications and services, and manage costs in the process. By reallocating idle capacity among locations, companies can meet sudden changes in demand and make full use of spare capacity anywhere in the network. With SIP trunking, organizations can reduce the number of phone lines they need. They also can deliver centralized management, which enables them to quickly and proactively direct their telecommunications with less reliance on on-site technicians.

Verizon Business and Cisco deliver a SIP trunking solution that allows you to gain efficiencies from your telecom network, offering cost savings opportunities from converting a TDM network to IP-based SIP trunking and setting the stage for new telecom services that you can use to further increase business efficiency and productivity.

About Verizon Business

Verizon Business, a unit of Verizon Communications (NYSE: VZ), is a global leader in communications and IT solutions. We combine professional expertise with one of the world's most connected IP networks to deliver award-winning communications, IT, information security and network solutions. We securely connect today's extended enterprises of widespread and mobile customers, partners, suppliers and employees—enabling them to increase productivity and efficiency and help preserve the environment. Many of the world's largest businesses and governments—including 96 percent of the Fortune 1000 and thousands of government agencies and educational institutions—rely on our professional and managed services and network technologies to accelerate their business. Find out more at www.verizonbusiness.com.

About Cisco

Cisco, (NASDAQ: CSCO), is a worldwide leader in networking that transforms how people connect, communicate and collaborate. Information about Cisco can be found at <http://www.cisco.com>

1 Infonetics Research, "SIP Trunking Deployment Strategies: North American Enterprise Survey," October 2009.

2 Slaymaker, Sorell, "VoIP/SIP Trunking Savings." Voicecon, No Jitter Blog, October 13, 2009.

3 Based on purchase of a Cisco Integrated Services Router over a 3-year lifecycle, in comparison to overlay appliances. Your savings will vary. Visit Cisco's website http://www.cisco.com/en/US/prod/collateral/routers/ps5855/prod_white_paper0900aecd805898e5.html for details.

4 Verizon, Case study: Northeast Community Bank, Cisco/Verizon SIP Trunking Solutions, October 2010.

5 http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/gatecont/ps5640/white_paper_c11-568504.pdf

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