

White Paper

The Proven Financial Benefits of
SIP Trunk Consolidation

Communication for the open minded

Siemens Enterprise Communications
www.siemens.com/open

SIEMENS

Executive Summary

In the US, a Pacific Northwest state is saving almost \$2 million a year by deploying IP Least Cost Routing. A New York based insurance company has shifted 70,000 calls a week onto their new internal SIP network, saving about 13,000 hours a month of voice traffic which previously had gone to a PSTN carrier. Meanwhile, in Europe a large manufacturing company is saving 35% of their inter-site communication costs by moving to SIP Trunking.

- SIP Trunking is now a well proven technology, with many Carriers offering this service, both domestically and internationally. Typical savings from using SIP Trunking can range from 25% to 50%.
- IP Least Cost Routing (IP-LCR) brings the advantages of IP to existing networks, typically saving 30% of inter-site communications costs.

Siemens Enterprise Communications continues to lead the evolution of real-time unified communications by delivering innovative and customer-centric solutions with measurable financial benefits, and has proven both the technology and the savings for customers. Best of all, our open, standards-based solutions can overlay in-place PBX networks to speed ROI -- without the need for untimely rip-and-replace migrations.

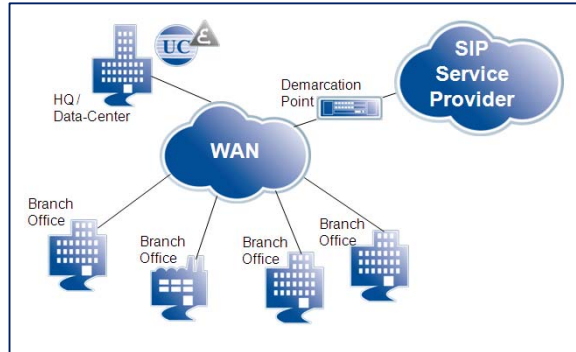
In this paper, we'll introduce the mechanisms of cost savings with SIP trunk consolidation, using Siemens Enterprise Communications' OpenScape Exchange overlay solution.

We'll also briefly review the advantages of IP Least Cost Routing (IP-LCR) for site-to-site traffic, since this can also be implemented with the same solution.

SIP Trunking

What is SIP Trunking?

SIP Trunking replaces conventional TDM-based carrier interconnection on PRI (T1 or E1) connections with direct interconnection of VoIP communications between Enterprise IP-PBXs and the PSTN via a SIP carrier. It uses the SIP standard for call control and provides the advantage that you can combine all forms of traffic (voice, data, video) on a single connection to the service provider. This is significantly lower cost than separate data and voice connections and provides far greater flexibility. In fact SIP can provide call control for all types of traffic on the connection (though the available bandwidth varies by carrier). Security is provided at the boundary by means of a SIP-aware firewall, plus Call Admission Control (CAC) to provide high-quality voice connections.



SIP trunking has the advantage that SIP trunks come in units of one channel, unlike T1 (23 channels) or E1 (31 channels), which are often more than needed for branch offices. By consolidating all the business requirements in one location (e.g. the data-center) significant savings can be made. In addition, some carriers offer burst-able mode SIP trunks, where, for a small fee, additional capacity can be instantly provided to cover short-term traffic peaks.

The ability to use a common connection for voice, data and video is important -- not just for cost savings, but also for deployment of unified communications (UC) solutions. Many legacy services require separation of these media (voice vs. data). UC assumes they are unified. So, using a single pipe makes sense.

SIP trunking is now a well-proven technology, with many carriers offering this service for both domestic and international traffic.

Cost Savings

Cost savings from SIP Trunking can be 25-50% compared to T1 / E1 based TDM or ISDN connections for many businesses. These savings are not only from per-call / per-minute savings, which have already reached very low levels for many enterprise customers; they are also from lower interconnection costs at every branch. The connection to the SIP carrier can be made from a single location, which provides the lowest cost, or from multiple locations.

Siemens Enterprise Communications has a SIP Trunking Estimator, which can analyze your specific network costs and provide an estimate of potential savings. In a recent modeling of eight US enterprises, all show a projected monthly savings for trunk and usage costs over 50% with SIP Trunk Consolidation. Six of eight of the enterprise configurations evaluated show a projected Return on Investment in 3-4 months (the smaller enterprises showed an ROI in 8-9 months). Most businesses with 5 or more locations and 2,000 or more total enterprise users would find an ROI estimate well worth the 15-minute call it takes for a rough estimate (call 800 - 765 - 6123 for your savings estimate).

"Businesses that have adopted SIP trunking have realized demonstrable ROI, both by eliminating more expensive tie lines and PSTN gateways. There are also benefits in the area of reliability, since SIP trunks can be homed to multiple providers and in this way lower the impact of service outages. And connecting to multiple service providers' networks over SIP trunks can be part of a cost-reduction strategy centered on least cost routing."

Current Analysis, September, 2010

SIP Carriers around the World

Many enterprise customers in Europe have been using SIP Carriers for years. Europeans see competition and cost-savings as the main drivers. Many use more than one SIP carrier for redundancy. In some implementations this can be either on a call-by-call, volume or overflow basis. There are many SIP trunking carriers in most major European countries, resulting in enhanced competition. Globally there are now at least 250 SIP carriers.

Many businesses in the US see UC deployment and the use of SIP Trunking as going hand-in-hand. SIP trunking has not been available in the US for so long, and now UC deployment and SIP Trunking deployment are occurring together. Thus, some companies have discovered that one of the best ways to accelerate the business case for unified communications is to tie in the SIP trunking savings.

It should be noted that, while SIP is a standard, some manufacturers and service providers have implemented it with proprietary attributes. The situation is improving rapidly as the standard matures. Still, as of the fall of 2010, it is advised that, when implementing a SIP trunking solution, one should confirm testing and certification of the three critical elements of the SIP trunking solution:

- Voice platform
- Session Border Controller (SBC)
- SIP service provider(s).

This is an area of rapid development, so check with vendors for their latest list of SIP certifications.

Siemens Enterprise Communications has considerable experience with SIP carriers and has tested communications products with over 40 carriers in 16 countries. For large customers, OpenScape Voice has been certified with Arcor, BT, CBeyond, COLT, Entel, Italtel, Level3, T-Systems, Verizon Business - USA, Verizon Business - Europe. Please check with your Siemens Enterprise Communications representative for the latest list.

IP Least Cost Routing

IP Least Cost Routing (IP-LCR) is a natural companion to SIP trunk consolidation.

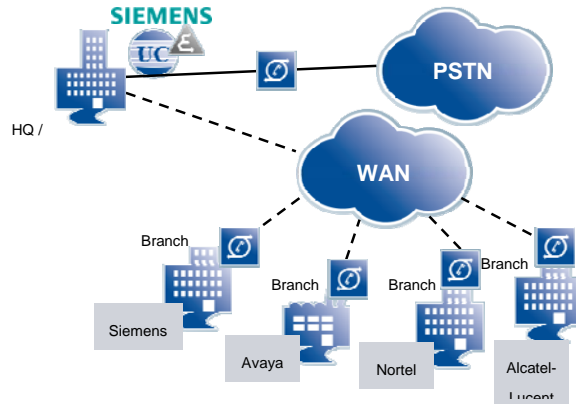
In most multi-site enterprises, each site usually has connections to other company sites via leased-lines, plus local PSTN connections for local calls. Each site has its own routing algorithms to send calls to the other sites in the network, and these require maintenance as users, sites and numbering plans change.

With IP-LCR, you simply interconnect all sites using a centralized IP-based call routing system to gain immediate interconnection and call cost benefits -- without having to incur the large capital costs of wholesale PBX replacements. The financial benefits can be considerable: not only are PSTN interconnection and call costs avoided, but so are the administration costs of maintaining numbering plans and routing tables in the PBXs.

IP Least Cost Routing can provide savings of up to 30% for site-to-site traffic. For one customer, that equates to projected savings of up to \$37,000 per month for a 10,000 user, 50 site enterprise. There are additional savings for the administration of local numbering plans and routing tables that are no longer required.

As with SIP Trunk Consolidation, OpenScape Exchange adds the cost-saving capability of IP-LCR to your in-place PBX network -- usually with little or no impact to the in-place PBXs. The OpenScape Exchange approach allows customers to preserve existing investments and upgrade voice networks gradually. It does not require forklift removals or write-offs of existing investments, providing a simple, logical and open path to Unified Communications. This is the essence of Siemens Enterprise Communications' OpenPath promise.

This diagram shows a simplified view of OpenScape Exchange at work. The OpenScape Exchange server is centrally located, and local gateways are placed alongside existing PBXs (from any supplier). Site-to-site voice traffic is then routed over the WAN. Requirements for local PSTN interconnect are therefore radically reduced.



Design Considerations

As with all networks, SIP Trunking is not a cookie-cutter solution. There are some important – and incredibly valuable – options worthy of consideration as you evaluate the move to SIP trunking. Chief among these are resilience/redundancy, longer term migration plans, branch gateways solutions, and high-gain solutions readily added to a SIP solution.

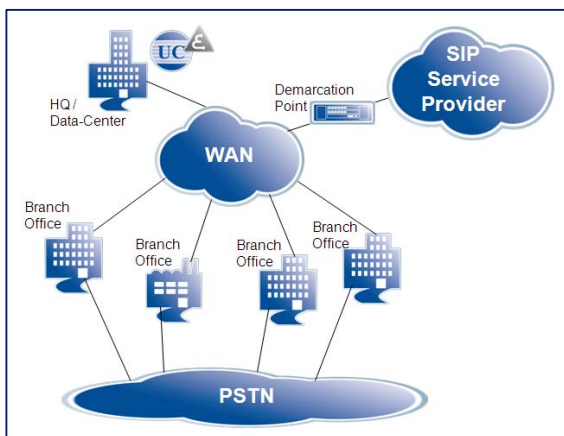
These “ROI Multipliers” can significantly increase cost savings. In fact, with the right SIP trunking solution as your foundation, many of the most prized UC solutions pay for themselves rather readily.

Redundancy

Concerns about WAN failure and call overflow are not unusual. Due to the relative newness of SIP in the US, some enterprises prefer to leave some PSTN access in place until they gain more confidence in their chosen SIP carrier or carriers.

However, there are better alternatives to sustaining the costs of PSTN trunks at branch locations:

- 1) Use dual consolidation points to access the SIP carrier. Just because SIP trunks *can* be located in one location doesn't mean they have to be. Geographical access separation works well, just as it does for a dual data center architecture.
- 2) Use more than one SIP Carrier. This can be done either by accessing multiple carriers over the same physical Internet connection, or by having dual physical connections. Some Siemens Enterprise Communications products already support multiple SIP carriers per connection (typically up to 4 simultaneously), and this capability will be expanded in the future. This is one key reason to consider deploying your own SIP overlay network, rather than having your carrier provide the SIP trunk consolidation mechanism. It enables you to use multiple carriers – for redundancy and competitive pricing.
- 3) Employ branch solutions that have SIP trunking built in. You can overlay SIP trunking using a variety of gateways – and in many cases, that's an economical option. However, as you look at key locations and your longer term migration plans, it's worthwhile to evaluate a smarter branch solution that brings added survivability in case of WAN failure and as an alternative egress point to the SIP carrier and PSTN. (more on this below)



Migration Planning

“SIP trunking can provide a simpler migration path to UC and open the door to mobile integration and hosted services.”

Yankee Group 2009

To get the best immediate and long-term value from a SIP overlay network, it's worth factoring in where you're coming from and where you're going. In particular, if your voice network includes legacy systems that are past their prime, take the time to look into an overlay solution that can also become an enterprise migration solution.

As an example, Siemens Enterprise Communications delivers SIP trunking and IP-LCR as an overlay solution via its OpenScape Exchange solution. This standards-based, data center optimized solution resides on a pair of industry standard servers or is readily virtualized in the data center. Once the servers are in, you've laid the foundation for additional overlay solutions that are overwhelmingly software additions – such critical solutions as contact centers with presence and social media integration; integrated mobility; and the rich collaboration resources of unified communications. In fact, once the core OpenScape servers are in, you can even add voice and other applications via subscription licensing, dramatically reducing the need for capital outlays. Of course, you can also build-out the OpenScape solution to replace older voice systems and gain the notable efficiencies and further cost savings of moving communications into your data center.

This migration approach allows you to cherry-pick the high value solutions your business needs, when you need them – and it does so with business cases that make sense. You get there by choosing a SIP trunking solution that gives you an open, software-oriented, highly scalable foundation to build upon. A truly open solution means you're not locked into a single vendor solution, so you can keep your options open. Best of all, you can advance without the cost and headache of a rip-and-replace migration strategy. Leading with SIP trunking means you get to the open, software-based world of UC with a great business case.

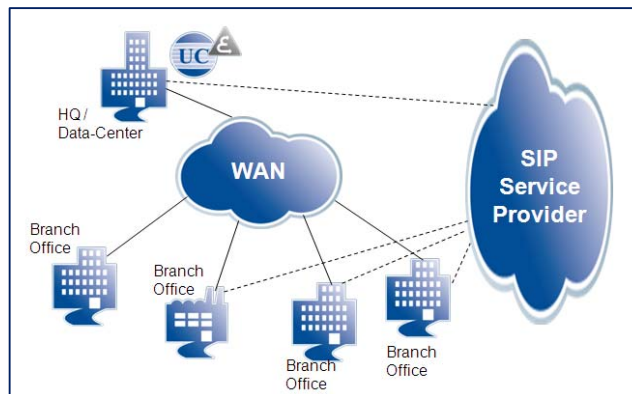
You may also wish to consider whether, over the long term, you will remain with a premise-based solution or move to a cloud solution. This should be an important factor, particularly in selection of your branch gear.

As a rule of thumb, any enterprise looking at implementing new communications solutions will find it worthwhile to look not only at the business case for your next step, but also at the step beyond. This will ensure that you're getting the best value and the greatest flexibility in both the immediate and long term.

Branch Solutions

Providing native SIP trunking connections from a data center based communications system, in the long term, can be more cost-effective than using external gateways on a network of distributed PBXs.

However, in very large organizations or for cloud and service provider deployments, there may be additional advantage in providing SIP trunking connections directly from key branches. This would provide the redundancy described above and enable external communications in the event of WAN failure. This could be done in any branch locations with additional special-purpose hardware -- but that just adds cost. An integrated solution is preferable.

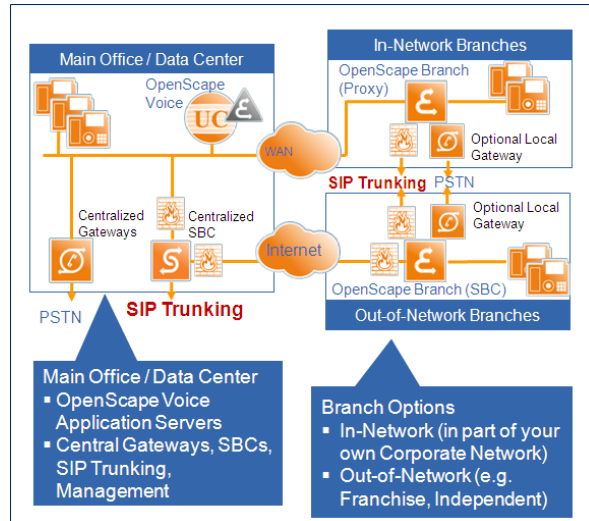


A notable example, OpenScape Branch is an intelligent branch solution for both enterprise networks and cloud-based service providers. It provides SIP trunking directly from the branch, obviating the need to transport voice traffic destined for the PSTN back to the data center. It also provides the redundancy options described earlier – every branch has its own SIP trunking, firewall, Session Border Controller (SBC) and conferencing capability. There are OpenScape Branch systems for up to 50, 250, 1,000 or 6,000 users (plus the ability to cluster them as needed).

For large branches, the use of OpenScape Branch, versus a basic SIP gateway, can balance the economies of consolidated SIP trunking with impact to the WAN.

OpenScape Branch includes:

- SIP trunks directly from the Branch
- Media Server for local Tones, Announcements and Conferencing
- Call-Control for feature-rich survivability
- Local backup for WAN failure
- SIP Firewall and Call Admission Control for security on SIP connections
- Handles UC, voice and video
- Supports external Gateway to PSTN, as required



High-Gain Add-on Solutions

Finally, if you are considering implementation of a SIP overlay solution, take a look at options to add cost-savings solutions – especially voice and web conferencing. Adding a conference bridge to OpenScape Exchange, for example, is a minimal expense. It’s not unusual for businesses to move as much as 90% of their conference calling off the costly service provider networks and onto the corporate network. In fact, it’s not surprising for this simple add-on to pay for even full voice migrations for some enterprises. Net savings in the range of 30% to 70% of conferencing expenses is common.

Integrated mobility is another solution worth considering. It provides one-number service for users, and it uses IP-LCR to make sure calls are optimally routed – without user intervention. More traffic on your corporate network, rather than using mobile long distance and roaming, means more savings.

Find out what else could be added to your SIP overlay solution and how easily or economically it can be done. Again, with the right solution, getting the foundation in on your SIP trunking business case can mean accelerated returns on further solutions.

SIP Trunk Consolidation Savings Estimator

The Siemens Enterprise Communications SIP Trunking Estimator is designed specifically to analyze your potential savings. More sophisticated than the many tools typically found online, it includes both generalized models and custom cost modeling. So, it can analyze your specific network and calculate potential savings. It will help you estimate how many PSTN access channels you will save, as well as how much your access and call costs could fall.

For a free savings estimate, call (800) 765 - 6123.

Conclusion

SIP trunking is now a well proven technology, with many carriers offering this service. With projected savings as much as 35% to 60%, SIP trunk consolidation is indeed worthy of investigation for most US enterprises with 2,000 or more employees distributed over 5 or more locations.

The Return on Investment for SIP trunk consolidation can be further sweetened by using IP-LCR for site-to-site traffic and through simple additions of solutions like an enterprise conference bridge.

These capabilities can be easily added to existing voice networks, usually with little or no impact on existing systems. This provides a vehicle for immediate cost savings, as well as enabling a gradual evolution to richer and more efficiently managed unified communications technology on a timeline that makes sense for the given enterprise.

Best of all, it's easy to get a glimpse of the potential business case for your company. A few minutes on the phone can give you a first pass estimate, using average market prices and standard erlang calculations. As warranted, a fully customized assessment and business case is easily compiled using your real data and costs from your preferred carriers.

Just call (800) 765 -6123 to get started.

Many factors influence savings potential for an organization, including configuration, carriers, design selections and current network. Your results may vary.

Additional Resources

[Siemens Enterprise Communications Announces OpenScape UC Server 2010 Edition Innovative New Software Platform Optimized for Data Center & Virtualization](#)

[Siemens Enterprise Communications Announces New Partnership with VMware for Virtualized Real-time Communications Deployment](#)

[Siemens Enterprise Communications Flagship OpenScape UC Server 2010 Receives Best of VoiceCon Award](#)

END

Siemens Enterprise Communications is a premier provider of end-to-end enterprise communications solutions that use open, standards-based architectures to unify communications and business applications for a seamless collaboration experience. This award-winning "Open Communications" approach enables organizations to improve productivity and reduce costs through easy-to-deploy solutions that work within existing IT environments, delivering operational efficiencies. It is the foundation for the company's OpenPath commitment that enables customers to mitigate risk and cost-effectively adopt unified communications. This promise is underwritten through our OpenScale service portfolio, which includes international, managed and outsource capability. Siemens Enterprise Communications is owned by a joint venture of The Gores Group and Siemens AG. The joint venture also encompasses Enterasys Networks, which provides network infrastructure and security systems, delivering a perfect basis for joint communications solutions.

For more information about Siemens Enterprise Communications or Enterasys, please visit www.siemens-enterprise.com/open or www.enterasys.com

©Siemens Enterprise Communications GmbH & Co. KG

Siemens Enterprise Communications GmbH & Co. KG is a Trademark Licensee of Siemens AG

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice. OpenScale, OpenStage and HiPath are registered trademarks of Siemens Enterprise Communications GmbH & Co. KG. All other company, brand, product and service names are trademarks or registered trademarks of their respective holders.

Communication for the open minded

Siemens Enterprise Communications
www.siemens.com/open