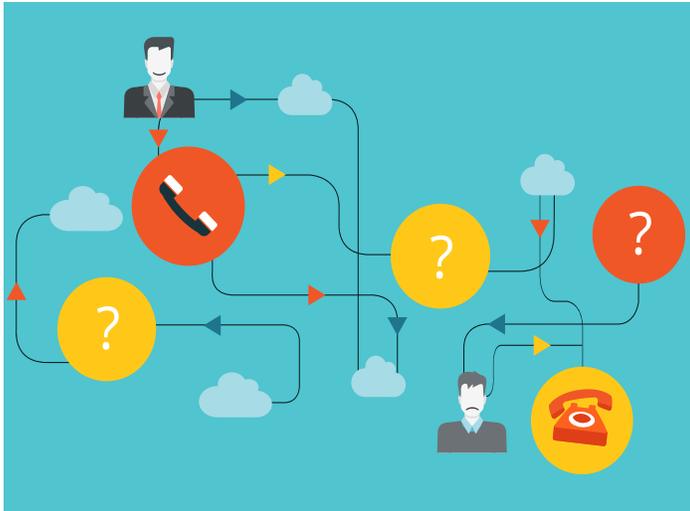


# Voice Resiliency: Advantages of SIP Delivered over Private Networking



## INTRODUCTION

Voice traffic is mission critical for most businesses today and increasingly the world is relying on the Internet to ensure voice and data gets where it needs to go. One of the key IP-based communications protocols is Session Initiation Protocol (SIP), which allows users to communicate over data services with the world. With a SIP trunk, you connect to a service provider for incoming and outgoing calls over the Internet instead of a traditional telephone connection such as TDM and ISDN.

*“There is no denying the world is moving to IP, and SIP has become the de facto solution of choice for businesses for IP connections. In North America, slightly more than 20% of the installed business trunks are SIP trunking today, with significant upside opportunity.”*

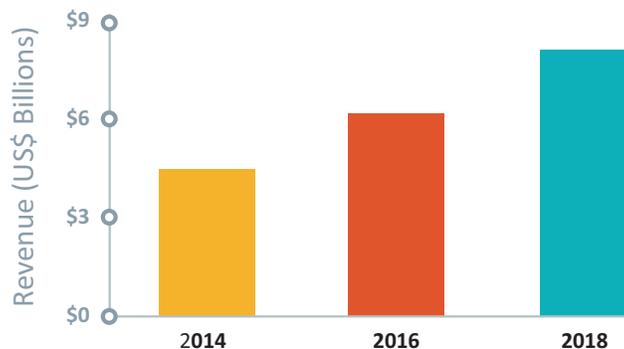
*Diane Myers  
Principal analyst for VoIP, UC,  
and IMS at Infonetics Research*

SIP can establish sessions for real-time communications such as traditional voice calling, online gaming, teleconferencing, and video conferencing. All of this traffic is transmitted over networks connected by IP addresses and IP protocols. In simple terms, SIP makes it possible for your Internet Service Provider to integrate basic IP phone capabilities with Web, email, and even online chat. That’s one reason why SIP is increasingly the network protocol of choice for enterprises looking to stretch their IT dollars while offering their users more service options.

## SIP Market’s Double-Digit Growth

According to market research firm Infonetics Research, SIP trunking services will top \$8 billion in revenue worldwide by 2018. The market was on track to grow 35% in 2014, to \$4.4 billion, according to the analyst firm.

Infonetic forecasts the SIP Trunking Services market to top \$8 billion worldwide in 2018



design

implement

support

MASS Communications

**Benefits of SIP -- The Promise of Unified Messaging**

The technology's advantages are numerous:

- *It is an open standard, allowing multivendor support and integration*
- *SIP messages are clear text, making troubleshooting easier.*
- *SIP can accommodate multiple users with differing capabilities. For instance, in a conference that has some users with video capability and some only with audio capability, the video users can see each other. They do not have to drop down to audio only, as with other protocols.*

By allowing users to take full advantage of applications such as video conferencing, presence, and instant messaging, SIP is helping the telecom world get closer to its vision for "unified communications," and along the way, provide a much more satisfying interaction between colleagues, customers and partners.



**SIP's One Achilles' Heel: Reliance on the Public Internet**

As more firms embrace SIP trunks to replace obsolete copper-based landline telephone networks, they must grapple with the issue of voice quality and reliability. Given that most SIP connections today traverse the public Internet, it is difficult to control voice quality. Routing traffic over the public Internet is inherently less secure than placing a call over traditional circuit-switched networks. SIP trunks over the public Internet can also be more susceptible to quality issues and outages that take longer to resolve.

One only has to read about the many-fold service disruptions that have affected a number of critical industries, including financial services. Back in August 2013, the NASDAQ SIP stopped functioning, and trading in NASDAQ stocks was halted for three hours. The exchange's president later blamed a bug in the system and the fact that it didn't fail over properly.

A more robust SIP vision is needed for the industry – otherwise, these kinds of outages will continue to be the norm. What if you could utilize secure, private circuits instead of circuits that traverse the public Internet? What if you had multiple levels of backup? New York-based MASS Communications, working with two strategic Tier 1 ISP's and SIP partners, has engineered such a robust answer to the SIP-resiliency question: taking SIP trunks over dedicated private telecom connectivity leveraging multiple providers and geographies.

The uniqueness of MASS Communications' SIP offer is deceptively simple: create two different diverse connections from two different carrier networks from two different types of facilities to ensure the maximum amount of redundancy and failover capabilities available. Is it possible for both connections to go down? Perhaps in a catastrophic event like a Super Storm Sandy, says MASS Communications CEO Darren Mass, adding, "But for your everyday run-of-the-mill outage it's really a good scenario. If there is a fiber cut or a circuit outage, you're still in business because you are running over multiple diverse connections."

In addition to the facilities redundancy, you also have network redundancy. That means if an ISP has a network failure, the SIP maintains the ability to automatically re-route over either a diverse circuit, path, or even a completely different ISP.

"It's three things – it's the geographic redundancy between our private connectivity to our partners' networks - located in multiple secure locations that are located in geographically diverse parts of the country; it's the facilities redundancy you get by going from one type of on premise circuit to another, and it's the carrier network redundancy by being able to move off of one ISP network to another," says Mass.

**Guaranteed Quality of Service – Now Possible**

This better, more robust SIP solution comes with other benefits, including the ability to add Quality of Service (QoS) across the entire end-to-end voice path, something with limited possibility in traditional SIP implementations.

"These are private MPLS services running over dedicated access connectivity and have dedicated, carved-out bandwidth from end-to-end for that service," says David L. Schwed, CIO, for MASS Comm.

Perhaps more valuable to time- and already resource-stressed IT departments: they only have to make one phone call for total support if they have an issue.

"This entire solution rolls up into MASS Communications so our clients can speak with us no matter how much redundancy we put into play or how many networks we incorporate into the solution," says Mass.

**PUBLIC VERSUS PRIVATE SIP NETWORKS:**

**A COMPARISON**

This graph outlines the major pluses and minuses of SIP over public versus private networks.

Feature	SIP over public network	SIP over private network
Voice Quality	<b>Unknown / could vary</b> – Going over multiple access points and unknown providers	<b>Strong quality;</b> no interference, going over dedicated private links between ISP and SIP provider
Redundancy	<b>One path</b> – you're limited to circuits you have onsite; not private - goes over the public Internet	<b>Private, built-in;</b> can failover to multiple back-ups
Scalability	<b>Limited</b> – can add more call paths but still have voice quality issues and unknown variables based on public consumption	<b>Unlimited</b> – add more redundancy to the solution – bringing in another ISP to our SIP provider

**Determining the Right SIP Path for Your Business**

**How do you know if this more robust SIP solution is right for you?**

Questions you need to ask include:

- How important is your voice and voice quality to your company? Does your business depend on using phones – or having inbound or outbound capabilities for voice?
- How critical is resiliency? Do you need failover?

SIP is ideal for organizations with geographically dispersed locations and those that consider voice fundamental to their operations. Financial services, healthcare, and hospitality industries all rely heavily on voice connectivity, as do businesses that operate call center environments.

**Redundancy x3**

It's also important to realize that while SIP is a key component of a strong business continuity plan, it's not the only component. Every IT department should be thinking about redundancy from a device standpoint, from a network standpoint, and from a geographic standpoint.

**The Future is SIP: Are You Ready?**

“The traditional telecom TDM networks are being phased out. They are way too costly and are a great burden to support and maintain,” concludes Mass. “SIP is here to stay and we are on the forefront of delivering a fully redundant solution that will make unexpected failures and outages a limited thing of the past.”

**Groundbreaking SIP Offer Result of Collective Brainpower of Three Innovators**

A singular focus on solving the quality and reliability challenge that has plagued users of SIP-over-the-Internet resulted in a groundbreaking, innovative offer that promises to accelerate the global acceptance of SIP as the future of voice networking.

The collective expertise of three leading companies across the telecom/ISP/SIP space enabled the birth of the industry's first fully privatized SIP solution. While MASS Communications is the lead company marketing the solution, it was an intensive team effort that tapped the creativity and telecom experience of three forward-thinking companies.

Are you interested in learning more about how MASS Communications and how they can address your SIP connectivity needs long term? Contact us at (866) 791-6277 or visit [www.masscommgroup.com](http://www.masscommgroup.com) for more information.

MASS Communications, a leading connectivity and telecom management provider, takes a consultative approach to deliver a full suite of voice, data, risk management and security solutions. Founded by engineering innovators, MASS designs custom networks with best-in-class carriers across an international footprint. The New York-based Competitive Local Exchange Carrier made the Inc. 500|5000 List for four years running, 2013 to 2016.

