The Evolution of Audio Conferencing

Why Modern Audio Conferencing is More Complex Than Ever

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Introduction by Mike Dickerson, PGi's General Manager & SVP of Global Collaboration Services

The collaboration experience is defined, at its core, by being able to effectively communicate. An increasingly globalized, mobile and virtual work culture has positioned collaboration solutions—audio, web and video conferencing—as cornerstones of modern business growth. Collaboration, as both a set of tools and business processes, drives the workplace forward. And as technology, work styles and teams become more complex, so too do the tools we use to connect those teams. Web and video conferencing were both born in the era of software, and their evolution has happened alongside major technological shifts such as mobility and cloud computing.

Audio conferencing, on the other hand, has largely remained a physical service, relying on physical audio bridges and lines to connect businesses to their employees, customers and shareholders. However, today's audio conference is software, moving to the cloud and onto virtual servers and machines; and it's just as complex to create and manage as any video call. A typical conference call today has users joining from PSTN lines, VoIP lines, smartphones, tablets and desktop computers. Some users are on Wi-Fi, some are on data networks of varying speeds and capacities, some are on landlines and others are on cellular service. Seamlessly mixing those services through hybrid audio networks is a monumentally complex technological feat.

And yet, the call simply has to work. The spoken word is the foundation of collaboration. If you lose a webcam feed or can't see a shared presentation during a web or video conference, the meeting can continue. Without consistent, quality audio, your meeting is dead.

In this report, we'll explore how audio conferencing has changed and evolved over the years in the face of unyielding user expectation. And we'll explore how PGi, a 20+ year veteran of audio innovation and service, continues to provide unmatched expertise and quality of service in the face of exponentially increased technological complexity.

EVOLUTION OF AUDIO NETWORKS

Improving Infrastructure

The underlying infrastructure powering audio conferencing today has seen drastic technological shifts in recent years. Until a few years ago, audio networks consisted primarily of what are known as time-division multiplexing, or TDM bridges. However, redundancy is very difficult to build into a network powered by TDM bridges. When a TDM bridge fails, it requires a physical cable swap or the flip of a switch to repair the network. For the last twenty years, TDM audio bridges were the standard throughout the industry, and many audio networks today still rely heavily on TDM technology.

However, as with almost all aspects of IT and enterprise communications, audio conferencing is beginning to modernize. More frequently, today's audio calls are utilizing Voice-over-IP, or VoIP, audio bridges. VoIP bridges convert voice transmissions into data packets and they allow for better redundancy and easier global distribution than TDM technology.

Workers want to work when they want, where they want and from what devices they want, and they don't care how difficult it is to mix those connections into a flawless audio experience.

Endless Endpoints and Access Methods

A few short years ago there were only one or two ways to join a conference call. Today's audio conference looks drastically different. Workers are connecting through a large number of endpoints, such as smartphones, tablets, PCs and desktop phones. To complicate matters further, those endpoints can utilize different access methods, including PSTN and VoIP. All of thse technologies are vastly different and have to be seamlessly blended together for there to be any chance of getting any actual work done.

Ignoring these needs means risking a huge chunk of your user base, as demand for anywhere work options and mobility continue to skyrocket. Workers want to work when they want, where they want and from what devices they want, and they don't care how difficult it is to mix those connections into a flawless audio experience. The expectations of users on audio providers have never been higher.

CHANGING BUSINESS NEEDS

Business audio needs are rapidly changing, driven by two primary factors: **technological advancement and user demands.**

The Technology Factor – Globalization and the Cloud

From a technological perspective, the Internet has made the business world smaller. Global reach is possible on a scale never before seen, and it's accessible for a larger variety of businesses than ever before. Networks that were once thought of in national or regional terms are now Internet-based and connected across the globe.
The shift towards virtualization and the cloud has businesses rethinking their entire operational infrastructure, with mission-critical functionality like email, instant messaging, file storage and collaboration all being hosted virtually.

As businesses try and do more with less, cloud functionality helps businesses maintain operational efficiency while reducing costs and lowering support burdens by having these functions hosted and managed by a vendor off-site. The cloud also allows for simpler interoperability, with the potential for all of a business's cloud services to become interconnected through more open APIs and built-in cross-platform integrations.

The User Factor – BYOD and Heightened Expectations

The other driving force affecting business audio needs is the user, encapsulated by the trends of consumerization and "Bring Your Own Device," or BYOD. Employees are more tech-savvy than ever before. They use smartphones, tablets, mobile apps and cloud services in their personal lives and they're bringing those preferences and user experiences into the workplace. They expect their professional applications to be as streamlined and intuitive as their personal ones. And they expect their company-provided devices to offer the same level of connectivity, engagement and interactivity as the ones they use at home.

When delivering modern audio conferencing, one of the primary difficulties on the user end is that the majority of the innovation has happened behind the scenes. While some changes are obvious—the proliferation of mobile devices as a primary access point, the increased usage of VoIP audio, etc.—other technological advances are all but invisible to the end user.

As older audio bridges are increasingly replaced with VoIP bridges, voice transmissions are converted into data packets and the virtualized infrastructure provides better redundancy and more efficient global distribution—all of which is invisible to the user. Audio networks have also had to evolve in order to mix audio from different sources such as PSTN, VoIP, smartphones, tablets and landlines seamlessly together in one hybrid audio call. Again, this hybrid audio network infrastructure is invisible to audio users.

The end result is that while delivering quality audio conferencing has gotten significantly more complex on the provider end, the user expectations are exactly the same: they dial a call and the call works. Even though the process of connecting one line to another has changed, the end user still expects to pick up a phone (or tablet or headset) and have a seamless, flawless connection.

RISING TO THE CHALLENGE OF MODERN AUDIO COMPLEXITY

Hybrid Audio Platform Support is Critical

All of this evolving complexity of audio infrastructure, user expectation and business need means that it's vital to invest in creating and supporting modern audio platforms, capable of seamlessly combining audio from a variety of endpoints and access methods into a single conference call. And all of this has to happen invisibly to the user to provide frictionless, intuitive collaboration experiences to power productivity and business growth.

PGi's audio platform is unique in that it is a truly hybrid audio platform that provides the ability to mix PSTN and VoIP callers on the same call, delivering seamless audio connectivity and crystal clear quality regardless of device type, connection method or location. It connects Internet callers that may be using a softphone in products like GlobalMeet® or iMeet® and their respective mobile apps and mixes those callers together with other participants who have connected to the meeting from PSTN phones, like their mobile phone, desk phone or home phone.

PGi's hybrid audio platform serves as the foundation for all of PGi's products, and has been specifically designed, built and optimized for the transmission of collaboration solutions. This includes integrations with several 3rd party collaboration tools. PGi's integrated audio solutions offer crystal-clear audio conferencing and call controls integrated directly into your existing collaboration solutions and web conferencing tools.

Solving Tomorrow's Problems Today

The PGi audio platform isn't just built with today's business needs in mind. The global network we've built ties into over 30 telecom carriers around the world, providing redundancy, reliability and local delivery of a call from anywhere in the world. And this network has been built from the ground up with a focus on delivering flawless audio collaboration services.

PGi is also looking to the future of audio and preparing its networks for the next generation of audio innovations. Wideband audio (or HD audio) is not currently widely available due to a lack of compatible endpoints; however, once the market begins to more widely adopt wideband audio, PGi's network is already prepared to deliver HD audio service across all platforms.

THE PGi STORY

PGi has spent over 20 years challenging and innovating the audio conferencing industry. We were the first-to-market with reservationless audio conferencing, forever changing how conference calls are conducted in the workplace and significantly increasing their usage and effectiveness.

When developing PGi's audio platform, we wrote our own bridge software and built our bridging infrastructure with best-of-breed hardware components. Compared to an off-the-shelf bridge software purchase, writing our own code allows for easier upgrades and enhancements to our network. PGi is wholly committed to continuing to invest in audio innovation, delivering the world's smartest hybrid audio platform that enables real-time collaboration on any device, any network, anywhere in the world.

Additional Resources

The Evolution of PGi's Audio Network

Consistent, Stable, Global: PGi's Cutting-Edge Audio Network

Powering Collaboration in the Unified Communications Era