

CONFERENCING WHITE PAPER

Use of conferencing is growing by leaps and bounds for business today. Most organizations are aware that conferencing saves time and money, increases communications and allows for easier collaboration. At the same time, technology is making conferencing better: higher quality, easier to use, and less expensive.

In this document we'll explain the various conferencing systems and services available today, ranging from simple audio conferencing to next-gen Unified Communications systems. We'll start out with the desk phone and conclude with these new collaborative systems.

CONFERENCING VIA STANDARD BUSINESS SPEAKERPHONES

Desktop speakerphones are the most basic type of conferencing apparatus: allowing one or two people to speak with someone at the other end of a phone line. Historically, it's been difficult to obtain good sound quality in a standard business speakerphone. True full-duplex conference calling (i.e., parties at both ends can speak and be heard simultaneously) requires acoustic echo-cancellation to block speaker-to-microphone echo. Improved sound quality requires advanced technologies such as room-echo modeling and cancellation, background noise suppression, and other signal-processing techniques that just aren't available in older TDM business phones.

In general, IP telephone manufacturers have improved upon the TDM speakerphone, especially at the upper end of their product lines. However, they still have not approached the quality of purpose-built speakerphones.

Pros: Least expensive conference calling option available

Cons: Limited capacity, middling quality

IP WIDEBAND STANDARD SPEAKERPHONES

The traditional speakerphone and conference phone has a very limited bandwidth from 300Hz to 3,400Hz. The Wideband standard (Polycom calls it High Definition or HD Voice) supports bandwidth between 150Hz and 7,000Hz. Since the human voice starts at a base frequency of about 100Hz and extends up toward 8,000Hz, the improved technology provides much higher quality voice transmission. Polycom, 3Com and several other IP PBX and IP phone manufacturers are conforming with this new standard.

Pros: Superior voice quality on regular calls and speakerphone calls, better comprehension, improved international dialogue, and less fatigue

Cons: You must have an IP phone system that supports Wideband. Wideband only works if the phones at both ends are Wideband.

POLYCOM – THE AUDIO CONFERENCE ROOM STANDARD EVOLVES

Polycom is the leading choice for purpose-built audio conference phones and for good reason. They make a high quality, reliable and attractive conference room telephone. They are available in a wide range of analog, IP and SIP versions. These saucer-shaped units incorporate the full range of features required to derive good audio quality in conference rooms. They have high-end DSP signal-processing, high-quality top-mounted, vibration-damped speakers and front-and-center microphones.

They have three separate SIP-based audio conferencing phones on the market today. The entry level IP4000 is an affordable alternative. Moving up to IP6000, you can enjoy the benefits of Wideband HD voice. Polycom's premier audio conferencing unit is the IP7000, again offering HD voice and options for remote microphones and integration with their HDX video conferencing system.

Pros: Affordable "next level" of conference calling quality.

Cons: Number of outside parties connected to the call limited by your phone system's capacity

LIMITATIONS TO AUDIO CONFERENCE PHONES:

Telephone systems have a finite limit to the number of conference call parties. Many have a maximum of three parties, some four and a few six parties. There are a couple of systems that do scale higher, but are many times impractical. Plus, the quality of a conference call degrades with each added user, unless sophisticated electronic circuitry is employed to match the volume on each caller in the conference call. Telephone systems just don't have the built-in horsepower to provide this larger scale conference calling, regardless of what a salesperson might tell you.

AUDIO CONFERENCE BRIDGES

Conference Bridges are external devices that are purpose-built for providing "industrial strength" audio conference call capabilities. In addition to simple connections, they have additional features such as 'meet me' functionality (i.e., the virtual conference room has its own extension, and participants can dial in as they like), password protection, moderator control features, sideline whisper, etc. Conference bridges are also modular and can be built to fit. The cost of conference bridges has dropped in the last few years, but they are still a substantial investment.

Pros: Excellent quality, feature-rich, expandable, less expensive than a conference service

Cons: Upfront cost.

AUDIO CONFERENCING SERVICE

Conference calling can also be provided through your local carrier (AT&T, CBeyond, TelePacific, etc.) or from a third party conference service. The service is typically sold on an as-used basis, charged per minute per user. The quality is excellent due to the superior technology provided by the carrier. Also important, is that a carrier-based solution does not tie up all your line capacity as a premise-based solution does. For instance, if you have 20 lines into your telephone system and you have a 10 person conference, you've used up half of your lines on the conference call. On a carrier-based solution, you'd use only one line for that same call.

Pros: Almost infinitely expandable, pay-as-you-go, excellent quality and features

Cons: Long term costs exceed that of a premise-based conference system.

DESKTOP VIDEO CONFERENCING

Video conferencing has always been associated with an expensive dedicated system permanently located in a conference room optimized for the application. But what about smaller video conference setups that are designed for the one-on-one conference at an affordable price? Well, with technology advances and the price reductions that accompanied those advances, desktop video conferencing is here.

Teledynamic recommends the Grandstream line of video phones as they are affordable and quite easy to set up and use. We've installed these phones in less than an hour. Acquire two video phones, plug them into your SIP-based PBX, do some minor setup tasks and you are making video calls before you know it.

ROOM VIDEO CONFERENCING - LIFESIZE – THE NEW STANDARD

Polycom was the leading choice for purpose-built conference phones over the past decade. They were early into the marketplace and specialize in audio and video conferencing. However as the years rolled on, Polycom showing increasing size of complacency and arrogance. And that left an opening for an aggressive startup. Lifesize Communications was founded in 2003 by several ex-Polycom employees with the sole purpose of creating a superior quality video conference product at a lower price point.

Fast forward to this year, and they are taking the market by storm. They have developed a product line utilizing current technology and haven't been held back by legacy product compatibility. They provide superior video quality in systems that are very easy to deploy and maintain.

Pros: Affordable “next level” of conference calling quality.

Cons: May require more bandwidth than you presently maintain

MULTIMEDIA CONFERENCING:

Conferencing can expand to include not only voice, but also video, data and messaging, thus making it a collaborative system. It is then possible to communicate using whatever media is most convenient and appropriate to the subject matter. Web-based conferencing on-line presentation, collaborative document editing and product demonstration capabilities. Desktop sharing that lets users view and interact with the desktop of a colleague. Detailed collaboration can occur to expedite the development and review of documents created in any PC application.

UNIFIED COMMUNICATIONS:

Unified Communications allows employees to use all of the collaborative tools as described in the multimedia conferencing section above. Rather than just a special event, all users have full access to these capabilities on a real time basis, plus the ability to observe status and availability of all users on a system. Thus, employees utilize these tools throughout their business day, improving communications efficiency and the collaborative process.

Microsoft with their Office Communications Server is the leader in this rapidly-developing space.

Pros: Provides a truly collaborative environment, increasing worker productivity.

Cons: Unified Communications primarily offers soft cost savings

CONCLUSION:

Whether it's simple audio conferencing or fully collaborative multimedia conferencing, the benefits to business are substantial. More and more, work is an activity, not a place and people are communicating across the globe in a team environment, fundamentally changing the way that we do business.

Moving far beyond simple conferencing, Unified Communications pulls together audio, video, workflow, presence, the desktop and collaboration tools together to provide a complete multi-media working environment for the modern day worker.