

High definition videoconferencing explained

VIDEOCONFERENCING TECHNOLOGY LEAPS AHEAD AS CTI INSTALLS FIRST HD SYSTEMS

The challenge. Overcoming the frustrations and limitations of conducting meetings using traditional videoconferencing equipment.

The solution. An HD videoconferencing system designed and installed by Conference Technologies, Inc.

High definition videoconferencing is here. It's practical and not necessarily any more expensive than standard definition conferencing. At CTI, we have completed our first two major HD videoconferencing installations plus a number of smaller systems. The technology is every bit as good as the hype.

What HD means for a videoconference

"HD is not just a little bit better, it's a leap," says Dennis Woodhouse, CEO of Conference Technologies.



Resolution is at least nine times better than with a standard system. Audio –a critical component– is also improved with a wideband signal and up to 16 kHz dynamic range. In addition, the colors are more vibrant. There's more contrast. Whites are whiter, blacks are blacker and everything in between looks better.

If you do the math, standard videoconferencing offers 352 x 288 resolution, or 101,376 pixels. HD provides 720p resolution (1280 x 720) or 921,600 pixels. But HD conferencing provides two video streams at 720p, "so it wouldn't be a stretch to call it 18 times better," says Woodhouse.

You can use those two streams in many ways, but most users transmit images of meeting participants plus a computer image: a PowerPoint presentation or even an Excel spreadsheet at essentially WXGA resolution (matching the newer wide-screen laptops).

"The resolution is high enough," says Woodhouse, "that in a distance learning setups the instructor can see gestures and expressions of far end students without having to go to a closeup."

Increased comfort level

The vastly improved clarity of HD systems has obvious advantages in medical, legal and other specialized applications. Now doctors can examine x-rays, MRI scans and other diagnostic data at a distance without any special preparation (such as downloading data in advance of a consultation). Attorneys and judges can examine documents in detail that a far-end expert witness simply drops on an HD document camera.

But the most important advantage, according to Woodhouse, is an increased comfort level for participants. "Most people have found videoconferences using the older technology to be something of a strain. You can't really see clearly. You may feel like you have to shout to be heard. And so, for many users, it's impossible to relax during the meeting."

With an HD system –at least one that's properly installed, with appropriate screens, cameras and a good sound system– there's a whole different feeling. "It's very natural," says Woodhouse. "It gives you maybe 80 to 90% of the experience you'd have if you were actually in the room with the people you're meeting."

CTI customers with HD systems report a much higher satisfaction level than they had with legacy systems. As a result, their staff are using the new systems more and they're getting a much higher return on investment.

ROI and bandwidth

Normally you would expect an improvement of this magnitude to carry a large price premium, but in this case a new vendor, Lifesize, jumped into the market by introducing HD at a price lower than the leading legacy systems. Codec prices from the three market leaders –Lifesize, Polycom and Tandberg– vary considerably, but it's possible to buy a complete, first rate HD system for roughly the same cost as a standard system.

To build a complete system you need monitors or projectors, switchers, cameras and audio gear as well as a codec, but for most installations, their costs too will be the same. "We normally need to build a system that will handle a computer presentation," says

Woodhouse, "and so we need to include high-resolution components. Basically you're going to use the same displays, cabling and switchers whether you're using a low or high resolution codec."

The one significant issue that will change is bandwidth. Going to HD may or may not require a network upgrade.

ISDN is not a good option with HD videoconferencing. Most users carry the calls on their organization's internal network or on their public IP connection. "These systems can utilize any bandwidth from 64K to five megabits per second," says Woodhouse, "though full HD, at 1280 x 720 resolution, requires one megabit." One megabit per second is the bandwidth of a cable modem connection—not a problem for most networks, though of course it depends on your organization's setup and ultimately on your volume of videoconference calls.

How Conference Technologies can help

CTI has offered a full range of videoconferencing services for over 20 years. These include equipment sales, system design, engineering, installation, network consulting, bridging services, rentals and service labor. The last three are worth explanation.

Bridging. We have a bridge and gateway in house, which allows us to connect your internal network-based calls to systems using ISDN. Using this service, your new (or old) system will be compatible with virtually any videoconferencing site, for point-to-point or multi-point calls.

Rentals. If you need to set up a larger-than-usual conference with gear you don't own (such as extra microphones, cameras, and switchers), or you need complete systems on a short term basis, we can help. Our rental department offers technicians and operators as well, so we can set up and run your conference. If you have someone at a remote location where there's no system, we can help you arrange for the rental of any of 1300 videoconferencing suites around the world.

Technical staff. We can send technicians to your site to repair or reconfigure your existing system, help you run a special event, or even replace in-house staff who are sick or on vacation. We offer these services on a one-time basis or via special service contracts which provide blocks of labor hours at a discount rate.

In sum, CTI is very good at dealing with all of the issues and technologies involved in HD videoconferencing. "We can bridge the gap into web conferencing, session recording, and a number of other technologies that augment videoconferencing," says Woodhouse. "We're able to offer an enterprise solution with the big picture in mind."



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