5 *WAYS TO ENHANCE YOUR ONLINE VIDEO DISTRIBUTION*

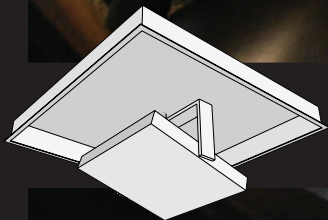# AVTECHNOLOGY

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The CTI boardroom in St. Louis features an installed videoconferencing system.
Photos by Pamela Becker, CTI

Going Beyond the Codec

4 CRUCIAL INGREDIENTS OF A GREAT VIDEOCONFERENCING ROOM DESIGN

by John Laughlin

What are the factors that make a video-conferencing room the best it can be?

Obviously you need a very good system—a great codec, camera, display and sound, whether from Tandberg, Polycom , Lifesize, Sony or Biamp—but in our experience there are a number of factors often overlooked that make all the difference.

1 OPTIMAL CAMERA PLACEMENT AND FURNITURE

Placing a camera properly for videoconferencing is not rocket science, but some of the decisions you make, especially on furniture, can force compromises that are far from ideal.

In the ideal videoconferencing room, the camera should be mounted close to eye level and as close to the center of the screen as possible – in most rooms, about 46 inches above the floor. If you can do that, participants will look natural and, when they focus on the screen, appear to be looking directly at the people at the far end. In practice that generally means centering the camera at the top of a flat-panel display or projection screen, or sometimes, in a two-screen system, directly between the screens. The simplest furniture setups use a single table placed perpendicular to the camera, with each meeting participant facing the camera and screen. Distance learning rooms often use multiple tables and chairs, and if this is your situation, be sure to offset each table so each person's face is visible to the camera.

As the room gets larger, it's necessary to raise the camera higher so that people in the back are still visible to the camera. A better solution, when possible, is to tier the floor so that faces are visible one above the other, yet the camera can still be placed very close to the screen, preserving the illusion that meeting participants are looking directly at people at the far end.

In a conference room setup, avoid a traditional boat-shaped or rectangular table, since some participants will appear to be hiding behind others from the point of view of the camera.

Sometimes room designers will include more than one camera, so that one captures the people on the left side of a table and a second those on the right. While this solves the visibility problem, it's definitely a compromise, since meeting participants will almost always look toward the central display and away from the cameras. Instead, use a wedge-shaped table, which allows everyone to be captured by a single camera mounted above the display.

2 OUTSTANDING LIGHTING

If you were building a photographic portrait studio, you'd set up your lights to produce the most pleasing image of your subject. Typically you would use one main light and one fill, each at about a 45-degree angle from the subject and about 45 degrees above their heads. And you would use large, diffuse fixtures to soften shadows and produce a flattering effect.

A room built for videoconferencing should be no different. Brightline and Lutron offer special florescent fixtures with reflectors shaped to produce a studio lighting effect, yet they fit within a standard drop ceiling. Since they throw their light at an angle, rather than straight down, they must be mounted far enough in front of each seating position that their light falls on each person's face, and they should be spaced in such a way that there is a fixture at about 45 degrees to each side of him or her.

The main lights are not the only lights that matter in your conferencing room. If the wall behind each person is too dark, it will throw off the camera's iris when you zoom in for a close up, and the person's face will appear too light. If the background is too bright, the person will be dark. When we design lighting systems, we make sure there is no more than a 1:2 ratio between the brightness of the faces and the brightness of the background.

The color of your furniture is important as well. A white or very light-colored table will reflect too much light upward into people's faces, as will highly reflective surfaces in any color. The best tables are gray, tan or wood surfaced, with a matte finish.

All of the lighting in the room should be at the same color temperature, ideally about 3200 degrees K. If you have incandescent or halide fixtures as well as your main fluorescents, be sure to turn them off before the videoconference begins.

Any windows should be shaded, since daylight is a very different color than your lighting fixtures and

can be much brighter as well. Avoid mini blinds and other treatments that can throw streaks of sunlight across people's faces or across the background. Blackout shades or draperies are best.

3 INTUITIVE OPERATING CONTROLS

Operating a videoconferencing system can be complex. The best control systems minimize confusion by reducing the user's decisions to a manageable few: Who are you going to dial? On whom will you focus the camera? What documents, videos or PC graphics will you use to support your meeting?

Any questions more technical than these should be answered automatically by the control system, and for the decisions the user must make, the system should make implementation simple and intuitive.

4 A WELL– USED ROOM

Any extraneous noises will affect the clarity of your audio, so you need to start with a room that's quiet, without traffic noise, elevator noise or other ambient noises that you can't control. You need good ventilation, able to handle

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heat from plasma displays, projectors and amplifiers as well as from the people in the room. Still, your HVAC system must be quiet and vents placed so they do not rustle draperies visible to the camera.

Chairs should be comfortable but hold participants upright and close to the table, where the camera will show them to their best advantage. You can include artwork, but avoid anything with stripes or that produces glare.

Your videoconferencing room should be an important asset for your organization, boosting productivity and speeding up decisions. How often it is used, however, depends to a very large degree on how comfortable your staff is in using it. For that reason, paying attention to image and sound quality, as well as ease of operation, can significantly increase your return on investment.

The best AV integrators will be able to help you with each of these issues. They know that a great installation takes more than great equipment. Be sure to work with someone who understands the nuances of camera placement, furniture, lighting and control.

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