



## How to Dramatically Reduce the Cost of Installing an Audio Visual or Conferencing System

A Guide to Help Operations Managers Avoid Expensive Mistakes When Installing an Audio Visual or Conferencing System



# Contents

Why is This Book Important?	2
How to Use This Book	2
Understand the Business Drivers	2
Generate Revenue	3
Decrease Overhead	3
What's the Return On Investment for Your A/V System?	3
ROI Calculator	3
Outline Any Space Requirements Early - Selecting the Space	4
Room Layout	4
Acoustics	5
5 Precautions to Keep in Mind When Thinking About Room Acoustics	5
The Clap Test	5
Lighting	6
5 Things to Consider When Designing Your Room's Lighting	6
Furniture	7
Standard Conference Room Layout and Infrastructure	7
Adoption and Migration...The Difference Between Good and GREAT!	9
Several Months Before Launch	9
2-3 Months Before Launch	9
1 Month Before Launch	10
2 Weeks Before Launch	10
Week of Launch	10
Example of Executive Letter to Be Distributed	11
How to Guarantee That Your A/V System Will Never have Downtime	12
About Cenero	13

## Why is This Book Important?

When an organization decides to install an Audio Visual or Conferencing System to conduct training sessions, meet with clients or discuss strategies with executives, there are numerous variables that need to be factored in prior to the installation.

Many Operations and IT Administrators make the mistake of thinking that such a system simply requires a fancy display, microphones, camera and a high speed internet connection. Nothing can be further from the truth.

An Audio Visual and Conferencing System, when deployed properly can strengthen and build your relationships with clients as well as reduce the need to travel for intra-office meetings. However when proper steps aren't taken to plan the implementation correctly, the impending results can be disastrous.

Variables such as insufficient conduit and power, poor lighting and acoustics, unstable network configurations, and more can all lead to disruption on video calls and or cancellation of meetings altogether. If your business relies on intimate communications with clients or other team members, this can eventually lead to a loss of revenue for your business.

In addition, lack of proper planning will also cause a considerable amount of strain to the support staff who will be forced to constantly band aide the system that wasn't designed and installed properly from the getgo.

This book is written to ensure that you take the necessary steps needed to design and install your Audio Visual and Conferencing System, thus maximizing the efficiency of your system and minimizing the overall cost of ownership.

---

## How to Use This Book

Every section of this book provides you with the information needed to maximize the effectiveness of your Audio Visual and Conferencing System. Some of the details outlined are things that you might have considered, and others, such as the type of furniture you plan to put in your conference room, you may not have given much thought.

---

## Understand The Business Drivers: Don't Install Technology for Technology's Sake

Before you begin planning your system, take a step back and understand why you want to install one in the first place.

## Generate Revenue

Fox Rothschild is a law firm with 15 locations throughout the United States. Because their offices and clients are geographically dispersed they have installed Audio Visual and Video Conferencing Systems to help facilitate virtual meetings with their clients and partners.

Given the cost savings from reduction in non-critical travel, Fox Rothschild is able to increase the attorney's billable hours because the systems can be used by non-technical staff. The user interface on the Fox Rothschild Audio Visual System is both simple and straight forward. This encourages personnel to use the equipment, not shy away from it.

## Decrease Overhead

The greatest advantage to utilizing web, video and teleconferencing via an Audio Visual System is that it decreases the travel cost required to maintain an intimate relationship with your customers, partners, and affiliates. Instead of purchasing a plane ticket, "wasting" time outside of the office, and hotel rooms required to keep in contact with your customers and colleagues located in other offices, these business tools will actually help save on travel costs.

## What's the Return On Investment for Your AV System?

If you aren't 100% sure if an Audio Visual or Conferencing System is right for your business, use this simple equation to determine if the ROI on the system is acceptable.

## ROI Calculator

Is the ROI of your AV System worth the investment?

Total Projected Cost of The System (Including Labor and Maintenance)	
Projected Increase in Billable Hours	
\$ per Billable Hour	
Projected Decrease in # of Business Trips	
Average Cost of Business Trips	

$$1 \quad (\text{Projected Increase in Billable Hours}) \times (\text{\$ per Billable Hour}) = \text{Money Earned}$$

$$2 \quad (\text{Projected Decrease in \# of Business Trips}) \times (\text{Avg Cost of Business Trip}) = \text{Money Saved}$$

$$3 \quad \text{ROI} = \frac{(\text{Money Earned} + \text{Money Saved}) - \text{System Cost}}{\text{System Cost}}$$

## Outline Any Space Requirements Early - Selecting the Space

### Room Layout

The first thing that you should decide when choosing the room which will house your Audio Visual System is how many people will typically be involved in a conference call or meeting.

If your company typically works in small teams of four people or fewer, a square room will be more suitable. If however, your business typically engages in large conferences that involve more than four people to be present in the room at one time, you will want to house your system in a rectangular room. This will ensure that all participants will be within the camera's view.

If video conferencing will be utilized in the space, then you need to consider camera placement.

When choosing a location, make sure that you are aware of the background. For instance, do not place the camera facing a doorway or large window where the frequent movement of people walking back and forth will be distracting to your audience. You will also want to avoid busy wall coverings or curtains in a draft. Finally, avoid a background with an outdoor facing window. The sun light will create a silhouette effect on those individuals sitting directly in front of the window.

It goes without saying that extraneous papers, cups, soda cans and other trash can tend to make your business look unprofessional, but video tends to flatten the depth of field, so these incidentals as well as excessive decorations, pictures, etc. will look like clutter to far end participants.

### Cenero Quick Tips:

- *Try to keep audience video conferencing camera at normal seating height between 46" and 48"*
- *Choose room layout according to number of attendees*
- *Keep clutter to a minimum*
- *A sweet spot for video conferencing participants is typically 6 to 8 participants*

## Acoustics

Once you have decided on the proper room size, design and layout, you will want to ensure that the room acoustics are optimized so that you can clearly articulate your message to your audience.

### 5 Precautions to Keep in Mind When Thinking about Room Acoustics

1. The room is part of the sound system. The size of the room, the shape of the room, and the fixtures within the room will drastically alter the acoustics of the A/V System.

2. Sound reflections are the primary cause of bad room acoustics. Too many reflections make it difficult to understand speech and determine the location of different sound sources. Too few reflections makes a room sound dead, unnatural, and may require more amplification.

3. Sound reflects off hard surfaces like light reflects off a mirror. Reflections, because they take a longer path to get to the listener, arrive at a different time than direct sound. Unless the reflection arrives with less energy than the direct sound, there will be a detrimental effect on speech intelligibility. Generally speaking, materials like stone, glass, and masonry reflect more sound than carpeting, cushioned chairs and people.

4. An empty room sounds different than a full room. When you are assessing the quality of sound in the room, make sure that you do it when the room is empty, and when the room is full of people. Remember, people tend to absorb sound quite efficiently. Because of this, a roomful of bodies can completely change the room's acoustics.

5. Noise from outside the room makes it more difficult to hear inside the room. Isolating the room from external noise sources is all about room construction. Creating sound proof adjacent walls will go a long way to improving the quality of sound in the room.

### The Clap Test

A single hand clap in a room can tell you a lot. Most sound professionals instinctively do this upon entering any room. Here's what you can learn:

- Multiple repeats of the clap indicates a flutter echo, which spells trouble for speech intelligibility. This is usually the result of parallel hard surfaces.
- Listen to how long the clap reverberates before becoming inaudible. A long delay time will be problematic.

#### Cenero Quick Tips:

- *Avoid an excessive amount of hard surfaces which will easily reflect sound back into the microphone creating an echo.*
- *Ensure that your room is not affected by outside noise and office chatter.*
- *The clap test is a simple and early way to predict whether or not the room is suitable for your Audio Visual System.*

## Lighting

After you have designed the room to maximize the acoustics to suit your goals and objectives, you need to take lighting into consideration.

### 5 Things to Consider when Designing your Room's Lighting

#### 1. The Camera Auto Adjusts

The camera will adjust its focus to the brightest part of the picture. If you have exceptionally bright ceiling lights or a lot of natural light in the field of the camera's view, the camera will accommodate to the bright lights and the people in the room may not be visible to the audience.

#### 2. Avoid Natural Lighting

Any outside windows within the field of view of the camera need to have total light blocking shades.

#### 3. Select the Proper Light Bulb

Use 50 watt light bulbs to create an even distribution of light around the room. Light should be angled approximately 45 degrees from the ceiling to ensure faces are properly accented.

#### 4. Avoid Busy Artwork

Any artwork, wallpaper, and corporate logos that are to be in the field of view of the camera should be neutral in color and not contain busy patterns. The camera may not be able to accurately process busy patterns and your audience will see a blurred and distorted background.

#### 5. Avoid Mechanical Devices Near the Camera

Mechanical devices such as heat exchangers and ventilation units should not be located in the ceiling above the immediate space or surrounding areas. These devices will transfer mechanical vibrations into the space and can cause the camera to shake, affecting the image.



#### Cenero Quick Tips:

- *Avoid placing fans, air conditioners, refrigerators near the camera. These vibrating devices will affect the camera's ability to focus.*
- *Keep overhead lighting consistent throughout the room to avoid shadows.*
- *Keep natural lighting to a minimum. Cover windows exposed to sunlight with shades and curtains.*
- *Keep the walls clean of corporate logos and busy artwork.*

## Furniture

One of the most dominant furniture fixtures in the room is the table. When choosing a table, ensure that the surface is matted. This will reduce the glare from light sources that will enter the lens of the camera.

Also, when choosing a table, make sure that it is designed to provide access to power and data. These are the tables that allow power cords and data transmission cords to be discretely connected to laptops and other necessary hardware. Power cords and wiring contribute significantly to the amount of clutter your audience will see during your video conference. We have found that triangle and trapezoidal tables work best for video conferencing purposes. This ensures that viewers farthest from the camera can be seen without having to lean over the table.

When selecting chairs, make sure that they are soft cushioned and not glossy. This will help with the acoustics and reduce the glare. Another thing to avoid when selecting chairs is to ensure they do not rock or roll. Wheels can squeak when they roll and the rocking motion of fidgety participants can be distracting to your audience.

## Standard Conference Room Layout and Infrastructure

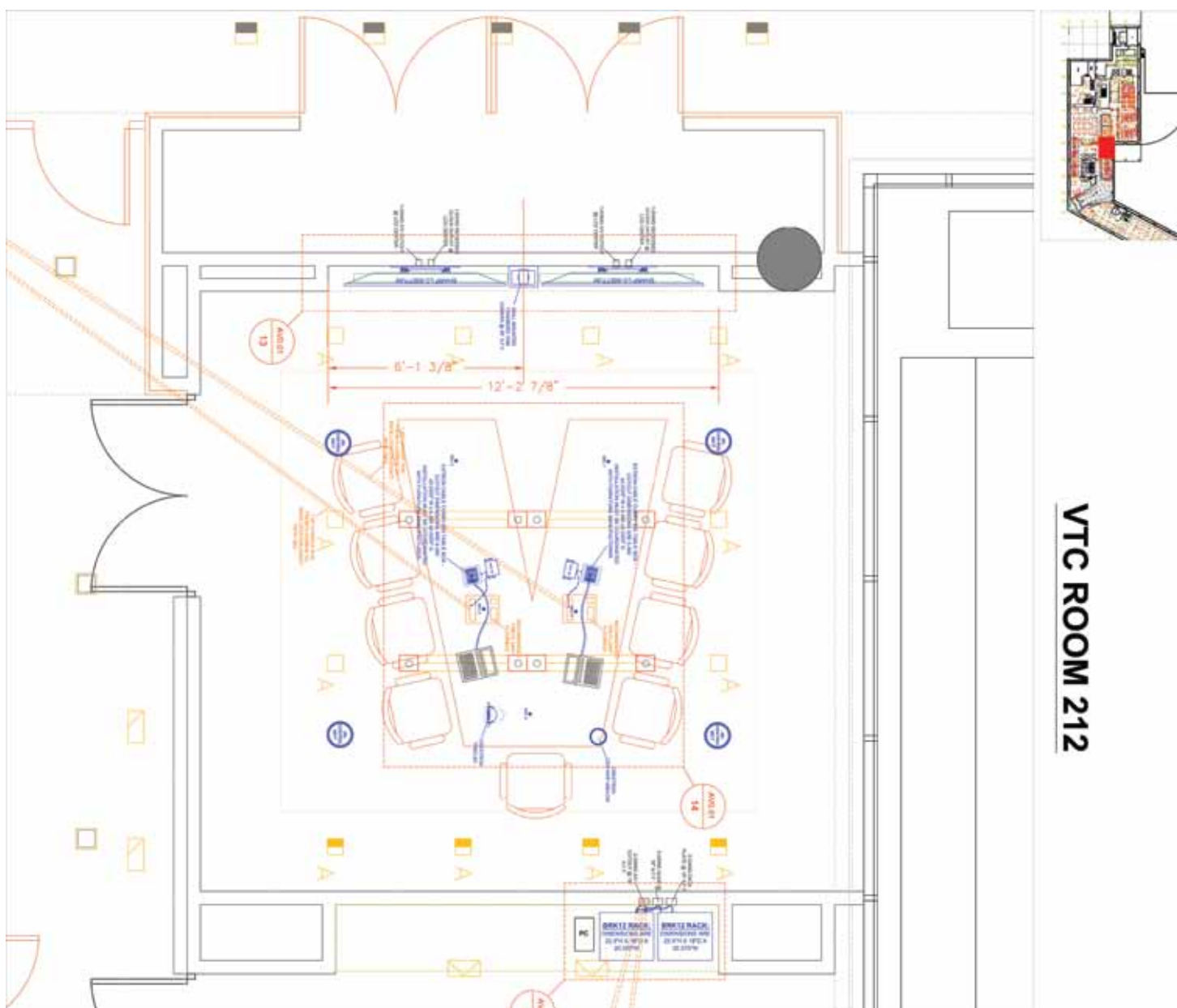
- Plan on running appropriate sized conduit dedicated for Audio Visual and Conferencing infrastructure. It is important to plan this early in the process.
- Make sure proper backing is designed for any flat panel displays. Adequate backing is dependent on size and weight of display.
- If possible, place microphones within 2 meters directly in front of participants to ensure that all speech will be detected. The best practice is to plan one microphone for every two to three participants. Avoid ceiling microphones whenever possible.
- Keep the document camera close to the leader of the meeting or the designated controller. Remember to arrange all the peripherals so that one participant can reach each of them to point, change the display, record or perform other functions during the conference.

### Genero Quick Tips:

- *Use furniture that limits echo and minimizes reflection.*
- *Ensure that cables, cords, and wires are out of view from the camera.*
- *Have chairs that do not promote unnecessary movement such as rocking, wheeling, and swaying.*

- To help ensure the most natural meeting environment, position the camera approximately 4 feet in the center of two displays or the receiving monitor. The camera should point directly at the meeting participants to guarantee eye contact with those at the far end. Avoid placing the camera to the side of the display at any costs.
- Always provide proper venting for any equipment in credenzas or closets.
- A room with carpeted floors will help absorb sound and prevent echo problems.

Sample Requirements Document



## Adoption & Migration... The Difference Between Good & GREAT!

Whether you are launching a video program for the first time or revitalizing your existing program, you can use this checklist to help guide your planning and make sure that nothing slips through the cracks. Please keep in mind that the time required for each step will differ depending on the size and structure of your organization.

### Several Months Before Launch

- Secure executive sponsorship from top company and departmental managers.
- Identify the business case for installing the A/V System.
- Identify your key team members — representing IT, Corporate Communications, Marketing, Facilities and Finance. Meet with them to share the business case and discuss the roles they will play in the launch and the ongoing success of the video program.
- Reach agreement with executives and key team members on the goals for the video program and how success will be measured.
- Identify potential champions throughout your organization that you will be able to train. These champions will then help you train the rest of your organization. Ideally, at least one member of each department should be represented - IT, Marketing, Facilities, Engineering, Finance, Corporate Communications.
- Create a baseline of user satisfaction within your organization of your current Video Conferencing System. This will help you determine whether or not you have achieved your goals and measure your progress in driving usage and adoption.
- You may want to create collateral to launch the new Video Conferencing System. This may include posters to be placed around the office as well as an email monthly newsletter updating employees on the construction status and the benefits of the A/V System. Start early and establish the types of promotional materials you need to create as well as the lead time for the deliverables.

### 2–3 Months Before Launch

- Set up your support team personnel and infrastructure. Work with facilities to finalize room design and booking system.
- Develop your end-user training program. What will be covered? Who will conduct training? What types of events will you hold?
- Meet with Corporate Communications or Marketing to plan and design promotional activities — posters, flyers, email announcements, etc.
- Create copy and artwork for printed materials and get them into production.
- Plan activities to make a “splash” at launch, such as usage contests, open houses and video field trips or guest speakers.
- Order any promotional giveaways (mugs, pens, etc.).

## Adoption & Migration... The Difference Between Good & GREAT!

### 1 Month Before Launch

- Draft executive letter and/or email and get executive sponsor approval.
- Reserve conference or board rooms needed for training.
- Prepare your informational intranet site, including contact info, user tips and quick reference guides, a map of video locations and any other relevant information.
- Conduct a rehearsal of training sessions and presentations. Fine-tune as needed.

### 2 Weeks Before Launch

- Send out executive sponsor letter and/or email.
- Send out email or personal invitations to announce training sessions.
- Put up posters or flyers in high-traffic areas.
- Write an article about the launch for inclusion in your company newsletter or intranet. Get ready to take pictures of launch activities.

### Week of Launch

- Order any refreshments you plan to serve at training sessions.
- Set up training rooms and test systems.
- Send out reminder notifications for training sessions.
- Set up any “Do-it-Yourself” video units and instructions in common areas.

### After Your Launch (at regular intervals such as 2 months, 6 months and one year after launch)

- Send out survey to employees to get feedback on training and how they are using video so far.
- Plan ongoing newsletter articles with tips or case studies to encourage continued usage.
- Report results to executives as well as employees. Showcase successful video users as your stars.
- Keep in mind that the success of your video program requires an ongoing effort to drive adoption. New employees need to be introduced to video. And, new video components need to be understood by all. It is important to continue to plan, promote, deploy, measure and optimize your training and awareness programs.

## Example of Executive Letter to be Distributed

To: All Employees

Subject: Introducing Our New Video Communication System

I am pleased to announce the addition of Cenero video conferencing systems to our facilities. These easy-to-use, state-of-the-art video systems will help <company name> remain competitive through improved communication and teamwork. They will empower us to respond faster than our competition, accelerate decision-making, improve customer focus and reduce the expense, time and stress of travel.

Video communications works much like your telephone — you dial a contact and are instantly connected. Unlike your telephone, you can see with whom you're speaking and share visual information with them — including PowerPoint presentations, spread-sheets and other materials. With the quality of today's systems, conducting a video call or meeting is just as natural as being there in person.

Our new video system will help us tighten communications with regional offices and help us more effectively engage regional employees in important decisions. From human resources to customer service, every department at <company name> can benefit from this system.

I have already begun using this new video communication system and have been impressed with the difference it makes in my day-to-day activities. I firmly believe that this technology will allow our company to dramatically improve our way of working, increase efficiency and significantly reduce expenses.

I am relying on your support to make the deployment and usage of video a success at <company name>. Shortly you will receive information on upcoming training sessions. I urge you to attend one. In the meantime, you can direct any questions you may have to <contact name> at <phone or email>. You will also find useful video conferencing resources at [www.Cenero.com](http://www.Cenero.com) or on <company name>'s own intranet.

Regards,

<Executive Name>

## How to Guarantee That Your A/V System Will NEVER Have Downtime

Imagine that you and your colleagues file into the conference room, coffee in hand, ready to discuss the strategy for a product roll-out during an 8 AM meeting with your development team half a world away..

You go to fire up your A/V System and for some reason, it doesn't work. The IT guy in charge of the system doesn't get in for another hour and everyone is scrambling to touch base with their contacts to tell them about the situation.

Forget the coffee - this will get your heart pumping in a hurry.

Unfortunately, you know from experience that you have between 3 and 5 minutes to get this thing working before the attendees of the meeting disperse.

3 to 5 minutes is all you have to ensure that your product roll-out remains on schedule. 3 to 5 minutes is all you have to ensure that you are able to save that meeting you've been waiting weeks to get.

Because A/V System downtime can create high anxiety, Cenero has created Constant Connect, a 24 hours a day 7 days a week monitoring system that guarantees that your equipment is ready when your staff needs it. The active response call center provides instant, accurate support for your employees at the press of a button.

Until now, AV diagnostic tools have been strictly reactive meaning you don't know that something is wrong until the system fails. This is similar to realizing you need to change the oil in your car AFTER the engine overheats.

Instead, Constant Connect offers a proactive testing procedure that gives you insight on critical points before your system completely fails.

Once you receive your caution report, you can simply call your dedicated support line to resolve the issue instantaneously.

To ensure that your business never suffers from system downtime, go to [www.avconstantconnect.com](http://www.avconstantconnect.com). If you call us within 30 days of reading this ebook, we will offer you a FREE space evaluation and recommendation based on the specifics needs of your organization.

## About Cenero

Malvern, PA-based Cenero is a service focused Audio Visual and Conferencing Solutions provider. Our core value lies in an experienced staff that has a genuine passion for working with the industry's most advanced collaboration and Audio Visual technologies solutions that help organizations improve communication and drive efficiency. Our goal is helping organizations gain a competitive edge by leveraging Audio Visual and Conferencing technology as productive tools.

We do not want to be your Audio Visual vendor; we want to be your business partner. As your partner, we work with you to design an advanced Audio Visual and Video Conferencing System tailored more towards your specific business needs. We will provide you with unmatched service and support before, during, and after the installation to ensure you are always satisfied with your Audio Visual investment.

### The Cenero Advantage:

- Managed services for Audio Visual and Video Conferencing presentations
- Complete design and installation of all AV Systems
- Operation center design and installation
- Ongoing support services and project management
- On-site personnel and supplemental staff
- Complete post-sale and installation support
- HelpDesk support
- Meeting and event support
- Sales, rental and repair of all AV equipment

Cenero's unmatched level of expertise includes a partnership with some of the industry's top manufacturers, a wide depth of highly-skilled and certified technicians, and the reliability of comprehensive support.

To learn more about Cenero, please go to:  
[www.Cenero.com](http://www.Cenero.com)