# audiovisual integration in a corporate infrastructure

**iGi**
Advanced Visualization

**HOW TO AVOID DOWNTIME AND FOSTER PRODUCTIVITY**

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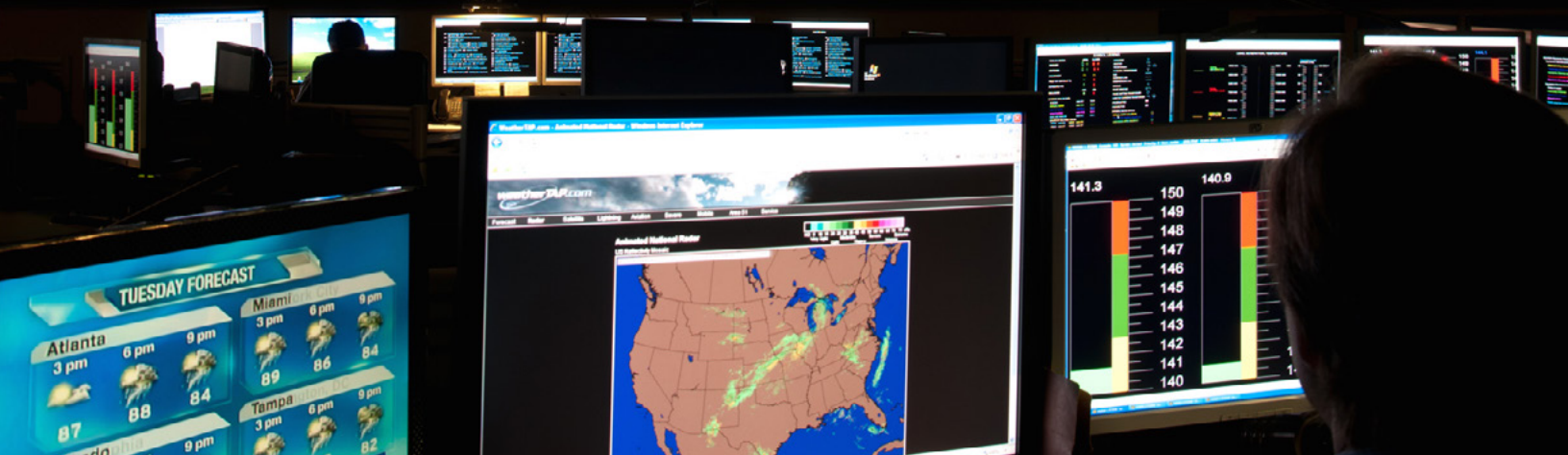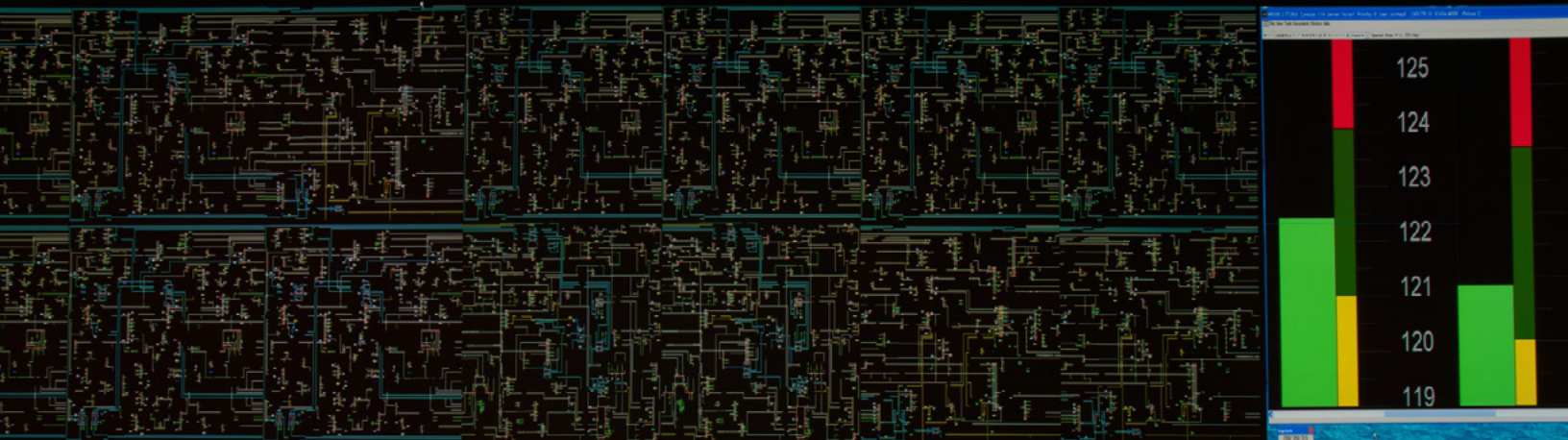
# Introduction

Upgrading an audiovisual system in a commercial space can be an involved process. As an Information Technology professional, having AV technicians integrating new systems into the corporate infrastructure can feel intrusive. However, this temporary inconvenience is minor compared to the eventual payoff in terms of productivity and collaboration thanks to industry leading AV integration.

Large corporations, the U.S. military, universities and many others have advanced to modern AV solutions which count on professional integration services. Whether it's upgrading analog systems to digital or streamlining remote collaboration through cutting-edge hardware, AV integration helps companies realize a customized technological vision through innovative design, professional installation and optimization of high quality solutions.

The latest audiovisual technologies offer many advantages to modern corporate environments. The two primary goals of professional AV integration are to improve corporate collaboration and communication:



## COLLABORATION

Audio/video conferencing and presentation systems streamline workflows. Collaboration can be improved by supplementing existing technological frameworks with hardware like microphones, cameras and projectors, or starting from scratch. Organizations may also maximize available space and increase productivity through "huddle rooms" that connect employees remotely for meetings and collaboration.

## COMMUNICATION

AV integration improves visual data dissemination to large audiences, either within the organization or between sites outside the physical organization. Moving from analog to digital connections helps gain better signal quality, stability, reliability and improves communication. Companies can also move past bulb based projectors to laser light projection or large format LCD/LED displays and multi-display, thin bezel video walls to improve the display of information.

AV integration depends on IT communication to ensure the success of network compatibility, online device optimization and many other factors — it really is a team effort. IT professionals and AV integrators are striving for the same goal: company prosperity and a superior working environment.

*This ebook will help IT members learn to ease the AV integration process through communication and avoid impediments by anticipating common roadblocks in the process.*

## COMMUNICATION IS KEY

The most important consideration to ensure a smooth AV integration process is communication between IT and AV professionals. This process requires expertise from both parties to ensure successful integration. Communication and willingness to work together will be integral for success.

Generally, IT departments are the main resource for all network questions. Some AV technology will require network connectivity, and it is important to have a knowledgeable IT expert available to field questions during integration.

AV technicians will need certain network information in order to assign IP addresses, and will need confirmation that the network can sustain any new devices. It's important to remember that AV technicians will know the network only through IT.

IT should understand the technical requirements of the various audiovisual devices as they are being set up on the network. This way, IT will be capable of handling device security after integration, and device updates can be applied over the network.

# Potential Impediments to be Aware of

The first step in streamlining the integration process is planning ahead. As an IT manager, you should anticipate potential roadblocks, and consider the integration process from all angles. Some general areas you might want to consider:

### SECURITY
Maintaining security with AV optimization. Will a security protocol prevent device communication? What effect might automatic updates have on conferencing software?

### BANDWIDTH AND POE
Is there a possibility for network bottlenecks? Is there enough power to sustain switches and devices requiring PoE (power over ethernet)?

### WIRELESS
How well will a corporate wireless network handle the added devices? Is an isolated network necessary?

### INFRASTRUCTURE
Are there infrastructure limitations? Will room material affect wireless signals, and is additional wiring required?

A project manager will work in close collaboration with facilities management and IT long before installation begins to ensure a smooth and timely integration process and minimize disruption. With this in mind, there are some technical areas AV technicians will not be privy to without IT disclosure. IT members will be the network experts for the integration team, and their role before installation will be to offer insight for successful AV integration into the company network.

*Let's explore each of these points in more detail to better understand the factors that can slow down AV integration, and learn what proactive measures IT can take to avoid them.*

## SECURITY

The most common technical issue facing AV integration is security. Due to the nature of companies that seek out professional AV integration, there is usually a complex security system in place. MIlitary, automotive, aerospace and many other organizations all have robust security systems to prevent cyberattack, which means regular network changes or updates. Due to these added network challenges, IT and AV integrators must work to optimize devices while still maintaining network security. This process involves four main considerations:

**IP address reservations** — Modern, professional AV integration involves many network-enabled devices that must be able to communicate with one another. Each component is ideally assigned IP addresses to allow for interconnectivity. A significant problem in component connectivity arises when IP address reservations are not granted and DHCP and host names are relied on instead.

**Blocked ports** — AV integrators may need specific ports opened up to improve device connectivity. This is central to the issue of communication, because without network access, components can't communicate.

**Automatic updates** — Computers will be installed to run specific resolutions and for timing updates to avoid hindering the performance of the the AV configuration. Unmonitored automatic updates can reinstall graphics drivers and change the video configurations resulting in display issues.

**Intrusion detection security systems** — Devices on a wireless network must be able to communicate with one another, but intrusion detection security systems often prevent wireless signals that are utilized among the AV systems.
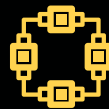
## BANDWIDTH AND POE LIMITATIONS

Download and upload speed will vary greatly depending on the bandwidth size of the company and this level of variance makes bandwidth a top concern during AV integration. IT should expect online collaborative tools to be especially taxing for the network. In particular, video conferencing requires a strong network in order to send and receive high definition video.

The last thing you want is for AV integration to affect the performance of existing technology on the network, so thorough consideration of bandwidth capability and limitations is crucial. Things to consider are bandwidth bottlenecks, the effect the added traffic might have on existing devices, ways to optimize network speed before installation and if a network upgrade is necessary to handle the added device usage.

Another factor that must be considered is PoE (Power over Ethernet) limitations. The power requirement for commercial AV solutions should not be overlooked, so consider if the current system in place can handle the additional power usage required by additional devices.

## WIRELESS

Wireless capabilities enable several technical functions for AV integration. Whether for control system touch panels, sending audio or video from laptops or mobile devices to displays, or wireless video conferencing and video streaming, a strong wireless connection is crucial.

In many cases, AV integrators will create a dedicated wireless network for AV equipment to forgo many of the issues associated with connectivity. In some cases, corporate policy may not allow an isolated network, but it is important IT experts recognize the possible issues associated with connecting AV equipment to the corporate wireless network. Whether it's the number of concurrent users consuming bandwidth, the connection quality of the devices, or wireless latency for sending control system protocols and audio/video, AV integration on the corporate wireless network requires careful planning to ensure acceptable performance.

## INFRASTRUCTURE

There are common roadblocks when it comes to building limitations and infrastructure. While some of these concerns cannot always be addressed by the IT department, it's important to keep them in mind to avoid excessive downtime.

Prior to the development of an AV solution, a thorough needs assessment is conducted in order to customize a design plan that meets facility and space requirements. As an IT specialist, your involvement on this front will be limited but crucial. Two main considerations for IT regarding infrastructure are:

**Wiring** — During the integration process the IT department will need to make the facilities department aware of any issues related to wiring. Data and power cabling can negatively affect each other. The IT and facilities departments may need to work together on rewiring to ensure optimal AV performance.

**Wireless signals** — Building material can interfere with wireless signals. The IT department may consider adding a wireless router or other means of boosting the signal in rooms that experience wireless outages.
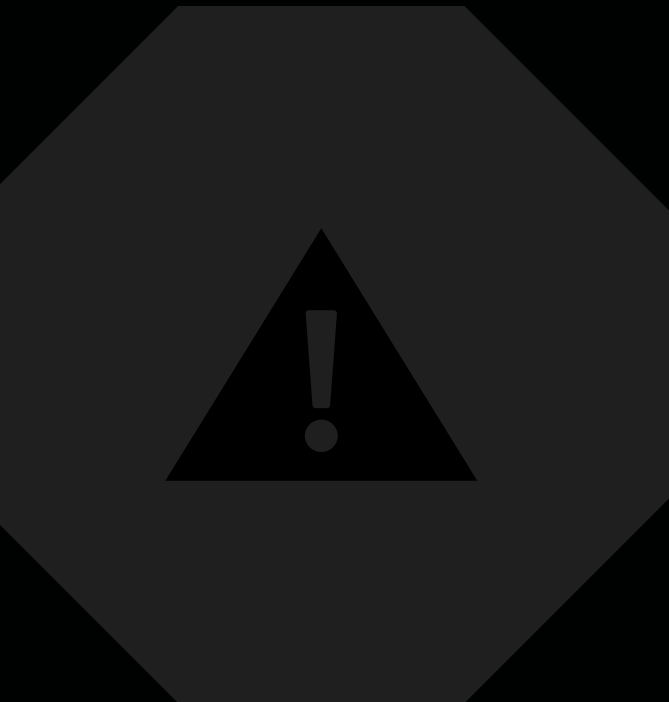
# How can the IT Department Prepare?

Communication between the AV integrator and IT early on is the key to successful integration, and being proactive at every stage will mitigate potential issues. The AV company must inform IT about all the protocols and IP connectivity information so provisions can be made long before integration begins. Without this preliminary communication installation cannot be streamlined which may lead to technical issues. It is far easier and more time efficient to install and optimize technology properly from the start than to try to troubleshoot down the line.

Of course, IT has finite availability and many responsibilities outside of AV integration, but it's important to communicate with the integration team and be clear about scheduling in case IT help is required. Whether its assigning IP addresses to devices, or contending with network issues, IT availability and collaboration is crucial to integration success.

At the end of the day, success of an AV solution is largely in the hands of your AV integrator. IT is always changing and an AV integrator must be adaptive and on the cutting-edge. Successful AV integration starts by partnering with a provider that is skilled in navigating the nuances of individual customers' needs, and one that can approach any integration impediment with expertise.

IGI offers industry-leading AV integration solutions custom designed for the most complex environments. Trained IGI technicians come to any client relationship with a level of professionalism and expert knowledge unrivaled by other AV integration companies. IGI's commitment to excellence translates to a superior AV experience optimized for clients in need of a highly technical, complex solution.

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