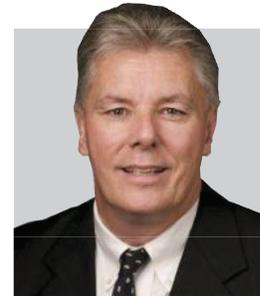


FACTORING HIDDEN COSTS INTO INFRASTRUCTURE DECISIONS *by Bob Stockwell*

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When upgrading a video system from analog to IP, or an access control system from RS485, there are more components to consider in the design and installation budget than just the cost of the device. Installing a new infrastructure to support the IP system can easily double the cost of the upgrade, so it's important to examine all possible options.

There are several factors to consider when deciding whether to use existing wiring, or to install new Cat-5 or -6 cabling infrastructure.

For video, first look at the existing platform. Are analog cameras being replaced on a 1-to-1 basis? In many cases, a single, modern, megapixel camera can replace two or more analog cameras. Replacing analog with megapixel and reducing the number of cameras will help reduce the new cabling infrastructure cost.

DETERMINE LENGTH, POWER CONDITIONS

In addition, consider how many cameras are being replaced. If it's only a few, the cost of converters for coaxial cable to run Ethernet can be an attractive option. Next, it's essential to note where the current analog cameras are located in relation to the recording device, because IP cameras have a maximum length of 100 meters per cable. This can be extended if there are switches or routers in between. However, if the closest data closet requires a longer run than 100 meters, a switch(es) will need to be added in the middle, or the existing coax must be used. This can be done with Ethernet-to-coax converters, and one will be needed on each end. Once installed, the converters will allow the IP cameras to run on the existing coax.

It is vital to research the converters as not all are equal; the distance that they can run Ethernet can differ from manufacturer to manufacturer. Plus, some of these converters can run power on the cable at the same time (PoE), but if not the new IP camera must be powered from another source. This can be achieved via the cable that previously powered the analog camera, if connected to the proper power source and adapter at the camera. No matter what, always remember to talk to the IT department. The IT team can assist with locations of data closets and may know of IT infrastructure that is already available, or can be repurposed.

DOES THE BUILDING MATTER?

Other factors that will affect the decision on whether to use existing network infrastructure or install new infrastructure are the type and construction of the building. For example, buildings with a plenum ceiling can have new cable added easily. However, if the ceiling consists of a harder material, the cost to add cable may increase significantly. Secured facilities can also add complexity, and require installers to obtain the appropriate security clearance to access certain areas. In environments such as hospitals and chip manufacturing plants, there may be strict standards for cleanliness, often requiring special equipment to work in sterilized rooms. This can range from ensuring installers wear clean-room suits to constructing custom enclosures with purpose-built filtration. Buildings recognized as historic can also be a challenge, because, in most cases, the edifice cannot be altered, including necessary activities such as drilling holes or cutting access panels. Even today's wireless systems can have issues in older buildings, because many were built using wire lath and plaster for the walls, significantly reducing the range for wireless devices.

In cases of either replacing or updating network infrastructure, always plan for the future. If the decision is made to replace the infrastructure, make sure to plan for growth. It is much easier and cost-effective to install any additional wiring all at once. Therefore, take into account other devices, in addition to video, that may be added down the road. For instance, there are new access control systems that run on IP and can power a door over PoE that you could consider.

Lastly, if new cable will be used, be aware that many municipalities require remediation of old wiring.

This can add time and expense to a job.

Though IP-based video solutions will improve the overall video platform and effectiveness of the system, it is critical to thoroughly review all elements contributing to the total cost of the project. By taking into consideration all factors, system components and installation options, you can more readily offer a cost-effective, reliable and highly scalable new or updated infrastructure solution. **SSI**

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