



VIDEO MIGRATION:

PROTECTING LEGACY

ANALOG INVESTMENTS

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IP CONVERGENCE IS DRIVING CHANGE

Network security systems are gradually replacing traditional stand-alone systems. By 2014, nearly half of all security systems will use network⁽¹⁾ cameras. Organizations are switching to IP-based physical security systems for their primary and secondary benefits, which cross a wide variety of applications from marketing and consumer behavior to sustainability and space-utilization strategies. Benefits of a network-based security system include cost savings (from eliminating the need to maintain separate networks); reduced capital, maintenance and equipment costs; improved image quality of network-based cameras; better scalability; intelligent video; and integrated solutions.

Organizations adopting an IP-based physical security system face several challenges when upgrading from an existing system or installing new surveillance technology and need to address issues such as transitioning to IP from an existing analog network, maintaining a legacy system, sustaining reliability while migrating to a network system, and ensuring functionality and quality after migrating.

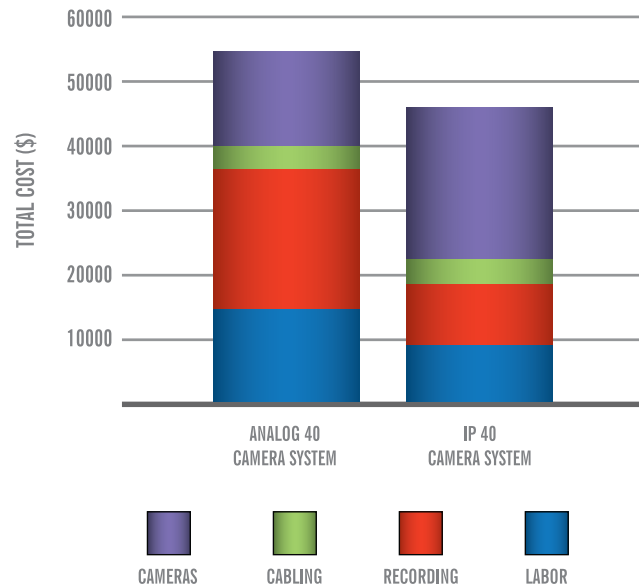


Chart 1: Cost Benefit Analysis: Analog vs. Networked Video

ESTABLISHING A MIGRATION PATH

Establishing a migration path to an IP-based network requires a plan that protects the already existing analog hardware and infrastructure investments. This is achieved by combining technologies to support current and future video surveillance application for the best video migration strategies.

There are several factors organizations need to consider when planning a migration: number of sites, specific vertical requirements, the size of the facilities, and the installed base. Based on the existing technology (e.g., cameras, cabling, encoders, etc.), the above factors and the desired final solution, organizations will migrate at different rates.

Analog Cameras

	Analog	Hybrid	Network
Camera	Analog	Analog/encoder	Network
Cable	Coax	Coax/UTP	UTP
Recording	DVR	NVR/HDVR	VMS/server
Event management/software	Proprietary architecture	Proprietary architecture	Open architecture
System management	Stand alone/decentralized	Multisite/decentralized	Multisite/centralized

Video Surveillance Evolution

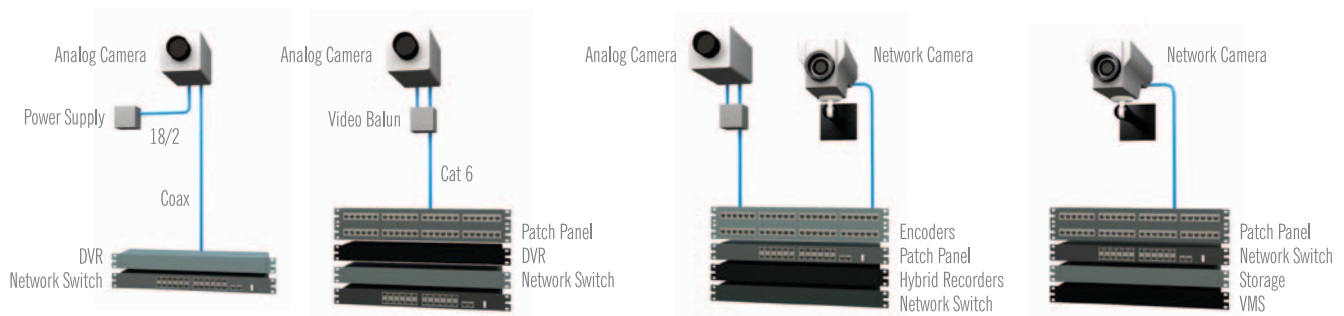


Chart 2: Migration Path of Video Surveillance

Advancements in analog camera technologies now provide higher than 700 TVL resolution for clearer images and wide dynamic range (WDR) improvements that enable better imaging in poor light conditions. As Chart 1 shows, analog cameras are cheaper to initially purchase, but their cost of operation is significantly higher than IP cameras. If it isn't possible to install network cameras today, it is possible to install an unshielded twisted-pair (UTP) cabling infrastructure, which not only supports the transmission of analog video, power and control signals using active and passive balun technologies, but will also support network cameras added to the system in the future.

Cabling Infrastructure

Structured cabling is vital for an analog-to-IP migration because it provides standardization that enables interoperability and backward compatibility between traditional and IP-enabled devices. If installing UTP cabling is not feasible, using a legacy coax cabling infrastructure with paired Ethernet adapters will allow 10/100BASE-T Ethernet communications to be transmitted over the cable. An organization can then add network cameras to the coax cabling. Hybrid cameras also contain similar Ethernet-over-coax technology and can simultaneously transmit both IP and analog signals on a single coaxial cable, which is particularly useful when high-resolution capabilities are required but there are budget limitations. Replace the cabling infrastructure if you are uncertain of its condition or if you want to ensure the cable is thoroughly tested to guarantee it can deliver the required performance to support mission-critical video applications.

Video Encoders

Video encoders provide another option in the migration from an analog to networked video surveillance system. A video encoder takes the incoming analog signal and converts it into a digital signal, which can then be transmitted and recorded over the network. Most encoders are stand-alone units with single or multichannel connections to analog cameras. For larger high-density systems, multiple encoders can be arranged on a chassis for a centralized solution.

MIGRATION TIP

When planning a security solution, work from the core out. Start by defining your needs and identifying which recording and management solution will best suit those needs. Once you have selected your solution, it will be clear which manufacturer products support your solution and which cameras you should select. In a market with so many options available, this will help you specify the right products for your requirements.

Watch a video about Anixter's Infrastructure Solutions Lab and how we can help you select the right products: anixter.com/lab.

Recording and Management

Recording and management solutions that enable networked video migration come in a variety of options from hybrid recorders, which are preconfigured appliances that seamlessly support both analog and network cameras, to video management software (VMS) solutions, which provide the choice of selecting an open-architecture hardware solution that will scale to meet both current and future needs.

Building flexibility and scalability into the system will help to reduce the need for costly upgrades on a regular basis. Selecting the right recording and management platform is crucial in defining both short- and long-term migration paths. The right solution will provide concurrent support for analog and network cameras plus provide scalability for small single-camera solutions as well as large-scale corporate or campus solutions with thousands of cameras.

Building Clarity through Standardization

The real benefit of networked video will be the ability to leverage future standards from organizations such as ONVIF, which is an open industry forum for the development of a global standard for the interface of IP-based physical security products regardless of manufacturer. The ONVIF specification defines a common protocol for the exchange of information between networked video devices. These protocols include automatic device discovery, video streaming and intelligent metadata. They are designed to standardize the communication between IP-based physical security products and increase flexibility and choice as well as secure investments by ensuring that interoperable products are available from a number of manufacturers. Using structured cabling infrastructure is vital when planning an IP migration because it provides standardization that enables interoperability and backward compatibility between traditional and IP-enabled devices.

CONCLUSION

As the technology continuum evolves, the protection of your analog investment does limit the expansion plans of the system. It is key to have a long-term phased migration strategy in place to ensure your business is ready to take full advantage of the cost savings and added functionality that ONVIF-compliant networked video solutions can deliver. To protect your current analog investments, make sure you plan a system with tested technologies that can pair your existing equipment to IP devices. This will create a solution that will enable you to define a path that will serve your current needs and assist your future migration.

To discuss or plan your migration strategy while protecting your current investments, contact your local Anixter representative or call 1.800.ANIXTER.

^[1] IMS Research 2011



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