White Paper

IP VIDEO MADE EASY

AISG
AMERICAN INTEGRATED SECURITY GROUP

By Susan Brady

Table of Contents


» p.1


» p.6


» p.2


» p.11

About the Author. Susan Brady is the Marketing Manager at American Integrated Security Group. An industry veteran and recognized authority on security, she has previously held positions as editor and chief of *Security Dealer* magazine for over 17 years, as well as management roles at Wavestore and IP UserGroup.

Overview

IP Network video is a surveillance system which allows you to install devices, monitor and record video footage via an IP network (Internet). IP Network video surveillance is emerging as an attractive alternative to older analog and DVR systems.

Leading integrators in the physical security market and their end user customers are embracing network video surveillance in a big way. The trend is growing at a rapid pace to replace analog CCTV with IP network technology when a security system is being installed, upgraded or expanded. The purpose of this white paper is to present factors that will support the transition away from analog and toward an intelligent IP Network video surveillance solution.

IP video surveillance technology provides proactive, reliable, high performance, lower cost, and better integrated security solutions. The price gap between IP systems and analog systems has closed dramatically while the difference in picture resolution is unmatched.

In addition to outstanding picture quality, network video surveillance brings new functionality, such as remote accessibility. Exceptionally usable archived video is available whenever and wherever you need it.

On a basic level, IP video is really a computer that sees. Network video technology is similar to computer technology in that both use unique IP addresses.

A network camera, also commonly referred to as an IP camera, connects to a network and can work wherever a network connection is accessible. By using IP network video surveillance technology, you can view cameras live, and monitor and review recorded video footage from just about any Internet-enabled remote device such as a PC, laptop or smart phone from wherever you are, on site or off site.

The Benefits of IP-Based Video Surveillance include:

- Image Quality
- Scalability
- Flexibility
- Cost Effective

Shift in Demand towards IP-Based Systems

IP Network Video technology is the obvious choice for cost effective, futureproof security installations. You can easily expand the system and improve security and business management. Network video surveillance technology guarantees successful security system expansion with a scalable solution, based on standard equipment, and the capacity to seamlessly integrate with other systems.

IP-based security, in general, delivers real-time surveillance, remote accessibility, and a host of solutions including access control, communication and building management, to offer advanced security functionality and intelligence. Today's video management software delivers customized analytics and the potential for marketing business growth data.

Shift in demand towards IP Network video systems is underway. According to a report by TechSci Research, "Global Video Surveillance Market Forecast & Opportunities, 2018," the IP Network video surveillance market is projected to grow at a CAGR of around 25% through 2018. Historically, in 2012, the analog-based video surveillance technology market accounted for the largest market share, yet in only two years by 2014, the demand for IP Network video surveillance systems and components surpassed the overall global demand for analog video surveillance. The Defense/Government end user segment accounts for the highest market share, followed by public and private infrastructure segments.

According to research conducted by Homeland Security Research, global intelligent video surveillance and video analytics are estimated to reach $39 billion in 2020. The study goes on to attribute the increased use of video surveillance and the migration from analog to digital cameras as two top drivers behind this trend. The report,

Successful IP Surveillance Market Applications

- Critical Infrastructure, Energy & Utilities
- Data & IT Centers
- Retail
- Wholesale Distribution & Warehouses
- Hospitality, Hotels & Resorts
- Government
- Manufacturing
- Corporate
- Large Venues, Sports & Entertainment Complexes
- Casino & Gaming
- Healthcare
- Education
- Transportation
- Banking & Financial
- Prisons and & Correctional Facilities
- Telecommunication
- Aerospace & Defense

Shift in Demand towards IP-Based Systems

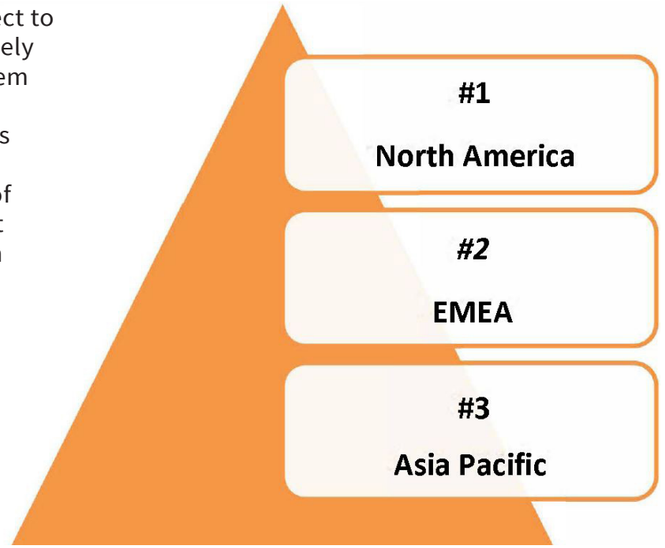
"IP Video Surveillance and VSaaS Market," puts the global IP Video Surveillance and VSaaS Market at an expected growth of 37.3% CAGR through 2020.

Increasing adoption by the government sector and increased maintenance costs of existing aging surveillance systems are major influences fueling the adoption of IP Network video surveillance systems. The report points out existing traditional surveillance systems are not competitive with respect to capabilities of IP video and will ultimately result in increasing the cost of the system over time.

IP Network video surveillance systems deliver advanced system intelligence, according to the report, with the help of video analytics and video management software. The capacity of storage on an older conventional device is also less. IP surveillance systems eliminate the problem of flexibility and scalability due to compatibility with existing infrastructure.

Moreover, IP video surveillance systems play a key role in the security system integration market. Revenue is expected to continue growing in excess of 9 percent through 2018, according to IHS, Inc. The security integration market consists of the design, consultancy, installation, service and maintenance, as well as sales of video surveillance, physical access control and intruder alarm equipment.

IP Surveillance Demand By Geographic Region



In 2014, North America generated the highest revenues in the IP/Network-based video surveillance technology market followed by the EMEA region (Europe, the Middle East and Africa) and Asia.

Source: TechSci Research, "Global Video Surveillance Market Forecast & Opportunities, 2018."

Advantages of IP Network Video over Analog

IP Network video surveillance systems offer many "technology sweet spots" that make the solution increasingly attractive. The many shortcomings of CCTV can be overcome with IP video surveillance security.

Closed Circuit TV Limitations Drive Need for IP

1. As a vital part of the Closed Circuit Television (CCTV) system, DVRs eventually fail. The need for replacement every three to five years raises the customer's cost of ownership.

2. Closed Circuit Television systems require maintenance intensive proprietary equipment that is difficult to integrate with other systems.

3. A major disadvantage for CCTV cameras is that they can only monitor a limited area. A single IP camera can often easily cover the same area you would need up to four analog cameras to cover.

4. CCTV surveillance systems offer no remote accessibility. With IP video surveillance you can view video on your laptop, mobile device and tablet and access video anywhere there is an Internet connection.

5. The quality of the images recorded by analog CCTV systems is often unsatisfactory. Low image quality minimizes the video's investigative and analytic value. Clear identification of individuals and events makes it impossible to use as evidence in investigations.

6. CCTV analog solutions require dedicated cables and monitors; separate audio and video cables must be installed from endpoint to endpoint.

Network Video Surveillance Bridges Technologies

IP Network video surveillance offers a host of advantages over CCTV, including high end features such as megapixel and HDTV resolution, built-in video intelligence and scalability. Network video surveillance can be added to a system without having to discard existing analog investments. Cost-effective hybrid solutions can integrate an analog surveillance system and gain the benefits of network video technology.

Network video surveillance offers the flexibility of on site or off site remote viewing. In a network-based system, video cameras and storage can be accessed over the web. Cameras can be viewed live from remote devices like smart phones and tablets. Advanced features also allow remote troubleshooting, service and upgrades to the system which eliminates the need for on site service calls.

IP video surveillance provides better overall security. Network surveillance cameras capture exceptionally clear video with high evidentiary value. Available exclusively on IP cameras, high-definition (HD) surveillance is now recognized as the preferred choice for professional security camera systems, delivering unmatched image quality with superb detail. An IP surveillance system captures more user friendly footage from a single camera. Upgrading from an analog CCTV camera system to 1080p HD, 360 degree panoramic or 4K ultra HD is easy and affordable.

24/7 Indisputable Evidence and Open Standards

Twenty-four hour video surveillance of entrances, exits, and reception areas provides a record of who enters and exits a facility and helps to deter criminals. IP Network video surveillance also provides search capabilities that enable video footage to be stored digitally and archived on network servers, hard drives, or network video recorders. Searching is much easier when seeking images related to a specific event.

Key Benefits of IP Network Video

Open technology standards inherent in IP network electronic security do not lock you into having to use one vendor; letting you choose the best components for each application. IP-based video surveillance systems can integrate various security technologies from different vendors such as access control, alarm, and facial recognition into one single cohesive system. Users benefit from increased functionality and performance throughout the life of the system.

Connect Innovations to Benefits

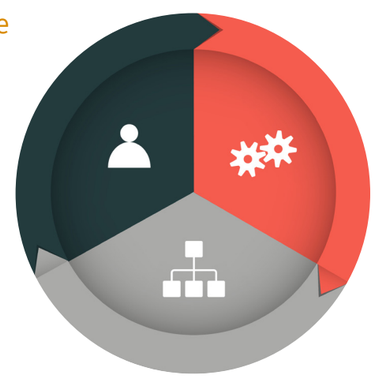
Advancements in video storage and security video management software allow network-connected digital cameras to enable interesting deployment opportunities for surveillance that help organizations be more efficient and connected. As video evolves, it is moving well beyond its original intention. IP Network video surveillance today is helping businesses assess marketing promotions with data like dwell time, for example, of how many and how long people viewed a display. Analysis of traffic patterns is factoring into access control management for loss prevention. Point of Sale (POS) and People Counting Analysis are other invaluable planning tools made possible through IP video management systems.

Utilizing the latest technology in video surveillance means:

- Significantly better image quality. No image degradation, improved compression.
- View larger areas and get 180 degree and 360 degree views.
- Open technology standards allows for seamless integration with other systems and applications as well as the possibility to upgrade and add more functionality. Integrating IP- based physical access control, intrusion, alarm and fire detection systems with IP video creates a single solution source.
- Leverage existing network and take advantage of existing cables, Power over Ethernet and Integrated PTZ.
- IP cameras are easy to install and move to another place. Ease of installation allows cost savings and quick setup to further reduce the total installation time.
- Simultaneously record and playback. Advanced search capabilities.
- Remote accessibility, remote monitoring capabilities and remote support. Users can see surveillance images from any computer on the Internet or via mobile device for surveillance, plus remote setup, remote zoom, remote focus and remote storage. Troubleshoot and service remotely over the web.
- Both audio and video transmit over the same network cable.
- Intelligent features like analytics.

IP Surveillance Market Product Categories

Hardware
Software
Services



Key Benefits of IP Network Video

Network video surveillance extends the return on an original video investment and provides an outstanding path for additional growth. IP video is a suitable solution for any application from a small business up to a global operation with offices around the world.

Network video surveillance ensures time and money is not lost on outdated, inefficient equipment. Hybrid configurations allow you to use all equipment from previous installations and optimize a system with additional IP cameras, video management software and storage devices. A network video surveillance solution with open standards integrates with a host of different manufacturers' cameras, access control, alarm, fire and other systems within the security market.

More Powerful Search Functions

The playback and search functionality in IP video surveillance systems is much better than even the most advanced analog and DVR solution. Retrieving details or attempting positive identification is almost useless with an analog video system. IP video search functions save time and money.

IP Network video surveillance is a more proactive means of surveillance. The event-driven features of IP Network video surveillance act with the security system and can validate alarm conditions beforehand to allow the proper response to be made. The intelligence within the system adds functionality that can be expanded over time for analysis, detection and alerts, initiating recording, alarms or other action, advanced motion detection, auto tracking, tamper detection, audio detection and other built-in triggers.

Futureproof Security Investments

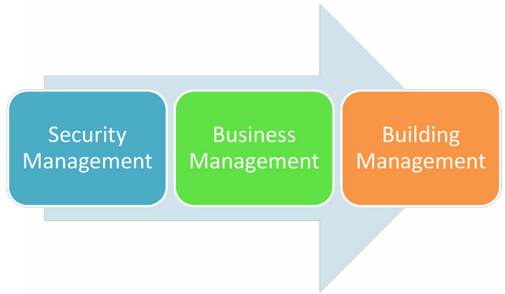
When upgrading from analog to IP Network video surveillance, head-end and storage costs are reduced, cabling costs are reduced, and the installation and maintenance is also less expensive. IP video represents not only lower costs for the network and storage with advanced technology, needing less staff is another benefit:

- Shared networks - existing voice and data networks can be leveraged.
- Storage - more flexibility on what and when to record.
- HR Savings - Analytics, scripting, sophisticated alarm and relay linking means less staff is required for security and monitoring.

IP Network video makes sense when you consider the cost of upgrading a video system over a three to five year time frame. IP cameras can be integrated within the network allowing almost unlimited expansion. With IP, you can update on a step-by-step basis and at a specific pace. For most end users, the migration to IP takes place gradually with analog and IP solutions coexisting, and, therefore, it is important to look at what existing system components can be reused. A mix of cameras is possible within an IP networked system allowing you a larger range of camera options and price points. You get continued growth with the current system design, expansion into other integrated systems and future technologies under development.

The ability to move gradually, to establish a migration strategy path is what is most attractive about using IP network electronic technology in all systems supporting security overall. Increased

Key Benefits of IP Network Video



Deployment Opportunities for Surveillance

- IP in Security Management
- IP in Business Management
- IP in Building Management

functionality and efficiencies illustrate tangible evidence that an IP-based solution can become an organization's valuable revenue source. The system can manage all technologies including video, POS, burglar alarms, Internet service, public Wi-Fi, and telephone; and serve as a tool that the end user can use for security, training or business optimization.

Leading Markets for IP Network Video

Already well-established, the hot markets for IP Network video surveillance include retail, critical infrastructure, banking, government and healthcare. These markets are not only enjoying the security benefits from a more efficient solution but they are utilizing valuable information obtained from business optimization functions made possible by IP Network surveillance. Securing facilities, while protecting staff and processes is a top priority in these markets.

• **Retail:** From a single shop to a whole chain of malls, IP Network video is making a

noticeable improvement to the way retailers are dealing with loss prevention, store optimization, fraud detection, security and customer service. In addition to enabling retailers to reduce shrinkage, IP video technology incorporates business tools that help improve operations. Advanced video analytics optimize floor plans and show traffic at merchandising displays to identify customer demographics and shopping patterns. Analytics are being used to increase sales, improve staff planning and add other marketing intelligence.

• **Government:** IP Network video solutions are successfully implemented in multiple government applications around the world. Public safety and security is an important issue for governments at all levels. Many government projects have chosen a seamless transition to an IP-based surveillance system that has enabled them to make the most of their existing CCTV investments while benefiting from the many advantages of network video technology. In addition, government applications are taking advantage of IP-based solutions that incorporate authentication protocols and data encryption standards to help mitigate risk against cyber threats. IP Network video surveillance is proving to be an efficient preventative tool to create a safer and more secure environment for citizens and government officials in applications including: city halls, court buildings, prisons, customs and immigration offices, museums, transportation hubs and other infrastructure. Network video surveillance is a great security solution for government buildings, facilities and operations in combating crime, both by detecting more serious threats and deterring would-be criminals from committing crimes in public places. IP video cameras also provide important visual information to police, firefighters, and other emergency respondents for effective action in a crisis situation.

Leading Markets for IP Network Video

• **Critical Infrastructure:** Executive security managers in charge of protecting critical infrastructures are embracing IP network surveillance technology for its high reliability, remote video management and integrated

analytics which are saving valuable time and resources. Widely dispersed, critical infrastructure is difficult to secure and must be able to function against all odds. Remote substations within a critical infrastructure are often unmanned and vulnerable to theft, vandalism and acts of terrorism. End users in this group are utilizing IP-based thermal cameras and low-light performance IP cameras to detect and track intruders, capturing full-color video in near-dark conditions. Wireless and fiber transmission technologies integrated with network video surveillance are securing massive perimeters. Viewing remote substations from a central security center off site, operators are able to remotely monitor these locations for security and operational reasons as well.

• **Healthcare:** Many different types of healthcare organizations are purchasing IP systems from large major hospitals, research institutions, and healthcare groups managing one or multiple facilities, psychiatric hospitals and medical schools. Smaller healthcare facilities, pharmacies, and nursing homes are also beginning to purchase IP-based security systems. Healthcare facilities are often spread across multiple buildings and sites and require monitoring from a single central point. The healthcare sector deals with people coming and going from multiple access points at all times of day and night, including shift workers, patients, visitors, medics and delivery personnel. In addition to keeping an eye on patients, for security reasons, there is often a need to manage pharmaceuticals, medical supplies and equipment. Healthcare end users are looking at integrating multiple systems like access control with video management as the heart of the system within a control center, to run real time analytics for reporting warnings and alerts as well as live monitoring. Operationally, in healthcare, users welcome the ability to install cameras, video storage and management servers

Leading Markets for IP Network Video

and video workstations on standard computer networks streaming very high quality video and audio at low bandwidth. Solutions are also being adopted for real time medical training systems, research and medical diagnostic applications.

• **Banking:** Banks are discovering IP video is the perfect solution for protecting customers, employees and assets while reducing risk and liability, and cutting losses from fraud. Exceptionally clear video makes it easier for bank officials to access and share video in real-time with law enforcement for quicker response and to build strong case evidence. IP-based cameras cover larger areas with fewer cameras. With advanced compression technology, banks are capturing and transmitting HDTV-quality video from remote branches. Other uses include remote ATMs, outdoor surveillance, drive-thrus and cash vaults. Like retail, advanced analytics provides data to improve the efficiency of banking branch operations.

• **Emerging markets:** Growing in the IP network surveillance space are transportation, education, gaming, malls, corporate, and large entertainment venues such as stadiums and athletic facilities. Network video surveillance is also commonly being used to monitor manufacturing lines, industrial processes, warehouses and logistic systems to ensure appropriate operations along with the safety of the facility.

Where to Start?

Start with American Integrated Security Group, leaders in IP Network video surveillance and integrated security systems on the network. American Integrated Security Group prides itself on providing innovative systems that offer an intuitive user experience.

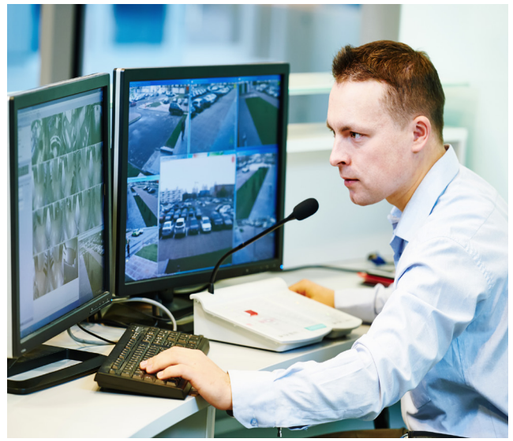
Open, scalable, and user-friendly, with AISG you get a professional solution at an affordable price with the power to upgrade and expand. AISG offers a technologically advanced support team that you can count on for training, maintenance and assistance.

An IP Network Video Surveillance System from AISG provides:

- **Open Platform**. AISG delivers a highly customized, reliable, stable and secure solution.
- **Power.** AISG optimizes solutions for all video applications.
- **Flexibility.** AISG provides unprecedented levels of command and control with a delightful user experience.
- **Innovation.** AISG's integration expertise in incorporating third party security technologies into a unified networked system is second to none. Systems designed and installed by AISG support advanced features including high resolution video images, advanced analytics, biometrics, access control, alarm notifications, license plate recognition and more.
- **Commitment.** AISG provides the confidence of knowing the solution will perform as specified and meet the rigors of even the most challenging applications.

State of the Art

The American Integrated Security Group's in-house central station is a state of the art command post delivering the latest in interactive 24/7 monitoring services.



About AISG

American Integrated Security Group (AISG) is a highly regarded systems integrator delivering timely solutions for today's security challenges. AISG specializes in the design and deployment of open platform integrated systems including IP video surveillance, access control, intrusion detection, perimeter protection and a full range of related wireless security technologies. Schools, hospitals, national retailers, critical infrastructure sites, hospitality and more trust AISG to deliver security solutions that exceed requirements and expectations. AISG is a valued partner to customers in a variety of vertical industries and institutional markets.

AISG
AMERICAN INTEGRATED SECURITY GROUP

AISG NY HQ
College Point, NY 11356

AISG – FL Office
West Palm Beach, FL 33411

AISG – OH Office
Cleveland, OH 44109

AISG – CA Office
Monterey Park, CA 91754

AISG – TX Office
Tyler, TX 75708

Toll Free - 877-496-8145 | **NYC** - 718-576-1471 | **FAX** - 718-785-3213 | **E-mail** - info@aisg-online.com