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What IT Education Managers Need to Know About IP Surveillance

The video surveillance market is in the throes of transition. IP Surveillance is rapidly taking over from traditional analog CCTV. Within the next three years more than half the surveillance cameras used in North America will be IP Cameras, according to the research firm Frost & Sullivan. Over the next two years IP Video Surveillance product sales will increase by more than 200% "significantly disrupting and overtaking analog CCTV sales," according to IP Video Market.

The emergence of Internet-based surveillance also means video surveillance management is moving from the facilities and security function to the IT department. For Educational IT decision makers, many of the advantages of IP Surveillance solutions will be obvious:

- Connectivity is simpler, less expensive and standards-based
- Management can be centralised with policy-driven automation of surveillance and video-logging tasks
- The availability of high-resolution IP Cameras is enabling organisations to capture far more compelling evidence for protecting the safety of students and staff and litigating vandalism incidents and insurance claims
- Bandwidth and storage growth can be managed and scaled more easily and flexibly, using open standards

The automation and scalability that comes with IP Surveillance is also expanding the range of video surveillance applications – whether they are for security, crime prevention and detection, monitoring of staff and facilities, or simply maintaining greater calm in school hallways.

For most IT decision makers the question is not whether IP Surveillance offers the best solution: The question is how to build the best IP surveillance solution for your district.

What you Should Know

IP Cameras are getting better, becoming less expensive and are providing better resolution than ever before. Megapixel cameras, for example, feature resolution three times greater than analog CCTV cameras and can be used for applications that require the viewing of finer details, such as personal identification for security or crime prevention or application of various kinds of image processing, from license plate recognition to recording lectures for distance learning applications. Alternatively, megapixel cameras can reduce the number of cameras organisations need to deploy.

Most IP surveillance solutions will contain a mix of camera types for different applications. A savvy vendor can help with the appropriate camera placement and lenses to satisfy your coverage requirements. One consideration is how large the image of interest is as a percentage of the total frame. UK police guidelines, for example, suggest that for standard CCTV analog resolution, people relative to frame size need to be:

- 5% to support watching movement of people
- 10% to count and keep track of each person in frame
- 50% to recognise someone you know or spot presence of someone you don't know
- 120% to record high-quality facial images to prove identity

Megapixel resolution reduces these requirements by a factor of 3 versus the lower resolution of analog.

Power Over Ethernet. Power over Ethernet, or PoE, provides approximately 15 watts of power to the end device, which is more than enough for most of today's IP cameras. Some of the newest cameras have a reduced energy footprint that requires as little as 2 watts of power. PoE+ extends power to approximately 25 watts to support such features as pan/tilt/zoom.

Other camera features to look for include:

- Motorised pan/tilt/zoom for flexible viewing angles
- User-selectable compression codecs including H.264
- 2-way audio support for challenge and communication at entrances
- Security encryption
- Low-light sensitivity
- Aluminium casing for optimal heat dissipation and superior camera protection
- Web-based remote access
- Cold-resistant outdoor enclosures
- Wi-Fi support for camera placement without running Ethernet cable

Building an End-to-End Solution

With all of the advantages of IP surveillance, there are also challenges that can be best dealt with by understanding and evaluating an end-to-end solution. Among the considerations for IT are:

Central Management. Given the ability to extend the reach of your video surveillance networks, IT should consider the ability to control and configure the cameras centrally, from any location. Centralised management enables organisations to set policies for usage that enhance security and allow control of such features as automated snapshot, event, alarm and motion detection.

802.11n Wireless. There are times when you will want your network to extend beyond where it may be feasible to have a physical connection, such as a remote area of a parking lot or the edge of a large campus. Wireless capabilities enable you to place cameras in these areas to extend your network and reach a broader area. 802.11n is the latest IEEE standard for WiFi, enabling transfer rates of up to 600 MBPs over distances covering up to 300 meters between switches. Flexible WiFi architecture for forwarding at the AP may be required to prevent the increased bandwidth of 802.11n from bottlenecking on a centralised controller and swamping your network core.

Managing bandwidth can only be done from the perspective of overall network capabilities. While improving data compression technology will continue to reduce the bandwidth required for streaming video, there is no question that careful planning and management is required. Among the considerations are:

QoS. Quality of service is especially important for video surveillance, where viewing in real time is critical. If you are using video surveillance over a multi-campus IP network that also supports VoIP, you need to have sufficient bandwidth and set QoS priorities appropriately to keep mission-critical functions such as streaming video courseware from being swamped by surveillance feeds.

Network storage. The expanded use of video, sometimes with video feeds piped back from remote locations to a data center running a security application and storage, can create challenges in managing both network bandwidth and network storage. The demand for storage used for video surveillance is expected to exceed 3.2 exabytes of capacity within the next three years, according to the research firm Global Information Inc., which also notes that iSCSI SANs are the fastest growing solution for video surveillance storage.

The best way to approach building this solution is to find a vendor that provides not only the IP cameras at the edge of the network, but also the switching infrastructure at the back end – for both wired and wireless applications – as well as the Storage Area Networks that are critical to the successful deployment and scaling of IP Surveillance.

D-Link's Unified Approach
D-Link is a leading end-to-end solutions provider with a full line of IP Surveillance Cameras, Network Switches and IP Storage. By providing a one-stop shop for the entire IP Surveillance network infrastructure, D-Link enables customers to get their systems up and running quickly and smoothly with the assurance that all of the pieces will work together and be supported by one supplier.

D-Link IP Surveillance solutions are field proven and certified with leading video surveillance software solutions for sophisticated educational applications. The company's nationwide field service organisation and extensive network of value added resellers apply educational expertise to integrate D-Link's IP Surveillance equipment into the larger security solution appropriate for your situation.

D-Link offers a wide range of IP cameras for wired and wireless connections. The DCS-6620 offers pan/tilt/zoom, 10x optical zoom, Dual Codec and two-way audio support. The Web-based interface allows up to 10 simultaneous users to view the live feed from the camera and the D-ViewCam software enables IT to monitor and manage up to 32 cameras, set recording schedules, configure motion-detection settings and change settings to multiple cameras.

D-Link's end-to-end video surveillance solution includes IP Network Cameras for image/video capture, storage area networks for video recording and playback, managed PoE switches, NICs, and intelligent surveillance software for controlling and recording. The solutions enable users to monitor, store and archive video, audio and application data for the Internet or private intranets. These solutions are completely integrated; provide a single source of support and are certified with leading video surveillance software. Plus, they utilise proven technology from a leading global supplier known for its ability to deliver high quality and leadership in price performance.

For more information: www.dlink.com

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