# **Tips for Buying Video Surveillance Gear**

Written by Jake Lahmann

More than 2 million video surveillance systems exist in the United States. Cameras are commonly stationed in places such as banks, traffic intersections, stores, business districts and neighborhoods. Criminals have particular reason to worry. Law enforcement organizations account for a healthy slice of surveillance-system purchases, and more cameras are going up every day.

The New York Police Department, for instance, requested funding a couple of years ago for 400 digital video cameras to help reduce robberies and burglaries in busy commercial districts. The city of Chicago recently spent around \$5 million on a 2,000-camera system, a move that has been credited with reducing crime to its lowest point in 40 years. Police in Palm Beach County, FL will soon be installing a multi-camera license-plate recognition system in unmarked cars that is able to read license plates, automatically search criminal databases and notify police.

The enormous backlog of criminal cases in court dockets means that prosecutors are relying more on video evidence to encourage pleas before a case goes to trial. Also, national security policies have freed up some grant money for video monitoring of vulnerable infrastructure such as bridges and railways. Many states are mandating in-car video systems to protect the rights of perpetrators and the reputations of officers.

Recent technology advances mean more and better bang for the buck. Features such as motion-sensitive recording, real-time wireless transmission of in-car video and IP video networking have become more affordable. A common in-car video system that may have cost \$10,000 five years ago now can be purchased for around \$3,500.

Justifying the purchase of video-surveillance equipment is often the easy part. Figuring out which system to buy—and how to deploy it—takes some expertise. Most people assigned to purchase video surveillance systems for their law enforcement units would be the first to admit that they are not video system experts. A number of critical issues exist when buying a video surveillance system for law enforcement. Get clear answers to the following 10 questions before the purchase.

# 1. What is the nature of your surveillance?

The number of different video security devices on the market is daunting. In the Supercircuits catalog alone, more than 1,000 different surveillance devices are offered, each designed to address a specific challenge or surveillance objective. To narrow your field of choices, define the nature of your surveillance.

Do you need an in-car video system? There are a variety of mobile units for sale. Are you doing covert surveillance for narcotics or vice? Body-worn cameras placed in shirt buttons or baseball caps might do the trick. If traffic enforcement is your objective, stoplight-camera

systems are an option. Need to support SWAT efforts? Pole cameras with articulating arms can help you see around corners.

Both covert and overt cameras can be placed on telephone poles, light poles and utility enclosures to aid in community policing efforts. If you're part of an environmental enforcement unit, outdoor covert systems are available. There are also surveillance systems designed for the police station in holding areas, interrogation rooms and jail cells. Name the mission, and there's a surveillance system designed to support it.

# 2. Are you trying to thwart perpetrators or catch them?

If you're objective is to thwart illegal activity, you want cameras that are big, obvious, weatherproof and relatively vandal-resistant. If you're using video surveillance to catch criminals, then covert cameras with high resolution might be better choices. Cameras can be hidden in all kinds of objects—including wall clocks, tissue boxes, pens, exit signs, plants and thermostats. They also can be concealed in body-worn items such as ties, hats, sunglasses, buttons and jackets.

# 3. Do you have the necessary technical expertise to choose the right system?

Nobody expects the typical law enforcement buyer to be a video expert. But if your organization has a technology officer, consider bringing him into the buying process. In some cases, you can find law enforcement officers who—through experiences in other cases—have become very knowledgeable about this field. Consult with them.

Your video security vendor can also serve as an important source of technical expertise. Sales consultants and technical-support staff from reputable vendors are trained to ask the right questions and recommend the right video system components to meet your objectives and budget. Some even have law enforcement or military backgrounds.

### 4. How do you choose the right video-security vendor?

Choosing the right vendor is as important as choosing the right equipment. After all, video surveillance solutions often require some degree of customization, so buying a system isn't like picking a camcorder off the shelf at Best Buy. Pre-sales consulting and after-sales technical support are essential to the success of a surveillance project.

Consider the following criteria in your vendor-evaluation checklist. Does the vendor have referrals from other law enforcement agencies? Does the company stand behind its products with warranties and return polices? How long has the company been in business? Does the company specialize in video surveillance systems, or is it a side business?

Does the vendor manufacture its own products or carry mostly third-party products? (Video-security vendors who design their own products tend to offer the latest technologies, lower prices and more customization options.) Does the company offer both overt and covert gear for a comprehensive solution? Does the company offer technical support after the sale? For how long?

# 5. How many cameras do you need?

Choosing the right number of cameras presents something of a Goldilocks dilemma. You don't want a number of cameras that is too big—it will be overkill and bust the budget. You don't want a number that is too small—you won't capture the information you need, and you won't have room for future growth. You need a multi-camera system that is just right.

Law enforcement video surveillance systems should be designed to capture two kinds of information: the identity of the perpetrator(s) and a record of their illegal activities. In buildings, this means you need to have cameras at entrances and exits as well as wider views of the area being surveyed. Entry / exit-ways are natural checkpoints that give you a more likely chance of identifying the subject. Square footage also influences the number of cameras required. Outside, whether the surveillance is covert or overt, the guidelines are the same: deploy enough cameras both to identify perpetrators and record their illegal activities. Your video security vendor can help you design the optimal mix of cameras in your system.

# 6. What are the correct specs for your system?

When designing your video surveillance system, you have to make decisions on several technical specs. One is the camera's focal length—how wide or narrow the camera view should be. Another is the camera's lux rating, or the ability of the camera to capture video in varying light conditions. The lower the lux rating, the better the camera does in low-light conditions.

Determining the resolution of your cameras is another key decision. The finer the resolution, the greater the detail. Yet another specification you need to determine is the IP (ingress protection) rating of the cameras. The higher the IP rating—65 or above is preferred—the better a camera can withstand weather conditions such as wind, rain and dust.

#### 7. How will you power your surveillance system?

The question of providing power to your surveillance system is not a minor one. Traditional surveillance systems inside retail stores and buildings can be connected to multi-camera power systems that make installation easier, consume less power and connect to back-up uninterruptible power supply (UPS) units. To make things even easier and less expensive, companies offer devices that can send video, audio and power over one cable. And don't

skimp on the quality or size of the power cable—inadequate gauge can prevent sufficient voltage from getting to your cameras.

Other systems, however, must run on batteries. Covert cameras disguised in household items, body-worn covert cameras or systems deployed out in the field typically can't be plugged in. Nor can some covert infrared lighting systems or hidden recording devices. There are ways to minimize battery usage. For example, systems can be designed to activate only when motion or other activity is detected in the area. Long-lasting, rechargeable batteries can also extend replacement intervals.

#### 8. How will the audio and video be transmitted?

How will the video get from the cameras to the recording and monitoring devices? Will the transmission method be wired or wireless? If wired, you have to determine the type of cabling, whether it's within municipal code and whether the cable is appropriate for the length of the cable run. Most vendors have calculations that help you to select the best video and power cable type and size for your application.

If the transmission is wireless, you have to make sure that you're using a legal frequency. The FCC licenses certain frequency bands for law enforcement. If you're using the wrong frequency, the video evidence may be ruled inadmissible in court.

If your surveillance system is networked—i.e., system components connected over an IP network—you also need to assess the network infrastructure needed to support transmission. Are there enough network connections? Will the Wi-Fi router and available bandwidth support wireless video transmission? Is there enough hard drive space on the server for recording? Is the equipment you're buying—cameras, monitoring and recording devices—networkable?

#### 9. Have you considered the recording issues?

It goes without saying that you need to record video surveillance for later analysis. When it comes to recording issues, you need to answer several questions, starting with whether you need a VCR or a DVR. Digital video recorders (DVRs)—though slightly more expensive—are superior to video cassette recorders for several reasons. DVRs have better resolution, higher recording times, better video motion detection and better reliability. With DVR prices dropping, there's little reason to buy VCRs anymore.

Another recording issue: Is the DVR networkable? If it is, you can view real-time video footage from anywhere within your network—and via the Internet from anywhere around the world—without having to be in front of the DVR. You also need to decide how many cameras (i.e., channels) can connect to a single DVR. Most systems come standard with between four and 32 channels, but DVRs with 16 or more channels offer more room for system growth.

And you must consider what you do with the video after it's recorded. How will you share it with other users? When you take it to court, which media (DVD, CD-ROM, flash drive) will you use? Also, ensure that the authenticity of the video can be proved for admissibility in court, which is usually done by means of "watermarking."

# 10. Is your system future-proofed?

It's important to make sure that, as your needs change and technology evolves, the investment in your video surveillance system is not wasted. Avoid systems with proprietary technology and connections because you can be stuck with one manufacturer for the life of the system. You want standard-technology systems that can integrate cameras and other equipment from a variety of manufacturers.

The surveillance industry is moving toward digital Internet protocol (IP) camera systems that can be easily plugged in and networked. Ensure that your surveillance solution can mix traditional analog cameras with IP equipment as part of an evolving, hybrid system. Even in a fully IP world, some IP cameras use proprietary technology that can only work with certain IP recording systems. For maximum flexibility, look for IP cameras that can work with a variety of recording systems.

In short, choose the right video security vendor, and then ask the right questions before you make your video surveillance purchase. You will be happier with the results.

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