

Seeing Is Believing: Why VARs Should Be Selling Megapixel Cameras

Higher definition cameras can provide a lower TCO for customers and more value for VARs.

BY BRIAN ALBRIGHT

Video surveillance solutions have been revolutionized by the introduction of IP-based, megapixel cameras. These cameras have a number of advantages over standard-resolution cameras, including providing higher resolution images and more accurate image detail. That makes the cameras much more valuable from a forensic standpoint. For security solution resellers, these cameras can increase sales with existing customers looking for an upgrade, while easing the sales process for new customers. "Seeing is believing, and selling a customer on megapixel image quality can be as easy as doing a demonstration," says Robert Kramer, product manager, security products at Panasonic.

Analog cameras provide images that are no more than approximately 0.1 megapixels; a networked camera with 3.1 megapixels records 30 times more detail. "Not only does this allow security practitioners to get more data from captured video, it also enables the capture of greater image areas including 360-degree panoramas," says Steve Gorski, general manager of Mobotix. "Because high-resolution IP cameras provide more coverage, fewer cameras are needed to cover a particular area, and this provides immediate value to the end customer."

Fewer cameras can lower the total cost of the installation, which can eliminate one of the primary objections many customers have to upgrading. "More often than not, the cost of a megapixel system is less than an analog system while providing greater detail (more pixels per foot)," says Raul Calderon, senior VP of Arecont Vision. "There is no reason to rule out megapixel imaging based on price, as currently available megapixel cameras are comparable in price to standard-resolution network

cameras, and they also provide added value."

There are other advantages to megapixel technology as well. For example, in-camera intelligence can work in tandem with higher megapixel resolutions to enable additional system capabilities such as facial recognition and even relative determination of age and gender. Adaptive technology enables the camera to perform despite lighting challenges such as backlighting.

"The camera image-corrects the video to provide superior images regardless of extreme contrast within a single scene or changing light conditions," Kramer says. "Smarter cameras are also able to perform more functions, including video analytics such as virtual tripwires, object left behind, etc. Using intelligent cameras that provide video to the network only in case of an alarm can minimize the use of network resources — all the more important because of the higher network demands of megapixel images."

Keep in mind that most customers don't have a good grasp of the differences in the various types of cameras. VARs should arm themselves with a thorough knowledge of each camera product they offer. "You have to be able to determine fact from hype, which means better understanding of camera vendor specifications and how each manufacturer establishes these specs," says Mark Collett, general manager of Sony Electronics' security systems division. "You also have to know how to deal with network professionals when utilizing existing infrastructures."

New Cameras Provide Greater Field Of View

Megapixel cameras are especially good for identifying people or reading license plates, which is why education, public safety, and enterprise markets were early adopters. Any application that involves covering a large area with few cameras will benefit from these new cameras. For smaller-scale applications (such as small rooms or storage areas), standard cameras may be sufficient.

"Outdoor applications such as parking garages and lots can benefit from megapixel resolu-



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tion, and any area with a crowd of people, such as a sports venue or stadium, is a perfect application for megapixel cameras," Kramer says. "In addition to public safety applications, other emerging verticals include healthcare, banking, and traffic control (which is distinct from public safety and typically a different buyer)."

Retail is also embracing these cameras, in part because the higher resolution images can enable applications outside of security. "With the incorporation of video analytics, video becomes a management tool to optimize business operations," Gorski says. "For example, analytics are valuable to gauge staffing levels and measure the number of customers in the store at a given time, dwell times, traffic flow patterns, and more. This intelligence enables the cost of a video surveillance system to be spread across multiple departments with a retail organization because now marketing and human resources can tap into the value of video."

How Many Megapixels Do You Need?

Megapixel resolution is great, but be careful not to get wrapped up in the megapixel arms race that has already engulfed (and confused) the consumer digital camera market. A megapixel is a gross count of the number of pixels, just as square footage is used to describe an area. "Sometimes people may think that to have two-times better resolution, that you would need 4 megapixels," Collett says. "The megapixel number is the gross count. So to double an area, you really need to increase four times (twice the length and twice the width). Also keep your lenses in mind. Can the lens of the camera support the resolution of the sensor?"

There is also a limit, for most users, in terms of how much increased resolution is actually going to aid the application. "There is some confusion in the market regarding the need to have higher and higher megapixel cameras, and therefore higher resolution," Gorski says. "But the question is: do security end users really need a 15-megapixel camera? Or is this expectation set incorrectly from the consumer camera market? Integrators need to look closely at the user's security and business needs to determine what resolution is ideal to meet the project goals. A higher megapixel camera is not always the best solution."

Evaluate Lighting, Network Needs

For VARs introducing megapixel cameras to security customers, it is important to work with manufacturers to understand the unique focusing and lighting needs of each camera, as well as determining which lenses will support the wider field of coverage made possible with megapixel technology. If these issues aren't addressed early on, end users will be disappointed by the solution's performance.

Lighting can be tricky, Calderon says. "Light sensitivity is an

issue for cameras with higher pixel counts because each pixel is smaller," Calderon says. "However, dual-sensor day/night cameras can switch to a monochrome sensor at night; for example, a 3-megapixel color sensor is used in the day, and a 1.3-megapixel monochrome sensor (with larger pixels) is used at night. Another approach is a 5- or 10-megapixel camera that can be used in a binned mode (combining information from adjacent pixels) to increase low-light performance."

Determining which type of camera is best for different lighting conditions can be difficult to ascertain unless you have all of the information available on each camera for comparison. "I think sensitivity for standard definition cameras is still better, but you need to be careful as different makers use different criteria in the minimum illumination specs," Collett says. "Just because the numbers are the same does not mean picture quality is the same. You could have the same numbers, but if AGC (automatic gain control) noise, fixed pattern noise, or shutter speed are not factored in, you could have issues later. In general, with the HD cameras now being more affordable, and with more and more advanced sensor technologies being developed, this gap on sensitivity is narrowing."

Another consideration is network capacity. Each megapixel camera transmits more data than a standard camera and may require more storage capacity, so evaluate your clients' network infrastructure with that in mind. "More computing power is needed to decode the image, which could potentially cause video delay if using an older computer or laptop," Kramer says. "Megapixel camera products also tend to cost more, related in part to the more expensive image processing chipsets used inside megapixel cameras compared to VGA (video graphics array) cameras."

According to Calderon, though, video compression has addressed many of these issues. "H.264 video compression has eliminated bandwidth and storage concerns related to megapixel video," he says. "The use of H.264 image compression reduces file sizes to minimize storage space requirements and to make megapixel video streams manageable on the network. There is also an erroneous belief that because the computational complexity of the H.264 encoder is high, the required decoder resources must also be high. In reality, the opposite is true: H.264 streams can actually require less computational power to decompress. Knowledgeable VARs can easily debunk these misconceptions for end users."

Apart from technical considerations, VARs should focus on educating their customers about the overall benefits of higher resolution images, the increased forensic value, the lower cost of deployment, increased ROI, and scalability of these systems. "Megapixel camera technology provides real value and measurable ROI to end users and their integrators," Calderon says. "Superior image quality, better overall system performance, and cost-efficiency can help close sales." ●