Spotlight feature on:

Arecont Vision
megapixel technology...
beyond imagination

Working toward an all-megapixel future for the UK and Europe

Pictured: Scott Schafer
Photo courtesy of Arecont Vision

International markets, including Europe and the UK, have played a huge role in the success of US-based Arecont Vision, a supplier of a full range of megapixel video cameras.

The company has emphasised a large and increasing sales presence in international markets, and has worked to increase brand awareness globally. The company's growth trajectory is higher than of the 50 per cent growth rate of the megapixel market. In addition, Arecont Vision has made a significant investment in operations, and now delivers 98 percent of shipments in less than two weeks, which benefits customers worldwide. We spoke with Scott Schafer, Vice President, Sales & Marketing, Arecont Vision, about the company's vision for a future when all video systems will use megapixel images, and what that means for the UK and European markets.

Q: What is your outlook for market adoption of megapixel cameras?
A: Megapixel cameras represent a new level in resolution for video surveillance systems. Simply stated, the new megapixel standard in the future will be precisely the resolution that each application requires. Gone are the days when there was one available resolution – 400,000 pixels take it or leave it – and the whole security system was built around that resolution. More resolution usually means fewer cameras in an application and it might mean added functionality in another, such as the ability to use video for digital pan/tilt/zoom (PTZ) in a way that was previously beyond reach. In any case, the resulting system will be better with the use of megapixel video.

Q: What do you see in the UK and Europe?
A: The advantages of megapixel video are resonating throughout the UK and the European market, which are embracing the benefits of better video images, with more detail, that are available anywhere on the network without overtaxing the network infrastructure. This is possible because of Arecont Vision's use of H.264 compression, which provides lower bandwidth relative to MJPEG systems and lower data load both on the video management server and client.

Q: Aren't megapixel cameras more expensive?
A: Arecont Vision offers cameras with megapixel resolution that are comparable in price to standard-resolution network cameras. The cost analysis for megapixel video gets even more attractive when you consider the system advantages of using fewer cameras to cover the same area. It is really only basic maths – 400,000 pixels versus one million to 10 million pixels. A single 5 megapixel camera has more resolution than 10 standard definition cameras. A single 5 MP camera could easily replace five or more standard definition cameras. Also, the ability to pan, tilt and zoom digitally within a live or recorded megapixel image is a big advantage with multi-megapixel cameras. If you factor in the costs you save on infrastructure or on mechanical PTZ devices, the cost advantages of megapixel video become even more compelling.

Q: What type of megapixel cameras do you feel the European market needs?
A: There must be camera models for a range of megapixel resolutions, from 1.3 to 10 megapixels and even more. There also should be day/night cameras, compact cameras, panoramic cameras,1080p HD cameras, low-cost cameras for price-sensitive applications, all-in-one dome cameras and cameras resistant to environmental hazards. Only with a broad camera line can a supplier expect to serve the varied needs of mainstream video surveillance applications in Europe or anywhere around the globe. Arecont Vision's camera line includes all these choices!

Q: What is the next step to increase usage of megapixel cameras?
A: Making it easier for integrators and end-users to learn the benefits of IP systems is critical. It is also important to educate the market about the advantages of megapixel video and technology developments that make it applicable to mainstream applications. We, as suppliers, need to resolve misconceptions related to cost and network issues. For example, using H.264 compression, Arecont Vision cameras provide greater compression efficiency to solve system issues related to bandwidth and storage. Lower camera costs are eliminating price objections, and greater functionality makes systems better overall. It's a compelling story, and one that we at Arecont Vision continue to spread throughout the UK, Europe, and around the world.

Q: How do you simplify integration of megapixel cameras into overall systems?
A: We have forged important technology and software partnerships with industry leaders throughout the world. These firms are network video recorder (NVR), storage, analytics and network transmission companies. Working closely with these manufacturers, Arecont Vision clears the path to megapixel system implementation for integrators and end-users alike. We cater to the needs of a variety of vertical and application markets, including banking, retail, education, government, manufacturing and transportation.

Q: What drives Arecont Vision's success in the megapixel market?
A: Innovation is a passion for Arecont Vision. Our company is built on an unwavering commitment to develop and deliver products with more innovative capabilities than competing products. We also strive to make the benefits of megapixel video available at a price point that is attractive for the full range of mainstream video applications.

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The case for megapixel

Raul Calderon, Vice President of Marketing at Arecont Vision, makes the business case for megapixel video.

As networked video systems gain traction, so has the use of megapixel cameras for general applications. The latest generation of megapixel cameras is proving to yield both greater cost-efficiency and video performance. Megapixel video was once assumed to be more suitable for specialised applications because of early technology limitations related to bandwidth and storage. But now there is a convincing business case for use of megapixel video in any application given the favourable ratio of greater system effectiveness compared to lower overall system costs. As a result, megapixel cameras are changing the process by which video systems are specified, implemented and justified. Let's look at ways megapixel and IP technologies can be combined to achieve affordable systems: Megapixel cameras can improve functionality and lower costs: networked systems enable the use of megapixel cameras, which deliver far superior imaging technology and related functionality than analogue cameras. A single megapixel camera can typically be used in lieu of several conventional analogue or standard definition cameras. Fewer cameras mean fewer cables, less software licensing fees and lower installation costs. Use of megapixel cameras can take the place of mechanical pan/tilt/zoom devices; users can digitally pan, tilt or zoom in real-time while simultaneously recording the full field of view. Archived video can provide four to 30 times the detail over standard definition cameras, depending on the megapixel resolution. Overall, megapixel cameras yield greater return on investment (ROI) than conventional cameras in the long run and in many cases immediately.

Standardised IT-based components: megapixel IP video systems are configured using the same 'building blocks' as IT systems including servers, network switches, digital storage, and so on. This allows megapixel cameras to integrate with other video surveillance and security devices with extreme cost-efficiency. Use of H.264 compression has reduced the costs relative to network bandwidth, server CPU capacity, and storage - lowering the overall cost of ownership of a megapixel system. Competition among suppliers also has led to lower pricing and has accelerated the development of new technologies to further enhance product functionality. These trends have continued to raise the performance of systems while lowering overall costs.

Software is taking on a leading role: because the 'brains' of IP video systems are in the software, it is much easier to update or upgrade a system once it has been up and running. Software updates are available via online downloads – and far more cost efficient than switching out equipment.

Scalability provides greater flexibility: one of the greatest intrinsic advantages of networking is scalability. With an analogue system, adding a camera or moving camera locations required a great deal of effort, manpower and expense – from physically moving the camera to running new wiring from the head-end to the camera location, installing a local power source, and adding additional processing hardware like multiplexers and card cages. With a megapixel IP system, you can add or move a camera by simply mounting it and plugging in a single structured cable to deliver all video, bi-directional data and power. Configuring cameras and servers and storage is all managed by a video management system (VMS) front end. In most cases an IP address is automatically assigned upon detection of the new network edge device, and you're in business.

Ability to use existing infrastructure: networked systems employing megapixel IP video surveillance cameras can often use existing infrastructure, whether over the internet, using WiFi, or over a corporate network. In any case, existing network infrastructure helps eliminate the need to create a parallel network just for the video.

Lower cabling costs: structured cable – specifically CAT5/6 - is less expensive than coax cable. It weighs less, is far less bulky and has a faster transmission speed. Cabling is also simplified with Power-over-Ethernet (PoE) – where power is supplied to cameras over the same cable as video and data signals eliminating the need for a separate power source to the camera. As a result, there is no longer a need to provide localised power at each camera location which can result in significant cost reductions in manpower, equipment and service.

Smarter systems are less expensive to operate (and easier to use): networked systems with high resolution megapixel cameras capable of capturing great amounts of data are ideal for server based video analytics to create smart systems and improve overall security while simplifying operations. Megapixel cameras are great tools for situational awareness applications requiring monitoring of vast areas while providing superior forensic recorded information. Paying staff to watch banks of monitors – often with hundreds of cameras - is expensive and impractical. With megapixel cameras, smart systems can do a much better job of detecting changes in a video frame based on user defined parameters and automatically notifying the appropriate personnel. This allows fewer employees (lower payroll) to be more responsive through the real-time benefits of IP video systems.

Overcoming misconceptions

A productive discussion of the business case for megapixel video requires that we put to rest some common misconceptions about the technology. Several come to mind. **Megapixel cameras are too expensive:** to compare the price of a megapixel camera with the price of an analogue or standard IP camera does not tell the full story. To compare apples to apples, you need to cost out and compare the total number of cameras along with the total infrastructure needed to support them. This approach to cost assessment clearly reveals the efficiencies and cost savings of megapixel cameras. Furthermore, today's megapixel cameras also cost less; in some cases, prices are comparable to IP VGA cameras or analogue cameras with encoders.

Megapixel video takes up too much bandwidth and storage: H.264 video compression has eliminated bandwidth and storage concerns related to megapixel video, which can lower costs of a high-quality, megapixel video system. H.264 produces equivalent video quality to the familiar JPEG compression method. The main difference between the two is that H.264 enables a major reduction in bandwidth while providing the same video quality. Bandwidth reduction translates to lower cost of security installations; requirements for networking equipment and disk storage are accordingly reduced.

H.264 compression has a 'hidden cost': a common myth about H.264 is the so-called 'hidden cost', an erroneous belief that because the computational complexity of the H.264 encoder is high, the required decoder resources must also be high – even more so for megapixel video. The opposite is true: H.264 streams can actually require less computational power to decompress. The computational complexity of encoding H.264 is in the camera. And, decompression of H.264 megapixel video by the VMS software is similar to JPEG.

Knowledge is vital

Knowledge is vital – of the technologies and their capabilities and how they can impact the company's profitability. When dealing with corporate spending constraints, security professionals should consider carefully initial cost of new technology and what the ongoing expenses are projected to be. Above all, one should focus on the value technology can bring to their enterprise.