Dr. Michael Kaplinsky

QUESTIONS & ANSWERS

FROM THE TOP

A conversation with Dr. Michael Kaplinsky

Arecont Vision, which was founded in April 2003, lends their expertise to the security market with product development and design of cost-efficient imaging systems for commercial applications. To find out more, we talked to CEO Michael Kaplinsky about his throughts on trends within the megapixel and camera marketplace.

Q. What differentiates Arecont from the many other players entering the megapixel camera and IP market at this time?

A. In video surveillance, the most important performance criteria is the ability to best recognize details in a scene. This is what continues to drive the professional security market's transition to megapixel video. While we believe the industry's transition to be inevitable, earlier professional megapixel camera offerings have had significant shortcomings that have impeded the process. Some of the obstacles that camera manufacturers are struggling to overcome include high prices, slow frame rates, poor nighttime sensitivity and a lack of features traditionally found in professional analog cameras.

From the get-go, Arecont Vision's aim was to solve these obstacles by developing a product line that would deliver imaging performance and features superior to conventional analog cameras at a competitive price point. We quickly realized that this goal required a tight integration of various image processing functions, along with very specialized internal camera architecture. With that in mind, we have developed proprietary, massively-parallel image processing architecture called MegaVideo® that enables Arecont to offer super-HDTV-resolution cameras at analog camera price levels.

Q. What new technologies or product trends is Arecont driving to market?

A. Arecont Vision does not use any third-party image processing technologies in its cameras. By maintaining complete control over our architectures and intellectual property, we have developed some unique solutions specifically designed for megapixel surveillance. For example, to address the issue of lower sensitivity associated with small pixel sizes, we developed dual-sensor day/night cameras that automatically switch between two sensors and employ larger pixel sizes for night viewing.

To further address the cost of the camera per unit area under surveillance, we developed quad-sensor, 8-megapixel panoramic cameras that provide 180 and 360 degrees of view. These cameras feature our SurroundVideo® technology and cost only a fraction of what it would cost to provide the same coverage with multiple conventional megapixel IP cameras.

We also have helped make migration to higher-performance megapixel cameras easier through simple ergonomics. By reducing the size of our megapixel cameras to less than 3 inches, they easily fit into popular domes and housings. We've also added critical features such as auto-iris support, flash synchronization and the ability to accommodate most standard video surveillance lenses. As a result of these efforts, we have seen considerable gains in market demand, which has led to our sales volume doubling every six months for the last three years.

Q. Where do you see video surveillance technology going in the future?

A. Megapixel cameras allow users to significantly reduce overall system costs, as multiple analog cameras can be replaced with just one megapixel camera while maintaining the same area coverage. While there is no doubt that megapixel video will completely replace analog cameras based on the 50-year-old NTSC/PAL standard, the only remaining barrier to widespread adoption is the fact that JPEG-based megapixel video requires larger bandwidth and storage size. It is well known that most camera manufacturers have been developing MPEG-based cameras that cut the storage requirements by as much as an order of magnitude. I would expect that complete lines of H.264 cameras will start to appear on the market as early as the first quarter in 2008. I also expect that some manufacturers will offer these cameras at an incremental price increase, further accelerating the complete market transition to digital HDTV surveillance.

Q. What makes Arecont Vision a different kind of company from other IP surveillance manufacturers within the security industry?

A. Many of the companies that manufacture IP video entered this business leveraging their networking and DSP expertise. As a result, they have to rely on third-party image processing technologies. This ultimately increases the cost of materials and limits the level of achievable camera design optimization, leading to higher prices and performance limitations.

In contrast, Arecont Vision was founded by CMOS camera and image processing experts. From the very beginning, we have targeted analog cameras, not megapixel, as our competition. That was the main motivation for the development of a broad intellectual property portfolio of cost-efficient, high-performance designs. We call this approach MegaVideo®. It has enabled us to compete with analog camera makers by offering to the market similarly priced but measurably superior megapixel alternatives.

This allows flexibility by having complete control over image processing architecture, and also allows us to produce multi-sensor panoramic and day/night cameras that bring the cost per area under surveillance down further.

The other factor that makes us unique is that we manufacture our products in the United States. The high quality of U.S. manufacturing results in near-perfect yields, more than offsetting the higher labor costs.

We also were fortunate to become profitable at an early stage. As a result, managers retained the majority stake in the company. This, in turn, allowed managers to completely dedicate their efforts to minding the business, rather than the board, resulting in an efficient operation.

Q. What makes the use of megapixel technology advantageous to the average end user?

A. Simply put, megapixel video is a lower cost and more efficient way to do surveillance and monitoring. The technology has already matured to the point where megapixel camera prices are similar to the prices of good, quality analog cameras. Yet, one megapixel IP camera can replace many analog cameras while providing the same area coverage, yielding much lower overall system cost. Furthermore, megapixel video enables important functionality that is simply unattainable with analog cameras: high-resolution archives allow "zoom after event," reducing the need for real-time zoom-in decisions by surveillance personnel, and enabling one person to handle the surveillance of much larger infrastructures.

The effectiveness of surveillance with megapixel cameras also is significantly higher than analog cameras can provide. Megapixel cameras can simultaneously deliver multiple video streams in different formats. This allows for zooming on some areas while maintaining an eye on the entire scene—something quite impossible with mechanical zoom optics where zooming implies a reduction in the field of view.

To sum it all up, megapixel cameras offer lower system cost and far superior image quality—the rare case where end user can have their cake and eat it too.

***Dr. Michael Kaplinsky**, Ph.D., is the CEO of Arecont Vision.*