

A new year brings new trends. Many of the trends from 2014 have since turned into industry standards, such as HD resolution and IP surveillance; however, new ones have emerged to keep the security industry on its toes in 2015.

The Market at a Glance

In 2014, video surveillance accounted for approximately 53% of the total market share (US\$13.5 billion) in terms of global physical security product sales, according to Memoori Business Intelligence. Double-digit growth has been the norm in the video surveillance market over the last decade, and analysts at IHS forecast similar growth in the new year, predicting more than 10% growth in 2015. Furthermore, Marketsandmarkets has predicted that the global video surveillance market will reach roughly \$42.1 billion at a CAGR of 17% for the period 2014 to 2020, with the IP system market expected to grow at a CAGR of 23.5% during the same period. Rising crime rates, an increase in terror attacks, and growing security concerns all are contributing to this growth.

Who Reigns Supreme? IP vs. Analog

The move to IP is no longer so much a trend as it is simple fact: New installations are going IP and many analog users are upgrading to network-based solutions. With that said, does that mean that IP has finally taken over analog in video surveillance? The answer is yes and no. In terms of revenue, IP sales have surpassed analog sales; however, in terms of quantity, analog shipments still outnumber those of IP. This is poised to change, with analysts believing that IP shipments will take over analog by the end of the decade. Evidence of this shift can be seen in markets like Latin America where the overall market — one that is heavily focused on analog — is now leaning toward IP equipment for the first time (by supplier revenue), according to a report by **IHS**.

Asia Leads the Way

In the world of security, Asia has had a tendency to be a step behind when it comes to the most up-to-date technologies. In the coming years, though, APAC is forecast to be the fastest growing region for IP video surveillance globally at a CAGR of 44.3% during the period 2013 to 2020, according to a report by Allied Market Research. The report also pointed out that North America is expected to experience the highest share in the IP video surveillance market by 2020, predicting that the continent would be the highest revenue-generating segment with a value of about \$19 billion in 2020. However, China is estimated to have been the largest regional market for video surveillance equipment, accounting for a third of global revenues in 2013.

Trends for the Growing Market

Along with growth come trends, trends that help drive growth and keep the market up-to-date with new and exciting technologies. In 2014, we saw IP surveillance become a norm and HD resolution become a standard. In the following, a&s explores a few of what we expect to be the most popular video surveillance trends for 2015.

High Efficiency Video Coding (H.265) One of the most important developments for 2015 will be that of high efficiency video coding (HVEC), also known as H.265, which directly relates to another trend: 4K resolution. HVEC will play a significant role in the feasibility of 4K in security applications. According to security experts, about 90% of surveillance products currently use HVEC's predecessor H.264 for compression. However, that is set to change. "Our outlook is that most future advancements in the market will focus on compression, as the megapixel market has evolved extremely quickly and the compression will need to advance nearly as quickly to meet the growing demand for higher resolution images. H.265 may be the answer to this as there is a tremendous amount of computational power required for the compression and decompression of these images that the industry is currently grappling with," said Stephen Carney, Director of Video Product Line Management at [Tyco Security Products](#).

Pervasive use of H.265 has many implications for the security industry. With the ability to double the data compression ratio compared to H.264 at the same level of video quality, H.265 will greatly improve the usability of 4K in security applications. In fact, both Hisilicon and Ambarella introduced IP camera SoCs based on H.265 at the end of 2014 and widespread use of H.265 is expected within the security industry by the second quarter of 2015. This will in no doubt directly impact the adoption of 4K.

Finding Applications for 4K

The entrance of 4K resolution into the security industry was met with both curiosity and excitement. Similar to how HD was expected to be the new standard for image resolution when it was first introduced into the industry (which it since has become), many believe that 4K ultra-high definition (UHD) will eventually replace HD as the standard, and the availability of H.265 in security will be a catalyst to this; however, this change will not happen overnight. "4K will certainly be a trend to watch, though broad adoption will be problematic for the security industry at this point due to limitations on current camera form factor/lens combination, bandwidth, and storage constraints and the cost of the equipment versus the benefits or necessity of the additional resolution gained with the technology," Carney said.

Despite the current limitations, many of the obstacles should soon be resolved. Aside from H.265 helping with data compression, the rapid rollout of 4G across the globe should assist in dealing with bandwidth problems, as well as better, improved accompanying hardware (e.g., lenses, monitors, etc.).

Bigger, Better Image Sensors

With the trend of 4K in 2015, along with the fact that HD has become the standard, bigger, better sensors are now needed to support such high-quality images. The trend toward increased value of total image quality will utilize large image sensors, the latest iris system, and high picture quality at

near IR, said Koji Maunari, GM of the Industrial Optics Business Unit at [Tamron](#). In fact, the image sensor market is expected to grow at a CAGR of 8% from 2014 to 2020, according to a recent report by Marketsandmarkets. Not only are manufacturers coming out with bigger sensors, they are also adding special technologies to further enhance image quality, specifically designed for video surveillance use. Well-known sensor makers such as Aptina, Omivision, and Pixelplus are now pushing out larger image sensors, while companies such as Sony have come out with new sensor technology specifically addressing the needs of the video surveillance market. The new Starvis technology, a back-illuminated pixel technology used in CMOS sensors specifically designed for video surveillance, was released by Sony in mid-2014. The technology extends from the visible light range to include the near-infrared range to support filming at night, which is often a problem area for 24/7 outdoor surveillance in most CMOS cameras. The improved performance at night will help more extensive adoption of CMOS cameras in the near future. Additionally 4K sensors are also being developed. These new sensors can support up to 12 megapixels (4:3) and 4K (17:9), and even support 4K at up to 60 frames per second. Furthermore, with sensors now reaching 1/1.9 inches, even higher resolution and clearer images are possible.

HD-over-Coax Gets More Advanced

HD-over-coaxial solutions are not new to the security industry. In fact, IMS Research, an IHS company, named HD-over-coaxial solutions a trend for 2012; however, at that time the solution in question was more or less limited to HD-SDI, which turned out to be not nearly as cost-effective as the security industry had initially hoped. Yet, like with any technologies a little time has yielded new-and-improved solutions, and 2014 saw just that with the introduction of new HD-over-coaxial solutions. One of the major proponents of HD-over-coax is Dahua Technology, who came out with their HDCVI technology in late 2012. However, it is not until more recently, in the last year, that the industry has really seen HD-over-coaxial solutions take off, with many other companies coming up with their own technologies and solutions as well, such as AHD, ccHDtv, and HDTV. HD-SDI has also evolved: The new generation has upgraded in long-distance transmission, and more importantly, has become more cost effective.

Despite the fact that the overall market is going digital, many definitely still see plenty of room for HD-over-coaxial solutions, noting acceptance of the technologies particularly in developing regions such as Asia Pacific and Latin America.

Renewed Life in Intelligent Video Solutions Intelligent functions have been touted for a while in security, but it isn't until more recently that they have been widely incorporated and desired in video surveillance. In fact, as of recent, a certain degree of analytics on the edge has become a standard feature for most IP cameras. From entry-level to high-end, cameras can now be differentiated by how "smart" they are. As part of this, video surveillance has proved capable of not just recording and reviewing, but preventing and analyzing. "The IP revolution has changed the surveillance

cameras from a forensic tool aimed at solving problems after an incident has occurred to becoming a vital part of proactive intelligence chain. Network video cameras collect valuable data that can be analyzed and turned into actionable insights,” said Johan Paulsson, CTO of [Axis Communications](#).

The idea of actionable intelligence is one reason intelligent video solutions are seeing an up surge in demand. “We [Verint] believe that actionable intelligence presents an opportunity for customer to implement solutions that enhance security and safety, while reducing operating costs and increasing productivity and efficiency,” said Brian Matthews, VP of Global Marketing and Product Development for Video and Situation Intelligence Solutions at Verint Systems.

Another reason demand is growing is due to more developed technology. “Advancements in analytics should also not be ignored, as this segment of the market has progressed to where analytics are accepted as reliable, accurate, and part of the day-to-day operations of a large percentage of users. Some analytics, such as facial recognition, will definitely benefit from the higher resolution images and increasing levels of clarity as camera technology continues to progress,” Carney said.

The many benefits that intelligence brings to video surveillance, especially now that the technology is more reliable, are being realized across verticals. Certain verticals like retail have found particular use for intelligent video, where the data is being used for business intelligence. “Especially video content analysis solutions like Bosch's that do not only automatically trigger alarms on the basis of pre-defined alarm rules, but also enable the tracking of objects,” said Erika Gorge, Corporate Communications Manager at [Bosch Security Systems](#). “This kind of intelligence can also be used to obtain information that goes beyond a pure security purpose such as marketing intelligence information on the scenes being under surveillance — for example number of people (people counting), movement of people, registering characteristics like color or crowd density information.”

Furthermore, we will also see a higher adoption of big data for multiple applications, such as smart cities, in 2015, where a smart surveillance camera with advanced VCA could definitely play an important role. We will see how VCA changes a surveillance camera into a content provider for big data.

There is a catch, though: Avigilon's recent acquisition of ObjectVideo's entire patent portfolio and licensing program. In the future, Avigilon will replace ObjectVideo as the patent holder to lead the future development of VCA technology, once again reshuffling the intelligence market. The impact this move will have on the security industry as a whole will be massive, and not necessarily in a good way — Avigilon now holds 124 US and international patents and 202 US and international patent applications as a result.

Integrated Systems Become a Must

In the past, integration of disparate systems has been a struggle for many users. With newer solutions, the ability to integrate is in high demand, and as such integration has become a focus for many security players.

“Integration has been talked about a long time — but as a user experience it has been less than ideal. You will soon see systems that deliver on that promise of a seamless user experience,” said David Gottlieb, Director of Global Marketing Communications at [Honeywell Security](#). William Ku, VP of the Brand Business Division at [VIVOTEK](#) echoed confidence in the integration trend: “The full integration of disparate systems, including video surveillance, intrusion systems, perimeter detection, access control, and real-time intelligent analysis on data will be the trend in managing security in every vertical application since the security could be secured seamlessly and enable staff to respond to intrusion or threats in a short time and solve the events on-site in an effective way.”

The trend for more integrated systems is also what will help push IP growth forward, as the IP market has matured and entered into the late growth stage of its product life cycle. Yet, the low-end market still has significant potential for IP growth, as noted by Karl Erik Traberg, Head of Corporate Communications and Business Development at [Milestone Systems](#).

In the middle and high-end markets, however, the trend for more integrated systems will continue to drive IP growth. “In the market for advanced solutions with high camera counts there is a significant opportunity to offer more advanced integrations with access control and other security applications,” he added. “Verint believes in and has realized increased demand for innovative, integrated solutions that combine situation management, communications, and cyber intelligence, and facilitate collaboration across security and law enforcement agencies. We believe that today’s government organizations, institutions, and multinational corporations, in connection with safe city, border control, transportation security, critical infrastructure, and other large-scale security initiatives, are interested in and preparing to deploy unified security solutions that fuse data from a wide range of security systems and intelligence sources to enable efficient information correlation and analysis,” Matthews said.

Hope for 2015

A lot of major changes took place in 2014 that has in a way left a question mark hanging over the fate of the security industry — the Canon Europe acquisition of Milestone Systems, Anixter acquisition of Tri-Ed, and most recently the selling of Samsung Techwin to Hanwha Group. Yet, one thing is for certain: there will always be a need for security and video surveillance. This sentiment is what industry players are emphasizing when it comes to future growth of the security/ surveillance market. Development for the overall market may not be as rapid as it once was, but with the above

trends helping to drive surveillance growth, as well as the continued growth of things like video surveillance as a service and cloud computing, there is definitely still upward hope for the future of video surveillance.

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