

“Developments Shaping the Global Security Industry”

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The last 15 years have been truly exciting in the global security market while unfortunate global events continue to make our industry one of the most critical and fast growing today. The industry has evolved from scores of small, family-run manufacturers and regional installers to one now dominated by multi-billion dollar, global companies like EMC², United Technologies, GE, Cisco among others. The market is continually expanding and, as the pace quickens, so do change and consolidation.

Consolidation: From Market Entry-driven to Technology-driven

A tremendous amount of consolidation has taken place in just the last few years. This trend promises to continue to reshape the market landscape. In the 1990s, consolidation was driven by companies who sought to enter the security market by acquiring companies and by companies looking to build market share through acquisition. While technology played a role in these acquisitions and the subsequent consolidation; it was not necessarily the principal driver. That is changing.

Over the next several years, market change and growth will be driven mainly by technology—primarily the shift to IP networking for all devices. This evolution will not only affect the manufacturers, it will also have a significant impact on the distribution channels, integrators and end-users.

The End of Status Quo

Why the change? For the same reason we see change in any market: the market is responding to what customers want. Until IP networking became ubiquitous, most manufacturers and dealers were manufacturing and installing proprietary systems with proprietary communications protocols. Their markets were practically captive and, as a result, there was little motivation and little innovation. This situation opened the door wide for new technology, new players and new channels.

Take, for instance, the Video Surveillance industry that some still refer to as the CCTV industry. It's somewhat ironic that CCTV stands for *CLOSED* Circuit Television because that's exactly what this market was, *closed*. Look where the industry was pre-IP networking. It was a handful of manufacturers making proprietary multiplexers, switches, mechanical PTZ domes and the special keyboards required to operate them. These products were sold to a select number of dealers, often with territorial exclusivity, so the customers' choices were truly limited. Sure, if you tried, you could get one company's keyboard to control another company's dome but they sure didn't make it easy. If one company had the best keyboard and another company had the best dome, too bad! The end-users often had to choose all or nothing.

Imagine if a Toyota was powered only by “Toyota gas,” or a Ford lubricated only with “Fordoil”! Customers would demand and eventually find something different! End users became desperate for alternatives and the freedom to choose the “best-in-class.” But making products open architecture meant that security manufacturers and dealers risked losing a portion of the sale to a superior competitive product and this wouldn’t do—they wanted it all. These business practices, and the attitudes behind them, created tremendous opportunity for new technologies and the IP video companies stepped right on in.

IP Video Leads the Charge

While IP video and network cameras have been around since the late 1990s, the technology really started to take off in 2004, with IP video capturing a substantial piece of the Surveillance Market (note I didn’t say CCTV) in 2005. IP video companies have been growing at 10 times the rate of CCTV companies because these companies offer significant technological advantages such as higher resolution. In addition, the consistent drop in the price for storage and bandwidth means IP video now offers a significant cost advantage over CCTV systems and that cost advantage will only continue to increase.

The broad acceptance of these new IP products is affecting the market at every level. Probably the most significant impact of IP Video is at the end-user level. Traditionally in a closed-architecture CCTV system the system was proprietary, so end-users were forced to pick a system manufacturer with whom to work. Then, they would select a camera but since CCTV cameras are limited to PAL/NTSC resolution, they really didn’t have a lot of choice. With IP video, the choices are virtually unlimited. You can choose from low-resolution, low-cost 640x480 network cameras up to high-definition, and even IQeye[™] resolution multi-megapixel cameras. Open architecture systems and a wide array of IP camera choices have completely change the buying process.

End users now select the *camera* first to get the appropriate coverage and image detail, *then* they decide how they want to record it and, since it’s all TCP/IP, the products and systems all work together seamlessly. Also, because network cameras use Network Video Recording (NVR) software which can usually be purchased on a camera-by-camera license basis, the end-users now purchase only the equipment they need in the beginning, as opposed to buying equipment they eventually grow into or possibly not at all. In CCTV systems if you need 25 cameras, you would likely have to buy a 32 camera DVR up front even though you don’t need the extra seven cameras. With IP Video you can add cameras and NVR licenses as needed. Also, users no longer have to make a huge payment up front for proprietary DVRs. In most cases, they can start off using one of their existing servers for storage. Then, as more storage is required, simply add more storage to existing servers or add another server or network storage. The longer you wait, the cheaper it gets!

Power to the End User

Another major impact of the rise of IP video, some may argue - the most significant impact, is the growth in the number of self-installing, self maintaining end-users. The components of an IP video system are network cameras, NVR software, commodity network switches/routers and commodity network storage/servers. The network cameras and NVRs are intuitive for people with networking experience so many end-users who maintain their networks in house are also realizing they have all the expertise required to install and maintain this equipment on their own. Self-installing end-users will often insist on buying directly from manufacturers which creates a dilemma for the manufacturers: do they sell directly to the end-users and challenge the channel partner relationships or do they try to direct the business through a distributor or dealer and risk losing the business because the price gets marked up too much? This will undoubtedly continue to be one of the most significant issues in the industry over the next few years. It seems the IT distributors have already recognized this growing trend and routinely sell directly to end-users. The question then becomes, what happens to the security dealer?

For the security dealer, the biggest trend is going to be the shift to more value-added services and less dependence on equipment sales for profit. The IT dealers have already recognized this. Computer and Network manufacturers originally sold only through distribution or dealers but have been selling direct to end-users for years now. Many IT dealers didn't survive this change, the ones that did, did so by restructuring their business so they were less dependent on profits from marking up manufacturer's equipment and focused on offering both improved and new services to their customers. As a result of this focus, the variety and quality of the services available to the end-user increased while their hardware costs decreased.

Changes for Camera and DVR Makers

For the video surveillance manufacturers, we'll see a shift in two areas. First, with the cameras. As resolutions of network cameras increase in the multi-megapixel range, you will begin to see the end of mechanical pan/tilt/zoom (PTZ) and dome cameras. Mechanical PTZ and dome cameras offer great optical zoom capabilities because of their lenses but their Achilles heel is that they are only looking in one direction at a time so you can only record what the camera is zoomed in on. This requires a full time guard controlling the cameras and even then, the guard can only look at one thing at a time. Multiple fixed cameras in place of mechanical devices guarantee constant coverage and free security personnel to do other, more productive activities. However, with limited CCTV resolution, the number of cameras needed to capture the necessary detail results in a higher cost than the PTZ (not counting the guard's salary).

Now, with higher resolution network cameras, a single multi-megapixel camera can be used in place of multiple fixed CCTV cameras or in place of a mechanical CCTV PTZ camera and still provide the ability to record a wide field-of-view and identify people after the fact. For that reason, by 2010 most surveillance cameras will be at least HDTV

resolution and mechanical PTZ cameras will be on the shelf gathering dust next to the slide rules.

The next shift will be with the CCTV DVR manufacturers. DVRs are basically PCs with video capture cards and NVR software. IP network cameras are fast replacing yesterday's CCTV cameras and, according to most industry experts, are expected to outsell them sometime within the next three years. With an increasing number of new installations going strictly with network cameras, the need for analog video capture cards will rapidly disappear. At that point the DVR manufacturers will simply have a PC with their NVR software and the PC is commodity so they will focus on improving their NVR software. This refocusing of resources on NVR software will inevitably will lead to more competition in the NVR marketing which will lead to better performance, features and cost.

In the end, you will see the same changes take place in the security industry that have already taken place in the IT Networking industry. Security Manufacturers will become more end-user centric which will lead to products that offer more benefits, are more intuitive and less expensive. Security Dealers will spend fewer resources focusing on learning how to support manufacturers' equipment and spend more resources on adding value to their customers with new services. These improvements in costs and services will enable more people to improve their security and ultimately, make things safer.