



IP Surveillance 101 for Loss Prevention Professionals

By Hedgie Bartol, Milestone Systems, summer 2008

When Milestone held a seminar earlier this year, some very well connected loss prevention professionals attended and provided feedback on our approach to the retail market. We were not very far into the seminar series when one of them said, "I still don't get what it is you do." It was then that I realized that the migration to IP-based surveillance was not as clear to many LP folks as may be to those bringing it to market. So, this article will hopefully help provide a basic understanding of IP surveillance.

In a nutshell, video surveillance is a matter of capturing and recording an image. In today's Digital Video Recorder (DVR) technology, you basically have your software and storage in a box. The cameras connect via coaxial cables that are run all the way from the camera to the DVR. In the case of IP surveillance, your cameras run to a common computer storage device (Dell, HP, Intransa, etc.) via CAT-5 cables that do not necessarily have to run all the way from each camera individually, thus saving installation costs. With open platform IP surveillance, you are able to pick not only from a mix of cameras, but also your storage device and the software to manage it, giving you complete control and flexibility over your surveillance system. But that can create a number of new challenges...

Freedom of Choice – the old way vs. the new way

You see, today's retailers have a choice when it comes to surveillance technology. But how do you know which choice is the right choice? Cost, scalability, future-proofing, bandwidth, adaptability...each of these factors weighs heavily in making that decision. Well, let's look a little deeper into these technologies.

On the one hand, as I've already mentioned, you have "The Old Way" with analog camera-based technology – closed circuit cameras hardwired to DVRs, both of which must be hooked to a power source as well as to one another. This sort of system is simple, but it is usually proprietary in nature (one vendor only), limited in scalability and functionality, often quite costly, and most importantly, it does not allow for the easy adoption of new technologies.

On the other hand, you've got "The New Way" with IP-based surveillance technology – networked cameras providing high-quality video, the ability to take advantage of other technology (such as analytics), greatly reduced installation costs (the camera can be powered by the same CAT 5 cable that carries the video feed, so no need for both power and video cables). Likewise, the ability to send video feed to a proprietary DVR unit **or** to send the feed to a common off-the-shelf server gives you more options that your IT department will thank you for!

With IP-based surveillance technology, the retailer is free of the stone walls put up by proprietary software and hardware – effectively unbundling your surveillance system and allowing many more choices and cost savings.

Video management software at the core of the solution

One of the most important of those new choices is which software you select. Your software drives the entire IP-based surveillance system, and while it may seem to be a small cog in a big machine, it is perhaps the single most critical piece of the system. The software is the foundation for your entire system, and with enough forethought, the software you choose today could serve you well enough that you will never have to buy another one again.



Criteria for your careful consideration when selecting new surveillance software should include:

- **Open Platform:** Does the software work with your existing cameras and with any other company's video storage solutions?
- **Eye to the Future:** Is your software developed by a leader in the market, or is it simply an add-on from a hardware manufacturer?
- **Partners:** Is the software integrated into solutions from other providers, such as access control, analytics, etc.?

IP-based surveillance has other advantages, such as a lower total cost of ownership; the ability to use best-of-breed hardware and software integrations; the ability to pick the exact right mix of hardware and software for each application and environment; better video quality, scalability, functionality; and the ability to grow and adapt for the future – not only in size, but to encompass new solutions.

What about the disadvantages of IP-based surveillance? The only disadvantage is that inherent in any technology – analog, digital, IP-based, etc. – nobody can say what the future may hold in the way of technology and other solutions. As a result, your best choice today is a solution that is open-source and open-ended – able to adapt and change with the new world.

What about bandwidth? Some may be nervous about the idea of “going IP,” especially when it comes to bandwidth. Sure, pulling video over a network does take up bandwidth, but there are many ways to address this issue. First of all, just because you are going IP does not mean that all of a sudden you are forced to send every single video feed to a single server. Though you might choose to do that, you could also choose a configuration that would look very similar to a DVR setup, with your initial video being stored locally at each location, and archives stored somewhere else. And, with the right software, you are able to “throttle” your archiving and trickle the video back across the network, sending 8 hours of video over the course of 12 hours, or something similar. As for remote viewing, you have fewer bandwidth issues than you would with an analog system, and by using your software, you can adjust the settings to be bandwidth-friendly or limit the number of concurrent users.

Won't IP-based surveillance be more expensive than the old-fashioned way? Cost is a concern for many. In reality, the total cost of ownership is much less than that of a traditional surveillance system. When you take into account the cost of installation, storage, and hardware, along with the fact that you are able to simply replace any individual components that may fail, without replacing the whole system...well, you really are looking at a much more cost-effective solution by going IP. Still not sure about cost? Ask your provider to give you two quotes when considering a new system – one for analog and one for IP, bearing in mind that with the IP approach you will be able to get exactly what you need for today as well as scalability into the future.

What about storage space? Won't all that high-quality video take up more space than the old, grainy footage? Size isn't a problem. With the right software, it's a very simple process to adjust the image compression and resolution to get to an acceptable image for LP use, while still maintaining an acceptable image size for IT to store.

What about transitioning from analog to IP? Isn't that a huge mess? The problem has been that many providers suggest throwing away your entire existing system and changing it all to IP in one fell swoop. That simply doesn't make sense in the retail



market. Retailers have made a significant investment in their existing systems, and it is not efficient to throw away everything they have.

Instead, the migration path to IP should follow more of a replace-as-you-go model. First of all, instead of investing in more expensive, proprietary, and low-performance analog solutions at your new stores and remodels, take the opportunity to begin moving into the IP space. If you begin with the right foundation, you not only begin to take those store operations up a level in terms of profitability, but you also can integrate that software (if it is open) into your DVRs and start getting everything on one platform, or user interface. Then, as your DVRs reach “end of life,” instead of replacing them with another DVR, you can turn your analog cameras into IP cameras with encoders, running them to a common off-the-shelf server. When the cameras reach the end of their lives, you would replace them with IP cameras.

IP-based surveillance allows you to replace only what isn't working, not the entire system. As a result, the process of transitioning from analog to IP isn't something set in stone. The changeover could be done almost immediately, or it could happen slowly over time. Realistically, it would take a few years, depending on the age and dependability of your current systems.

Open Platform future-proofs your surveillance

The most important thing to remember about IP-based surveillance technology is the availability of open source software and solutions. If there is one key issue retailers should consider when evaluating IP video technology for their stores, it is open platform. Too many retailers find themselves locked in a box with their existing, proprietary systems. They would like to adopt new technology or solutions but are unable to do so, due to the proprietary nature of their existing system. There are many companies out there that began their migration to DVRs with the best technology available at the time. Then, when they were 1/3 of the way through the project, a new solution hit the market from a completely different manufacturer, so they switch to that solution. After a couple of years, they find themselves with a range of disparate systems, none of which will talk to each other.

Over the next five years, video surveillance technology will continue to grow and develop. You will be able to do more and more with your surveillance system that will transcend business units and be more than just an LP solution. With video analytics now being coupled with other solutions, such as exception-based reporting (EBR), alarm systems, electronic article surveillance (EAS), etc., the sky really is the limit. SO ask yourself, “Is my provider putting me into a proprietary situation so that I will never leave them, or am I putting THEM in a position of having to earn my business every day!?”

According to Eric Fullerton, Chief Sales and Marketing Officer of Milestone Systems, “In the next five years or so, the volume of video traffic running over the Internet will overtake that of voice and data.” Imagine the impact that will have on the direction of surveillance technology!

Milestone's goal is to help our customers and partners grow their business. By taking a firm stand as completely open and manufacturer-agnostic, we will be able to follow the trends and continue to partner with best-of-breed offerings, both in the manufacturer space and with other software providers. And we will continue to develop our solutions to fit exactly what the retailer needs.



HEDGIE BARTOL has served the retail loss prevention industry for more than a decade, bringing solutions from access control and identity theft to fraud prevention and systems integration. Before joining Milestone Systems in January 2008, he was the Business Development Manager for the Retail Solutions Group at Diebold. A graduate of Catawba College, Bartol is also a member of the American Society for Industrial Security (ASIS) Retail Council and active in various other industry organizations.