Should I Use IP Cameras?

Re-Assessing IP Camera's Advantages

By John Honovich, May 14, 2008 (jhonovich@ipvideomarket.info)

IP cameras have won acceptance in the hearts and minds of the security industry. Yet most cameras are still analog and most video management systems are still DVRs.

 When and how do we make the transition? Is it a fast transition? When does a security manager, manufacturer or integrator know when to make the move?

Though the big picture seems settled, with much of the actual transition still come to, how to execute and navigate the transition becomes a critical business decision.

Key Strategic Points

To help make this transition, here are 3 key strategic points that shape the timing and execution of transition tactics.

- The larger the facility being secured, the more valuable an immediate transition to IP cameras.
- The more megapixel cameras mature, the more valuable an immediate transition to IP cameras.
- The more DVRs continue to catch up to NVRs, the less valuable an immediate transition to IP

This report examines these key strategic points and concludes with specific recommendations for integrators and end-users.

Definition of Advantage

I define an advantage to be the incremental economic value that a technology generates relative to its alternative. On the cost side, I am looking for reductions in installation or operational cost. On the revenue side, I am looking for losses prevented or mitigated. IP cameras need to demonstrate clear financial returns that a normal combination of analog camera plus DVRs can not.

Many aspects of new technology are cooler, more sophisticated or better but do not generate economic value. I discount those aspects strongly as buyers ultimately will not pay significant premiums for them.

While individual buying decisions will vary, over time, markets tend to reward only new technology that delivers specific economic benefits. Competition enforces this as new suppliers provide the same value at lower costs.

Strategic Point #1: The Larger the Facility

The larger the facility being secured, the more valuable an immediate transition to IP cameras. It is not so much how many facilities but the size of each specific facility. Because of the intrinsic limitations of

coaxial cable, when facilities become too large, the costs of system installation increase dramatically. Think of office towers, corporate campuses, military bases. Low cost coaxial cable runs could not solve the problem. Proprietary networks were needed.

The elimination of proprietary networks is the one advantage of IP cameras that dwarfs all others and has been driving IP cameras/encoders. This is where the business case is absolutely rock solid.

For large scale surveillance projects, you can save $1,000 to $4,000 per camera relative to analog long distance transmission systems. If you can eliminate trenching, the cost savings are even more dramatic.

It is no surprise that most of the biggest IP camera systems are among schools, corporate campuses, municipalities and the military. That's not to say that IP cameras are not deployed elsewhere but many if not most of the biggest success stories are in applications where long distances exist between cameras.

Likewise, we should not be surprised that quick serve restaurants, bank branches, small and medium size businesses and other organizations with small footprints are slow in the uptake of IP cameras. Coax works just fine there making the business case much harder to justify.

Strategic Point #2: The more mature megapixel cameras become

Economically speaking, the increase in quality between standard definition IP cameras and analog cameras recorded by a DVR is minimal. The quality of IP cameras is certainly better but it is not so much better that many more crimes can be solved. Without a clear and sizable increase in such drivers, the quality of IP cameras does not drive IP adoption (that does not mean IP won't be adopted but it is more likely IP is adopted because of strategic point #1 and the quality is a nice throw in).

By contrast, megapixel cameras absolutely have the potential to solve more crimes. We are seeing the beginning of this with the use of megapixel cameras in casinos. By being able to show a level of detail impossible with analog cameras, losses are being prevented and mitigated, generating sizable business value to the organization.

However, the business case of megapixel cameras is still weak due to its increases in overall system cost. It is still very unclear when and how those costs and complexities will be overcome, triggering widespread mainstream adoption.

While megapixel has the potential, it is not yet actualized. This will hasten the transition but when and how?

Strategic Point #3: DVRs will continue to catch up to NVRs

One of the most interesting and underappreciated elements in the transition to IP cameras is how DVR manufacturers have responded in this transition. This undoubtedly will continue, making it easier to extend the life of analog cameras.

Here are 5 areas where DVRs have traditionally been faulted in comparison to NVRs and how DVRs have narrowed the gap:

- **IP camera support**: Almost all mainstream DVRs have become hybrid systems supporting a wide variety of IP cameras. This trend will continue as the technical implementation is not very hard and customers clearly want the flexibility. While hybrid DVRs will not support as many brands of cameras as NVRs, the range of support is likely to be good enough for most users. And given, the deep installed base, hybrid DVRs will often have an economic advantage over system that require IP cameras or encoders.
- **Remote Access**: While early DVRs might have been limited in remote access, today all DVRs offer a variety of ways and functions for remote access including thick client and web access. From a customer's perspective, the difference between DVRs and NVRs will rarely be noticeable.
- **Scalability**: While NVRs had the early head start here, it is common for today's DVRs to be able to manage systems of thousands of cameras. DVRs offer health monitoring, centralized administration, virtual matrixes, etc., etc. This is not a claim that DVRs are better or are somehow going to knock NVRs out. Simply that DVRs have addressed the key deficiencies making it hard for IP to win solely on this point.
- **Integrating Applications**: DVRs have always been strong at integrating with access control, intrusion detection, POS, ATMs, etc. I find claims by either side on this point to be more marketing hype than actual differentiation. I suspect most customers will see that either type supports their needs.
- **Analytics**: With the rise of hybrid systems and the continued increase in CPU speeds, DVRs are becoming powerful analytic platforms. The fact that DVRs are hybrid systems now means they can support the same OV or IoImage cameras that an NVR can. The fact that lots of extra CPU speed can be obtained in DVRs for minimal cost, means that DVRs are going to be running analytics inside their systems. With dual and quad core becoming common place, the economics of performing analytics in DVRs are becoming very competitive relative to smart cameras (see http://ipvideomarket.info/reviews/show/9).

So many of the core IP camera advantages have been co-opted by DVRs. Though it certainly will not stop IP cameras, this is going to make further inroads harder and reinforce the value of existing and replacement analog cameras.

Recommendations

Let's start with general recommendations that apply across the industry and then examine specifically end-users and integrators.

General Recommendation #1: The growth is in large facilities
If you are looking to grow revenue or grow responsibilities in new areas, the growth area will certain be large facilities. Why? IP cameras change the business model of deploying cameras in large facilities and areas. Where once it was too expensive to deploy, IP is enabling new use of cameras.

We will certainly see this continue in schools, corporate campuses, municipalities, outdoor facilities, anywhere that long distances separate cameras from recording/monitoring stations.

General Recommendation #2: The absolute decline in analog cameras and DVRs will be slow

Because DVRs are moving up and analog cameras will remain a good value for smaller facilities, expect the decline in the use of analog cameras and DVRs to be slow. In other words, it is very unlikely that they we will see a mass exodus from these system in the next 5 years. This should change as the price competitiveness of IP cameras increases and as NVR solutions become simpler to setup and manage. However, this is a process that will evolve over a number of years.

General Recommendation #3: Pay Close Attention to Megapixel Cameras
Megapixel cameras are the wild card here. If and when the total cost of ownership (camera, bandwidth, storage) of megapixel cameras gets close to analog cameras, the financial incentive to switch to IP could become very strong. Right now, it is hard to tell when and how that will be happening. However, if you want to benefit from this transition, focus your energies on understanding and anticipating this emergence.

Security Manager Recommendations

For the 10 or 20% of you that are already all IP, continue course.

For the rest of you, your decisions should be driven by two factors:

1. Size of the facilities you manage: If they are small like quick serve restaurants or boutique retailers, take your time with IP, no rush. If the facilities are large, you want to move aggressively to IP.
2. The state of your DVR: Check the advances your DVR supplier is making. If they are making advances like going hybrid, supporting analytics, providing central management, etc., you will likely be in good shape for years to come. If they are not supporting this, you may be missing out on this generation's wave of operational savings and loss reduction. In this case, start investigating migration to a new IP based system.

Integrator Recommendations

For a traditional electronic security systems integrator, handling the transition to IP is a key challenge.

On the plus side, you should be able to maintain and extend your core business by slowly adding in IP. New features on your current DVR lines should support this. Ensuring that you retain your key technicians with IT know-how should be satisfactory.

On the downside, it will be hard to grow double digit revenues because the easy growth in deploying new systems is for large facilities. If you want to grow aggressively, targeting these applications with an IP camera line and an NVR will be critical. You likely already have 1 or 2 solid IT technicians and with additional training and a few more hires should be well poised to expand.

Further Discussion

If you would like to discuss this further, please contact John Honovich at jhonovich@ipvideomarket.info.