



***The Economics of Monitored Video  
in the Commercial Market***

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## **Introduction**

Growing a profitable, sustainable and healthy business is the number one objective of any security provider. In today's uncertain economic climate, this objective is paramount. IT and security are converging, products are evolving, technology is integrating and budgets are starting to tighten. In addition, the security industry continues to consolidate with numerous large companies buying up market share and investing heavily in growth.

So how do security providers continue to outpace this headwind while protecting a respectable margin? They do this by continuing to offer value-added security products and services. Today, customers already expect individual solutions such as intrusion, access control, video surveillance and fire monitoring. Now they are starting to seek more advanced, integrated solutions. One area that is currently getting a lot of attention is monitored video.

The video surveillance market as a whole – including hardware, professional services and infrastructure – has some pretty compelling growth statistics. It is currently estimated at \$13.5B and will reach \$46B by 2013.<sup>1</sup> At the same time, the remote monitoring industry is on the rise, largely fueled by video monitoring, which is growing at nearly 20% per year and will continue at this pace over the next 5 years.<sup>2</sup> And as customers make the transition from analog to digital, the need for intelligent video solutions is moving to center stage.

Alarm companies are beginning to respond; most companies either currently provide or expect to provide video solutions. By offering higher value solutions like monitored video and implementing them correctly, providers will be better able to differentiate themselves, increase RMR, increase growth and lower attrition – all of which directly impact a company's market valuation. Given the current economic climate, it is more critical than ever to gain new customers and increase retention.

### **Why Monitored Video?**

What is more central to an alarm company's value proposition than protecting people and assets? One of the most compelling concepts to a customer is the simple notion that the technology they invest in might actually be able to catch a criminal and potentially stop a crime from occurring, rather than simply recording the event. How satisfying is it to a security provider when the thief actually gets apprehended? But the only chance a provider has to apprehend a criminal is to install proactive and not reactive solutions. A video surveillance system is a valuable tool, but it is also a reactive solution. In a commercial environment, a reactive solution like a DVR will provide great video footage that you can watch on Monday morning of the vandalism that occurred on the previous Saturday night – painful for all to watch.

So how do you make a solution proactive? Somebody or something needs to watch the video and alert the police in "real time" and as the crime is underway. So let's start with the concept of using "somebody" to watch the cameras. Critical incidents will invariably be missed. Studies have shown that humans can effectively watch 9-12 cameras for only 15 minutes.<sup>3</sup>

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*If an alarm is unable to be verified, the dispatch priority is typically lowered...it can delay the police response time to over 30 minutes.*

*Some companies have reported an average RMR for monitored video of \$50 – 80 per 4 cameras.*

Moreover, continuous monitoring requires a major investment in resources, and is neither scalable nor profitable with current labor costs. On the other hand, a computer never blinks, sleeps, takes a break or becomes distracted. It is always “watching” and has the speed to notify someone in time to react accordingly. But computers are not perfect and still need to be verified by humans to make a definitive assessment. Most providers should agree that using a computer to continuously monitor the video camera is the best method. Video analytics is the software that enables a computer to perform this task.

Another compelling reason for monitored video is the growing need for a verified solution. At the same time verified response ordinances are popping up in various cities around the country, false alarm fines are starting to skyrocket. One of the best ways to address this issue is to verify a crime electronically. If an alarm is unable to be verified, the dispatch priority is typically lowered. In fact, Department Of Justice studies have shown that unverified alarms can extend police response time to over 30 minutes.

Monitored video technology obviously adds marginal cost to an already expensive video surveillance system. However, when customers factor in the savings over higher false alarm fines, it greatly improves the ROI in favor of a more featured system. Additional provider benefits include:

- **RMR Growth:** The video surveillance market has quickly become commoditized, and adding monitored video to it can protect existing RMR. In fact, some providers have reported an average RMR for monitored video of \$50 – \$80 per 4 cameras.
- **Margin Protection:** Customers often incorrectly compare cameras and DVR technology with analytics-based video monitoring solutions. As discussed, this is not a true “apples to apples” comparison since one is passive (and hence rapidly being commoditized) and the other is proactive. While your costs may increase slightly, solutions are available that allow you to maintain a 30%+ margin and still fall within market rates.
- **Decreased Attrition:** Customers perceive your company as “high tech” and are therefore more apt to keep their service. Given IT departments’ increased level of involvement in security decisions, this impression can indeed make an impact. In contrast, if you don’t offer monitored video services and someone else does, then you have in essence invited the competition in to your account and you risk losing the customer altogether.

### ***Taking the Plunge***

As you begin to look at monitored video, there are several questions that you should ask as part of your information-gathering process. The answers to these questions will help you cut through the marketing hype and get to the “good, bad and the ugly” of the various industry solutions.

- Does the system require IP or analog cameras? If IP, would it require that the customer change out their existing investment in analog cameras?

- What is the impact on bandwidth? Would a solution require you or your customers to replace the existing network or even build a second one? What is the impact of transmitting a video clip over the network versus streaming live video from multiple cameras?
- What is the impact to the security of your customer's IT network and what security risks are you asking them to take?
- Is the solution simple to install and set up? What is the skill level of your installation team? How heavily do you rely on contractors? Do you feel that they can double as "network engineers"? How much training is needed for field technicians?
- Is it affordable enough for small/mid-size organizations? How much hardware will you have to buy? What is the footprint of the solution and relevant space/power requirements?
- What additional functionality does the solution provide? Are there other departments that could share the cost burden?

### ***Current Strategies***

There are a number of strategies in use for deploying a monitored video solution. One such strategy is to deploy a DVR on site and then offer remote access to recorded video. The system can also be configured to be activated by a motion detector and transmit a video clip back to the monitoring center. However, this approach often results in excessive false alarms and loss of productivity from the monitoring center staff.

Another approach is to install IP cameras on site and then modify network settings to provide remote access to the live video. The video can be stored on a Network Video Recorder (NVR) and accessed by monitoring center personnel. This solution is very labor intensive and generally not scalable. It is very difficult to offer profitably.

Ideally, the best solution is to use cameras on site filtered by video analytics to alert the monitoring center when something materially changes on the video. Any solution should filter the nuisance video and send only what you need to see, thereby reducing the burden on monitoring center staff. So then the next question becomes: where does the video analytics software live? It can live at either the customer site or offsite. The limitation of running the analytics offsite is that all video traffic must be transmitted over the customer's network for review. This can cause an enormous drain on bandwidth, which is cost prohibitive and will surely be discouraged by the IT staff. The alternative is to filter all of the video at the customer site and only transmit what has been verified. This approach minimizes bandwidth drain and for obvious reasons is the optimal solution.

Now that we agree that filtering video using analytics at the customer premise is the optimal solution, we are still faced with the question of the best method to deploy the onsite video analytics. Video analytics capability is typically found in one of 3 places - the camera, a DVR or an encoder. We will explore the merits of each below.

For the analytics to live in the camera, an IP camera is most often required. However, a majority of commercial customers still use analog cameras due to their lower cost, greater functionality and reliability. Many also want to continue to leverage the investment they have already made in their existing analog video surveillance system.

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Lastly, they may not want the incremental burden on their network that an IP solution requires and may not have extra bandwidth to spare.

DVRs are rapidly evolving and typically are sold as either a PC-based unit or a console-based unit. Many alarm providers prefer console-based units due to their simplicity, security and ease of setup and maintenance. So the market for console-based DVRs continues to flourish. How does a console-based unit work with video analytics? For starters, very few console-based DVR units come with video analytics beyond basic motion detection. (Basic motion detection is not a form of video analytics and, as a result, suffers from a high level of false alarms.) Also, many monitoring software solutions are not able to receive the analytics' output, greatly limiting integration possibilities. Lastly, a DVR with video analytics greatly increases the price for a video solution.

Ideally the encoder offers the easiest and most flexible approach to working with multiple types of cameras configurations. It also offers simplicity of installation and ease of ongoing support. An encoder can truly be "plug and play" and if it fails, can easily be replaced. It is currently the most compelling technology to house video analytics locally, filter out nuisance video and push results to monitoring software in an integrated way.

### ***Common Pitfalls of Solution Alternatives***

There are several "lessons learned" that one should consider when implementing a monitored video solution. Properly understanding these issues on the front end of the process can minimize obstacles and avoid unnecessary headaches.

*Beware of mixing multiple vendors' technologies* – Many providers in this space do not offer an end-to-end solution, leaving it to the security provider to connect all of the pieces. However, when a problem arises it quickly leads to finger pointing and the security provider is caught in the middle. The incompatibility issues yield disappointing accuracy and reliability compared to original expectations. Worst of all, the one that tends to feel the greatest pain is your customer.

*Remote management tools are critical* – Expect the unexpected. Every operator knows that problems will occur, so select a solution that allows you to securely fix most problems remotely. This will minimize prolonged "truck rolls" or even heavy tuning to resolve technical problems that can quickly compound from hours to days. You should also assess the technical acumen of your field technicians. Most alarm companies are challenged with finding and retaining tech-savvy field technicians. If that is the case with your organization, then remote management is paramount.

*Don't believe the hype* – Nearly everything you read today discusses the migration from analog to digital. You would think that analog cameras are nearly a relic, when in fact more than 80 % of all new camera purchases are analog.<sup>4</sup> Many customers are simply not ready or willing to invest in IP technology when their analog systems are still working perfectly. Since a large majority of customers still use analog (NTSC/PAL) cameras, it is easier and more cost effective to implement a solution that can interface with both analog and IP cameras. Additionally, reasonably priced NTSC cameras are available for almost any environmental condition. If you require cameras for indoor or outdoor, low light or no light, vandal resistant or bullet proof situations,

*Remote management tools minimize prolonged "truck rolls" or even heavy tuning where resolving technical problems can quickly go from hours to days.*

an appropriate affordable camera solution likely already exists. This allows you to get the maximum benefit from a solution that fits well into commercial customers in the small, medium and large markets.

## ***Recommended Solutions – Key Considerations***

As we have explored, there are several key factors to consider when selecting a solution. But what are the attributes of the perfect solution?

The perfect solution offers:

- Ability to use analog cameras
- Minimal bandwidth consumption
- Maximum security
- Ease of installation and deployment
- Simplicity in ongoing support
- Minimal operational disruption
- Affordability
- Versatility
- Incremental revenue
- End-to-end solution

*IP camera implementations can also often have an “iceberg effect” where a litany of problems may loom beneath the surface.*

*Ability to use analog cameras* – If you go into most businesses today, you will find that most still rely heavily on analog cameras. You will also be hard pressed to find an IT person who admits to extra bandwidth capacity. The simple fact is that analog cameras are cheaper, proven and more diverse than digital cameras. IP implementations can also often have an “iceberg effect” where a litany of problems may loom beneath the surface. Issues related to installation challenges, bandwidth drain, network upgrades or even setting up a separate network can all potentially emerge during implementation. The ideal solution will combine the best of both worlds. Seek a solution that will work with the customer’s existing analog video network but transmits using IP protocols.

*Minimal bandwidth consumption* - An IP connection will ensure better video quality than compressed video transmitted over a phone line. In addition, the clip will arrive more quickly, allowing your monitoring center to make decisions faster. This approach maximizes quality and minimizes bandwidth consumption. It makes the entire solution more manageable and less costly, giving the customer a simple, affordable solution that works.

*Maximum security* - Security is one of the IT department’s biggest concerns, and it is problematic that many IP-based security solutions are not secure. They use static IP addresses that can leave the door open for a hacker to tunnel back in and potentially compromise a customer’s network. Ideally you want a solution that does not require a static IP address, and that initiates an outbound secure SSL connection and transmits all data encrypted and secure.

*Ease of installation and deployment* - You want a solution that is easy to install and deploy. It should be simple and offer “plug and play” installation at the site level. It is preferable to find a solution where the analytics can be deployed in either the camera

or in an encoder. An encoder is preferable because it can be easily “bolted on” to an existing system or added to a new proposal. Regardless, simplicity makes it easier to train your sales staff, field service and subcontractors.

*Simplicity in ongoing support* - All systems need some level of configuration, but very few provide the tools to set up and configure the solution remotely. What happens when something goes wrong? Who will troubleshoot customer issues and how much travel will be required? An ideal solution needs to have the ability to log in remotely and make adjustments as if you had a technician on site. There are tremendous benefits to a centralized expert able to handle advanced functions from the monitoring center. This type of support is the most cost effective, scalable and the easiest to control.

*Minimal operational disruption* - In the end, monitoring center operations should not be disrupted. They are the life blood of any alarm provider. Seek a solution that requires little or no re-training, where your existing workflow and current procedures can continue to be used.

*Affordability* – Many of the solutions on the market that provide analytics are simply not affordable. Some cost \$1,000 - \$2,000 per camera. Once you apply a reasonable mark-up, it is very difficult to keep the solution within the customer’s budget. However, some solutions use less processing power, enabling them to run more efficiently at lower price points. Look for solutions that cost closer to \$500 per camera to allow you to maintain your margins.

*Versatility* - Video analytics are the “brains” of the monitored video system. They tell the camera when an event is real. However, this technology can also benefit business areas in addition to security by improving operational efficiency. Solutions like “people counting” would greatly interest a company’s marketing department because the system could count people during the day, thereby providing business intelligence, and then protect the property at night. This added functionality will help “future proof” your installation, offer additional value-added services for marketing and provide operational efficiency with solutions like counting, queue management and customer statistics.

*Incremental revenue* – At the end of the day, a security provider makes the most money when it can cost effectively increase its RMR, and RMR from video monitoring can be sizable. Some companies currently charge between \$50 and \$80 per 4 cameras for video verification in a commercial installation. Increasing RMR directly impacts profitability and subsequently a company’s valuation in the marketplace.

*End-to-end solution* - Many providers require the security provider to connect all of the dots to have an end-to-end solution. It is important to find a solution that has been built to integrate into the back office central station software. Products are changing constantly either in terms of “version to version” variations, market leadership or what is being adopted by your central station. Having the ability to communicate to popular monitoring platforms via XML is critical.

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## **Conclusion**

Moving to video monitoring is a big step but one that most alarm companies will either enter willingly or be competitively forced into by their customers. By not offering it, you allow competitors to fill that need and over time find that you have to fight to keep the business that you already have.

There are a lot of solutions on the market and it can be confusing. Inside the various solutions live many obstacles and pitfalls. It is very important to do your homework and truly understand what is required of your company and what you are getting yourself into.

When you are able to find a solution that 1) allows for usage of analog cameras; 2) consumes minimal bandwidth; 3) provides maximum security; 4) is easy to install and deploy as well as simple to support on an ongoing basis; 5) minimally disrupts operations; 6) is affordable and versatile; 7) provides incremental revenue; and 8) is available in an end-to-end solution – you have a solid platform that can substantially impact your business. The right solution can reduce attrition, increase customer satisfaction, improve profitability, grow margins, increase RMR and boost the overall value of your business.

Video monitoring is one of the fastest growing markets in the security space, increasing at 20% per year. What other area of your business is growing at that rate? Can you afford not to at least investigate the possibilities? Will you enter this market on your own terms or will the terms be dictated by your competitors? The ideal solution is out there and can make an immediate impact to your 2009 plan. Take the time and check it out.

## **About the Authors**

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<sup>1</sup> IMS Research Press Release, "Remote Monitoring Set for Growth", 15 April 2008.

<sup>2</sup> www.allbusiness.com, "Video Surveillance: A Market Poised for \$46 Billion of Explosive Growth, Says ABI Research", 18 March 2008.

<sup>3</sup> ASIS CPP Exam.

<sup>4</sup> IMS Research, *The World Market for CCTV & Video Surveillance Equipment*, December 2006.