

The OzVision Secure NetworkTM

**Transforming IP-Based Video Solutions for
Security Service Providers**

Executive Summary

The security systems and services industry has enjoyed steady revenue growth for over a decade. The video surveillance equipment market alone, \$5.5B in 2004, is projected to grow at 15% CAGR through 2008.¹ But these figures belie serious challenges facing alarm dealers, integrators, and service providers – specifically surrounding the effective and profitable implementation of video monitoring services.

To a large degree, these challenges are driven by the emergence of Internet-based information technology, its convergence with security systems, and the growing end-user expectations of greater access to alarm event images. Concurrently, alarm verification regulations, and penalties, continue to grow, with 158 municipalities and states either considering or enacting verification legislation.² Verification is here to stay and will become ubiquitous. It is in fact the next great opportunity for technology providers – to solve the problem of providing a verified alarm, instantaneously, and in a cost effective manner to the central station

Video monitoring is perhaps the most effective and well-positioned technology to provide genuine alarm verification. But IP-based video monitoring offers central station service providers more than a solution for verification. A secure, video monitoring service presents service providers with a significant recurring revenue opportunity, as well as a new way to interact and connect with their clients.

Based on years of experience with monitored security, OzVision has developed the first hosted video monitoring network for security service providers. The OzVision Secure Network™ (OSN) is a technology that will transform the business opportunity for security services. OSN provides central station service providers the opportunity to offer branded Internet-based video to their subscribers: viewable from their supported PC, PDA, or even cell phone. Security service providers now have access to an affordable, secure, easy-to-implement video monitoring solution and revenue stream.

¹ “Security Growth Conference”, John E. Mack, III, USBX Advisory Services, March 8-9, 2005.

² “False Alarm Update: Second California City Considers Total Verified Response”, Feb. 28, 2005. http://www.securitysales.com/t_news_print.cfm?nid=2147 In addition, Olympia, WA implemented an alarm ordinance that includes \$60 for each false alarm. Lubbock, TX implemented a \$50 fee after the first three false alarms.

Changing Security Services Landscape

A large and growing component of alarm industry revenue has been CCTV installations, which surpassed burglary installations for the first time in 2005. Significantly, the fastest growing segment within CCTV installations has been remote video monitoring.³ There also has been a dramatic increase in the penetration of IP-based cameras and digital video management systems.

The problem of false alarms, and the economic implications for security service providers, has also continued to grow. Security service providers are under increasing pressure to provide some form of alarm verification. City and municipal law enforcement organizations are looking to better control their costs associated with responding to false alarms; registration and penalty legislation is growing. Video verification is a logical and powerful technological solution to alarm verification. Several municipalities and states have encouraged through legislation, video verification as a requirement for alarm response – and implemented penalties for false alarms.

According to a J.P. Freeman study, 30 percent of security professionals already use IP-based cameras and an additional 45 percent plan to purchase IP-based cameras in the future. In fact, 50 percent of new video surveillance sales today are digital.

2005 U.S. & Worldwide Video and Surveillance Market Report, J.P. Freeman

Customers' expectations surrounding security and premise video monitoring are also changing. Some of this trend is attributable to the wider use of the Internet in general and its broad acceptance as a viable, and valuable, channel of communication. More specifically, customers are far more comfortable with IP video-enabled devices such as PC's, PDA's and cell phones. It doesn't take a great leap of imagination for end-use customers to ask why they cannot view their premises remotely from these devices and have the viewing done via a secure network not subject to tampering or hacking.

These trends present a real opportunity for forward thinking security service vendors. IP-based video, because of its broad adoption and familiarity to end-users, not to mention low infrastructure cost, offers numerous recurring revenue opportunities: video verification, offsite recording, customer initiated access, and more. Beyond addressing video verification challenges and generating recurring monthly revenue (RMR) opportunities, operators enhance service to existing customers (with little infrastructure investment), and attract new customers with omnipresent "broadband" access and other advanced service capabilities.

The OzVision Secure Network (OSN) Solution

Implementing IP-based video services is not without challenges. For example, despite the legislation and penalties, the security industry to date has not seen wholesale adoption of video alarm verification services. This is due in part due to specific technological challenges, and in part due to overall market maturity.

³ Ibid.

The challenges in implementing IP-based video monitoring include the technical know-how, cost of infrastructure, and maintaining appropriate levels of security.

OzVision has been a market-maker, first in secure video over the telephone line-dominated alarm business, first in offering complete integration into central stations and now the first to offer a secure network. OzVision developed the first solution that seamlessly integrated with most alarm panels on premises, and the OzVision CS1000 Video Receiver allowed multiple video streams from the premise to be presented to the operator at the central station. This presentation is enabled because of OzVision's integration with automation partners: ABM, Bold, IBS, MAS, MicroKey, SIMS, SIS, and DICE, among others. OSN leverages this experience, and these business relationships, into the OSN solution.

OSN Advantage - Intelligent Firewall Setup

From the perspective of the service provider, the number one technological barrier to the deployment of IP video solutions is the inexperience with IP infrastructure, specifically – the difficulty with configuring solutions to accommodate different firewalls. Since not every installer can be quickly trained in IP networks or firewall configuration, OzVision focused on simply eliminating this as a barrier. The OSN solution has the intelligence to detect how the firewall is configured, and direct the video signal to the most effective protocol available. These protocols include UDP, TCP, and HTTP. In effect, this provides a plug and play solution for the installer. OzVision has eliminated the need to change the settings on firewalls in 99% of installations.

This automatic “intelligence” also reduces the time required to install video equipment and connect to the central station. The installer has complete control over the job; he does not have to rely on further training, or in larger, networked environments, an IT group to help him or instruct him how to manipulate the settings on a firewall. All this translates into a more cost-effective and successful installation process. After powering up the appropriate premise device from OzVision and connecting it to the router, the camera video becomes available in seconds.

Even if the installer can configure the firewall at the premise site, they do not have control over the firewall where the users PC or IP connected phone may reside. Most installers never think about this half of the connectivity equation. The firewall configuration at the location of the remote user is often a point where the video connection is limited. The OSN solution has the ability to adapt and flow through any firewall restrictions; this includes the premise where the video is originated as well as the user's PC or handheld device.

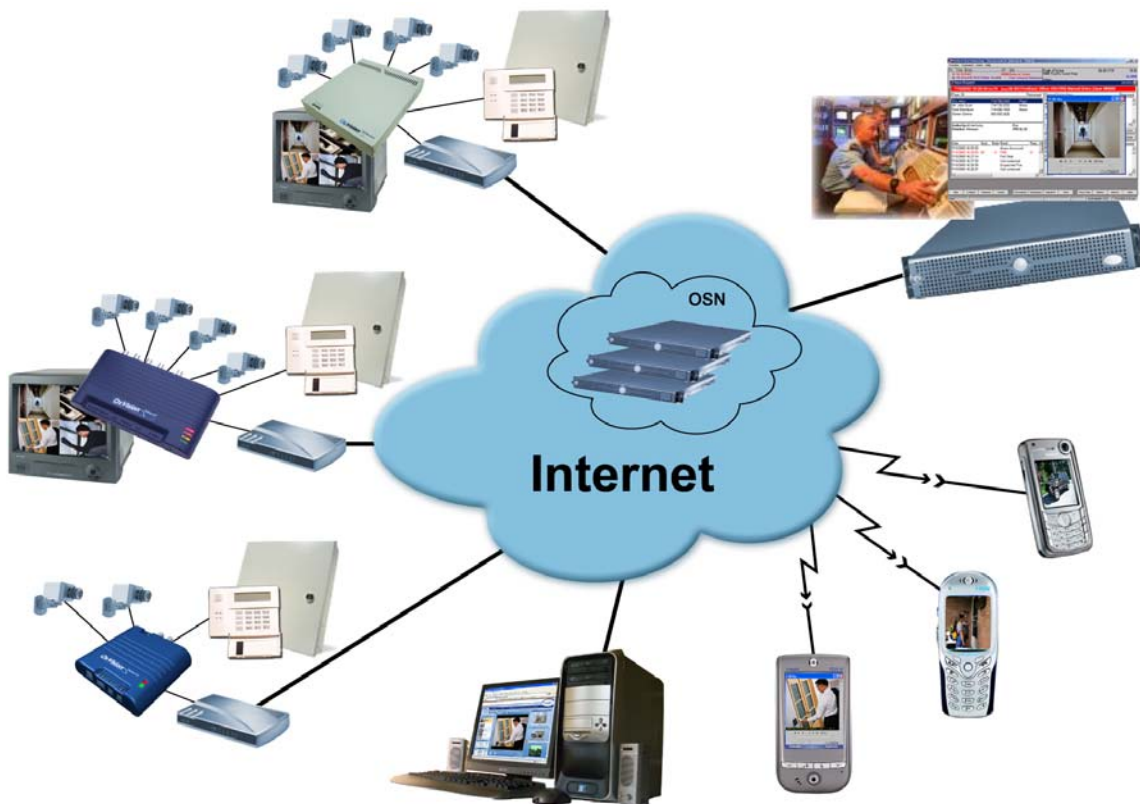
Without the intelligence of OSN the central station will have to deal with a network configuration that is not in their control, train employees in multiple router, firewall, and network configurations – employees who rarely have a computer at the installations, and most likely will result in an unhappy customer. OSN's intelligent firewall setup provides

the easiest IP connectivity solution in the industry, and this translates into lower costs, as well as more opportunity, for central stations operators.

OSN Advantage - Seamless Connectivity and National Coverage

By leveraging the ubiquity of the Internet, OSN enables connectivity to the premise equipment from any IP connection on the planet. The intelligence in the OSN configuration analyzes the best connection method and ensures a reliable and secure end-to-end connection path. In fact, the OSN infrastructure is peered with 5 major network providers ensuring worldwide connectivity.

Figure 1 – OSN IP Infrastructure



The Communication Server (MM) controls a Remote Storage Server (RS), Subscriber Database (SD), and Media Streaming Server (HSP), and communicates with a Web Server (WS) and to ActiveX clients.

By implementing an IP-based network, OSN not only effectively leverages the existing Internet infrastructure, but also the IP-enabled equipment on premise. Many Digital Video Recorder's (DVR's) already advertise IP connectivity, when in fact this feature is

rarely used precisely because of the complexity of connecting to the IP network. Leveraging the Internet eliminates the cost of infrastructure outlays for the service provider, while at the same time provides him expanded video monitoring capabilities.

And, OzVision has made OSN implementation easier at the central station as well. Working through its partnerships with all the major automation software providers, OSN has already been integrated with the top 10 automation providers that cover 90 percent of the alarm install base in the world. In addition, OzVision's experience has made it easy to integrate OSN into any proprietary automation system as well.

OSN Advantage - Security and Encryption

Service providers must protect the integrity of not only the video streams, but user account information and the alarm connections themselves. Without focusing on all the components of the video solution, security is only as good as the weakest link.

The OSN server infrastructure has two levels of protection. The first firewall opens only the ports required to enable connectivity. The User Database is then protected behind a second firewall, on a separate local area network (LAN), which limits access to authorized OzVision personnel only.

In addition, OzVision is hosting its own Domain Name System (DNS) to further limit and control the access to the OSN network. Each user of the OSN system will have a unique login name and password. All user logins will be encrypted, and the passwords will be stored only on the LAN side of the server configuration (behind two firewalls).

The OSN video streams themselves are encrypted using the strongest encryption algorithm available today, the Advance Encryption Algorithm (AES). This technology was introduced as a replacement for 3DES and is accepted as being 10x more powerful than 3DES. It should be noted that 3DES was never broken as an encryption algorithm.

Physically, OzVision has protected the location of the OSN servers and network hub. This location is protected by a 24 hour guard. The facility has multiple power generators for reliable power supply and redundant network connections to protect against a catastrophic failure. As stated above, OSN infrastructure also is peered with 5 major network providers ensuring Internet connectivity.

The network is designed to scale to thousands of users and provide a cost advantage to each central station using OSN. Rather than engineer all of the network components discussed above, OzVision provides them as an essential part of the central station's OSN 'live' video offerings.

Business Benefits and Growth Opportunities

OzVision has leveraged its industry relationships and technological experience to address the challenges of providing secure, reliable IP-enabled video monitoring. The business benefits to security service providers are:

- Effective solution for video verification;
- Low cost of entry for IP-enabled video monitoring (premise, infrastructure, and central station); rather than building it yourself.
- The platform for additional customer services and RMR.

The growth opportunities provided by IP-enabled video are perhaps the most compelling aspect of OSN. The new video capabilities afforded service providers allows them a rapid return on investment, as well as greater customer interaction and satisfaction.

In addition, the Ozline family of premise products currently supports an IP network interface and the OzConnect API. These products still have the same ability to be triggered by the alarm panel, and now, via the OSN network, the central station will receive the video clips for verification.

Video Verification Done

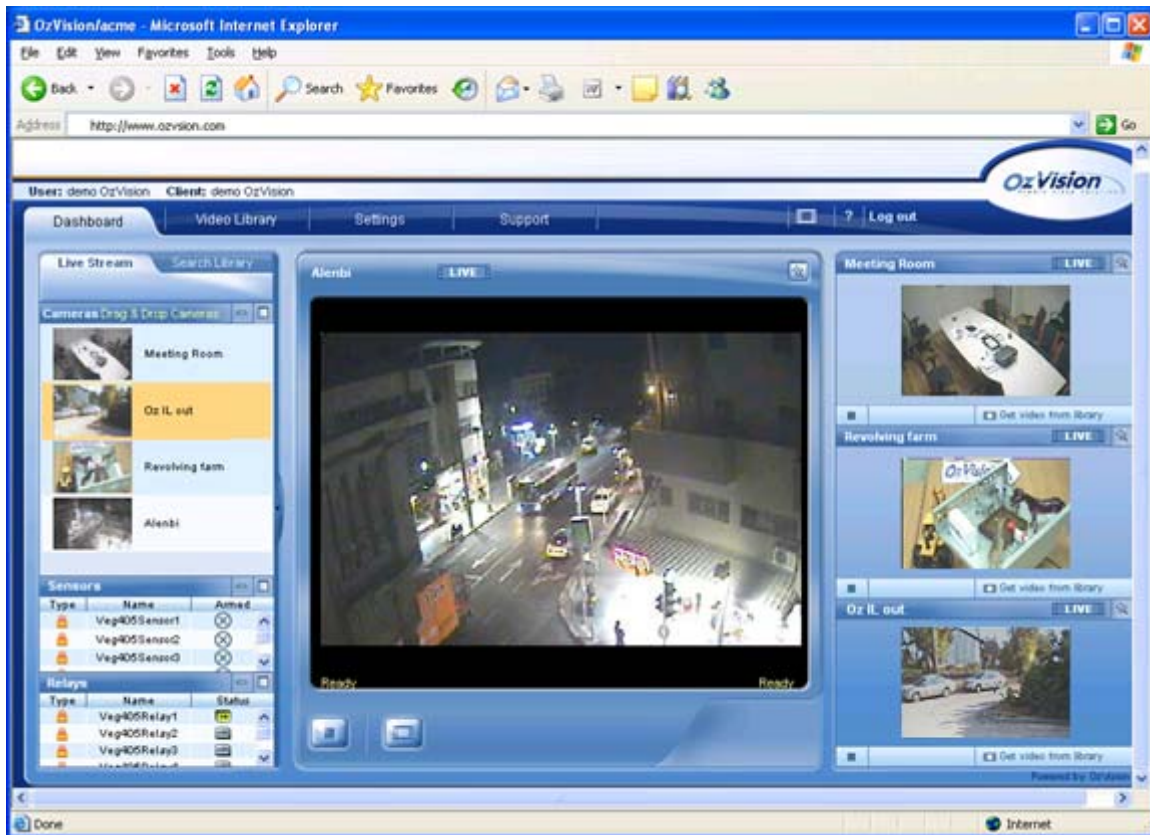
With OSN, central stations can offer more than alarm monitoring and a promise to call the police. Service providers can use the OSN video to verify an alarm, avoiding false alarm penalties and lost productivity. The central station operator can view in real time activity on premises, whether triggered by an alarm or during a scheduled look in. They can simultaneously view up to four video streams to check for false intrusion alarms. All video, whether tied to intrusion and panic alarms or captured for other monitoring purposes, can be stored on the OSN for future use. And remember, all video files are AES encrypted for complete security.

Ease of Use

An important component to the OSN solution is the easy access to the video both at the central station and by the end-use customer. SecureView™, the OSN web-based interface, provides an intuitive way for users to access live video. When developing SecureView, OzVision focused on the user experience; familiar Web conventions and ease of use. This easy to use yet powerful video monitoring tool accommodates central station current workflows, and makes operators more efficient.

Through the familiar Microsoft Internet Explorer application the operator can access the OSN (or service provider branded) website. SecureView allows the operator with appropriate logon ID and passwords to access all OSN registered cameras and the recorded video streams. There are four active video windows, which allow the operator to view live and recorded streams at the same time. In addition, each video window can be detached from the web page and moved independently from the rest of the interface. This allows a user to keep a live video window persistent on their desktop without having to keep the entire SecureView active.

Figure 2 – SecureView™



Enhanced Customer Access

Historically in the security industry there have been a very limited number of solutions that combined re-occurring monthly revenue (RMR) and video. The OSN service has changed the playing field when it comes to RMR for service providers. The first step is to recognize the increasing availability of IP networks and connections at most customer locations. The second step is to transition from offering the customer very limited access to alarm or video equipment to engaging the customer in the solution. For the first time, central stations can go back to their accounts that have CCTV and offer integration with their intrusion systems and remote access to all of the connected cameras. Integrating the customer environment and having a persistent presence for the end users is a tremendously compelling reason to adopt OSN.

OSN is designed to enable customers to view the video from any IP enabled device, PC, laptop, PDA, even cell phone, a feature that customers have been requesting for years. The end-user can access their own video via the website. They could have much the same view as would the central station operator. This OSN client allows anyone's cell phone using Symbian and Windows CE to access OSN and view the video over any IP wireless connection: GPRS, GSM, and EVDO.

Engaging customers by allowing them to easily view “their” video is critical for generating higher RMR and future growth. This could be the customer who wants to leverage their investment in IP-enabled equipment on premise, or simply a customer that wants to check-in periodically to see what is going on. The power of video in the hands of the customer can be a compelling selling point. The OSN service provides the solution to engage these customers, and to provide a much higher level of service without significant investment in infrastructure or resources.

The OzVision premise based products include a 4 channel IP solution that transmits video from 4 cameras simultaneously, up to 30 fps per camera; a DVR version of the 4 channel gateway that can store video locally as well as on the OSN network; and a 2 channel video gateway.

Figure 3 – The OSN IP- Enabled Premise Solutions



Offsite Recording

The OSN investment allows the service provider the ability to record video separate from the customers premise, and retain easy, 24 hour access to recorded video. Criminals have become savvier about security cameras. They have started to look for the DVR or VCR when committing a crime, and will destroy this device. With OSN the customer can feel secure that the video has been moved off site and is easily retrievable; no matter what action is taken on premise, the criminal cannot destroy the evidence. They can also save video clips in a secure location on the site for evidentiary submission later. OSN video recording offers unprecedented flexibility in how events are stored; by time and date, by motion, by activation of a sensor, and stored in many configurations based on access or numbers of days or weeks of recording.

Conclusion

All parties involved in alarm services—residential and commercial users and service providers—need to better understand the benefits of IP-enabled video networks. Greater

confidence in alarms reduces exposure to piecemeal legislation, penalties for service providers or customers, and perhaps most importantly, expanded service offerings. OSN's leveraging of the Internet infrastructure and widespread use of IP-enabled equipment – both on premise and in the hands of customers, opens up new revenue opportunities for the central station operator. Offering the customer the ability to easily view their own premises is a powerful value proposition. OSN's new monitoring capabilities offer security service providers opportunities for new customers and growth.

To learn more about how OzVision's Secure Network can help your company expand revenue generating services and attract new subscribers, please contact sales@ozvision.com or call 1.800.385.2317

Additional information is available at OzVision's website at: www.ozvision.com.