

The Integration of Powerful Computing and A/V Components:

A Practical Approach to
Surveillance Technology

The integration of powerful computing and rapidly developing visual technology can be seen in consumer industries such as ondemand television, digital cameras, and mobile phones; specialized markets that use powerful computing and a/v technologies have not seen comparable integration: many surveillance technology companies continue to distribute analog security technologies that offer limited functionality. As the accessibility of powerful a/v computing technologies increases, emphasis on software with practical functionality and intuitive design continues to increase. Integrating new technologies into surveillance enables practical solutions for a wide variety of applications.

ANALOG TRADITIONS IN SURVEILLANCE

An analog surveillance solution provides basic functions for capturing and reviewing video; analog surveillance systems were popularized with the advent of the videocassette recorder. In the 1990's, digital multiplexing became affordable and revolutionized the surveillance industry by offering more features and operations than traditional analog recorders. As digital multiplexing technologies became more accessible, analog systems adopted many of the same hardware components as the digital systems, but analog systems failed to integrate the advanced functions and operations from the digital solutions.

The Limitations of Analog Surveillance Technology

- **Limited Scalability**

- o Analog receivers have a predetermined amount of inputs. When scalable barriers exist, businesses must conform to the technological capacities of their analog system. Ideal technologies are able to adapt with their work environment over time.

- **Limited Adaptability**

- o Analog receiver technology remains static: new technologies and software updates are not easily integrated into analog receivers. Users must work within the limited capacities of their receivers.

- **Limited Archiving Space**

- o Analog receivers have a predetermined amount of recording space. Although some DVRs offer storage upgrades, there is always a cap on available space.

- **Analog DVRs Mimic Servers**

- o High-end analog DVRs are produced to mimic servers: DVRs contain many of the same hardware components as a server, but offer less upgrading options and less computing power. Analog recorders inevitably become an unnecessary intermediary between recording video and archiving/analyzing it.

- **Low Quality Video**

- o Analog video recorders offer low-resolution pictures compared to their digital counterparts. Analog cameras must be converted into a digital format in order for the video to be archived or analyzed on a computer.

THE DIGITAL-IP SOLUTION TO SURVEILLANCE TECHNOLOGY

A digital surveillance solution extends security capabilities for a variety of applications. Digital technologies offer the same functions as traditional surveillance systems, but expand the possibilities for useful operations.

The Benefits of a Digital-IP Solution

- **Unlimited Scalability**

- o Digital-IP surveillance systems allow end-users to move from one camera to unlimited amounts of cameras without having to upgrade the entire surveillance system. The same system is used irrespective of the number of enabled cameras. Surveillance capacities are able to grow with the needs of the system's user.

- **Increased Adaptability**

- o Digital surveillance systems offer end-users more freedom and functionality than analog systems. Networks of cameras no longer have to be a stagnant grid of running video in a single control room. Digital technologies enable user presets, allowing for an infinite number of roles to be defined, and also allows for camera monitoring in a variety of combinations from a variety of locations.

- **Archiving Space**

- o Digital surveillance systems allow video to be archived with ease. Because cameras in such a system capture video digitally, formatting and conversions are unnecessary.

- **Server-based**

- o Servers can be equipped with an operating system, unlike analog DVR solutions. Video can be viewed live, browsed through, cropped, and still images can be saved all within the same interface. Server-based solutions keep the same functions as traditional analog systems, but offer superior controlling, usability, and functionality of various operations.

- **Superb Video Quality**

- o Digital cameras offer high-resolution images, already formatted for analyzing and archiving on a computer.

STRAND'S ENTERPRISE SOLUTION: DECIDEDLY DIFFERENT

Strand's digital enterprise solution leverages the capabilities of traditional surveillance systems by combining the primitive navigation functions of analog surveillance systems with the advanced functions made possible by powerful computing and digital technologies. Strand's Enterprise Solution delivers all the benefits of a Digital-IP surveillance system: Server-based solutions keep the same functions as traditional analog systems, but offer superior controlling, usability, and functionality of various operations. By serving its clients primarily as a software company, Strand has been more able and willing to break the mold of outdated, traditional hardware platforms, instead opting for new-age technologies and greater capabilities.

The Benefits of Strand's Enterprise Solution version 8.0

• Strand owns the software

- o Many IP surveillance companies do not even own the rights to the software they distribute! Because Strand owns the rights to the software they distribute, customizing and tailoring surveillance functions specifically to a client's needs is enabled: Strand can manipulate the base-code or integrate new features into their software at their own prerogative. Integrating third party systems into Strand's surveillance software is part of Strand's concerted effort to create intuitive and highly functional solutions for a variety of clients.

• Linux-based platform

- o Linux has mainly been used as a server operating system, and has risen to prominence in that area; Netcraft reported in February 2008 that five of the ten most reliable Internet hosting companies run Linux on their web servers; only two of the ten ran Microsoft platforms. Linux is renowned for its stability throughout the IP industry. Strand runs Linux on its servers and the result is creating stable and reliable surveillance networking solutions.

• Web-browser based

- o Many IP surveillance solutions require a client to be downloaded onto every computer that will view the surveillance video. These "fat clients" perform the bulk of any data processing operations, and therefore, necessitate numerous high-end computers instead of one powerful server. Strand's surveillance management system is a "lean client," which designates the server to a majority of the data processing. This setup ensures stability in the surveillance system, and allows users to control their system from any location in the world without having to download client software from a CD.

• Web-enabled diagnostics

- o Protecting the soundness of operations in a surveillance system can often be a difficult endeavor in itself. With Strand's webenabled reporting tools and support diagnostics, and with customized camera labels, keeping track of your surveillance operations is simplified, and enabled from anywhere in the world, at any time.

• Intuitive Graphical User Interface

- o Strand's user-centric approach allows for quick, cost-effective training and use of their software. Intuitive controls and navigation tools make using Strand's surveillance management software effortless even for a first-time user.

• Hardware Agnostic

- o Strand's surveillance management software is compatible with the highest-grade hardware components. The latest digital camera technology is enabled in Strand's software and helps provide a higher resolution than outdated analog technologies. Strand's agnostic approach to server and storage hardware allows for maximum flexibility when determining the right surveillance solution for any user. Additionally, Strand's software adapts to the latest developments in physical security hardware technology including integration with access control points, point-of-sale technology, and other third party systems.

- **Enterprise-grade software**

- o Strand offers enterprise-grade overarching surveillance management software from the very first camera installed. Strand allows for unlimited cameras to be added and unlimited users to be defined to their surveillance system at no extra cost. Strand's Enterprise Solution was built for practicality and functionality, allowing clients to leave scalable and modular pricing concerns behind while searching for the perfect surveillance solution.

- **Non-modular platform**

- o The addition of more cameras to most surveillance packages can prove to be a cumbersome process: modular pricing, seat licensing, and adding inputs to a receiver can unnecessarily complicate and raise the price of any surveillance package. Strand enables unlimited user profiles to be defined, and does not charge for seat licensing.

- **Pricing:** Strand offers simplified pricing to their solutions by charging an all-inclusive price rather than pricing for each individual component.

- **Platform:** Strand's Enterprise Solution was built with all types of surveillance applications in mind. Strand sells the same core system to all its clients, and users are able to enable and disable a wide variety of functions depending on their needs. Strand sells enterprise-grade software with perpetual licenses and unlimited users to all of their clients.

APPLICATIONS FOR STRAND'S SURVEILLANCE SOFTWARE

When powerful computing is integrated with digital video technologies, highly functional surveillance solutions become enabled. Digital technologies and IP networks allow surveillance to serve many more operations than it ever has. The surveillance and management possibilities become endless when one considers integrating third party technologies. Digital surveillance solutions can be specifically tailored to any industry.

Education

Whereas surveillance was once seen as a luxury in the educational system, many school systems are beginning to understand surveillance as a necessary and highly cost-effective precautionary measure against vandalism, theft, and violence. Solid documentation that a video recording provides can be invaluable in situations involving liability claims. The use of video records as evidence and as a means of identification modifies student's behavior so that they're less inclined to cause trouble. When advanced surveillance technologies are properly implemented in schooling systems, security threats and liability issues can be almost entirely eliminated.

The Benefits

- Leverages existing network infrastructure traditionally built through e-rate funding
- Navigate the existing surveillance of multiple sites anywhere in the world using a single interface.
- Reduce and deter theft, vandalism, and property damages through constant monitoring and chronicling of video surveillance.
- Reduce cost of stationing full-time security in facilities by implementing effective and strategic video surveillance schemes.
- Cost effective, using digital technology over existing network infrastructure for low start-up and operation costs.

- Intuitive designs and controls reduce the need for complicated and costly user training.
- Integrates with analytic software for simple monitoring and liability solutions.
- Total System diagnostics available at anytime, from anywhere in the world.
- Megapixel camera technology ensures that end-users get the clearest, highest-grade images and video.
- Decrease security staffing costs by having one person or center assigned to monitor bank branches and dispatch security personnel as needed.

Retail

Theft and inventory shrinkage are primary concerns for any retail business. Network video systems provide pro-active surveillance and monitoring to many retail industry concerns. Network video surveillance can help retail companies with loss prevention, monitoring floor control, counting people, and optimizing store layouts. Concordantly, surveillance can help reduce costs substantially for any retail business, and therefore, the return on investment is unbeatable for any retail business.

The Benefits:

- Point-of-sale integration: combine transaction data from point-of-sales systems with video recordings for a practical shrink management solution.
- Navigate the existing surveillance of multiple sites anywhere in the world using a single interface. Shop owners, managers, and security experts can monitor multiple stores from any computer with Internet capabilities and a web browser.
- Intuitive designs and controls reduce the need for complicated and costly user training.
- Total System diagnostics available at anytime, from anywhere in the world.
- Megapixel camera technology ensures that end-users get the clearest, highest-grade images and video.
- Decrease security staffing costs by having one person or center assigned to monitor different facilities and dispatch security personnel as needed.

Banking

Security is a vital concern for financial institutions worldwide. Strand's digital video surveillance and security for banking is a complete data capture, storage, and retrieval solution that helps protect clients and assets at every branch in a banking system. Traditional analog cameras that have long been the foundation of bank security programs are not sufficiently equipped for the needs of contemporary surveillance. As surveillance industry standards continue to grow, the best technological investments will be the ones that can continue to evolve with one's business.

The Benefits:

- Navigate the existing surveillance of multiple sites anywhere in the world using a single interface. Security experts can monitor multiple branches from any computer in the world with Internet capabilities and a web browser.
- Help reduce cost of maintenance by deterring theft, fraud, and vandalism.
- Intuitive designs and controls reduce the need for complicated and costly user training.
- Integrates with analytic software for simple monitoring and liability solutions.

- Total System diagnostics available at anytime, from anywhere in the world.
- Megapixel camera technology ensures that end-users get the clearest, highest-grade images and video.
- Decrease security staffing costs by having one person or center assigned to monitor bank branches and dispatch security personnel as needed.

Industrial

Industrial installations of IP-video technology can help secure assets, manage operations, and reduce threats such as vandalism, theft, and terrorist attacks. Industrial warehouses, labs, and administrative buildings are often developed in clusters, leaving those monitoring the facilities with a daunting task. With the installation of IP video technology, multiple facilities can be monitored from one interface remotely from any location in the world. The advanced functions and capabilities that can be integrated with IP video can have a significant impact on the cost-effectiveness of any firm's operations.

The Benefits

- Integrates with metadata and point-of-sales tracking for advanced monitoring and liability assurance.
- Navigate the existing surveillance of multiple sites anywhere in the world using a single interface. Security experts can monitor multiple venues from any computer in the world with Internet capabilities and a web browser.
- Intuitive designs and controls reduce the need for complicated and costly user training.
- Integrates easily with access control systems for advanced monitoring and liability assurance. Also integrates with analytic software for advanced surveillance capabilities.
- Total System diagnostics available at anytime, from anywhere in the world.
- Megapixel camera technology ensures that end-users get the clearest, highest-grade images and video.
- Decrease security staffing costs by having one person or center assigned to monitor bank branches and dispatch security personnel as needed.

Health Care

IP-video surveillance can be an effective tool for increasing security and controlling costs in hospitals and health-care facilities. Surveillance cameras can work to protect hospital employees and patients from security breaches, and they provide valuable visual evidence that can be used to increase productivity and prevent dishonest claims. IP video technology offers hospitals the benefits of remote video monitoring, effective storage capabilities, and advanced analytical functions.

The Benefits

- Surveillance technology can help increase overall security and safety by preventing crimes, break-ins, and also allowing operators to watch for troubled patients and monitor for unauthorized visitors in restricted areas.
- Navigate the existing surveillance of multiple sites anywhere in the world using a single interface.
- Intuitive designs and controls reduce the need for complicated and costly user training.
- Integrates with analytic software for simple monitoring and liability solutions.
- Total System diagnostics available at anytime, from anywhere in the world.

- Megapixel camera technology ensures that end-users get the clearest, highest-grade images and video.
- Decrease security staffing costs by having one person or center assigned to monitor bank branches and dispatch security personnel as needed.

Government

Government applications of surveillance technologies can span many different uses. In addition to establishing a secure environment at government buildings and facilities, surveillance technologies are also used in temporary venues for speeches, political gatherings, and parades. As government agencies continue to emphasize the safety of our nation's political minds and valuable resources, IP surveillance technology will continue reassert itself an integral precautionary measure against terrorism, security breaches, and many other threats. Using IP video technology, facilities like seaports, dams, pipelines and state buildings can be monitored remotely via the Internet. Also, advanced analytical functions made capable with IP video can help monitor areas more closely than any naked eye would be capable of.

The Benefits

- Navigate the existing surveillance of multiple sites anywhere in the world using a single interface.
- Intuitive designs and controls reduce the need for complicated and costly user training.
- Integrates with analytic software for simple monitoring and liability solutions.
- Total System diagnostics available at anytime, from anywhere in the world.
- Megapixel camera technology ensures that end-users get the clearest, highest-grade images and video.
- Decrease security staffing costs by having one person or center assigned to monitor bank branches and dispatch security personnel as needed.

CONCLUSION

For businesses and organizations that depend on surveillance to secure safety, liability, and general monitoring issues, Strand's Enterprise Solution overcomes the limitations of traditional analog surveillance systems. Designed to adapt and evolve with the rapid advancements in computing and digital a/v technologies, Strand constantly aims to integrate their surveillance management software with the newest and most practical technologies. By reducing costly modular and scalesensitive pricing, improving accessibility and functionality of surveillance management software, integrating with third party data systems, and combining with best-of-breed hardware, Strand is changing the way people think of surveillance technology.

Strand's overarching surveillance management software platform and emphasis in IP technology is decidedly different from many traditional surveillance platforms: surveillance technology is no longer used as something that is reviewed after an event has occurred, but instead, should be seen as a preventative and cost-effective measure to deter and manage any unwanted or inefficient events in any facility. To find out more about the Strand Enterprise Solution, visit: http://www.strandusa.com/site2/html/solutions/enterprise_application.html