FROST & SULLIVAN

PHYSICAL SECURITY SOLUTIONS IN GAMING AND CASINOS

A Frost & Sullivan White Paper

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OVERVIEW OF PHYSICAL SECURITY IN GAMING AND CASINOS

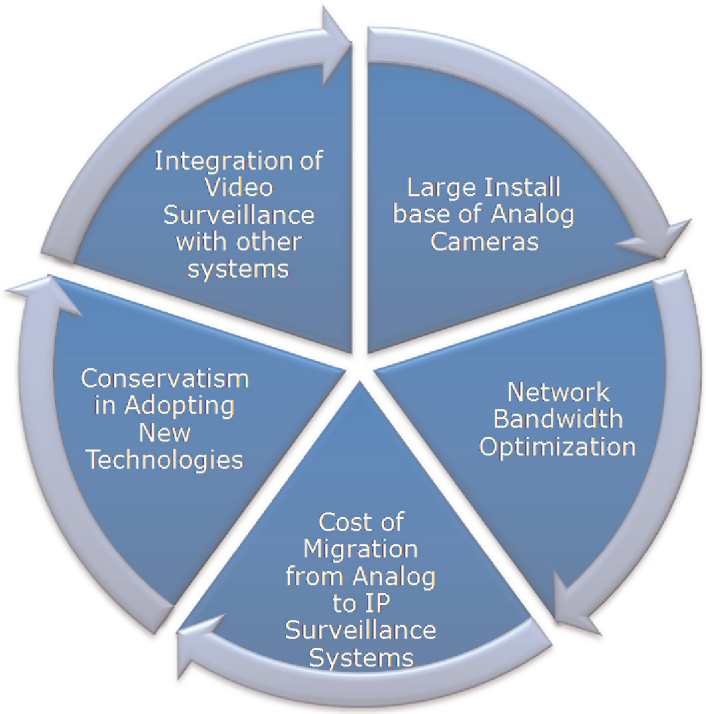
The gaming and casinos sector is one of the premier sectors for growth of next generation IP-physical security solutions. This sector has deployed analog technology for decades to adhere to regulations mandated by gaming commissions. Today, vendors face the challenge of changing customer mindsets and enabling the migration of the large existing analog install base to IP technology.

Market Definition

The hospitality sector is defined to include:

- Casino/Gaming Operations
  - Front-end operations, which includes traditional gaming operations
  - Back-end operations, which includes food and beverage sales, hotel operations (rooms, meeting conventions, and recreational activities), and retail operations
- Hotel Industry associated with gaming and casinos
  - Large hotels with meeting conventions, and retail operations
  - Small hotels with casinos
  - Restaurants (both chains and standalone) inside the casino

Key Challenges in the Gaming and Casinos Sector



Market Regulations and Standards

The casino industry has stringent regulations to maintain the integrity of gaming functions. There are various standards established by various gaming commissions to ensure that each machine that is not linked electronically to the network is under 24-hour surveillance. This measure is undertaken for the security of employees and patrons.

Standards have been established to monitor all slot machines, card tables, table games, keno, bingo, race books, sports pools, pari-mutuel books, casino cages, vaults, count rooms, surveillance/security rooms, records, and gaming salons.

All DVR equipment and systems used in a gaming surveillance system have to comply with the requirements of the surveillance standards. All systems must be capable of recording and real time viewing at a minimum of 30 frames per second (fps), and have visual resolution of sufficient clarity. Recorded video must be stored for a minimum period of 7 days. The storage system must be configured to ensure that failure of any system in the infrastructure will not result in the loss of video data.

PHYSICAL SECURITY SOLUTIONS IN GAMING AND CASINOS

Analog vs. IP Surveillance Systems: The Ongoing Debate

Typically video surveillance systems deployed in the hospitality sector are analog systems with cameras connected to a Video Home Systems (VHS) via coaxial cables for recording and storing video on VHS tapes. This system had been established as the standard for video surveillance in the hospitality sector at a time when digitization was unheard of in the security industry.

IP surveillance systems use a company's existing TCP/IP network to transmit images from analog cameras and/or IP cameras over public networks. These systems allow live streaming video and still image transfer (both one-way and two-way) at an average of 30 frames per second into a standard, easy-to-use Web browser, so that video can be remotely viewed in real time.

IP-based systems deliver a great deal of additional functionality. For instance, they provide motion detection, auto time and date stamps, easy transfer of visuals, and pre- and post-alarm messaging. Security personnel are notified immediately if an event is occurring; they can then log on to the system remotely to see what's happening in real time.

Analog Surveillance Systems	*IP Surveillance Systems*
Infrastructure Cost	
High due to need for specialized hardware (coaxial cables etc.). Typically, infrastructure costs add nearly 33% to the cost of security systems.	Lower than analog systems due to use of existing cabling (Ethernet cables etc.). Typically, infrastructure costs add less than 20% to cost of security systems.
Vendor Locking	
High due to lack of interoperability between systems.	Low due to open-platform standards.
Picture Resolution	
PAL, NTSC, SECAM	Flexible and seamless support for a variety of standard and multi-mega pixel image resolutions beyond NTSC, PAL and SECAM, delivering image sizes at 50 times the size.
Camera Features	
Video Capture	Intelligent motion detection On-camera automated alerting via email or file transfer in response to video motion detection
Data Transmission	
Video data transferred at the same resolution as captured, normally at CIF (352 × 288) or 4CIF (704 × 576) resolutions	Support for different streaming media and compression formats to relieve transmission bandwidth and data storage requirements (MPEG-4, MJPEG, JPEG 2000 etc.)
Future Proofing	
Updates cannot be made once the camera is installed	Future-proof installations with field-upgradeable products due to the ability to upgrade camera firmware over the network
Integration	
Integration with different systems difficult and time consuming	Integration of video surveillance with other systems and functions such as access control, alarm systems, building management, fire & safety, traffic management, etc

RETURN ON INVESTMENT FOR PHYSICAL SECURITY SOLUTIONS

Physical security solutions can require large investments, depending upon the nature of the installation. With the convergence of security and IT departments, the onus is upon the IT department to justify the investment made in a physical security solution. As is the state of affairs in the industry today, basic security solutions only offer no real quantifiable ROI justification. However, an integrated physical security solution (video surveillance, access control, fire & safety, intrusion detection, communications, digital signage etc.) can offer a real justification of ROI with regards to;

Improved Employee Productivity

Employee productivity can be quantified in various ways; revenue per employee, employee turnover, hours per day spent by each employee servicing customers, etc. According to the U.S. Census Bureau report in 2002, hotels across the U.S. witnessed 27.1% employee

turnover in the accommodation business, including large hotels with meeting conventions and retail operations, motels, Bed & Breakfast inns, restaurants and casino hotels. Following is the breakdown of employee productivity measures by accommodation type;

Type of Hotel	Employee Turnover	Revenue per employee
Large Hotels with Meeting Conventions	27.5%	$55,997
Motels	22.3%	$45,412
Bed & Breakfast Inns	24.6%	$42,827
Casino Hotels	29.0%	$76,146
Restaurants	28.9%	$31,975

Integrated policy-based security systems can be used to collect data on employee productivity in real time to enable management to improve productivity. Casino hotels have the highest revenue per employee figure, which can be attributed to gaming operations, while maintaining integrity with the use of video surveillance in casinos.

Impact on Insurance Rates

As with the residential security market, insurance rates in the hospitality sector are impacted directly with security measures undertaken by each establishment. An analysis of liability rates pre- and post- deployment of physical security solutions can help customers understand the economic impact. Establishments with fully functional physical security solutions can lower their liability rates by 5-10% annually.

Employee Theft Prevention

As with most industries, theft/loss is the primary concern for security directors when installing a physical security solution. Customer crime in casinos is large but the chief cause of concern for casino owners is employee crime. It involves internal losses and collusion which can be more sizable in the amount of money / property lost as a cumulative effect. Many sources document that nearly 50% of all losses incurred by casinos are attributed to employee theft. According to the Nevada Gaming Commission, during the period 1999-2000, approximately 34 percent of those arrested for theft or cheating in casinos were the casinos' own staff members. The major types of employee theft / misdeeds include:

- Cash-handling positions (on the gaming floor, in cashiers' cages, back rooms, at POS (Point of Sale) terminals) are particularly susceptible; however, embezzlement by midlevel and even upper management has also occurred
- Watering down drinks, with bogus comp entry for paid drinks (customer pays but the bartender pockets the money and states the drink was provided at no charge)
- Fraudulent recording of average size and amount of time spent gambling by patrons (casinos reward high rollers and frequent gamblers with free food, lodging, event tickets, etc.)

- Drinking on the job, drug use, loitering
- Theft of alcohol, food and meat from casino receiving docks, theft of guest possessions by staff, housekeeping, etc.
- Patron theft (of winnings, purses, chips, etc.)

The use of video surveillance systems focused on employees can help reduce the rate of employee theft. Video content analytics can be used to pick up any irregularities in employee behavior to alert security personnel as an incident occurs to help mitigate the risk of employee theft.

Collection of Non-security Data

Video surveillance systems with embedded content analytics can help casino owners collect marketing data, and improve operational efficiency. Imagine a scenario of just 3 functioning blackjack tables in a casino and ten gamblers standing, waiting for their turn. The pit boss can get an alert from the analytics engine about 10 gamblers waiting / ready to go to another casino. The pit boss can mitigate this risk by sending 2 dealers to open up tables and keep the gamblers in the casino.

Marketing data can be collected around the retail spaces in casinos to see what kiosks and stores attract shoppers' attention and help increase revenues in stores. This is the latest use for content analytics being used in retail outlets to collect information about shoppers.

BENEFITS OF TRULY NETWORKED PHYSICAL SECURITY SOLUTIONS

Truly networked physical security solutions offer end-users the following benefits;

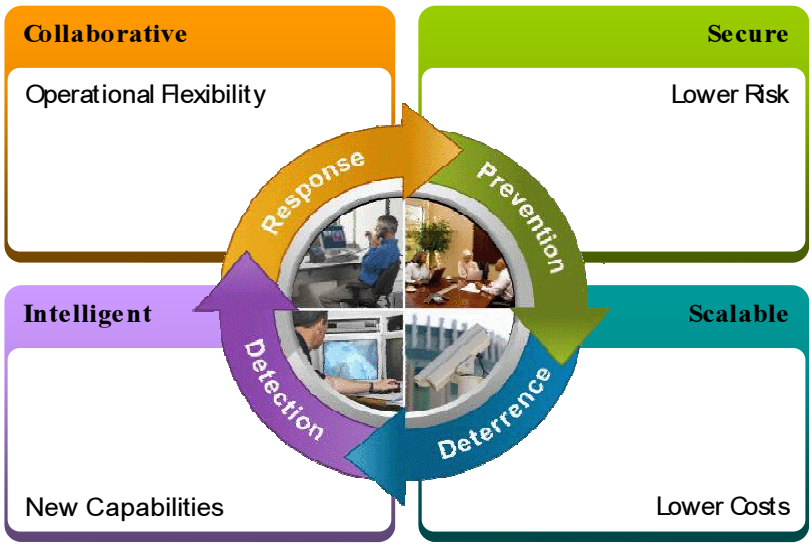
- Operational Flexibility
- New Capabilities
- Lower Costs, and
- Lower Risks (Better Security)

Networked physical security solutions, unlike traditional solutions that are proprietary, expensive, and difficult to extend and manage provide Gaming and Casino operators with a lower total cost of ownership, better security, increased operational flexibility and new capabilities across the entire life cycle of safety and security processes – Response, Prevention, Deterrence, and Detection. In fact, a Network Physical Security solution reinvents safety and security for Gaming and Casino operators.

Response is better supported because networked physical security solutions are collaborative. Collaboration drives operational flexibility. For example, Security personnel are able to view, monitor and respond to incidents from any where and from any device. Prevention of loss, connecting physical and logical IT security can be more easily and quickly supported and policies can be implemented on a global basis.

Deterrence is better supported because Networked Physical Security solutions are more scalable, and can be quickly deployed with thousands of endpoints using an existing converged IP network infrastructure at a lower cost. Network Physical Security solutions also make better and more flexible use of human resources.

The Network as the Platform Reinvents Safety and Security



Detection is better supported because Network Physical Security solutions enable open standards, APIs, and eco-system partners and applications. The end result for Gaming and Casino operators is that new COTS applications and capabilities can be more easily and quickly deployed further driving business results and competitive advantage.

Network physical security solutions are more adaptive and never obsolete, thus reducing the need to overhaul infrastructure to upgrade technology. Increasing focus on developing standards in the IT world enables end-users to upgrade technology easily, be it a wired security system or wireless 802.11 n security systems.

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