

Record locally, view centrally, manage remotely

As Forbes Insights found in a recent study, many organizations underutilize video surveillance in their business*. The majority of those surveyed (58 percent) said they cover less than half of their valuable assets with video surveillance; unsurprisingly, businesses with widely distributed assets, such as remotely located power stations or cell towers, face particular challenges covering a majority of their assets with video surveillance.

According to the same survey, of respondents who do use video surveillance, a majority (66 percent) said that for the locations or facilities where video surveillance is in use, fewer than half are actively monitored by security personnel. The top concern preventing more monitoring is cost-effectiveness (52 percent of respondents).

Recent advances in digital video technologies make it possible to address concerns about the effectiveness and cost of active monitoring, as well as dealing with bandwidth issues for remote sites. Deploying increased intelligence in cameras and in devices at the edge of the network can ensure that people get access to the right video data in a timely manner.

Addressing the challenge of remote sites

Video surveillance can be a very effective way of securing and managing dispersed and remote assets. By providing immediate “eyes on” any remote site, centralized personnel can respond to security threats and even operational issues quickly and appropriately. However, simply having the cameras available is not enough, because streaming all that video to a centralized location is at best a waste of resources, and may not be possible at all.

Streaming video across long distances can be problematic and costly. Beyond the obvious question of bandwidth limitations, intermittent increases in latency or drops in throughput quickly lead to lost data. The best solution for drastically reducing the opportunity for data loss is to keep the recording as close to the cameras as economically viable. When coupled with greater intelligence at the edge through video-analytics-enabled cameras, this approach offers opportunities to significantly reduce the amount of data that needs to be sent to a central location in the first place.

Video analytics is software that analyzes a video stream to make sense of what is happening in a scene. Typically, video analytics is used to alert security personnel about events that may require action, reducing the need to constantly monitor all the cameras. And video analytics can also provide the intelligence to reduce bandwidth and storage requirements. Video analytics performed on or near the camera allows all the video to be analyzed and tagged with metadata and then streamed to a local video recorder that intelligently decides whether to record based on live events. This dramatically reduces



View the full infographic at:
<http://www.forbes.com/sites/avigilon/2015/06/22/are-your-companys-most-valuable-assets-protected-infographic/>

the amount of footage recorded, minimizing storage and bandwidth needs without losing critical data. Furthermore, when a remote investigator needs to search the video, the metadata can be very quickly searched, retrieved and presented to the user, so that only the essential video needs to be retrieved and transmitted over a long distance.

Ultrahigh resolution cameras provide great coverage of vast areas, reducing total camera count while still providing enough detail for identification purposes. But ultrahigh resolution cameras increase the challenge for bandwidth and storage management, particularly in remote sites with limited information technology resources. Avigilon's High Definition Stream Management (HDSM)[™] technology coupled with a local recording server makes it possible to deploy cameras with very high resolution even in remote sites with limited bandwidth. Because HDSM technology ensures that only the appropriate resolution and portion of video is transmitted from the server to the viewing client (in both live and recorded video), a centrally located investigator can efficiently view video from any Avigilon camera: From 1 megapixel through 7K (30 MP), all can be viewed over a connection with limited bandwidth.



Why not record on the camera itself?

In an effort to keep the recording as close to the camera as possible, many would like to do away with the recorder completely. This is a good strategy if a site has only one or two cameras with modest resolution, but as soon as the resolution of a camera is greater than 3 MP, and/or storage requirements are for multiple weeks or even months, the solid state storage used in most cameras becomes prohibitively expensive or simply unavailable in sufficiently large quantities to meet the specific application. Our analysis shows that the total cost of ownership of a system per unit of storage can quickly reach 10 times that of an equivalent system with spinning disks. These cost differentials and storage capacity limitations may be reduced or even eliminated with time; but for now, the most efficient solution is a recorder with spinning disks such as Avigilon Control Center (ACC) Edge Solution (ES) High Definition (HD) Recorder.

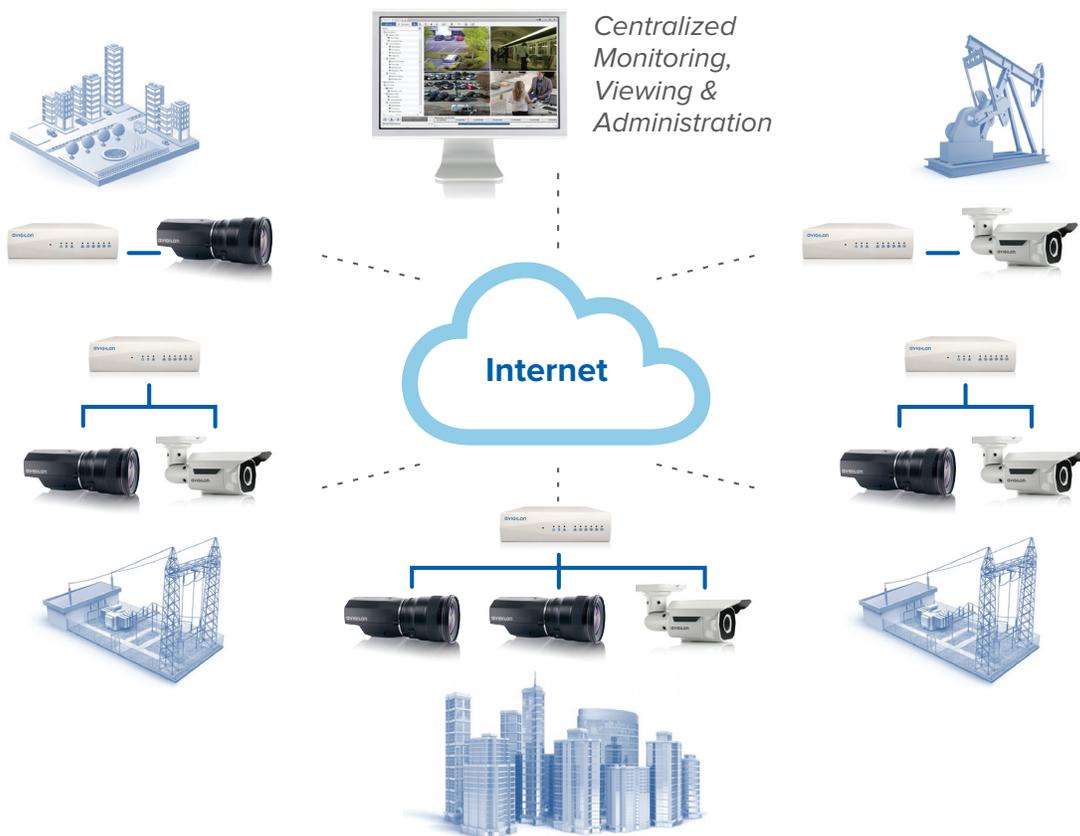
Managing a large number of remote devices

To ensure the secure and continuous operation of the whole system, each device must receive regular updates to its firmware. With hundreds or even thousands of devices on the network, managing updates of each device individually can quickly become a problem. Avigilon ensures that every update of recorder software also updates the cameras attached to the recorder by packaging the latest firmware for each model of Avigilon camera with every server update. System administrators can remotely deploy and manage recorder software updates from a single, central location and automatically cascade updates to all the individual devices. This enables system administrators to quickly update the entire system at once, making it easier to keep the system healthy.

In addition, the system administrator has a holistic view of the entire system and can verify that each device is functioning as intended. If a problem should occur, it is easy to remotely troubleshoot the issue.

To ensure the privacy of the law-abiding people who are being surveilled, it is necessary to manage the access rights and system permissions of people who can view the video. Systems with many thousands of devices will often have hundreds of users. If access to every device or every site needs to be managed individually, keeping user roles and privileges up to date is a very heavy administrative burden. It is essential to ensure that people's access rights are appropriately updated as they move to different positions in an organization, or removed immediately when they leave the organization. Avigilon lets administrators manage user access and privileges centrally for all sites and devices and enables delegation of responsibility for this administration along regional or other lines, to ensure that the burden of administration does not need to rest with a single individual.

In addition, Avigilon enables users to access the sites and devices that they need quickly and efficiently, even in a large, distributed system. Users can find and access the sites that they need with a minimum of effort, so they can see what is relevant, organized in a logical fashion, regardless of the physical setup of recorders and cameras across sites.



Changing the cost model for monitoring remote sites

The Avigilon solution makes better security of remote sites more cost-effective in many ways. With our ultrahigh resolution cameras, you can cover more area with fewer cameras, lowering installation, licensing and maintenance costs. Combined with our HDSM 2.0 technology and our ability to record at the network edge, you can increase image resolution while minimizing the requirements – and costs – for storage and bandwidth. And by incorporating video analytics, one operator can monitor 10 times the number of screens, optimizing security personnel workload and capabilities. With roaming guards, Murphy’s law says that something will happen in the location where the guard isn’t. With remote monitoring and video analytics, you can reduce costs while ensuring that your security personnel don’t miss a thing.

Conclusion

There are many challenges to keeping multiple remote sites secure. Deploying on-site security personnel is usually too expensive. Video surveillance can be challenging due to inadequate IT resources at remote sites, which can limit the ability to view and record video data. And when there are many remote sites, the number of devices and complexity of the system can create challenges for system administration, maintenance and even users trying to view the right data. Avigilon addresses these issues with an end-to-end security system incorporating ultrahigh definition cameras, video analytics and video recorders that operate at the network’s edge. The system is designed to reduce storage and bandwidth requirements while minimizing administration and maintenance time. Taken together, the Avigilon system makes it cost-effective to protect all of your assets no matter how remote they are.