IP Video surveillance in the Banking Industry

## A Milestone Blueprint Article – June 2008

Banks and Credit Unions were one of the first industries to adopt video surveillance on a wide scale basis. Back in the '70's there were 50 mm film cameras and VCR's were high tech. Another transition occurred in the late 90's as hard disk recorders (DVR's) entered the market.

In present times, most branches have migrated to DVR's but continue to use analog cameras at standard television resolution. The next transition is to IP Video, where a digital camera is connected directly to the network instead of coaxial cable. IP Video is gaining acceptance because megapixel cameras and digital imaging offers better quality. This article will focus on how IP Video is advancing the state-of-the-art in banking industry surveillance.

With all this technology advancement overlaid on a turbulent business environment, a common scenario is a merger where a community level bank is taken over by a larger organization. Among the thousand or so details involved in running this business, you notice that the video surveillance system is an old black and white multiplexor and VCR tape. If you've ever seen bad bank robber video on television, this is the type of system it came from. It's gotta go.

Typical Branch Layout
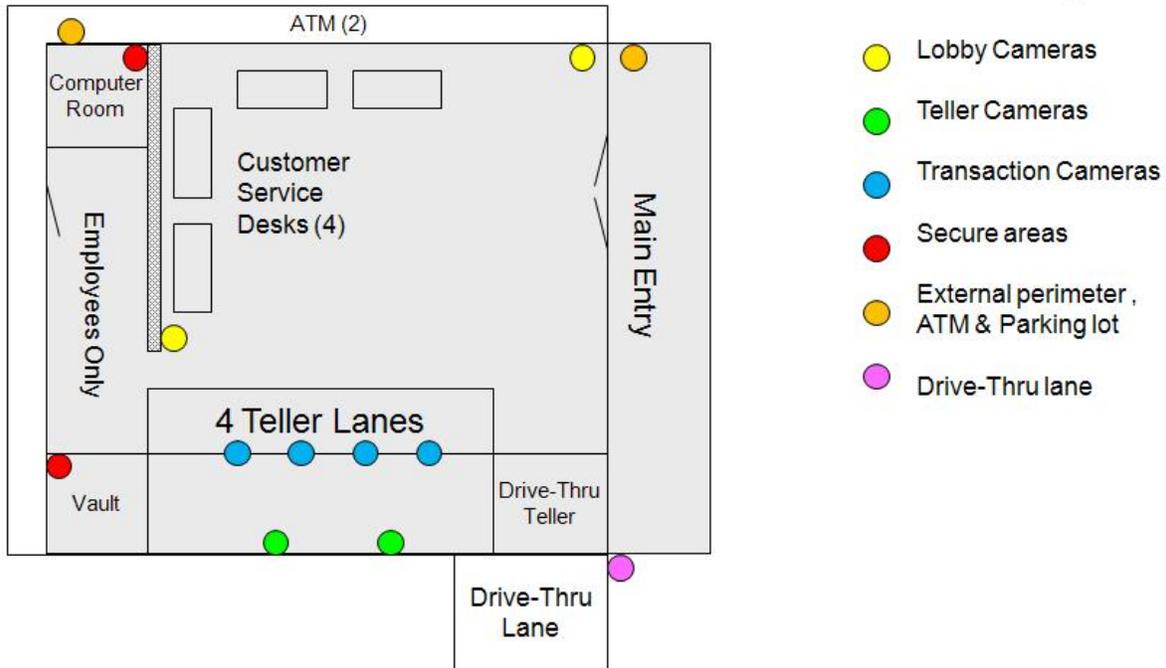
Teller Cameras: Usually one per teller line. These cameras are usually quite visible, to let customers know they are being monitored and to discourage criminal activity.

Drive-up Window Cameras: These are usually mounted in the drive-up lanes so that a teller can view the customer and help them to complete a transaction.

Entry/Lobby Cameras: One high resolution, Megapixel camera aimed at the main entry can capture a detailed snapshot of each customer as they enter the bank.

Perimeter/Parking Lot Monitoring: Watch for vandalism, suspicious vehicles, and parking lot incidents with one or more Megapixel cameras mounted at the corners of the building, under the eaves.

Transaction Cameras: Watch paperwork on a tellers' desk to ensure that a customer cannot repudiate a transaction that was properly entered. Camera points down toward a work surface from overhead.

License Plate Readers: One of the most demanding applications for cameras, due to day/night variations and glare from headlights. Best results are obtained with a specialty camera intended for this purpose.

Hidden Cameras: A small pinhole camera can be hidden in almost anything. These are typically low resolution analog cameras with minimal optics and no network interface

ATM Camera: A small fixed zoom camera is integrated into the ATM enclosure. This camera is usually synchronized to the transaction flow of the ATM so that both can be seen simultaneously.

Secured Areas: The vault, the computer data room, emergency exits and other secured areas are restricted from general use.
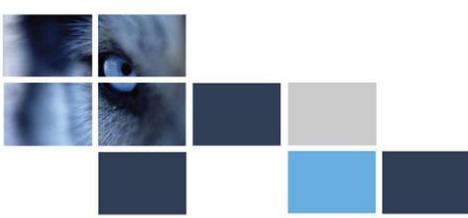
Transitioning from Analog Cameras to Network Cameras

Unless this is new construction, chances are good that you already have an analog camera system installed. If the existing system is less than 5 years old and the cameras are still working well, they can be incorporated into a hybrid IP system. A network encoder converts the analog signal to digital so that it can be managed with other cameras on the network.

For new camera placements, the choice is clear. The industry is marching down the IP Video path with most of the technology development focused on network cameras. Analog products are in the sunset phase of market maturity. Compared to standard 480 or 520 line analog cameras Mega Pixel cameras are capable of more than 4x the resolution of standard CCTV cameras. This is like HDTV (or even better) for security video. A Megapixel camera can cover more territory than before, so fewer cameras are needed. You can zoom digital zooms even after the video has been recorded to get identifying features like tattoos and jewelry.

IT professionals are comfortable with IP video because it is based on network principles that they are very familiar with. CAT5e wire is ubiquitous in modern office environments. Power over Ethernet means that the cabling is 'Single Wire Simple' on network cameras. An analog PTZ camera with power, control, audio and video connections would require up to 4 wiring equivalents to do the same thing.

Taking a Closer Look

With a clean slate and a sharpened pencil you take a close look at the bank's video surveillance needs. The main use of this system will be for facility security – i.e. to discourage robberies and to assist in prosecution of suspects should an incident occur. Hopefully this won't ever occur, but lots of other things do happen on a regular basis.

Identity fraud is a front page issue now and is on the increase as the economy struggles along. There are dozens of variations on this theme. Was it a family member or the guy that pumped the gas into your car this morning? When a customer wants to know what happened to their account, stored video from both the ATM and inside the branch can be an invaluable tool. Keep your camera angles low whenever possible. If someone is hiding beneath a baseball cap you want to be looking straight at them, not from above.

Taking some tips from the casino industry, you'll want a transactional camera aimed at the counter to record any exchange of cash and documents. If you train your tellers to count cash out in the middle of the counter you will have a clear record of each transaction, time synchronized to the transaction tape from the POS system. At the end of the day if the till is out of balance, you can quickly review each transaction, customer by customer.

Storage and Retention Policies

Storage used to be the most costly part of the system. Fortunately, we are living in the 'Golden Age' of disk storage. With large, fast drives and external disk expansion, systems with 2 Terabytes or more are becoming common. The new H.264 video codecs will allow retention periods of 120 days or more to be achievable at a much more reasonable cost.

Analytics

At the leading edge of IP video is the emerging field of analytics. Handwriting analysis and signature recognition are now widely available on ATM machines. License plate recognition, facial recognition, and behavioral modeling are also available. Since the data is all digital, anything is possible. Video surveillance becomes a software defined network.


Milestone XProtect Video Management Software:

The role of this software is to collect the video streams from multiple cameras, organize them on the screen, record video to hard disk, and provide control and alerting functions. Milestone Systems is the world leader in video surveillance software, based on largest number of installed cameras. In a banking environment, the Milestone Xprotect software can be configured to serve multiple functions:

- It creates a high frame-rate view for the lobby monitor so that customers can see that the video being recorded is actually quite good quality
- Tellers have access to the transaction cameras (and no others), so they can use the system to help reconcile end of day balances.
- A video pop-up occurs on the security officers' desktop whenever there is movement in the safe, the IT room, or the emergency exit.
- Evidence can easily be exported off of the system onto writable DVD's.
- Smart search features quickly get you to the location and time that you need to review.
- The video system will send a text message to a cell phone when there is movement in the bank outside of normal working hours.
- The installed video system makes a good teller training tool, and can create audio/video presentations.

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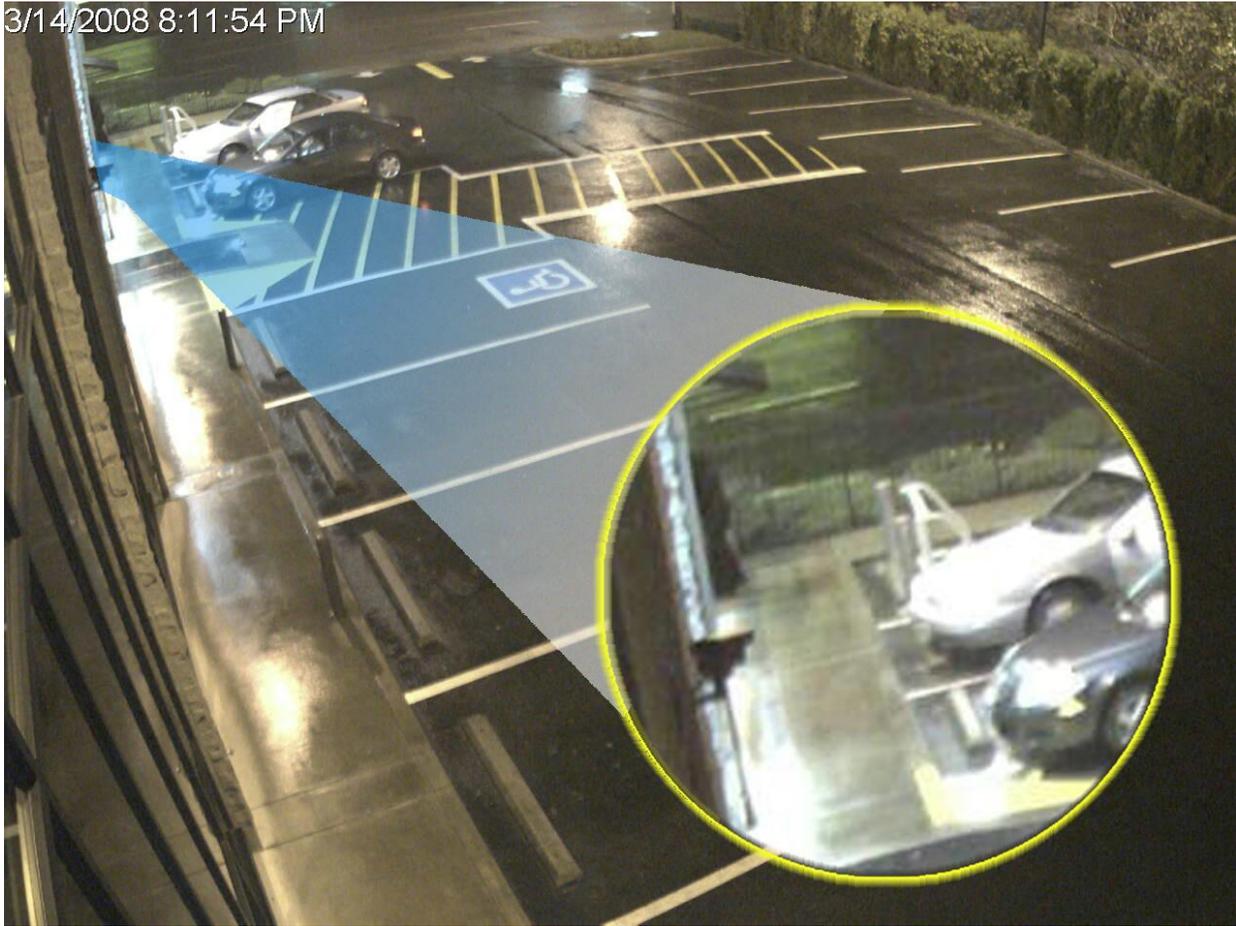
About WatchPoint Video:

WatchPoint Video LLC is a Milestone Certified Partner and System Integrator serving the Pacific Northwest. Based in Portland Oregon, the founder and author of this article is Roger Finger, a former Applications Manager at Intel Corporation for 21 years. WatchPoint Video specializes in IP based video surveillance solutions for government, industrial and commercial customers. Contact sales@watchpointvideo.com to find innovative solutions for your challenging video surveillance requirements.