Cloud Computing: Physical and Cyber Security’s Transformative Technology
Cloud Computing: Evolution, not Innovation

• Conventional thinking
  – Each organization maintains its own Kingdom of IT
  – Keep an expensive bundle of assets locked behind the organization's front door
  – Constant care of servers, software, hardware, and staff
  – The “Kingdom of IT” - it's always hungry for money

• Cloud computing
  – Access your software apps, data and shared computing power on demand through the internet
  – Subscribed to rather than owned
  – With Software as a Service (SaaS) you buy access to software, not the software itself
  – Someone other than the user takes care of installations, patches and upgrades
SaaS Example

- An entire finished application can be available on-demand from some SaaS vendor.
- The application exists in the cloud (not in an on-premise datacenter) and can be consumed from any browser.

“Understanding Public Clouds” http://www.keithpij.com
Get to know Cloud Computing

- **Software as a Service**
  - Gmail, SalesForce.com, Hosted Security applications

- **Infrastructure as a Service**
  - Cloud providers
  - Data Centers, Network Access Point (NAP), Co-Los
• Forrester Research is most optimistic in their forecasts for analytics, BI, Cloud Computing and Smart Computing (23% and 14% respectively)
End-user applications, delivered as a service, rather than on-premise software.

Application platform or middleware as a service on which developers can build and deploy custom applications.

Compute, storage, or other IT infrastructure as a service, rather than as dedicated capability.
• Gartner: “Cloud Services Market will reach $150 Billion by 2013”
• Gartner: “By 2012, 20 percent of businesses will own no IT assets.”
• A recent study from ABI Research shows that the number of small-medium businesses in the world will hit 330 million in 2014.
Software as a Service and the

• Users access portals, giving access to SaaS, Infrastructure and Application Platforms
Hosted Video is a significant trend:

• Initial system cost is reduced by removing the need for local management and storage
• Replaces with a subscription-based service
• Users are not required to be IT experts
• System management is performed remotely
• IMS Research: 2010 will see a dominant industry focus on Video-based Software as a Service solutions
Video Management (VMS)

- Treats Video as Data
- Often Incorporates “best of class” Video Analytic subsystems
- Manages Storage, Local, Remote
- May be delivered from “the Cloud”
Video Solutions - product

System scalability
Per site

Large
1000
500
Mid
10
Small
10

Video Management Systems

High Geo Dispersion
Remote Access
Small Camera Count

Mid-range NVRs
Hosted

Recording/Monitoring
General Video Management
Specialized Video Management

System complexity
Hosted software – Easy to

- Easily customized to create a company specific monitoring portal
- Easy administration of multiple users
  - Different levels of service depending on customer profile and business model
- Scalable architecture
- An Internet Connection is all you need!
- Minimal end-user support regardless of Internet service provider, routers and settings
  - One-Click Camera Connection
- An Internet Connection is all you need!
Hosted video – Efficient

Wherever there is an Internet connection you can access the system

- Easy login
- Live view
- Recording
- PTZ support
- Mobile access
- Event notification
Hosted Video – Overview
Hosted video software –

Accessories that enhances the AVHS system performance

> Iomega StorCenter Local Storage
> 2 TB for approx $295 msrp
> One click deployment
> Ix line and Px line supported
> Multi purpose use
  > Redundancy/back up
  > High frame rate recording
Integration via automation software

Central monitoring Station

(Hosted video - Integrated into Central Station Solution)
Hosted Video Application

- Yes
  - Internet Connectivity
  - Small Camera Count
  - Multiple locations
  - Remote Access by User
  - Wants to use video to improve their business

- No
  - Larger camera count
  - Needs complex interface like POS
  - Wants media distribution (share video with hundreds of users)
Advantages of the “Zero” Configuration Hosted Solution

• No Special Router lists for compatibility required
• No Static IP Address or Dynamic DNS
• Elimination of the DVR; no periodic HDD replacement as primary recording
• Improved installation and commissioning as the “focus” is on the image capture device
Hosted Video Solution

Axis has a wide range of network video products to complete the AVHS setup

• Fixed and PTZ network cameras
  – Your choice of alarm trigger – external, built-in PIR or video motion detection
  – Audio
  – Built-in illuminator

• Encoders
  – Connect existing analog systems to AVHS!

• Local storage for backup and continuity
Detailed Camera Binding Operation through “One Click”

- Press the “one-click” button on the Axis camera connected to the Internet and it will automatically find one of a number of Dispatch servers available globally.
- The security contractor enters an Owner Authentication Key (OAK) at an AVHS Server portal. The AVHS Server, which may be located anywhere there is Internet connectivity then communicates its ownership of the Axis camera being programmed to the Dispatch server.
- The Dispatch server then reconfigures the Axis camera so that it will directly stream to the partner’s AVHS server. The Dispatch server then drops the connection.
- The Axis camera streams to the AVHS server; the end user or security contractor receives video on a workstation, laptop or mobile device.
- If a Network attached storage (NAS) unit is deployed, it is discovered in the same manner as the Axis AVHS network camera and the Axis network camera may be configured to stream higher resolution video content directly to it on a Local Area Network, Wide Area Network or via the Internet.
Mobile device application

• Two approaches
  – direct from camera
  – served from hosted video location
• Alarm recording; Event playback
• Real-time monitoring
iPad and hosted video

- Hosted video microsite for iPad
- iPad / personal hotspot used to monitor

Diagram:

- Camera
- Server
- Personal WiFi Device
- iPad with Page

Bicsi
The Next Step – Managed Video Solution with Integration

- Intrusion Detection System via Central Station Automation (DICE, Immix by SureView, Manitou by BOLD)
  - Video clip of alarm condition
  - Late-to-close; early to open video clips
  - Video Guard Tours

- Access Control
  - Visual verification and identification
  - Visitor management
  - Entry LPR/LPC

- Fire Alarm
  - Situation awareness for local AHJ