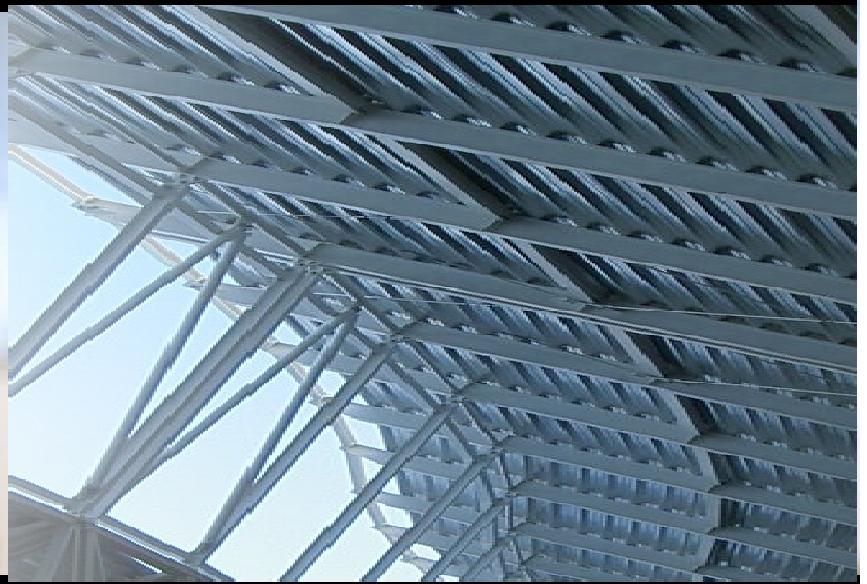




# Cisco Connected Real Estate (CCRE)



***Cisco Integrated Building Solutions***

***Tan Lip Boon***

***Cisco CCRE/ET***

# Converging Real Estate and Information Technology = Cisco Connected Real Estate



## Converging Conventional Technologies

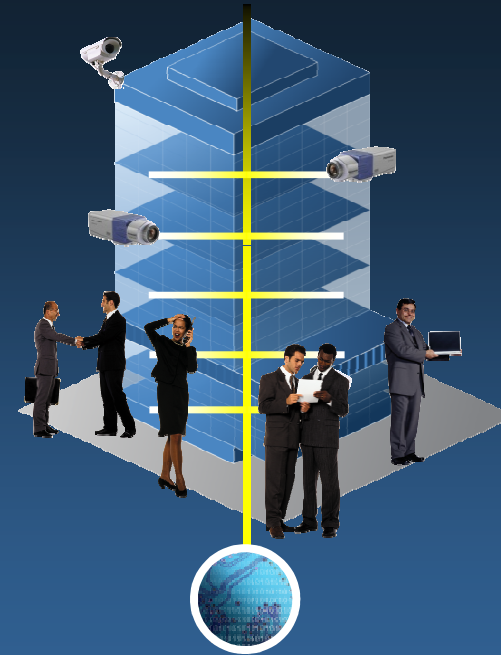
Real estate

IT

Business Support Infrastructure



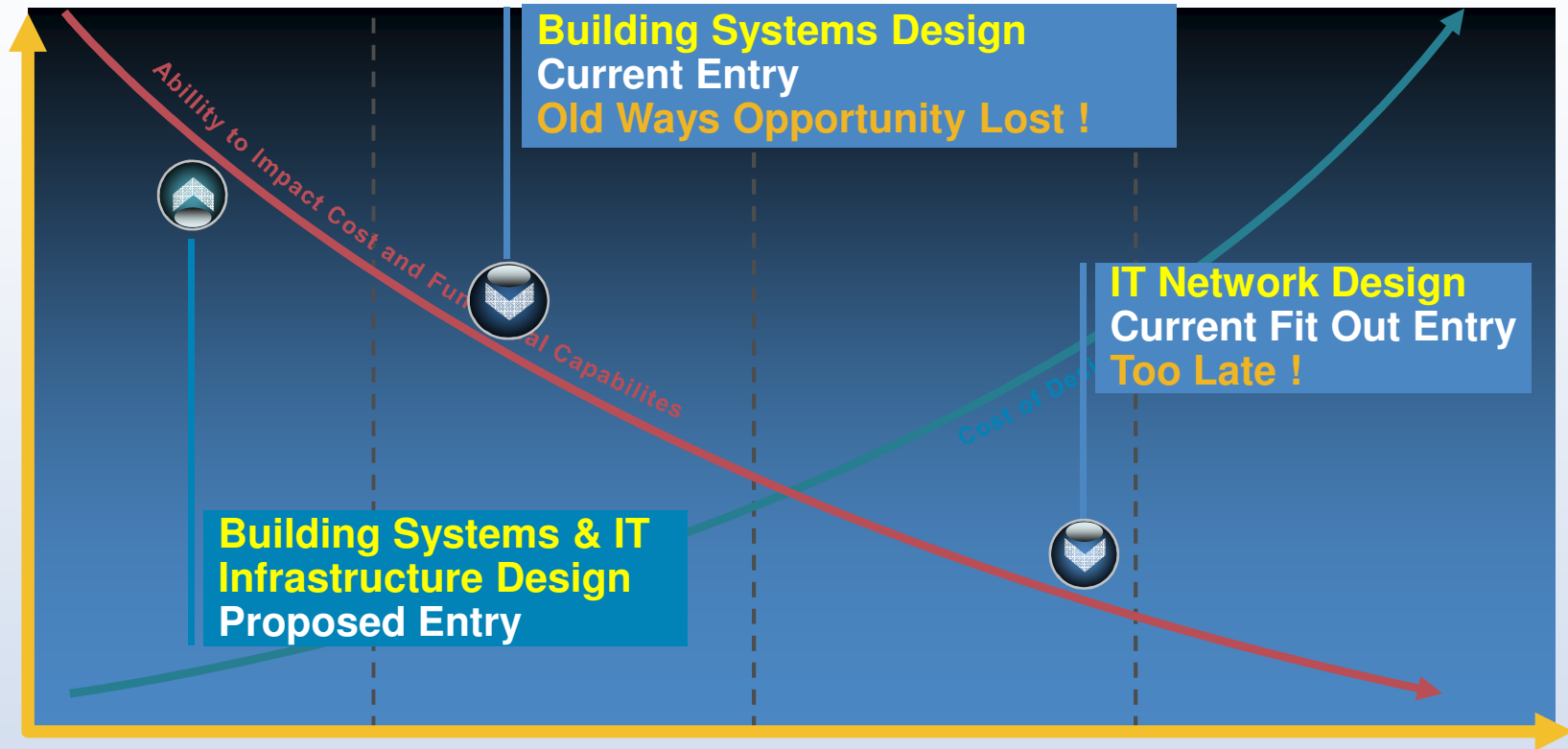
## Intelligent Converged Environments



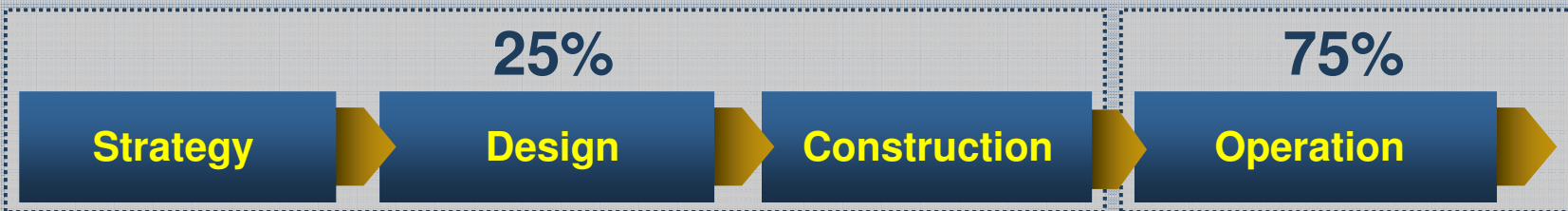
Integrating real estate and technology architecture

Changing the way real estate is designed, built, managed & used

# CCRE Estate Implementation Strategy



Lifecycle cost

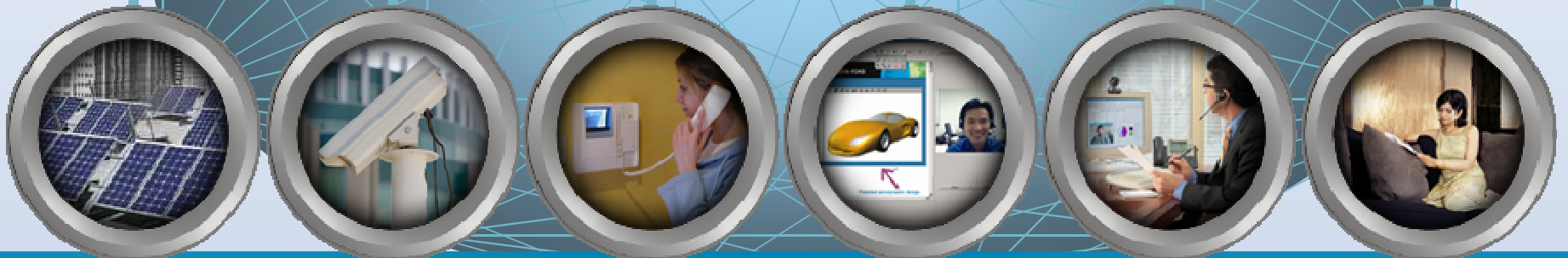


# How Do You Enable Collaboration and Boost Efficiency and Effectiveness?

## Content / Applications

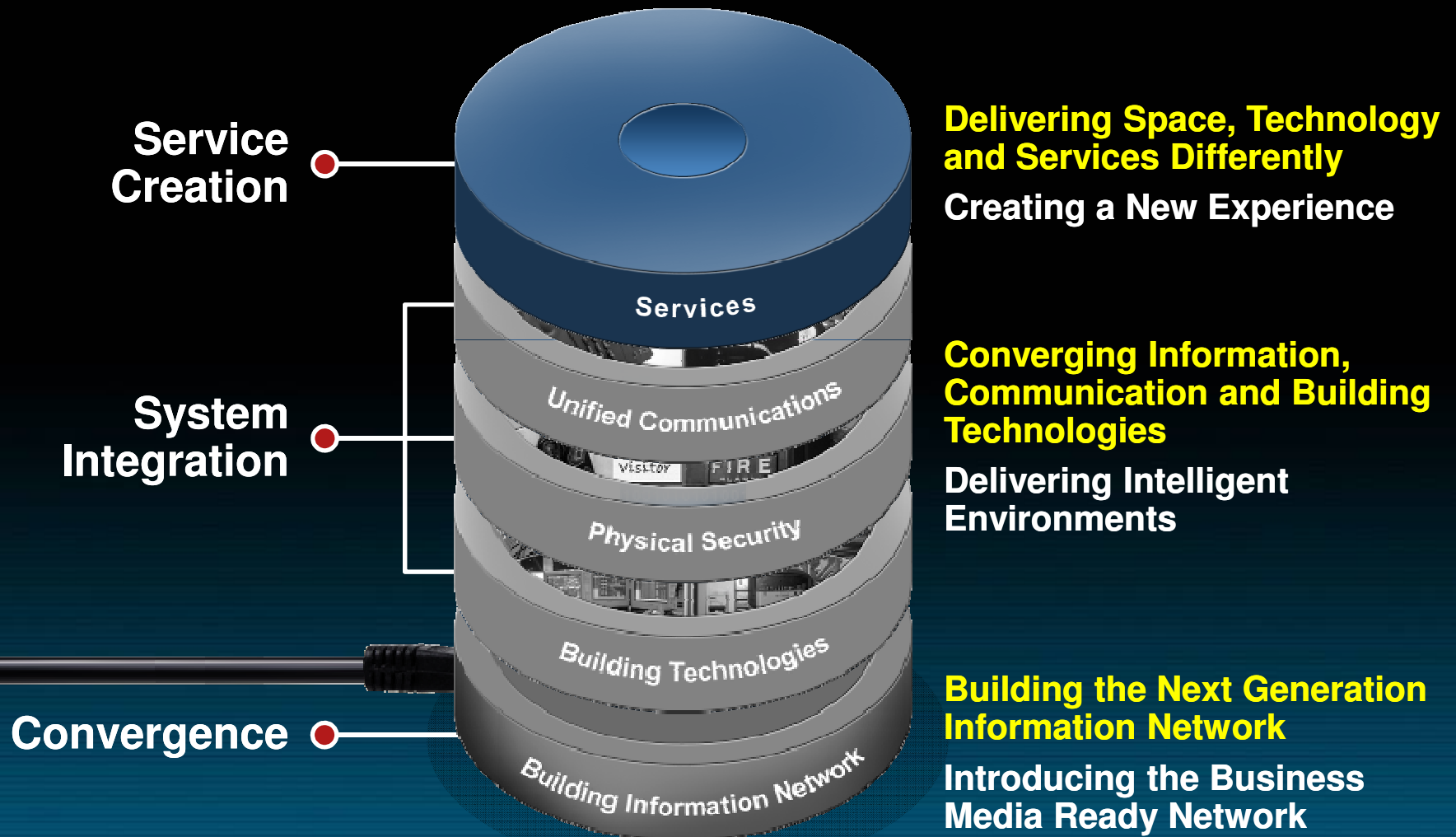


## Experience



## Devices

# Framework for Connected Real Estate





# Converging IT and Building Systems Unified Communications

Call Manager and  
Cisco Unity

Rich Media  
Content Video  
Portal

Video and Voice  
Conferencing thru WebEx &  
UC Video

Personal  
Communicator

Telepresence &  
Digital Concierge

Digital Signage &  
Video On Demand  
Enterprise TV



# Converging IT and Building Systems Physical Security



Intrusion Detection & Perimeter Monitoring

IP & Hybrid Video Surveillance

Network Security

Human & Asset Tracking

Physical & Network Access Control

Secured Radio Communications

# Converging IT and Building Systems

## Building Technologies



Facilities Management

Safety Management

Building Automation

Public Address

Car Parking Systems

Energy Management

# Raising User Experience and Effectiveness

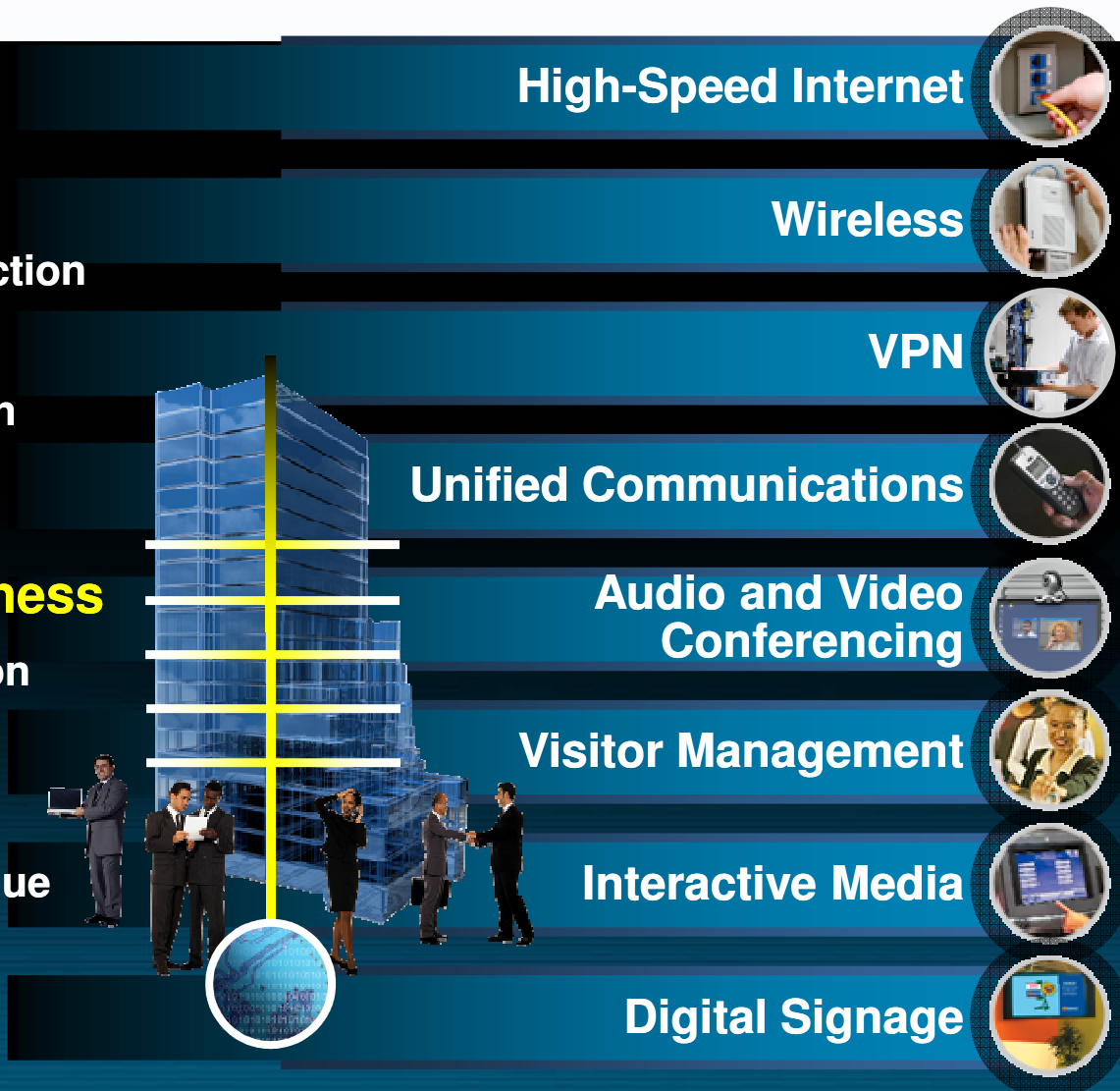
## Benefits:

### User Effectiveness

- Collaboration and interaction
- Mobile Connectivity
- Experience and attraction
- Productivity

### Real Estate Effectiveness

- Improved space utilization
- Simplified management
- Reduced costs
- Increased services revenue



Services and Technologies

# Raising Building Performance and Value

## Benefits:

### Building Performance

- Safety and security
- Environmental sustainability
- Occupant comfort
- Organizational flexibility

### Real Estate Effectiveness

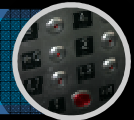
- Reduced costs
- Energy savings
- Managed services
- **Competitive** advantage



Lighting



Elevator



24 / 7 Monitor



HVAC



Fire



Video Surveillance



Access

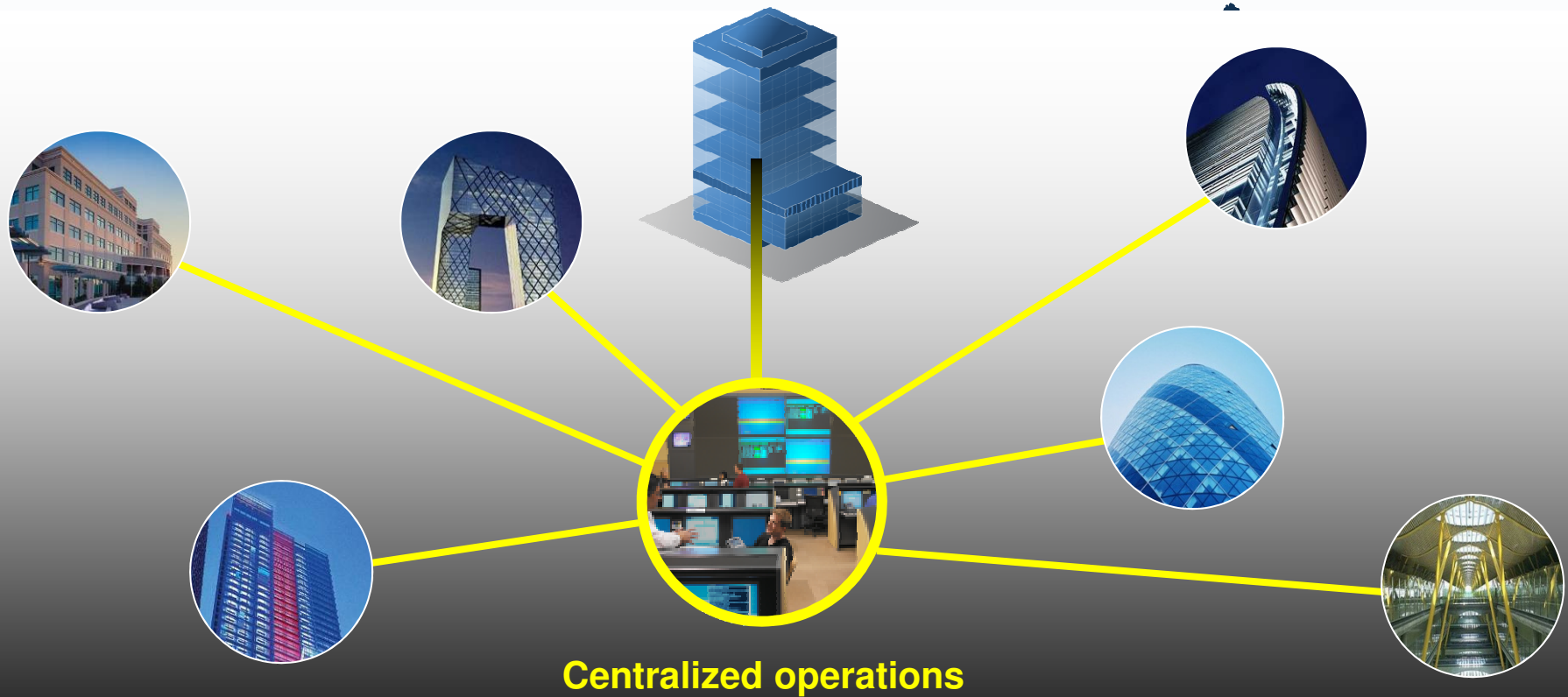


Energy



Services and Technologies

# Connecting for Centralized Management and Remote Services



**Economy of scale benefits through connecting the buildings in your portfolio or by outsourcing space and management**

# The Cisco Real Estate Portfolio



Portfolio	16.2 M SF Owned: 62%
Persons housed	47,600
Countries	75
Buildings	392 Owned: 69

A Laboratory for Innovative Real Estate and Technology Solutions

# Benefits Summary of Intelligent Converged Environments



## Finance

- CAPEX reduction
  - Simplified design & construction
- OPEX reduction
  - Centralized management
  - Energy savings
  - Integrated operations
- Intensified space use
- Revenue opportunities
- Increased property value

## Process

- Business intelligence
  - Enterprise solutions
  - Ubiquitous access to real-time data
- Process efficiencies
  - Integrated business processes
  - Web based tools
- Managed services
  - Outsourcing of management and space
- New business models
  - Revenue generation

## People

- Internal & external mobility
  - Remote workforce
  - Work-life balance
- Workforce satisfaction
- Workforce productivity
- Higher comfort
- Improved health, safety & security

## Community

- Competitiveness & differentiation
- Economic development
- Reduced ecological Footprint
  - Reduced consumption
  - Less space requirements
  - Energy management
- Social responsibility

### CAPEX Reduction

CTBG study, 2004

**23%**

### OPEX Reduction on Security

Systems, Inc. 2005

**30%**

### Property Value Increase

Irvine Companies

**4.7%**

### Increased Satisfaction

Cisco Systems, WPR, 2005

**82%**

### Improved communications

Cisco Systems, WPR, 2005

**82%**

### Preferred Environment

Cisco Systems, WPR, 2005

**77%**

### Electricity Savings

CIFE, Stanford University

**20%**

### Reduced Energy Consumption

Fairmont Vancouver and CABA

**35%**

### Reduction real estate cost

British Telecom

**£450M**

# Cisco Integrated Building Solutions

## Cisco Building Systems Components

- **Physical Security System**
  - a) IP Surveillance
  - b) IP Physical Access Control System
  - c) IP Intrusion Detection System
  - d) IP InterOps Communication System
  
- **Digital Media System**
  - a) Digital Signage System
  - b) Enterprise TV System ( VOD )
  - c) Desktop Video System
  
- **Wireless ( Mobility )**
  - a) Human Tracking System
  - b) Asset Tracking System
  
- **Unified Communications**
  - a) IP Telephony
  - b) Virtual Attendant ( digital Concierge )

# Cisco Integrated Building Solutions

## Cisco IT Systems Components

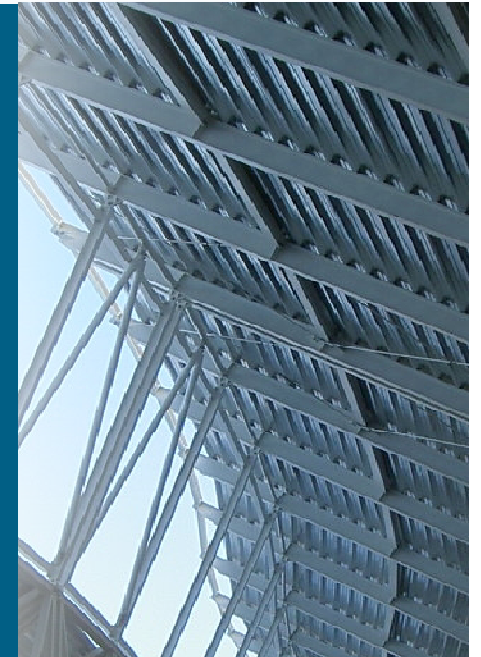
- **Data Centre**
- **Wireless**
- **Routing & Switching**
- **Network Security**
- **Unified Communication**
- **Telepresence System**

# Cisco Integrated Building Solutions

## Cisco Eco-Systems Partner Solutions

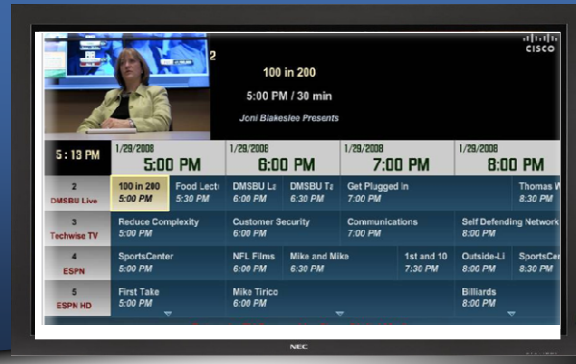
- **Connected Building Cable Management System**
- **Data Centre Grounding/Cabinet Cooling System**
- **Intelligent Building Management System**
- **Public Address System**
- **Intercom System**
- **MATV System**
- **Master Clock System**
- **AV System**
- **Building Automation System**
- **Fire Alarm System**

# Cisco Integrated Building Solutions – Digital Media Systems



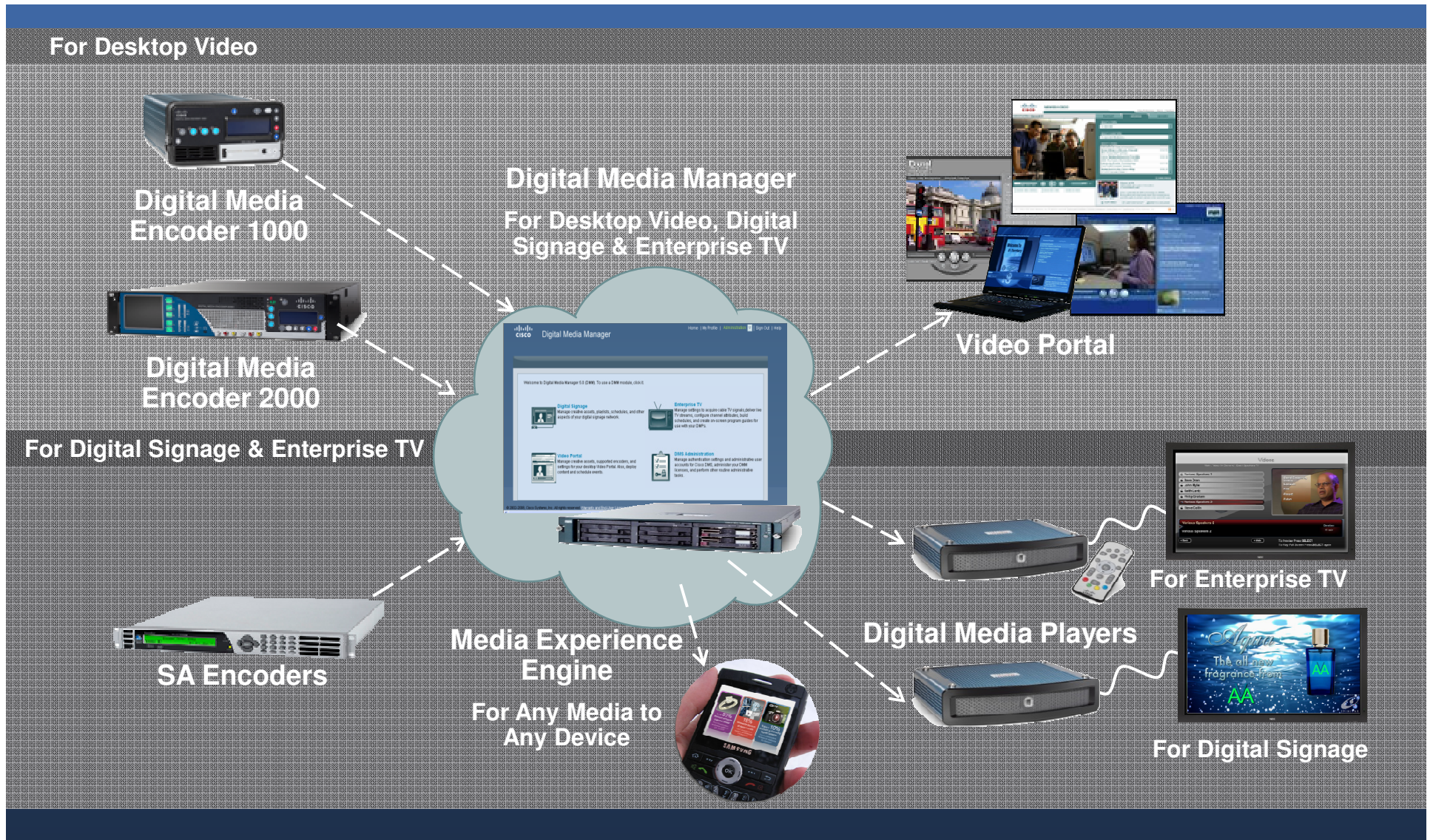
# Cisco Digital Media System: Overview

## A Comprehensive Suite of Digital Signage, Enterprise TV and Desktop Video Applications



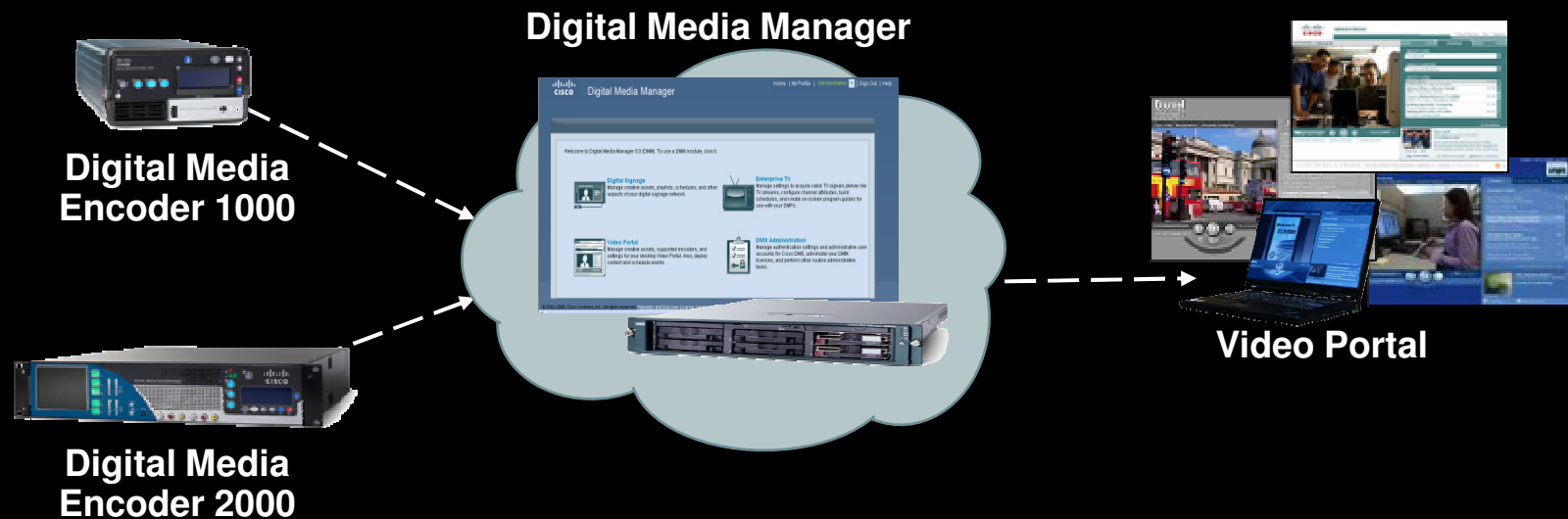
- **Comprehensive:** Suite of digital signage, Enterprise TV and desktop video, managed from a single platform
- **Scalable:** To thousands of users and digital displays
- **Network-Centric:** For optimal, intelligent media content delivery

# Cisco Digital Signage, Enterprise TV, Desktop Video & Media Experience Components



# Cisco Desktop Video: Overview

Enables digital media creation, management, and access for relevant, direct communications over the Web to users—anywhere, anytime



# Cisco Digital Signage: Overview

A comprehensive solution for flexible and centralized management and publishing of digital media to networked, on-premise digital signage displays



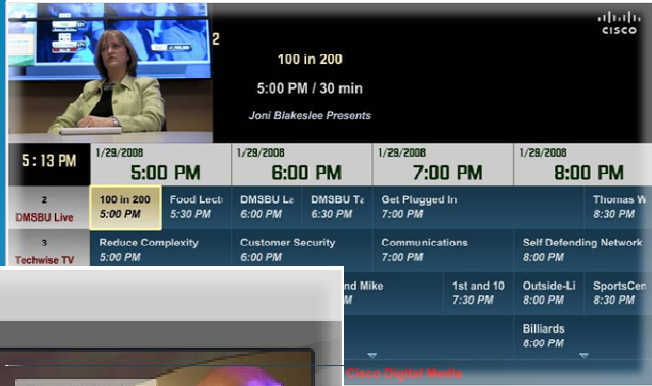
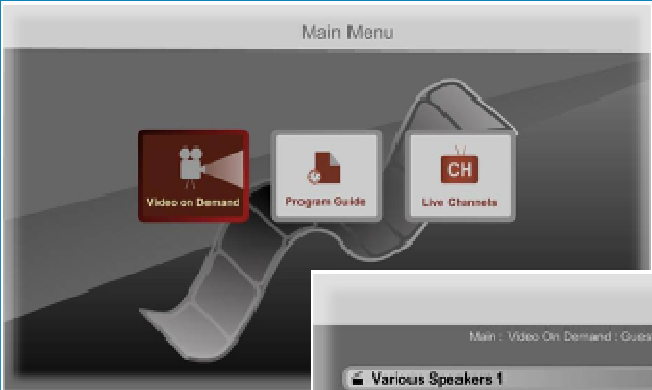
# Cisco Enterprise TV: Overview

An interactive application enabling organizations to deliver on-demand video and broadcast live TV channels over an IP network to digital displays



Enterprise TV leverages the same hardware platform as Digital Signage

# Components of Cisco Enterprise TV



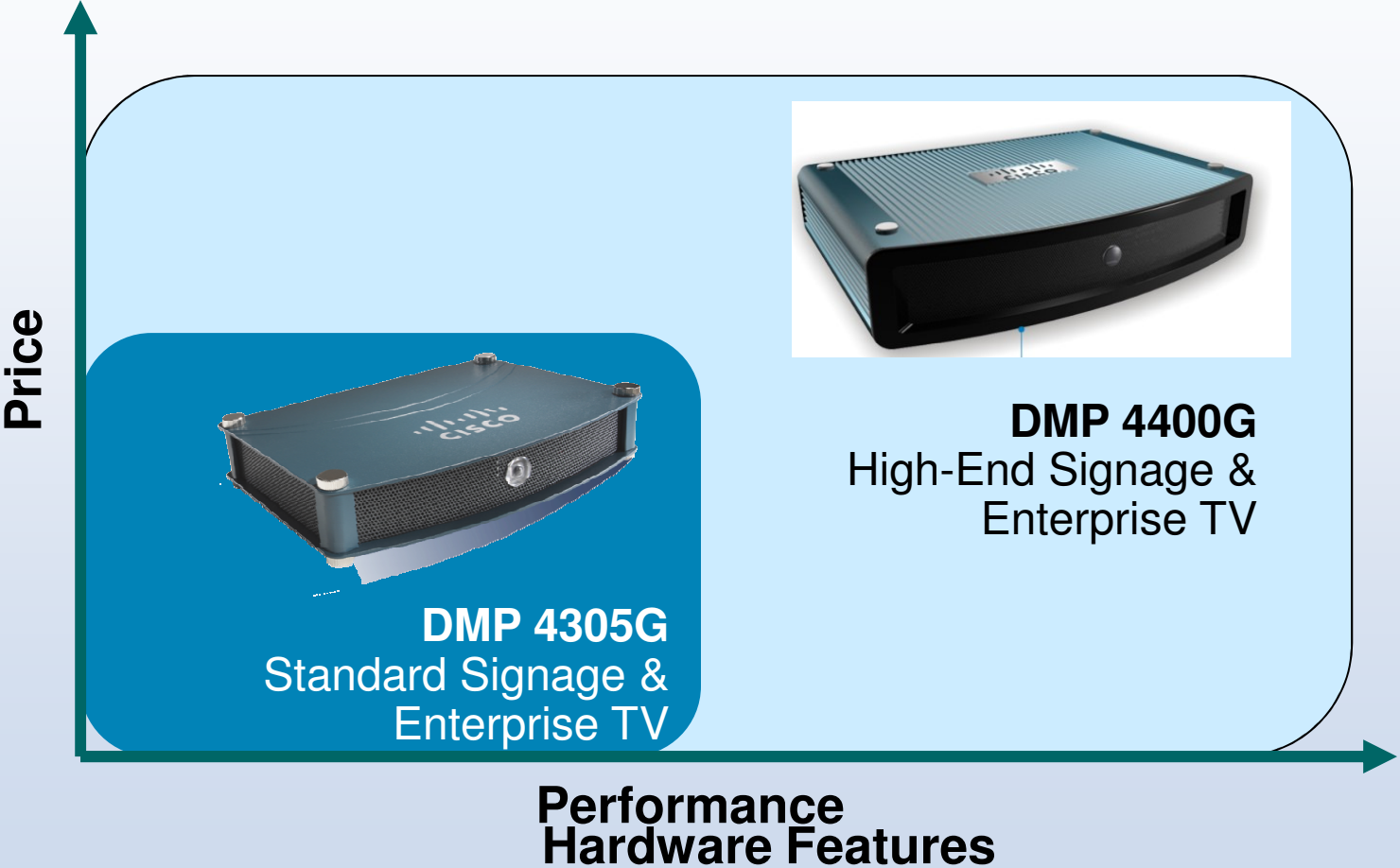
Digital Media Player



Digital Media Manager

Network as the Platform

# Digital Media Player Platform Positioning



# DMP Features Comparison

DMP Feature	4305G	4400G
MPEG2-TS	Yes	Yes
MPEG4/H.264	No	Yes
Flash	Flash 7 (and lower)	Flash 9 (and lower)
Local Storage	2GB	4GB
HTTP Download to Local Storage	Yes	Yes
Mixed Content in Same Zone	Yes	Yes
Emergency message Insertion	Yes	Yes
Subscribe to RSS Syndication for Content Zones	Yes	Yes
Scrolling Ticker (Right to Left)	System limitation (No)	Yes
Remote Control and ETV Program Guide	Yes	Yes

# Cisco Digital Media Player Appliance vs. PC

	Cisco Digital Media Player	PC Player
Technology	Dedicated appliance	PC hardware, Windows OS, separate software
Form Factor	Small	Large
Video Quality	SD and HD at 1080p	HD video often not achievable or poor quality
Hardware Life Expectancy	10+ Years	2-3 Years
Hardware Maintenance	No moving parts. No hardware replacement required.	Many individual components each with their own failure rate
Reliability	Designed for 24x7 operation	Requires frequent periodic rebooting
Power Consumption	Less than standard light bulb	5X DMP

# Business Driver Applications

## Sales and Marketing



- Promote, cross-sell/up-sell
- Marketing videos that grab viewer attention
- Compelling product and service information
- Provide a human face on content
- Reduce perceived wait time

## Corporate Communications



- Direct line of communications to employees or customers
- Global corporate messaging consistency
  - Immediate executive communications
- Live broadcast of company events

## Training



- Cost-efficient training to remote employees
  - Information consistency across channels
- Power of video—users retain more information
- Increased ability to absorb information in searchable segments

## Information Sharing



- Instant communications for rapid response
- Directional signage (way-finding)
- Informational videos available on-demand
  - Breaking news relevant to employees/  
Emergency communications

# DMS Verticals and Customers

<b>Education</b> 	<b>Manufacturing</b> 	<b>Energy</b> 	<b>Gaming</b> 	<b>Government</b> 
<b>The Courts</b> 	<b>Healthcare</b> 	<b>Hospitality</b> 	<b>Stadiums</b> 	<b>Transport</b> 
<b>High Tech</b> 	<b>US Military</b> 	<b>Financial Svc.</b> 	<b>Retail</b> 	<b>Theme Parks</b> 

# Business Transformation With Cisco Digital Media System

Centralized Content Management



Easy, Customizable Publishing and Access



Scalability to 1000's of Endpoints



NORSK TIPPING



Flexible Scheduling and Features



BAPATLA ENGINEERING COLLEGE



Real-time Information and Entertainment



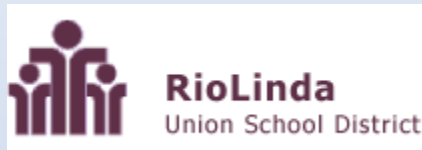
Trusted Source and Innovation



Growth and Results

Over 610 Customers in just 18 months  
Global momentum across all vertical industries  
Customers asking "how do I," not "why" deploy

# Education



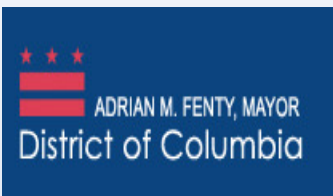
We help students thrive and dreams come alive



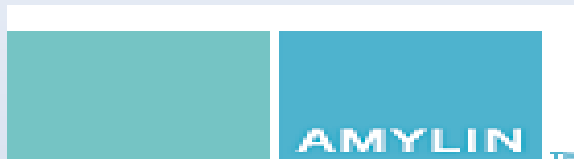
# Federal + SLG



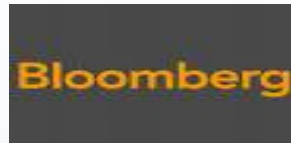
American Red Cross



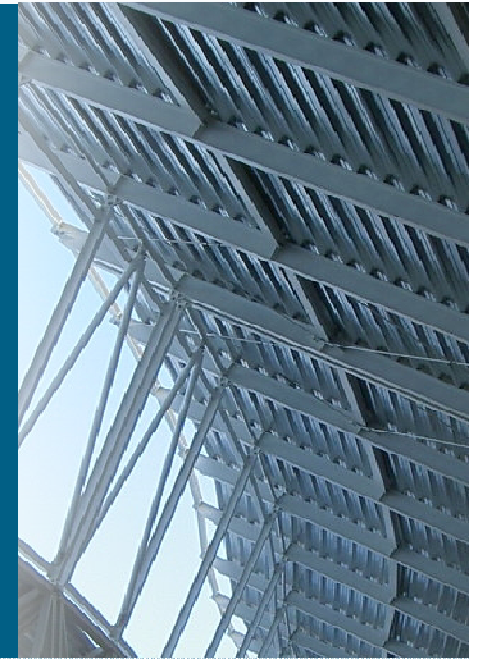
# Healthcare



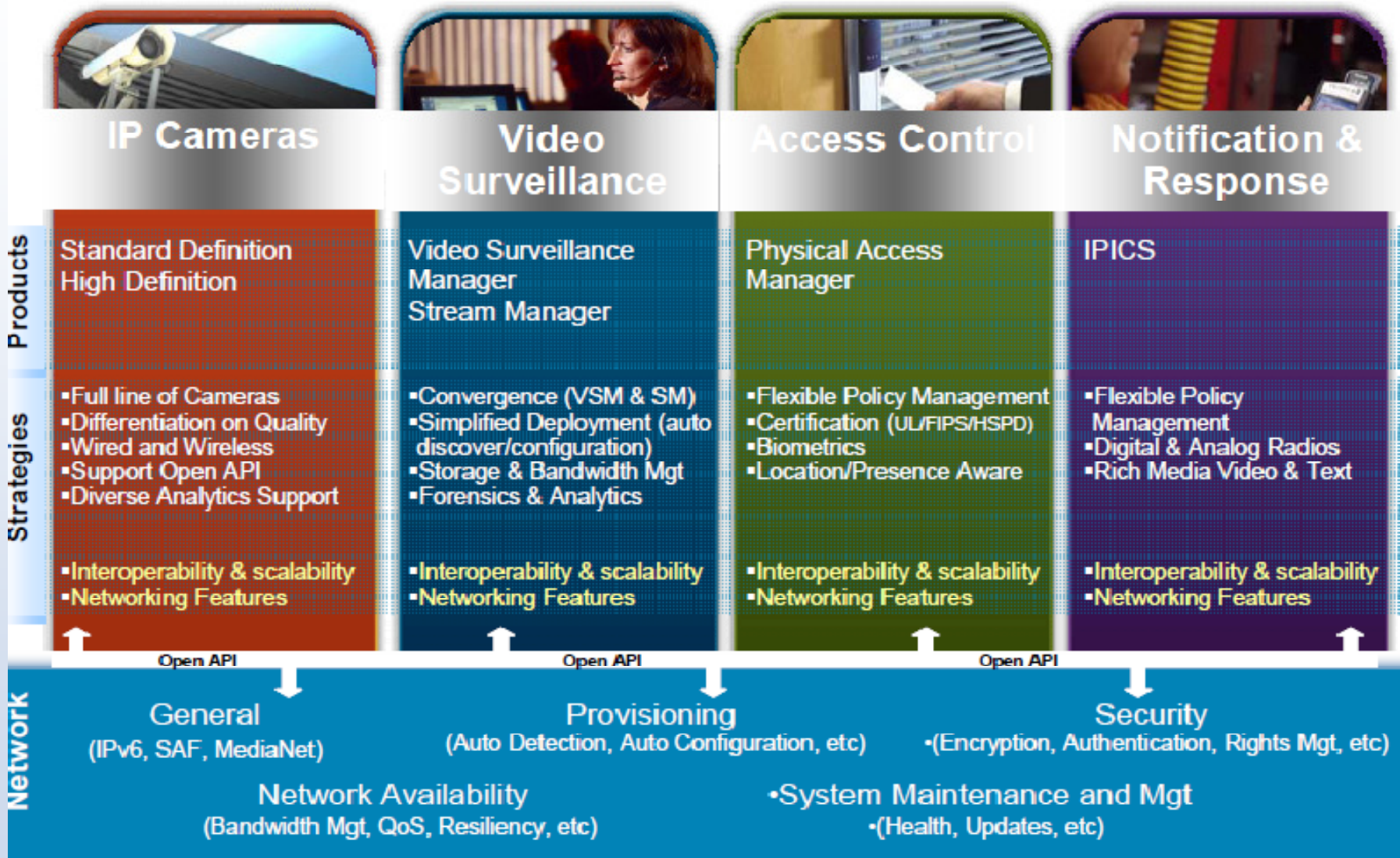
# Financial Services



# Cisco Integrated Building Solutions – Physical Security Systems



# Cisco Integrated Building Solutions : Physical Security System





# Cisco Video Surveillance IP Camera



# Proposed IP Camera Portfolio



Peter Island Wired

Peter Island Wireless

Norman Island Indoor

Norman Island/Vandal Proof

Norman Island/Vandal Proof

CIVS-IPC-2500

CIVS-IPC-2500W

	802.11g			
1/3" CMOS Progressive scan	1/3" CMOS Progressive scan	1/3" CMOS Progressive scan	1/3" CMOS Progressive scan	1/3" CMOS Progressive scan
102dB typ/120dB max	102dB typ/120dB max	102dB typ/120dB max	102dB typ/120dB max	102dB typ/120dB max
Remove able IR Filter w/enclosure	Remove able IR Filter w/enclosure	Remove able IR Filter Indoor	Remove able IR Filter Indoor	Remove able IR Filter Outdoor/IP66 NEMA
CS/Manual & DC _iris Custom	CS/Manual & DC _iris Custom	DC_Iris only 2.8-10mm	DC_Iris only 2.8-10mm	DC_Iris 2.8-10mm 2.8-10mm
0.4 color/0.04 b&w	0.4 color/0.04 b&w	0.4 color/0.04 b&w	0.4 color/0.04 b&w	0.4 color/0.04 b&w

# Proposed IP Camera Portfolio



**Anegada  
CIVS-IPC-4300**

**Anegada Wireless  
CIVS-IPC-4300W**

**Anegada DSP  
CIVS-IPC-4500**

	802.11n	
1/3" CMOS Progressive scan	1/3" CMOS Progressive scan	1/3" CMOS Progressive scan
>85dB	>85dB	>85dB
Remove able IR Filter	Remove able IR Filter	Remove able IR Filter
w/enclosure	w/enclosure	w/enclosure
CS/Manual & DC_iris	CS/Manual & DC_iris	CS
Custom	Custom	Custom
< 1 lux	< 1 lux	< 1 lux

# Proposed IP Camera Portfolio



Anegada DSP Wireless

HD Fixed

Sandy Cay

SD PTZ

Cooper Island

HD PTZ

Virgin Gorda

**CIVS-IPC-4500**

802.11n

1/3" CMOS Progressive scan

>65dB

Remove able IR Filter

w/enclosure

CS

Custom

< 1 lux

1/3" CMOS Progressive scan

>65dB

Remove able IR Filter

Indoor/outdoor

CS

2.8-8mm

< 1 lux

1/3" CMOS Progressive scan

102dB typ/120dB max

Remove able IR Filter

Indoor/outdoor

NA

20X

0.4 color/0.04 b&w

1/3" CMOS Progressive scan

>65dB

Remove able IR Filter

w/enclosure

N/A

20X

< 1 lux

# Cisco Video Surveillance Standard Definition IP Camera

- **Day/Night Capability**

Movable infrared (IR) cut filter, which enables color video in high and low light conditions and as IR sensitive black/white video at night, automatic or manual

- **Dual streaming**

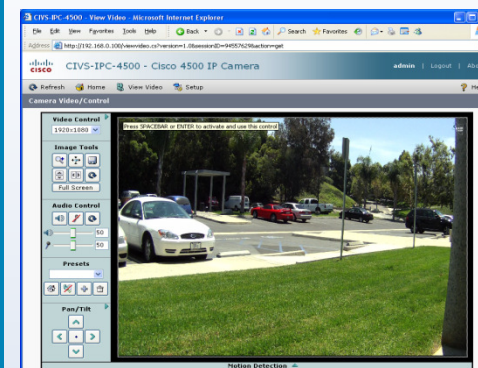
Cisco IP Camera offers dual streaming capability, users can adjust frame rate, and/or resolution to control the quality of the video for different purposes simultaneously, this cannot be done with strictly analog cameras and systems

- **Analog Output**

There is an analog output with a standard BNC connector for ease of installation

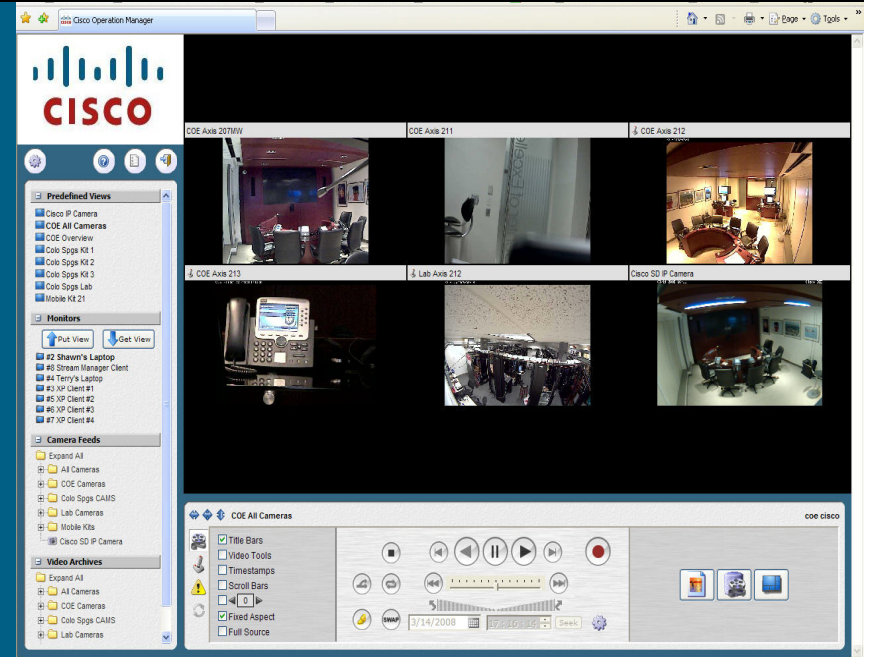
# Cisco Video Surveillance High Definition IP Camera

- True HD Video Surveillance Camera
- Outstanding Image Quality
- 1080p (1920 x 1080) 30 FPS
- 720p (1280 x 720) 60 FPS
- H.264, MJPEG Compression
- Dedicated Digital Signal Processor (DSP) for Video Analytics
- USB Memory Card
- Application Programming Interface (API)
- IPv6





# Cisco Video Surveillance Manager



# Cisco Video Surveillance Manager

Capture



Analog and IP Cameras

Manage



**Video Management (MS and ES)**

- Video Collection
- Video Routing
- Storage & Retrieval
- Event management
- Rules Engine
- C3/4 Integration

Archive



**Video Storage (SS)**

- DAS, SAN, NAS
- Local and Remote
- Loops and Events
- Redundant Archives
- Optional Clustering
- Hardware Agnostic

View



**User Portal (OM)**

- Video Viewing
- PTZ and Presets
- System Configuration
- User Management
- Reporting
- Event Display

Distribute



**Virtual Matrix Switch (VM)**

- Single Control
- Multiple Displays
- Video Switching
- Video Wall

**Operating Systems and Data Bases**

Linux, Windows XP

MySQL, Oracle, dB/2

**Communications**

Internet - Intranet - TCP/IP - HTTP(s) - RTP - RTSP

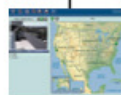


MS - Media Server  
 ES - Encoding Server  
 SS - Storage System  
 OM - Operations Manager  
 VM - Virtual Matrix

Common API



Video Analytics



Custom Interface



Access Control



Video Wall



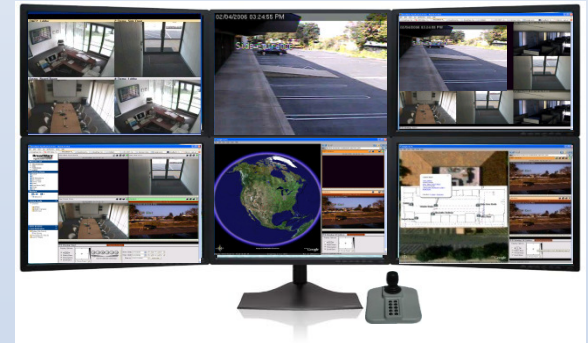
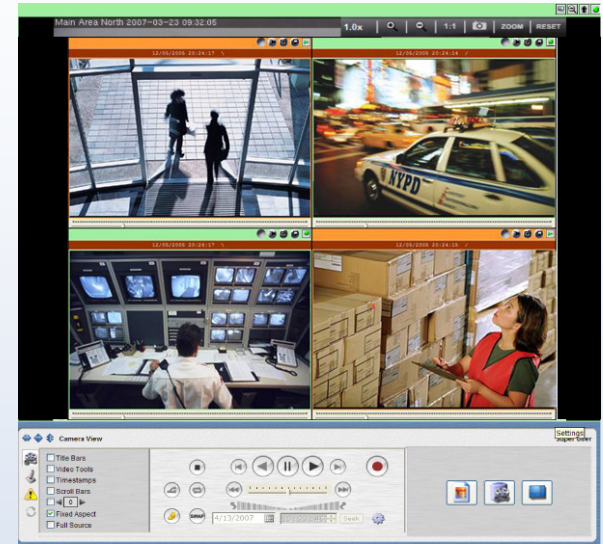
Back Office

# Cisco Video Surveillance Manager Family Network-Centric, Browser-Based

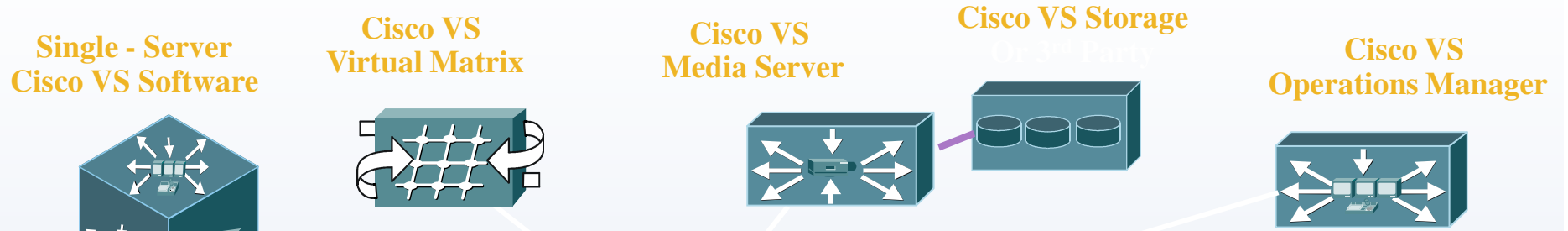
## Suite of Software Modules

- Media Server
- Encoding Server\*
- Operations Manager
- Virtual Matrix Server

**\*Media Server SW with Encoder Cards**



## Cisco VSM Solution Overview



**C** IT-C  
**Flexi**  
**Scalab**

**All in one Appliance**  
**Cost-effective**  
**Easy Operational Management**

# “Router – Integrated” IP Video Surveillance and Video Recording



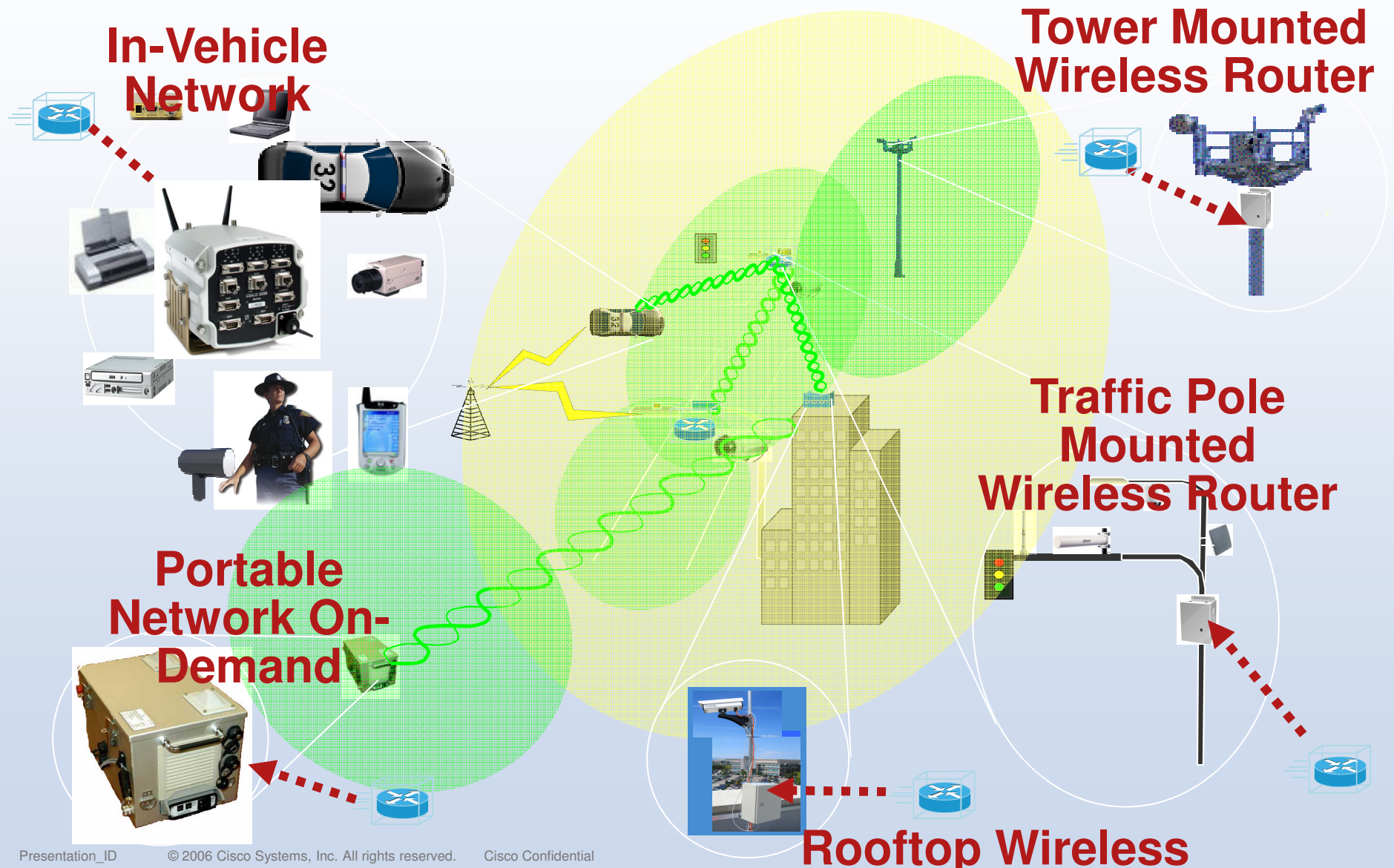
Integrated Analog Video Gateway  
Hybrid Analog and IP Cameras  
Integrated Video Management  
and Storage System



## Cisco Integrated Services Routers

- Analog Video Gateway: IPVS-16A
  - **Analog video interface for IP Video Surveillance**
- 16 Analog Video Ports: MJPEG, MPEG-4
  - 8 Contact Closure Ports
  - 2 RS-485 ports for device Pan/Tilt/Zoom control
- Integrated Video Management and Storage System: VMSS
  - **Targeted at <32 stream (camera) deployments**
  - Utilizes pre-packaged VS Operation Manager and VS Media Server
  - Manage, view and archive data for up to 32 devices simultaneously
  - Unified interface into IP Cameras and Analog devices (through the AVG)

# Cisco 3200 Series Wireless & Mobile Routers in Multiple Communications Environments



# Video Management Subsystem

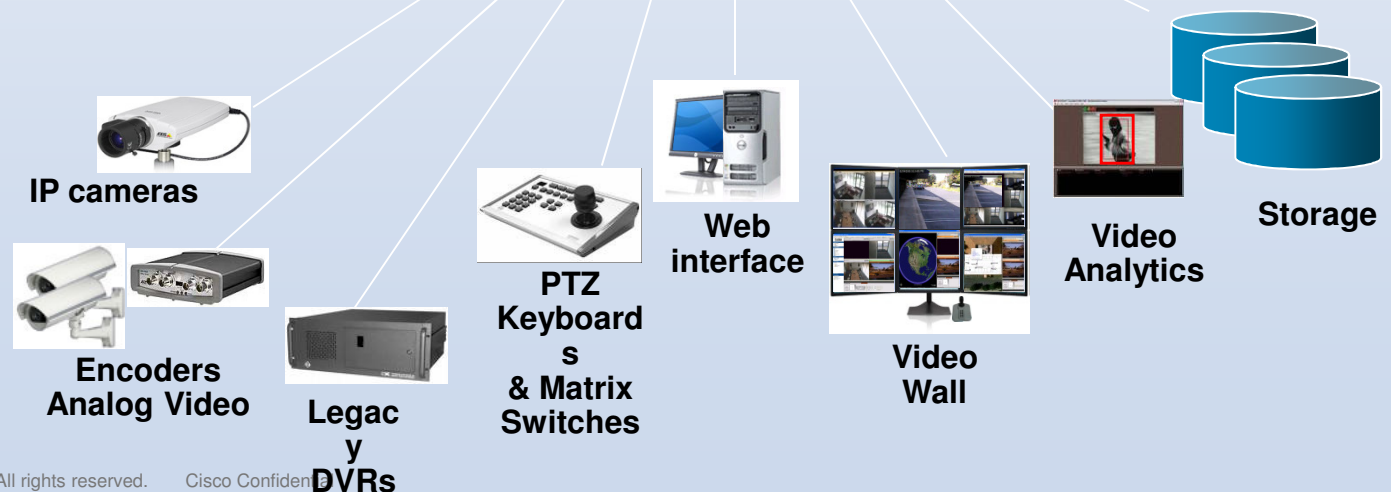
## Corporate Systems



## Peer Sub-Systems



## Abstraction Layer for Video Components



# Customize and Interoperable

## Cisco Ecosystem System & Application Providers



# Cisco Integrated Building Solutions -Human / Assets Tracking

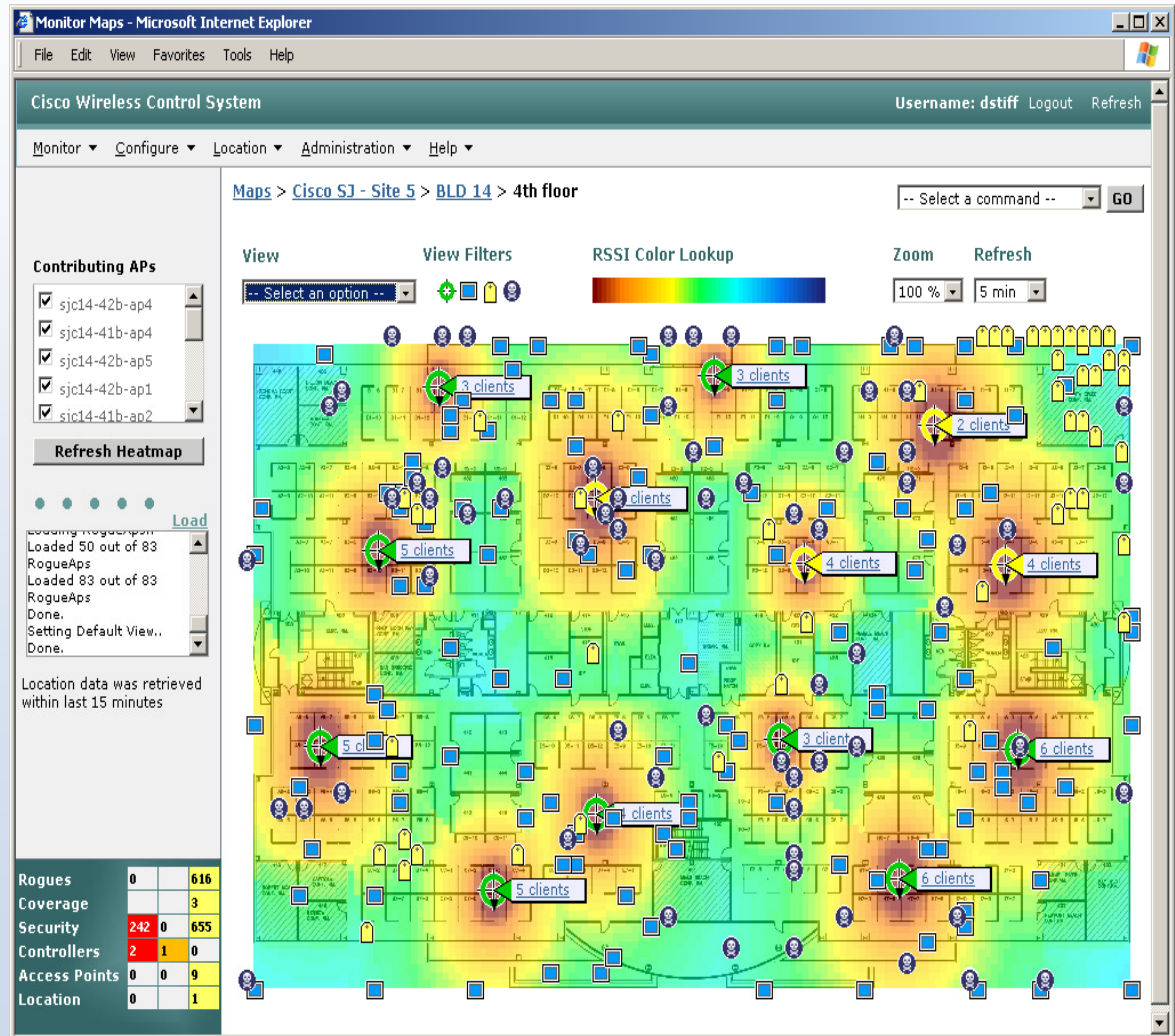


# What is RF Fingerprinting?

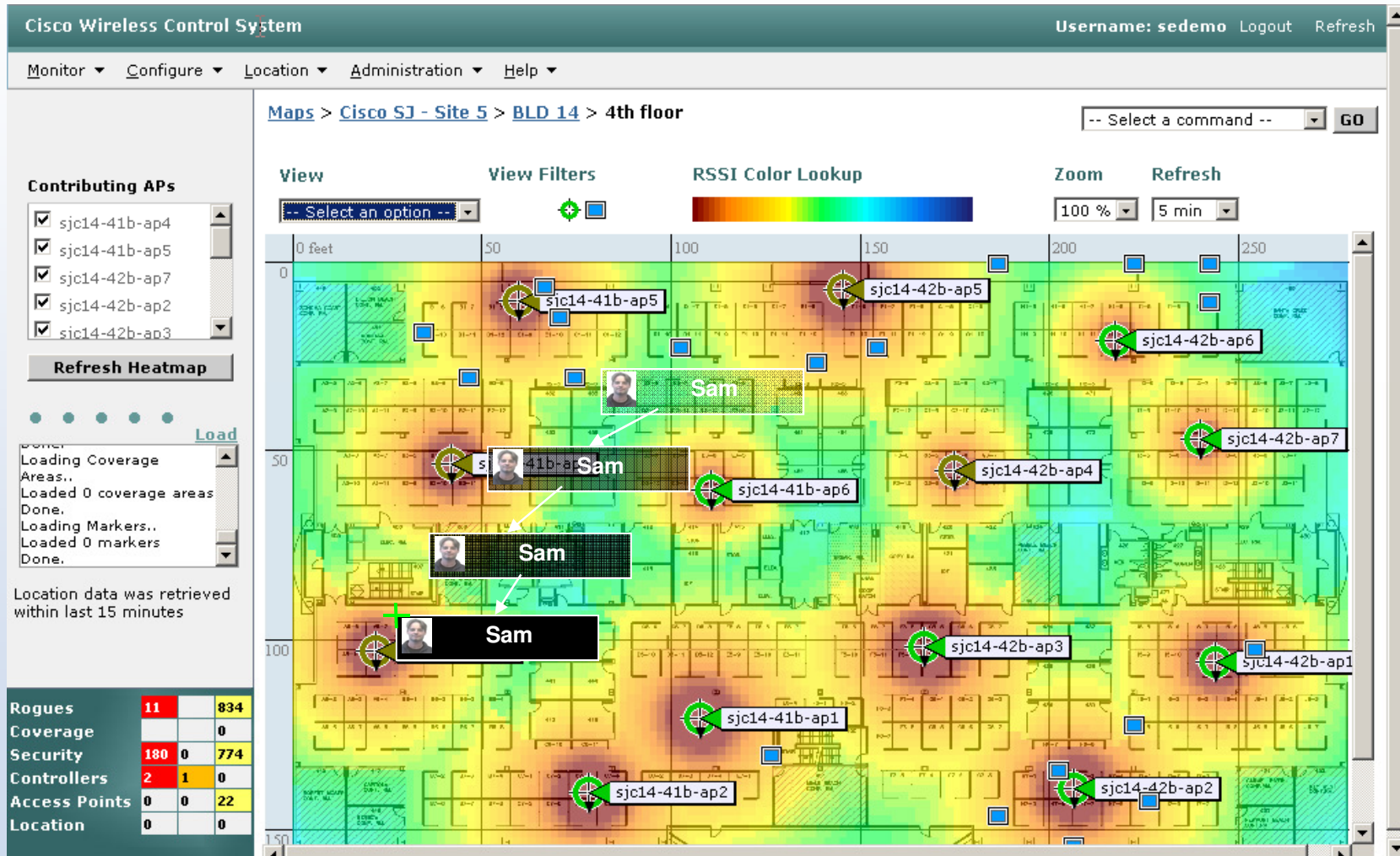
- **Closest AP**: Identify AP with strongest signal. Limited accuracy: an AP can easily cover several thousand feet.
- **RF Triangulation**: All APs identify the strength with which they hear a client. Intelligent algorithms triangulate responses to find probable location. More accurate than closest AP. But does not account for effect of building material and people on signal e.g. multi-path, attenuation, reflection...
- **RF Fingerprinting**: RF prediction creates a grid that identifies how every single part of the floorplan looks to all APs. Real world information is gathered by APs is compared to these fingerprints to determine location to within a few meters.

# Rich Functionality and Intuitive GUI

- Hierarchical maps
- High value asset and user visibility
  - Wi-Fi Tags
  - Wi-Fi Devices
  - Rogue Devices
  - Rogue Access Points
- Location-based security and rich audit trail for historical location information



# Location Tracking Over Time



# Location Based Alerts

## Location Based Alerts for Business Policy Enforcement & Audit Trails

Location Notifications Summary											
Absence			In/Out Area			Movement from Marker			Location Changes		
	Last Hour	24 Hours	Total Active		Last Hour	24 Hours	Total Active		Last Hour	24 Hours	Total Active
All Notifications	1	1	1	All Notifications	1	1	2	All Notifications	1	1	1
Client Stations	1	1	1	Client Stations	0	0	0	Client Stations	0	0	0
Asset Tags	0	0	0	Asset Tags	1	1	2	Asset Tags	1	1	1
Rogue Clients	0	0	0	Rogue Clients	0	0	0	Rogue Clients	0	0	0
Rogue AccessPoints	0	0	0	Rogue AccessPoints	0	0	0	Rogue AccessPoints	0	0	0
Battery Level											
	Last Hour	24 Hours	Total Active		Last Hour	24 Hours	Total Active				
All Notifications	0	0	0	All Notifications	0	0	0				
Asset Tags	0	0	0	Asset Tags	0	0	0				

- Transports Types for Alerts**
- Syslog, SNMP traps, SMTP, and SOAP
  - 3rd party applications can integrate location based alerting through SOAP/XML API
- Flexible Notification Triggers**
- Triggers can be logically combined using “and / or”
  - Triggers can match wildcards or specific asset name, asset category, asset group or MAC address

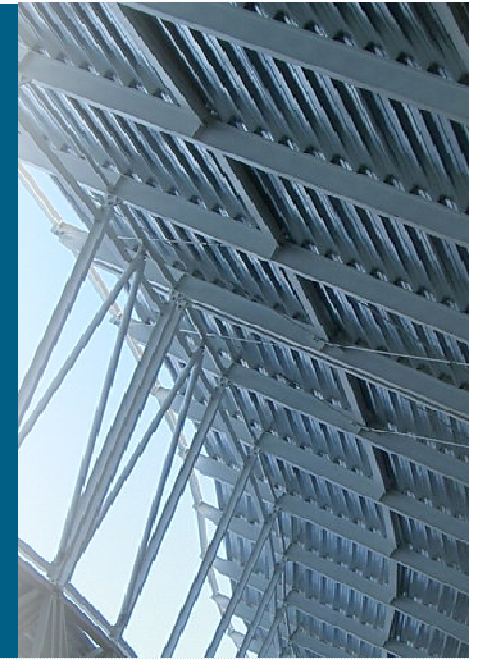
- **Absence:** Missing or out of range of network, time intervals configurable
- **Inside/Outside of Defined Areas:** Network design, building, floor, coverage area
- **Distance or Movement from reference points:** Floor-XY coordinates, marker, tag or mobile station
- **Device location change:** Position of a Wi-Fi device has changed
- **Tag battery level:** Indicates the Wi-Fi tag's power level

# Wi-Fi Active RFID Tags

- **Interoperability:**
  - Interoperable with any standards based 802.11 tag
  - Proven interoperability with PanGo & Aer Scout tags
- **Battery life:**
  - 3-5 years, depends on beacon/blink rates
  - Unassociated tags promote battery life; intelligent motion detectors provide intelligent alerting only, preserving battery life
- **Security mechanisms:**
  - 802.11i/WPA2 & VLANs
  - Unassociated tags do not associate to network
- **Rich Device Information Relay:**
  - Serial telemetry information capable
- **Dimensions:**
  - Varies slightly by vendor but approximately
  - 2.44" (2.61) x 1.57 (1.74) x 0.67" (0.88) "/62mm (66.3) x 40mm (44.2) x 17mm (22.35)
  - Weight: 1.2oz (35g) -2.5oz (w/batteries)
- **Various Mounting Options**
- **Environmental Durability:**
  - **Operating Temperature:** varies by vendor: -30 °C to +75 °C (-22 °F to 167 °F) to 32 to 130 °F (0 to 54 °C)
  - **Dirt/Dust/Water resistance,** includes rubber lining IP-67, IP-68



# Cisco Integrated Building Solutions - Virtual Attendance



# Virtual Lobby-Ambassador

A solution that replaces lobby-ambassadors/receptionists with a call-centered based video attendant capable of fully interacting with the visitor and controlling lobby devices.

**Lobby**



**Call Center**



# Visitor Experience

**A session is initiated one of three ways:**

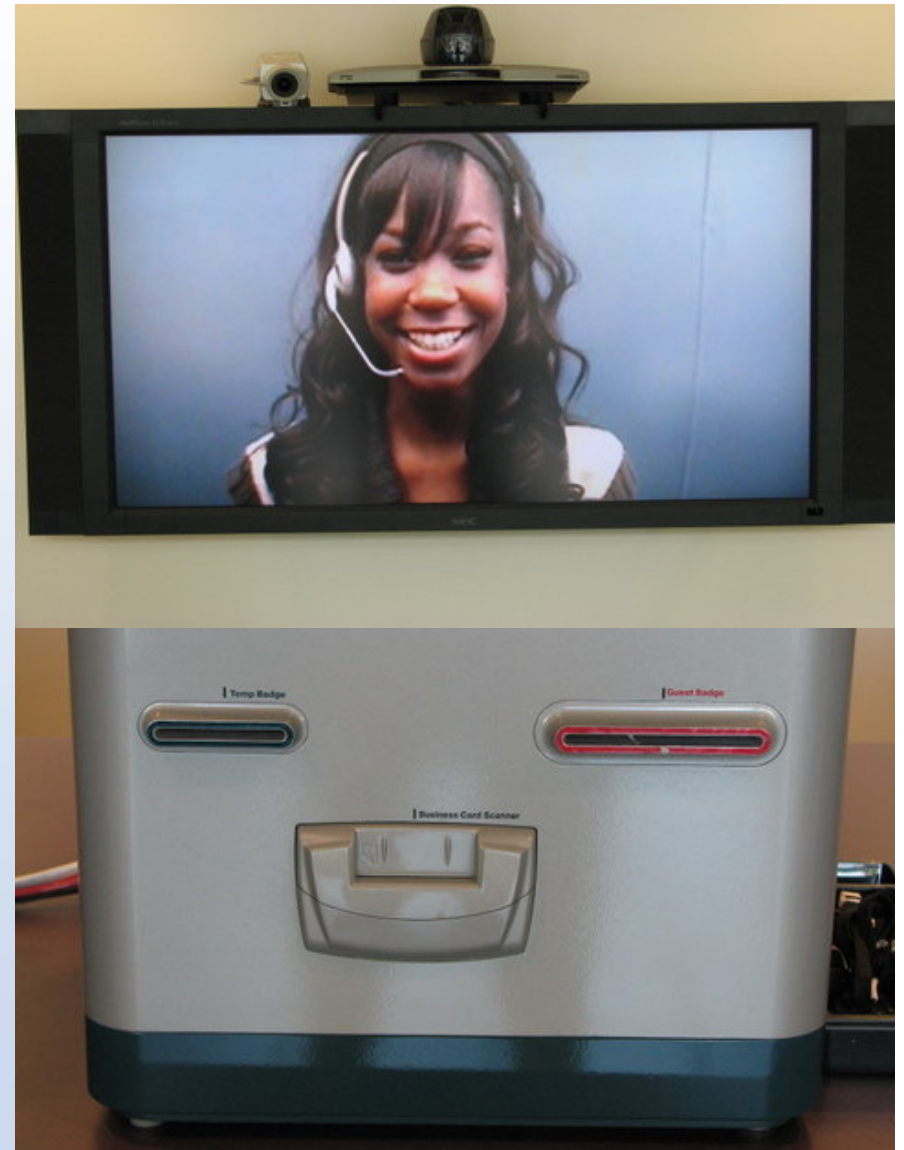
- **By a visitor touching the “Connect” button**
- **By a visitor stepping on a pressure pad in front of the endpoint**
- **By the call-center attendant, based on surveillance observations**



# Visitor Experience

The remote attendant can provide an array of services:

- Call a person in the building
- Scan a business card
- Issue a guest badge
- Issue a temp employee badge
- Display information on the screen



# Virtual Lobby Attendant Can Provide Superior Service to a Manned Lobby

- Constant coverage with little or no additional cost
  - 24 hours
  - No time away for lunch or bathroom breaks
  - No sick days
- Can create coverage preferences so people from a given building get the same individual, even when traveling
- Attendants can have specialized skills
  - Foreign language capabilities
  - Concierge-like knowledge expertise
- Multiple lobby end-points can provide peak period coverage without requiring another dedicated person

# Call-Center Attendant Experience

- During our pilot, attendants claimed to enjoy their jobs more than in a traditional lobby deployment. Reasons include:
  - Social atmosphere
  - Technology interaction is more challenging and interesting
  - More consistent engagement
- This should lead to lower turnover, traditionally a big problem for the industry



## *Questions & Answers*

