



## Tech update – Juni 2009

### Cisco Business Video

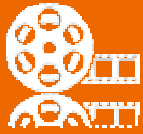
# Agenda

- Business Video overview
- medianet
- Digital Media System
  - Desktop Video / Signage / EnterpriseTV
- Media Experience Engine (MXE)
- Cisco Physical Security

**MOBILITY**

**VIDEO**

**VIRTUALIZATION**



**WEB 3.0**

**anywhere**

**any  
media**

**any  
device**

**WEB 2.0**

**XML**



Wikis, Blogs, Mashups

**WEB 1.0**



Browser, Email/IM

# Business Video



**NETWORK AS THE PLATFORM**



**PC**



**Smartphone**



**Digital Sign**



**TelePresence**

# Business Video Collaboration



**NETWORK AS THE PLATFORM**



**Smartphone**



powered  
by **webex**



**Desktop Video**

TELEPRESENCE    IN THE HOME    SURVEILLANCE    DIGITAL SIGNAGE    MOBILE    DESKTOP

AD INSERTION    TRANSRATE    MULTICAST

TRANSCODE    ENHANCE    PROTECT    COMPRESS

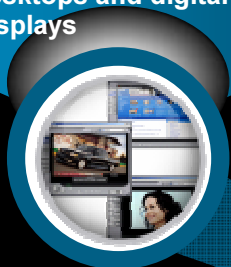
ENCRYPT    STREAM    QOS    TRANSLATE

**NETWORK AS THE PLATFORM**

# Business Video Systems

## Cisco Digital Media System

Streaming video to desktops and digital displays



## Interactive Desktop Collaboration

Rich Media Collaboration



## Cisco TelePresence

Next-Gen Collaboration



## Video Surveillance

IP-based video surveillance



## WebEx

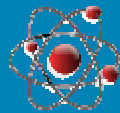
Web Conferencing plus Video



**Network as the Platform**

# Medianet

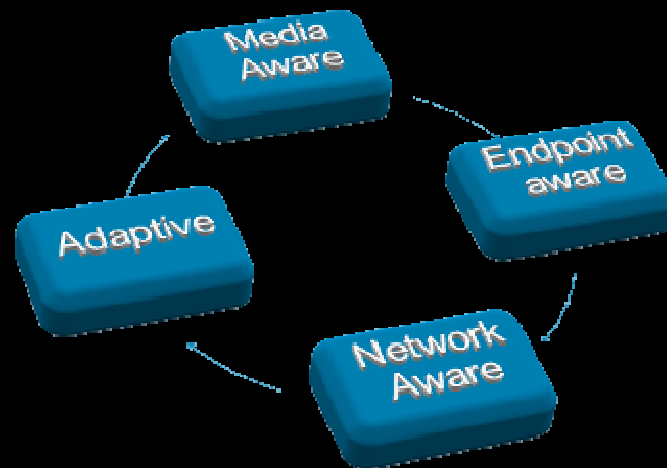
Technology Platform



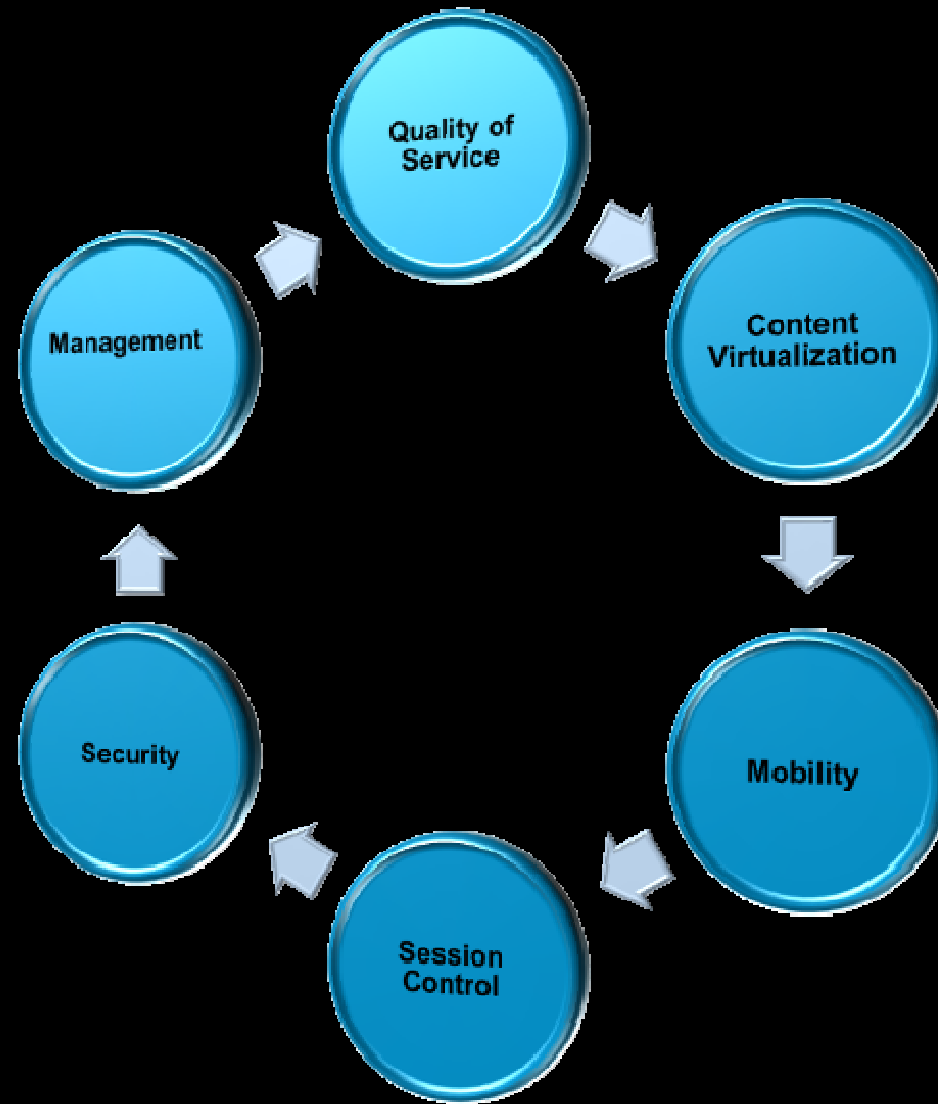
- What is medianet

# Medianet

**A vision of an Intelligent network  
optimized for rich media**

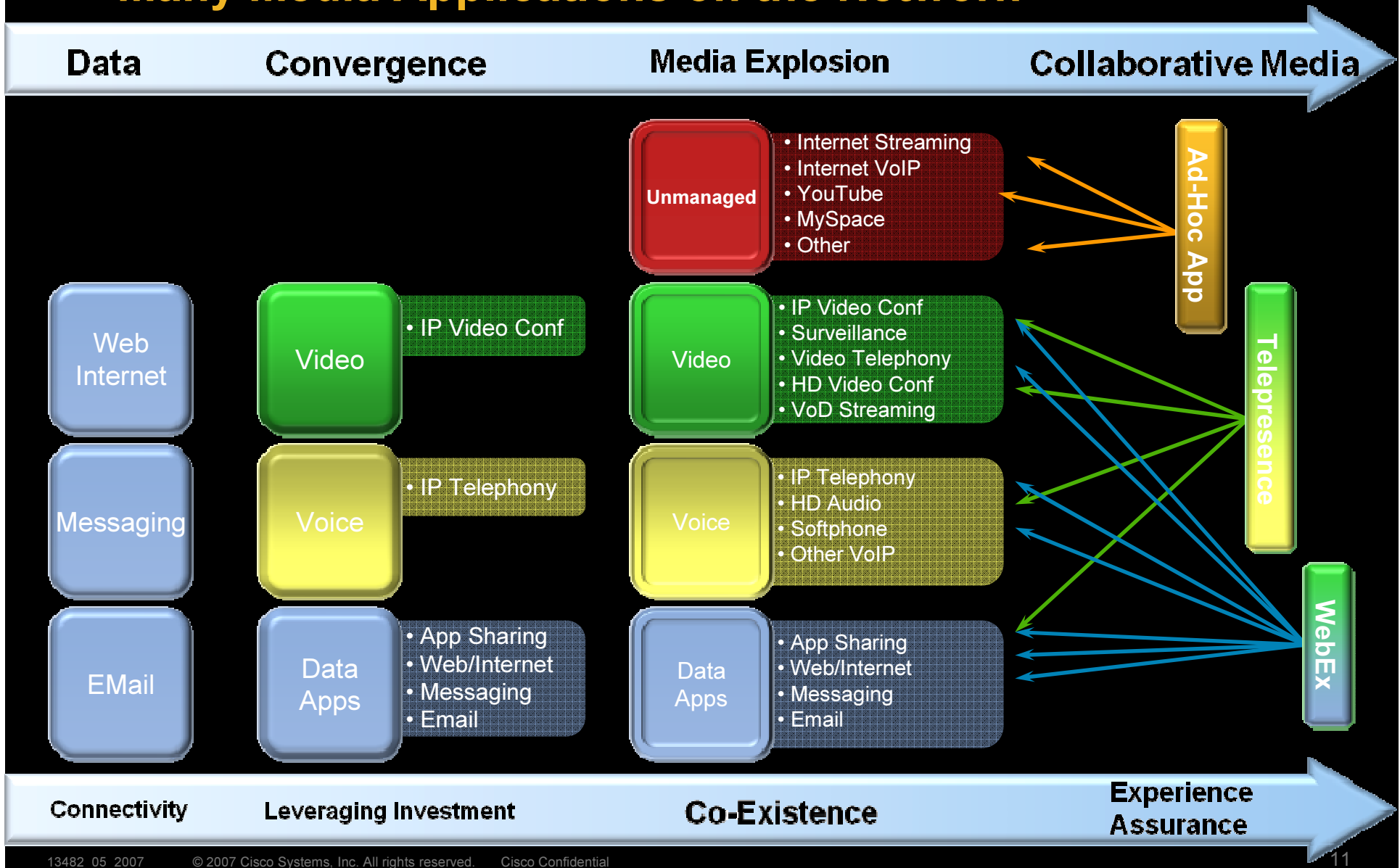


# Medianet **Service Categories**



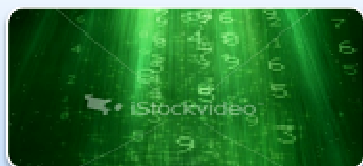
# Enterprise Challenges

## Many Media Applications on the Network



# Video & other media

## Considerations



### Delivery and Insuring the Experience

- Provide relatively high bandwidth
- Meet performance tolerances (latency, jitter, loss, bursting, admission)
- Insuring wanted video streams service level, managing unwanted



### Digital Media Management

- Capture, Storage, Archive, and Retrieval
- Distribution on-demand or live broadcast



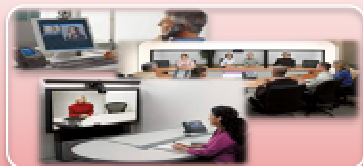
### Client Access

- Access controls, wired and wireless
- Network context/services aware – bridge device gap
- Conferencing and transcoding resources



### Security

- Protection of video sources and content
- Securing content for intellectual property and/or compliance
- Access controls for clients, digital rights



### Integration

- Standalone video applications constrain productivity
- Collaboration driving need for application integration
- Leverage endpoints and resources across multiple video services

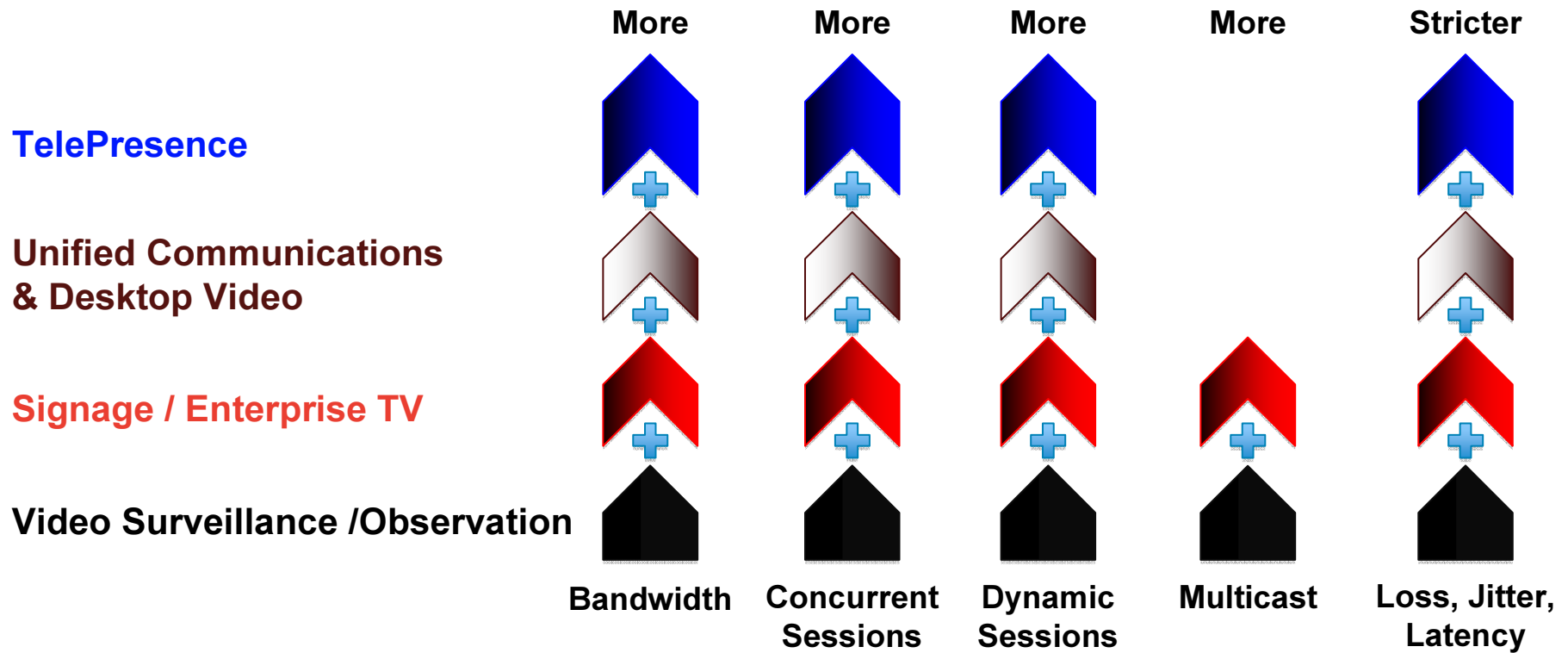
## Consider the impact of convergence

- Phase 1  
SNA/Data to IP
- Phase 2  
Voice to IP

### • Now Video

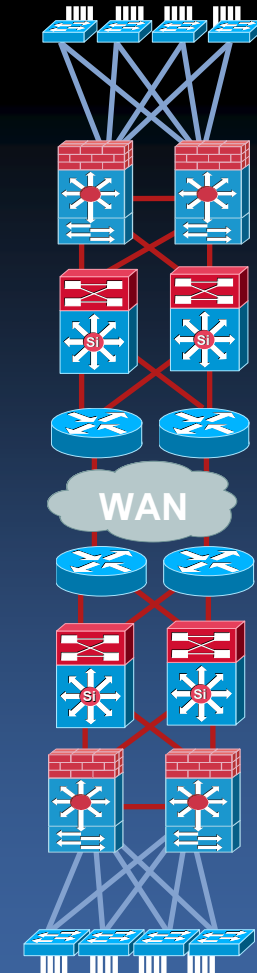


# The additive effect



# Leverage Cisco's expertise

- Leverage VoIP lessons & tools
- Consider current capabilities
  - Resiliency
  - High Availability
  - QOS
  - Bandwidth design
- Design Considerations



# Resiliency & High Availability

## Enhanced Network Availability

- Non-Stop Forwarding
  - Protocol Soft Restart Capabilities
- Sub-Second recovery with EIGRP and OSPF
- Multicast Multilayer Switching (MMLS)
- UniDirectional Link Detection “UDLD”
- HSRP, VRRP, or GLBP
- L3 Access
- QOS

## Enhanced Platform Availability

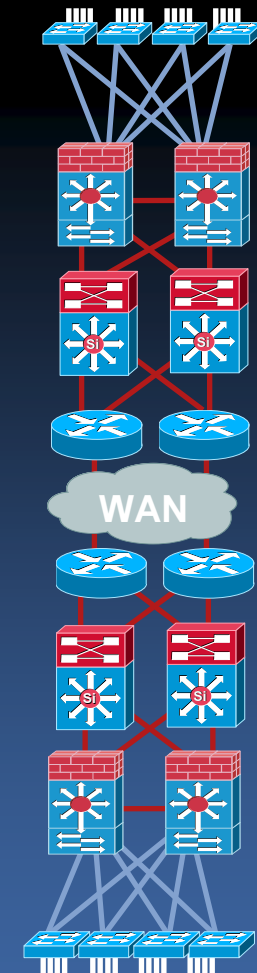
- Stateful Switchover (SSO)
- Stackwise+
- Modular IOS and ISSU

## Layer 2 Redundancy without Spanning Tree concerns

- Virtual Switch with MultiChassis EC

## Multicast HA Optimizations

- Multicast Multilayer Switching (MMLS)
- Sub second failover of designated router
- Triggered RPF check for rapid convergence



# Quality of Service Requires a strategy

## Develop or re-examine QoS Policy

- Understand business requirements
- Understand technical requirements

## Develop or re-examine the QoS architecture

- Develop the QoS architecture to service your traffic flows.

# Quality of Service

## Destroyers of Media quality

	Latency	Jitter	Loss VoD	Loss Live
Streaming	< 1000ms	< 100ms	< .1%	< .05%
Video Conf.	< 150ms	< 30ms	NA	< .1%
TelePresence	< 150ms	< 10ms	NA	< .05%
Signage	< 1000ms	< 100ms	< .1%	< .0%
Enterprise TV	< 1000ms	< 100ms	< .1%	< .0%
Video Monitoring	< 1000ms	< 100ms	< .1%	< .05%

# Cisco Video Application Marking Proposal

## Cisco Video Apps and RFC 4594 Classes

Cisco Video Applications	RFC 4594 Application Class	DSCP	Reference RFC
	Network Control	CS6	RFC 2474
	VoIP Telephony	EF	RFC 3246
IP Video Surveillance – DMS Multicast	Broadcast Video	CS5	RFC 2474
CUPC	Multimedia Conferencing	AF41	RFC 2597
TelePresence	Real-Time Interactive	CS4	RFC 2474
Digital Media Systems (All DMS not Multicast)	Multimedia Streaming	AF31	RFC 2597
	Call-Signaling	CS3	RFC 2474
	Transactional Data	AF21	RFC 2597
	OAM	CS2	RFC 2474
	Bulk Data	AF11	RFC 2597
	Best Effort	DF	RFC 2474
YouTube / BitTorrent/etc.	Scavenger	CS1	RFC 3662

# Medianet Phase 2 Focus Areas

## Auto-configuration

- Reduce complexity
- Easy deployment of video endpoints

## Video Monitoring

End-to-End monitoring  
Assessment of network  
Identify video path

## Network Management

- Protect network resources from overbooking
- Intelligent use of links
- Sanctioned applications given preference

Better visibility  
Better integration between the applications and the network

## Resource Reservation

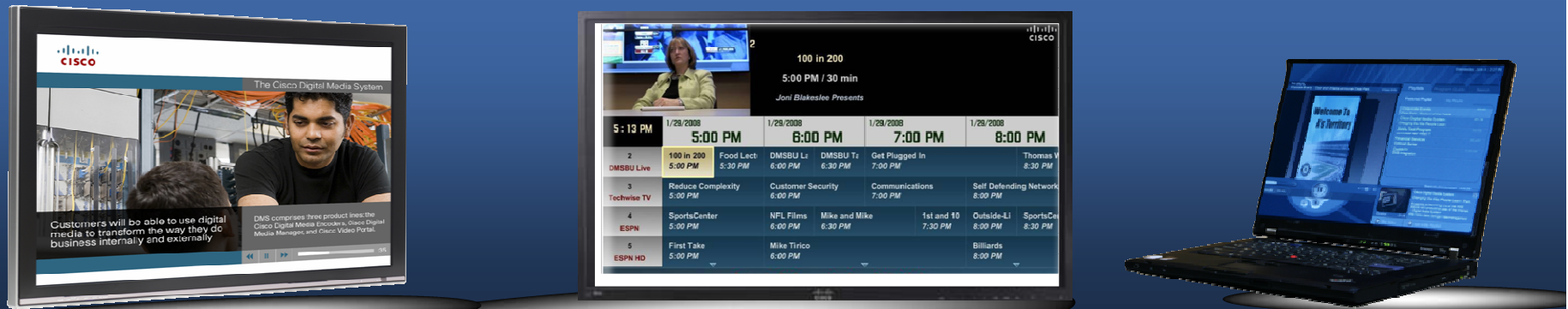
## Metadata

# Key Takeaways

- Medianet foundation is the **first step**.
- **Preparing** yourselves & our customers
  - Impact of video
  - Network requirements
- **Leverage** VoIP knowledge and tools
- **Evaluate** current network design.
  - Correct Policy ?
  - Leveraging the available tools?
  - Planning and Design to meet the coming challenges

# 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

# DMS Business Driver Applications

## Sales and Marketing



- Promote, cross-sell/up-sell Products & Services
- Marketing videos that grab viewer attention
- Provide a human face on content
- Reduce perceived wait time when queuing

## Corporate Communications



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

## HR/Training



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

## Information Sharing



- Display breaking news/Instant communications for rapid response
- Ensure safety and security through emergency communications
- Directional signage (way-finding)
- Informational videos available on-demand via ETV

# Cisco DMS Customers – over 900 Globally

## Norsk Tipping – Norwegian Lottery

Over 4000 remote and dispersed locations all centrally managed. Fast updates driving product up sell and speeding up direct communications with customers.



## Accent Recruitment - Benelux

Smart Digital Signage across 100+ screens. High levels of brand impact. DS has added scalability and central management along with tailored, targeted and accountable content



## CityJet – (Air France)

Internal marketing and videos to 720 employees. Live webcasts and video-on-demand via Cisco Video Portal. Created new communications channel – “Voracity”. 30-40 minute shows that loop every few days (news, birthdays, events)



# Cisco DMS Customers....cont.

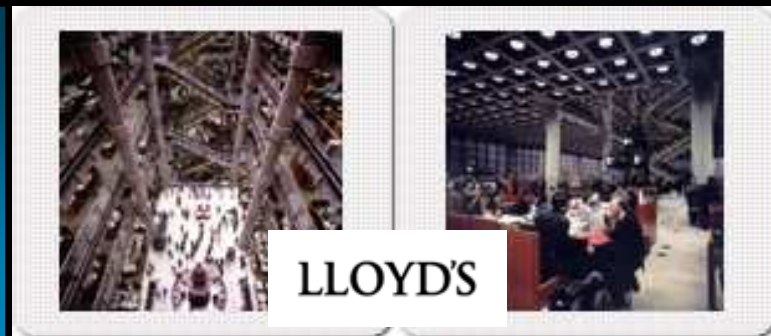
## Stars Centre - Egypt

Shopping Mall DS integrated with Cisco ACNS technology. The goal is to increase brand image, help with way finding and to create a sustainable revenue thru advertising



## Lloyds of London

Lloyd's can deliver rich, dynamic content including TV/satellite images, text tickers, flash animations, high definition video and web content, which could be instantly updated across groups or individual signs within the trading floor.

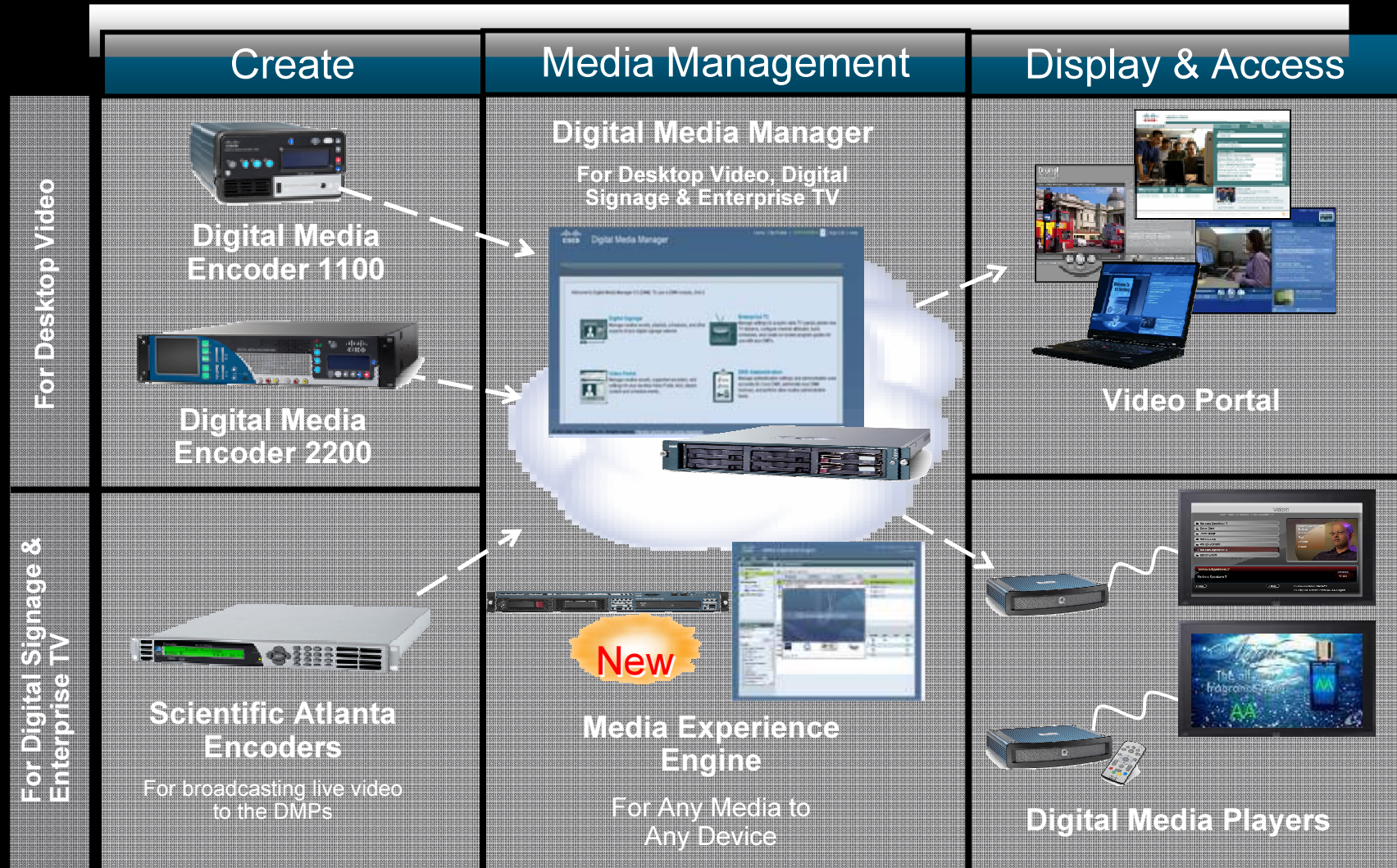


## Coca-Cola Corp – WW Corporate Comms

Strategic comms - Video Portal. Reliable & scalable platform to 30K « Knowledge workers » soon to be enabled, via Video DesktopNext Step : digital signage for the non-Knowledge workers



# Cisco Digital Signage, Enterprise TV and Desktop Video Components



# Cisco Desktop Video

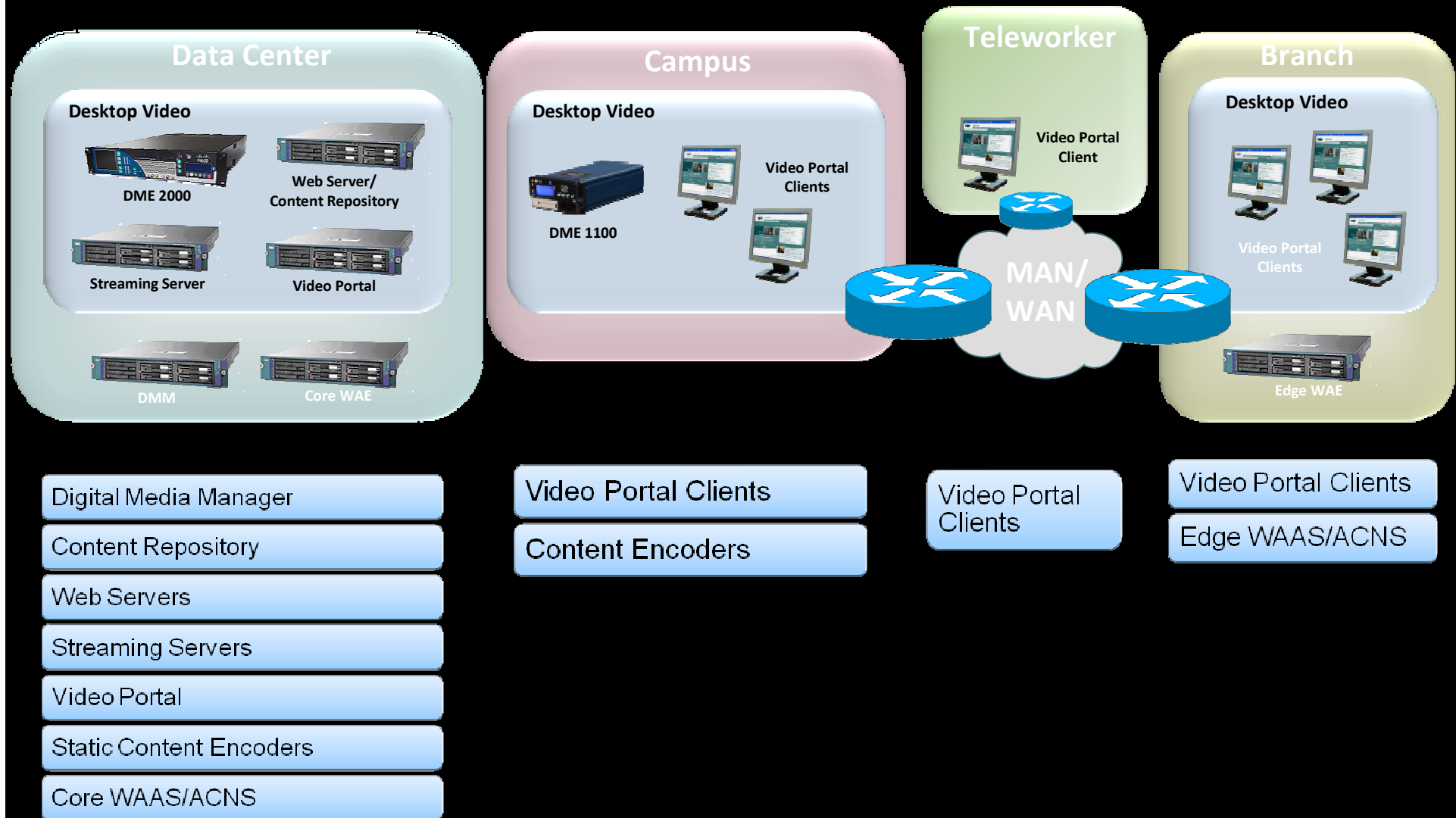


# Cisco Desktop Video: Overview

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



# Desktop Video (Video Portal)



# Cisco Digital Media Encoders

## Capture/Encode Video and Audio Feeds

### ■ **DME 2200 Features**

- Studio-level, dual channel encoding appliance
- Ideal for corporate offices or data centers
- Live encoding/transcoding of media into standard formats (WMV, Flash, H.264, etc.)
- Local or remote management



### ■ **DME 1100 Features**

- Portable, lightweight, single channel encoder
- Ideal for outdoor, classroom, and conference room use
- Support for all standard video formats
- Local or remote management



# Cisco Digital Media Manager for Desktop Video

## Centralized Digital Media Management and Publishing

- Robust, Web-based content management features
  - Add, catalogue, and archive media
  - Preview content and manage approval workflow
  - Schedule instant and future deployments
- Flexible, remote publishing to Cisco Video Portal endpoint
- Customizable Cisco Video Portal interface
- Live Event Module allows for slide synchronization and Q&A
- Restrict who can watch what
- Active Directory and LDAP integration

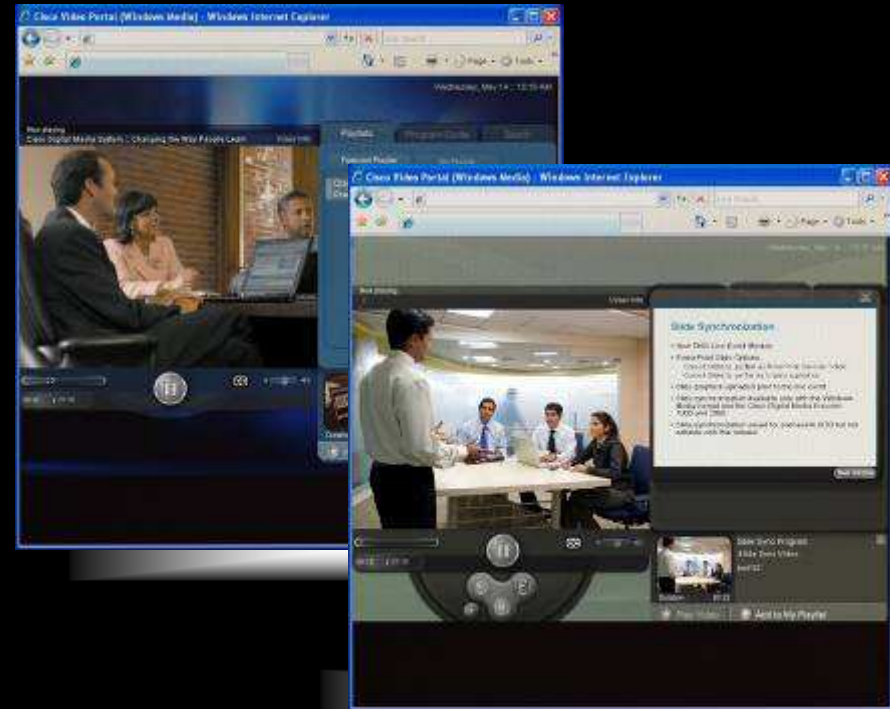


**Same Application for  
Managing and Publishing  
Cisco Digital Signage and  
Enterprise TV Content**

# Cisco Desktop Video Portal

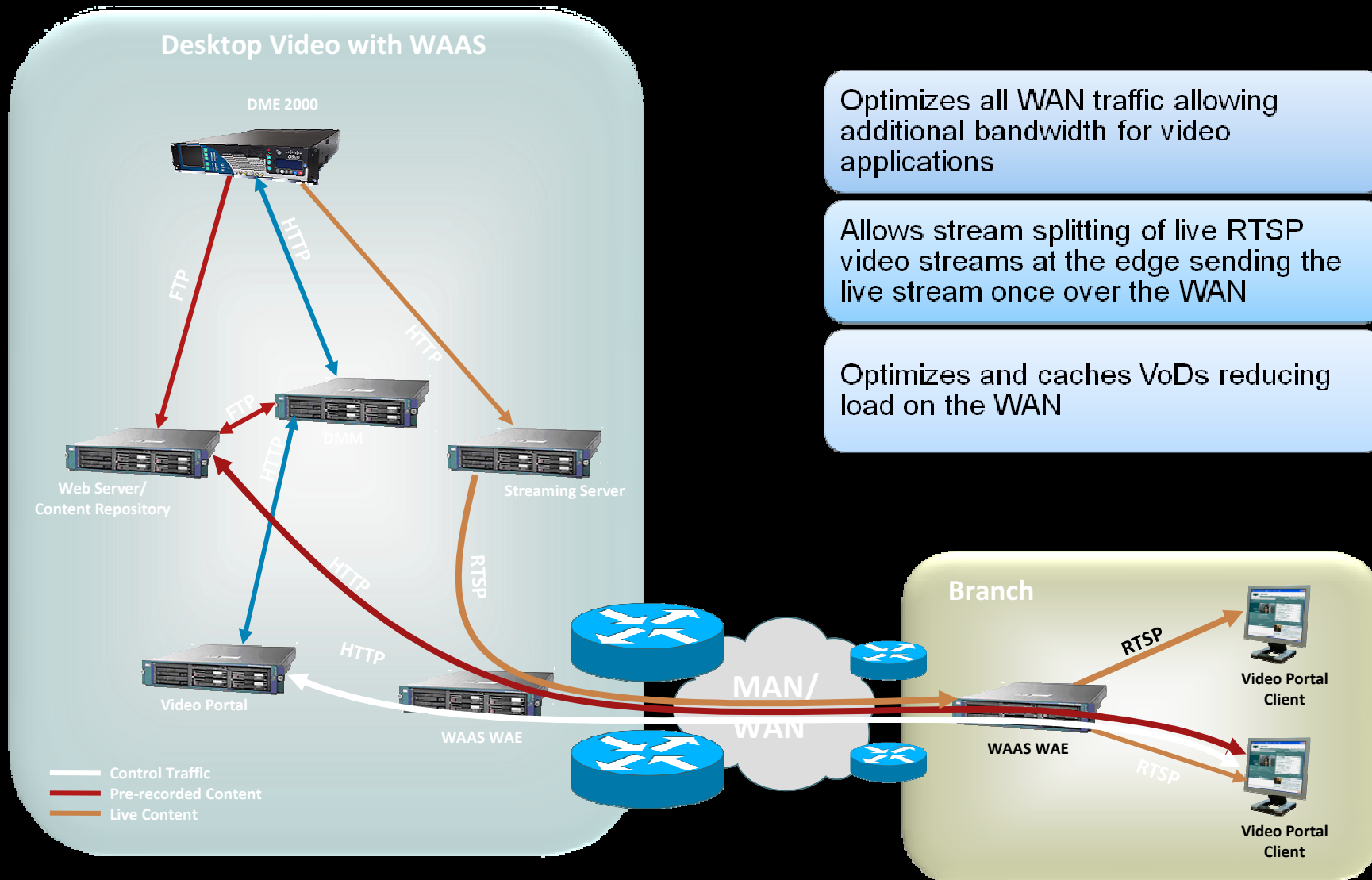
## Browse, Search and Access Digital Media

- Customizable interface, program guide and search
- Personalized and featured playlists
- Advanced player controls
  - Full screen, Fast Forward, Rewind
- View synchronized slides
- Submit questions during live events
- User restricted content access based on Active Directory/LDAP
- Supports major formats: Windows Media, Flash, H.264, QuickTime



**Customize the Look and Feel to Reflect the Organization Brand with the Digital Media Manager**

# Desktop Video with WAAS



Optimizes all WAN traffic allowing additional bandwidth for video applications

Allows stream splitting of live RTSP video streams at the edge sending the live stream once over the WAN

Optimizes and caches VoDs reducing load on the WAN

# Cisco Digital Signage



# 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 Digital Media Manager for Digital Signage

## Centralized Digital Media Management and Publishing

- Web-based media management and publishing
- Granular access control for roles such as: designers, IT admins, marketing/sales, regional vs. corporate

Sales and Marketing – create playlists, scheduling and daypart

Content creators/designers – manage assets, design screen layout and zones

IT admins – can configure, remotely manage, group and run reports on DMPs

Control physical properties of the display via connected DMP

- Integrates with Cisco ACNS for optimized WAN delivery



**Same Application for  
Managing and Publishing  
Cisco Desktop Video Content**

# Cisco Digital Media Players

## Playback of Compelling Digital Media Content

- Renders graphics, Web content, text tickers on digital displays
- Supports full-screen or “zoned” video in SD or HD resolutions
- Customizable on-screen templates
- Remote management of display properties
- IP-network addressable
- Local storage, high availability, automatic failover
- Small and lightweight
- Remote control for interactivity
- Low power consumption and high reliability
- Security: Hardened device



**DMP4305G**



**DMP4400G**

# Cisco Digital Media Player 4400G

- Supports: MPEG 1, 2, and 4 part 10 in standard definition (SD) and HD, graphics, Web content, Adobe Flash 9 animation, and tickers
- Small and lightweight: 10" x 8" x 2" at 4.5 lb.
- Local storage of 4-GB capacity



# Digital Media Player Specifics

	4305G	4400G
<b>Jitter Buffer</b>	4MB 1500ms for multicast	5.5MB 1500ms for multicast
<b>Multicast Support</b>	IGMP v3	<u><b>IGMP v3</b></u>
<b>Video Support</b>	MPEG-2 MPEG-4 Part 2	MPEG-2 MPEG-4 Part 10 H.264
<b>Bandwidth Required</b>	SD – 3 to 5 Mbit HD – 13 to 15 Mbit	SD – 1.5 to 2.5 Mbit HD – 8 to 12 Mbit
<b>Flash Application Support</b>	Flash 7	Flash 10

# Cisco LCD Display

For the Digital Media System



# Cisco Professional LCD Overview

- Features:

- Full-HD 1080p (1920x1080) native resolution
- High-brightness and high built-in contrast ratio
- Landscape and Portrait mode support
- HDMI inputs for real Full-HD content rendering
- Built-in speakers
- Central management through DMM including volume/power control etc

# Cisco Professional Series LCD

## Customer Benefits

- End-to-end Cisco solution, one stop shop
- Customized DMP protective case
- Cisco support/services
- Integrated with Cisco DMS
- Cisco capital leasing/financing options

40" and 52" Models



***Cisco LCD Displays + Digital Signage/ETV =  
Complete End-to-End Solution***

# Cisco Enterprise TV



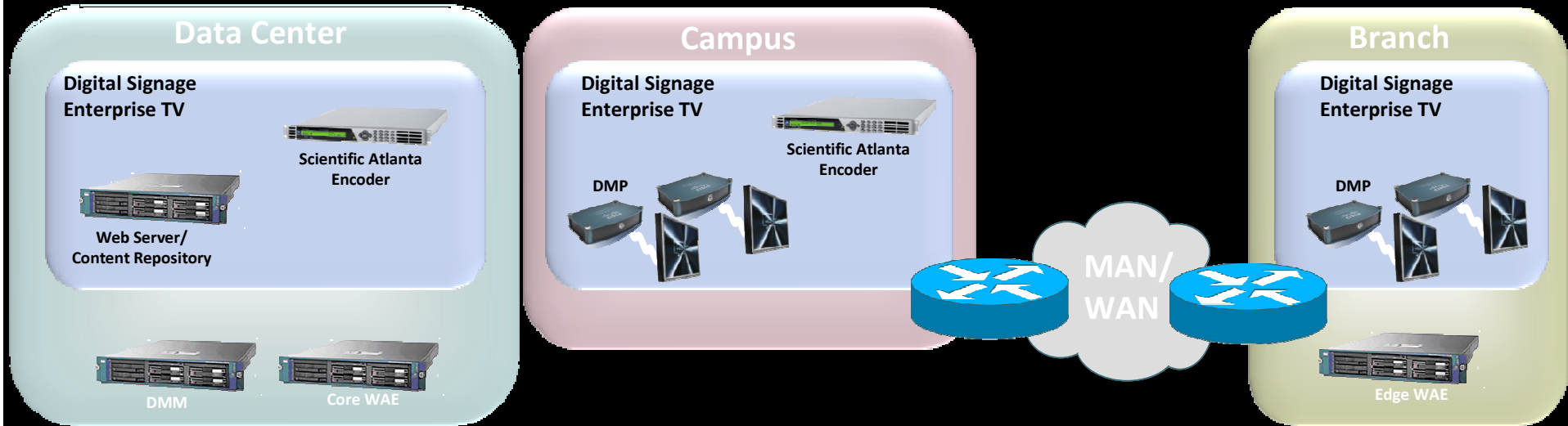
# Cisco Enterprise TV: Overview

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

# Enterprise TV/Digital Signage



Digital Media Manager

Content Repository

Web Servers

Scientific Atlanta Encoders

Core WAAS/ACNS WAE

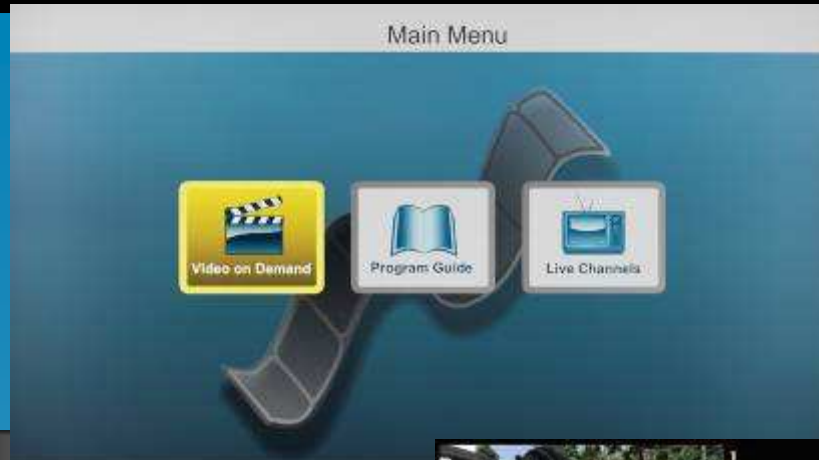
Digital Media Players

Scientific Atlanta Encoders

Digital Media Players

Edge WAAS/ACNS WAE

# Components of Cisco Enterprise TV



Digital Media Player



Digital Media Manager

Network as the Platform

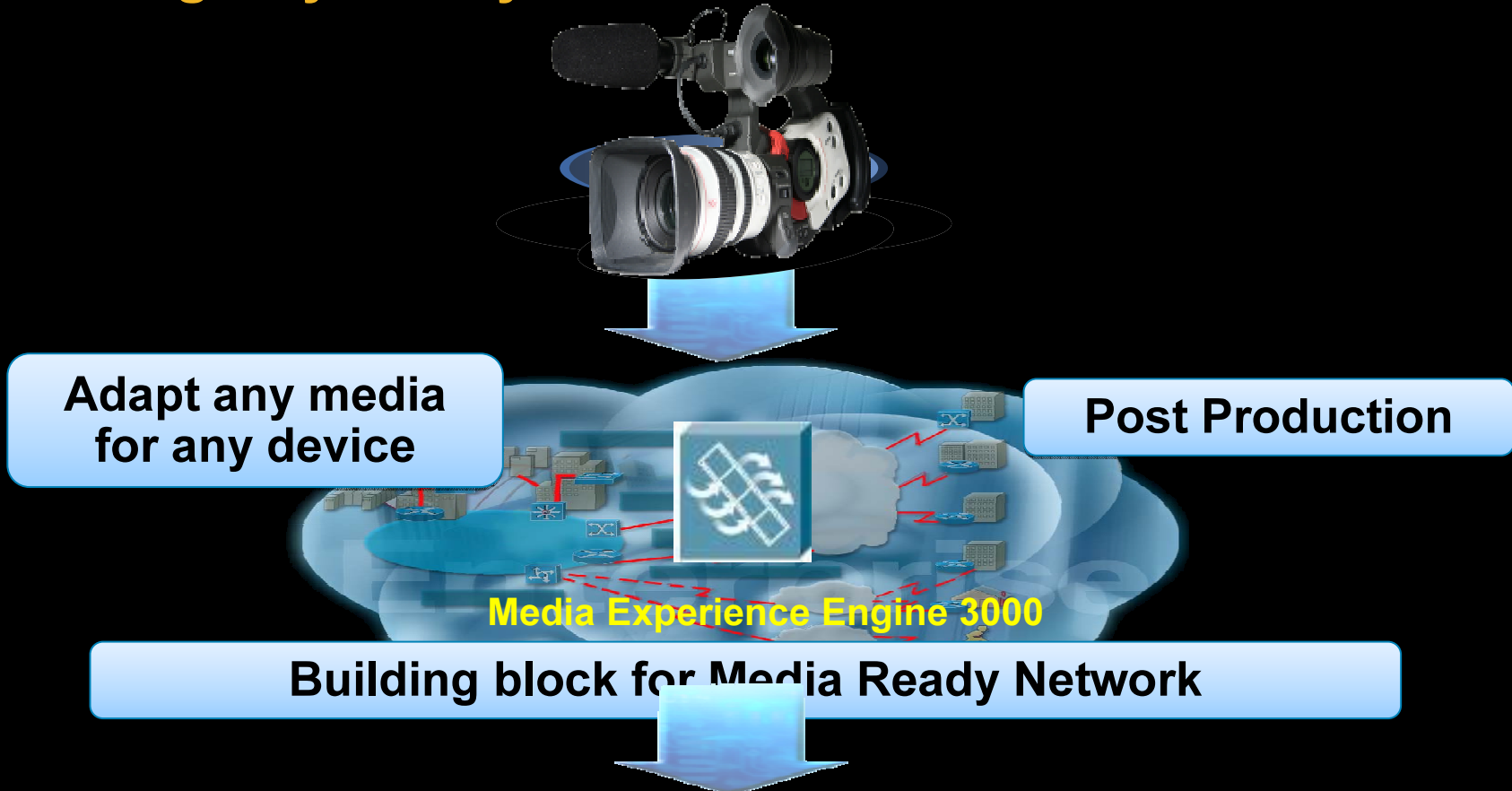


# Media Experience Engine MXE 3000



# Cisco Media Experience Engine 3000

## Enabling Any to Any Media Transformation in the Network



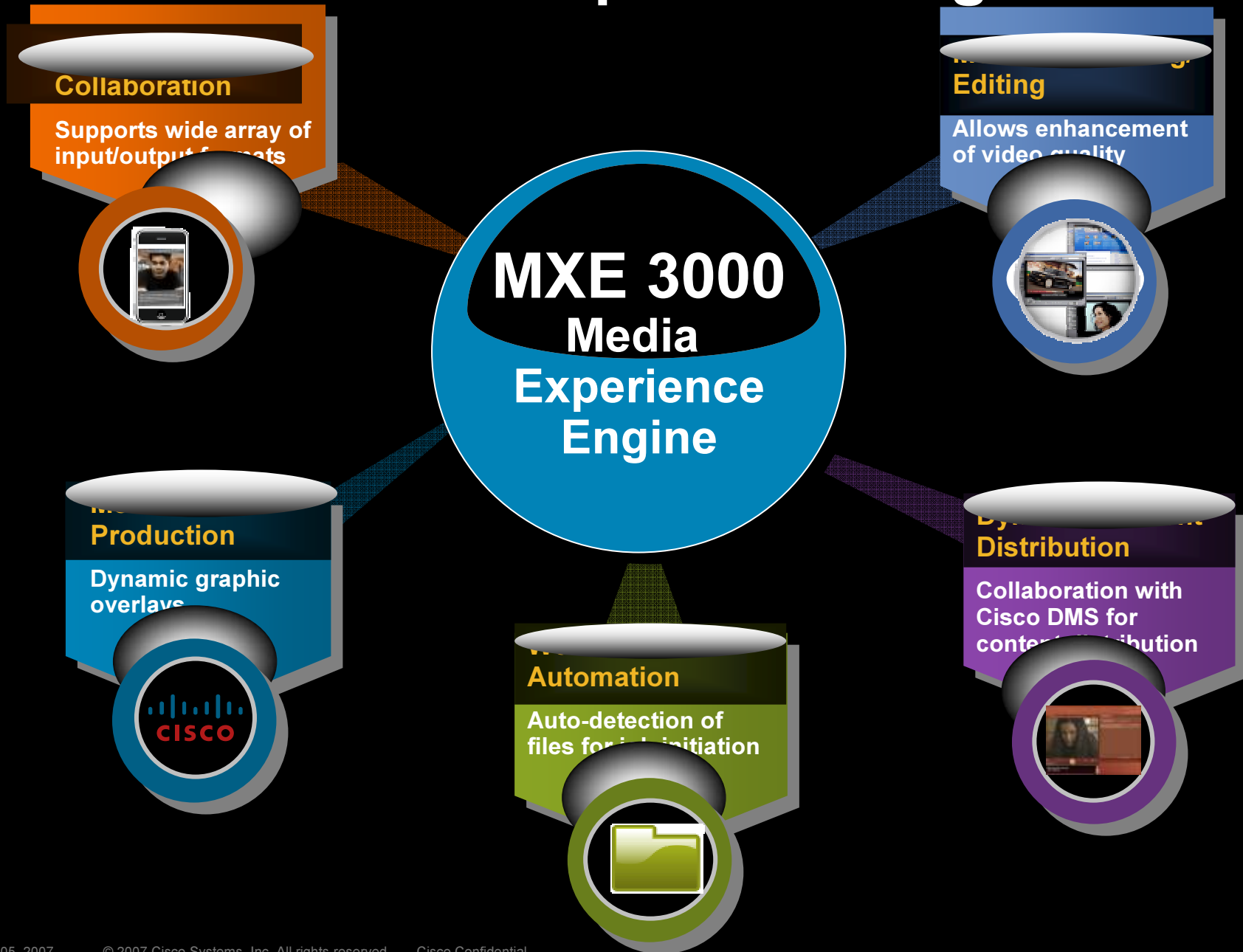
# MXE 3000 Features



- 1RU appliance for offline digital media processing
- Provide “one file source to many formats”, convert digital signage/ETV media for desktop video, position for enabling more endpoints on DMS, e.g. PDAs
- Media “production” capabilities: video composition, editing, watermarking, text and image overlays, dynamic streaming tickers
- Media pre-processing: Color, noise reduction, & aspect ratio adjustments; video editing including clipping, cropping, and stitching



# MXE 3000 Media Experience Engine



# Supported Formats

## Web / Mobile



- Input  
Quicktime, MPEG-1, MPEG-2, AVI, Windows Media, VC-1, H.264
- Output  
H.264, Flash 8 On2 VP6, Windows Media, 3GPP, Quicktime, Real, MP3, WAV
- Additional features  
API & Job Manager

## Signage



- Input  
Quicktime, MPEG-1, MPEG-2, AVI, Windows Media, VC-1, H.264
- Output  
MPEG-2 transport streams (SD and HD), MPEG-4/H.264 transport (SD and HD) streams, AC-3 Audio, Layer II Audio, Windows Media Proxy, MPEG 1, MPEG 2

## Graphics



- Dynamic graphics updates occur during transcoding
- Supports multiple simultaneous transcoding sessions with customized graphics
- Overlays graphics on all output formats
- Flash 8 Pro template authoring
- Web Services and XML API interfaces
- ActionScript enabled

# MXE 3000

## Media Production

Video  
Composition

Title  
Overlays

Logo  
Insertions

The central image is a composite of several elements:

- Video Call:** A woman, Janey Hoe, is shown in a video call window. Below her name is the text "Janey Hoe, Senior Director".
- Workflow Diagram:** A diagram titled "Workflow" showing the process from "CTS: Little Bill" to "ML-50A" and "DMM - Digital Media Manager". The steps are:
  1. Little Bill records CTS session
  2. ML-50A Processes media content
  3. ML-50A suite records files
  4. Processed content pushed to Mobile Streaming Server and CMS ServerThe content is then distributed to "Handheld", "PC", and "DMP Digital Signage" devices, all connected to a "Streaming Server".
- Logos and Watermarks:** The Cisco logo is visible in the bottom left. A news ticker at the bottom reads "In the News: Cisco announces the availability of ...". A large watermark at the bottom center says "CISCO CONFIDENTIAL DIGITALLY WATERMARKED - DISTRIBUTION TRACKING ON".

Animated  
PowerPoint  
Insertions

Dynamic  
Streaming  
Tickers

Water -  
marking

# MXE 3000

## Automated Workflow

### Workflow



Acquired media saved to storage

Files transferred to transcoder

User initiates transcode

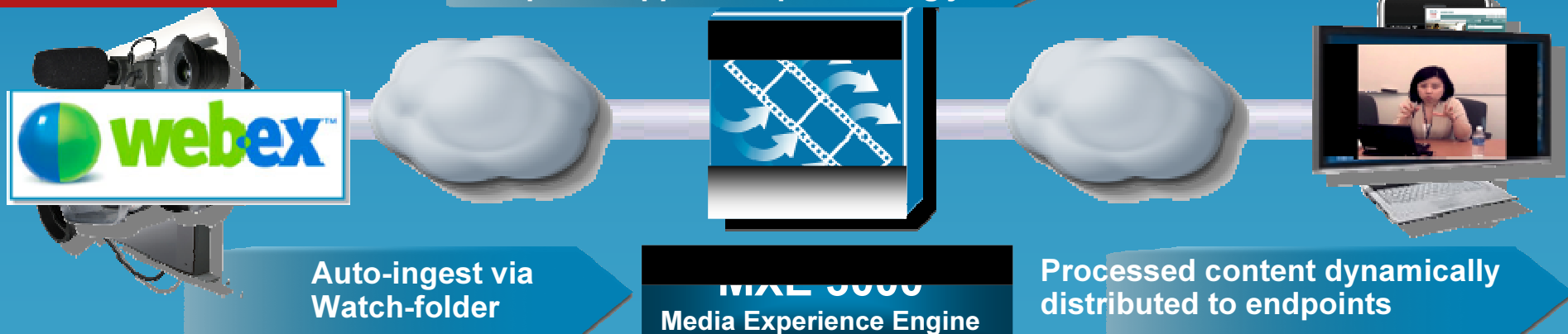
Transcoded files sent to storage

production performed in studio

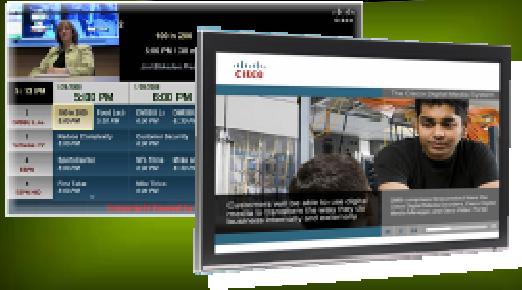
User posts content to streaming server

Content accessed from endpoint

### with MXE 3000



# MXE 3000 Dynamic Content Distribution



**Enterprise TV / Signage**



**Video Portal**

- **MXE content can be played back instantaneously on digital signage displays.**
- **Content can be added to playlists, scheduled for playback, shared, archived, & assigned metadata for searches.**
- **Live / On-demand MXE programs can be accessed through menu of on-screen program guides.**

- **Allows MXE content to be quickly shared to remote users via pc.**
- **Supports fully automated uploads of MXE content.**
- **MXE content can be archived & assigned metadata for easy location.**
- **Secure access to MXE content is supported.**

# MXE 3000 Dynamic Content Distribution

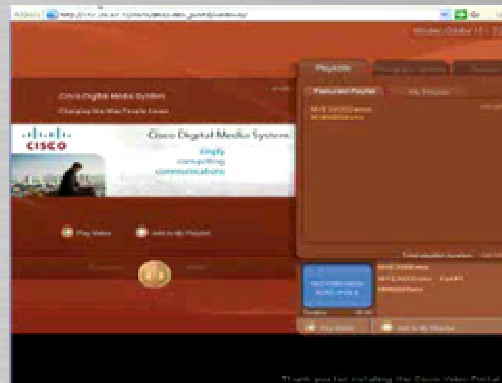
pushed to DMP screen



H264 content to iPhone



uploaded to Video Portal





# Cisco Digital Media System

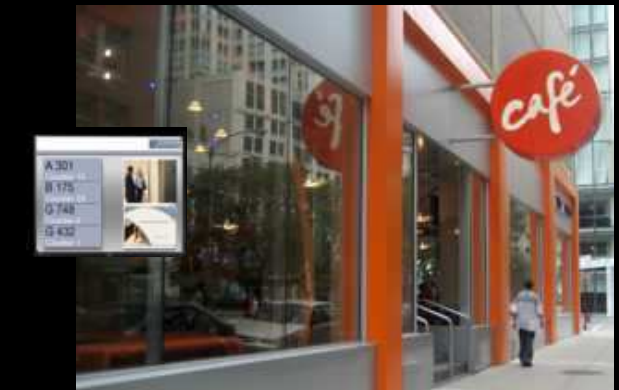
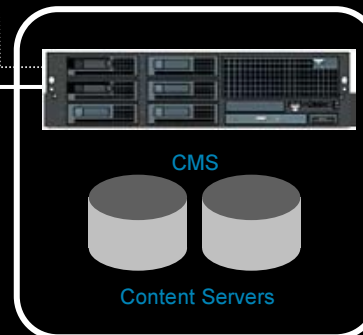
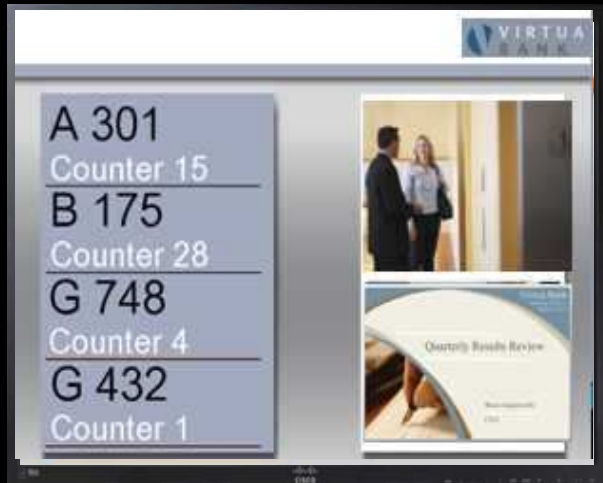
## **Integrated Applications**



# Conference Room Management



# Line Queuing



# Call Center



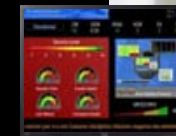
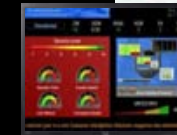
Inova Broadcaster



Digital Media Manager



Cisco Unified Contact Center



# Manage Content Displays From the IP Phone

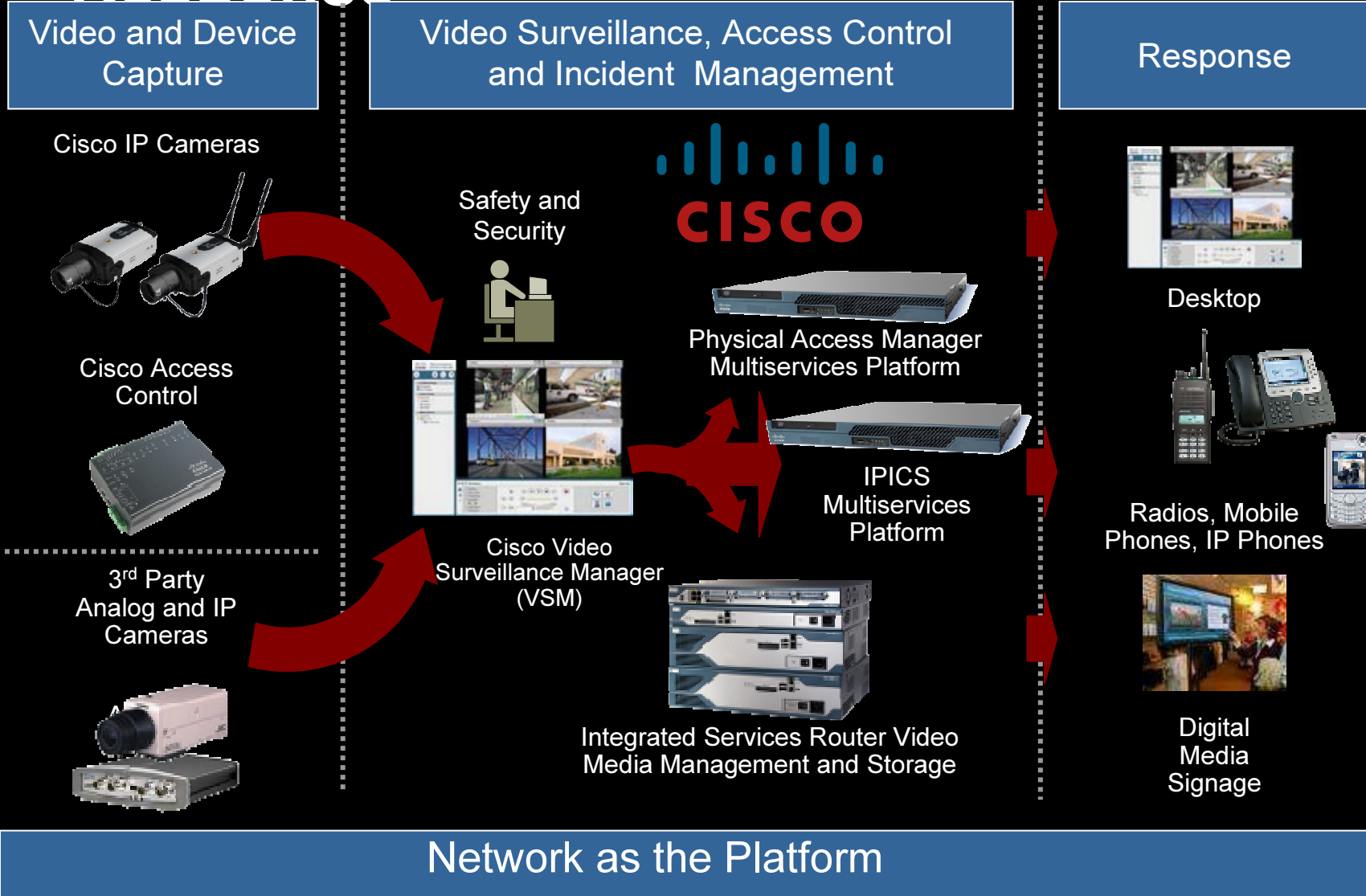


# Cisco Physical Security Solutions

The power of the network to converge, connect, and protect



# Cisco Physical Security: Video Surveillance, Access Control, Incident Response



# Cisco Video Surveillance Manager

Capture



Analog and IP Cameras

Manage



Video Management  
(Media Server and Encoding Server)

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

Archive



Video Storage  
(Storage Systems)

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

View



User Portal  
(Operations Manager)

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

Distribute



Virtual Matrix Switch  
(Virtual Matrix)

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

Common API



Video Analytics



Custom Interface



Access Control



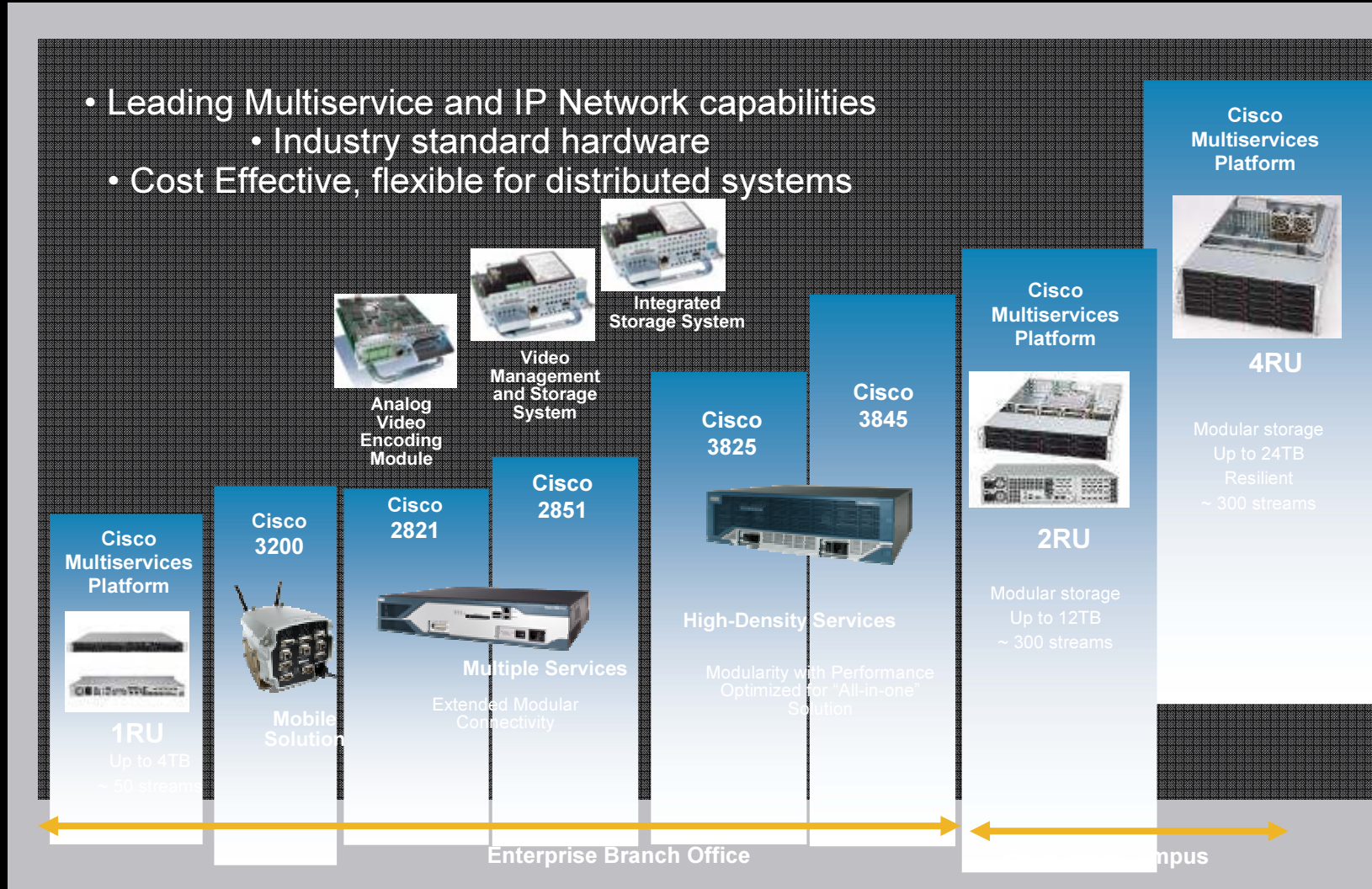
Video Wall



Back Office

# Cisco Physical Security – Product Portfolio

- Leading Multiservice and IP Network capabilities
  - Industry standard hardware
- Cost Effective, flexible for distributed systems



Scalability, Resiliency, Serviceability

# Cisco Video Surveillance IP Cameras

## High-Resolution, Video Surveillance IP Cameras



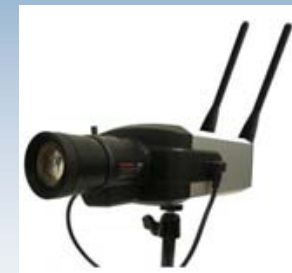
2500 Series



4300 Series



4500 Series



Standard Definition

High Definition

Resolution, Features, Network/storage Flexibility

# Cisco Video Surveillance IP Cameras

## Excellent Image Quality in Variable Lighting Conditions

- Two Models:

- **Full High Definition (HD) (1080p)**

- Video Analytics Ready with optional High speed dedicated DSP

- **Standard Definition (SD) DVD Quality**

- **Available Wired and Wireless**

- **Wide Dynamic Range**

- **Network & Security Features**

- Power over Ethernet, IEEE 802.3af

- AES Encryption, Hardware Acceleration

- 802.1x Authentication

- MPEG-4 (SD, HD)

- H.264 Support, MJPEG





[www.cisco.com/go/designzone](http://www.cisco.com/go/designzone)

[www.cisco.com/go/medianet](http://www.cisco.com/go/medianet)