Cisco Digital Media

Horst Dümcke

Cisco Expo 2007

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Cisco Enterprise Video Strategy

Delivering an Intelligent, Converged Environment for Video

Desktop Video Streaming

12 Billion streams in 2005

Digital Signage

Market size estimated at $2B+ 2010

Digital Media

31.8m MP3 players and Video iPods

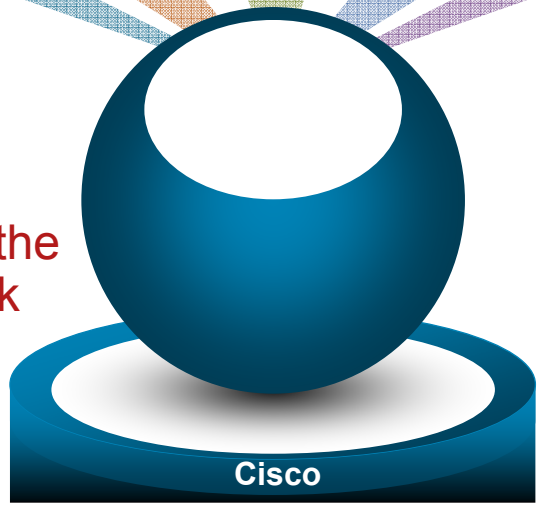
Video Surveillance

$1282m market size 2009

TelePresence

Next-Gen Collaboration $4 to $5 in network upgrades for every $1 spent on TelePresence

The Platform for the Human Network



Cisco Enterprise Video

- Entered four new emerging markets
- Markets include
  - IP Video Surveillance
  - Desktop Video
  - TelePresence
  - Digital Signage
- Leverage IP network as a platform

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Addressing Customer Challenges & Opportunities

Pain Points

- Communication challenges across distributed audiences
- Video difficult to use and manage
- Network integration and distribution

Customer Opportunities

- Effective communications and richer experiences
- Non-technical teams can manage video
- Capitalizing on the adoption of digital media

Scalable Video Solutions and Services

Benefits

- Full integration and delivery of digital media on the network
- Reach remote audiences live or on-demand
- Simple to install, manage and use
- Enables business transformation, improves productivity
- Real time delivery of content

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Agenda

- Overview
- Video Architectures
- Video and Digital Media Services

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Overview

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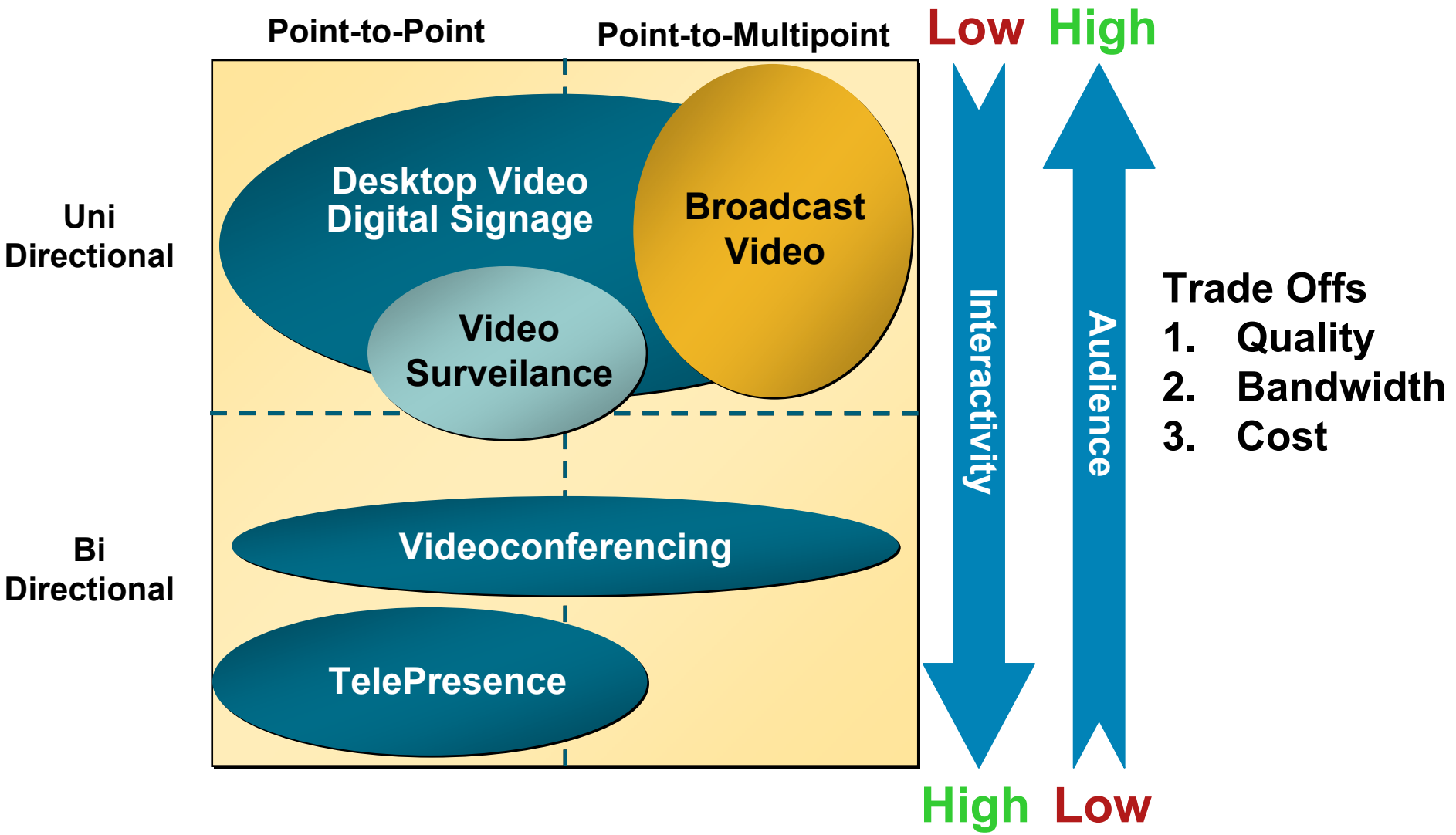
There are different Video Applications and different Delivery Models



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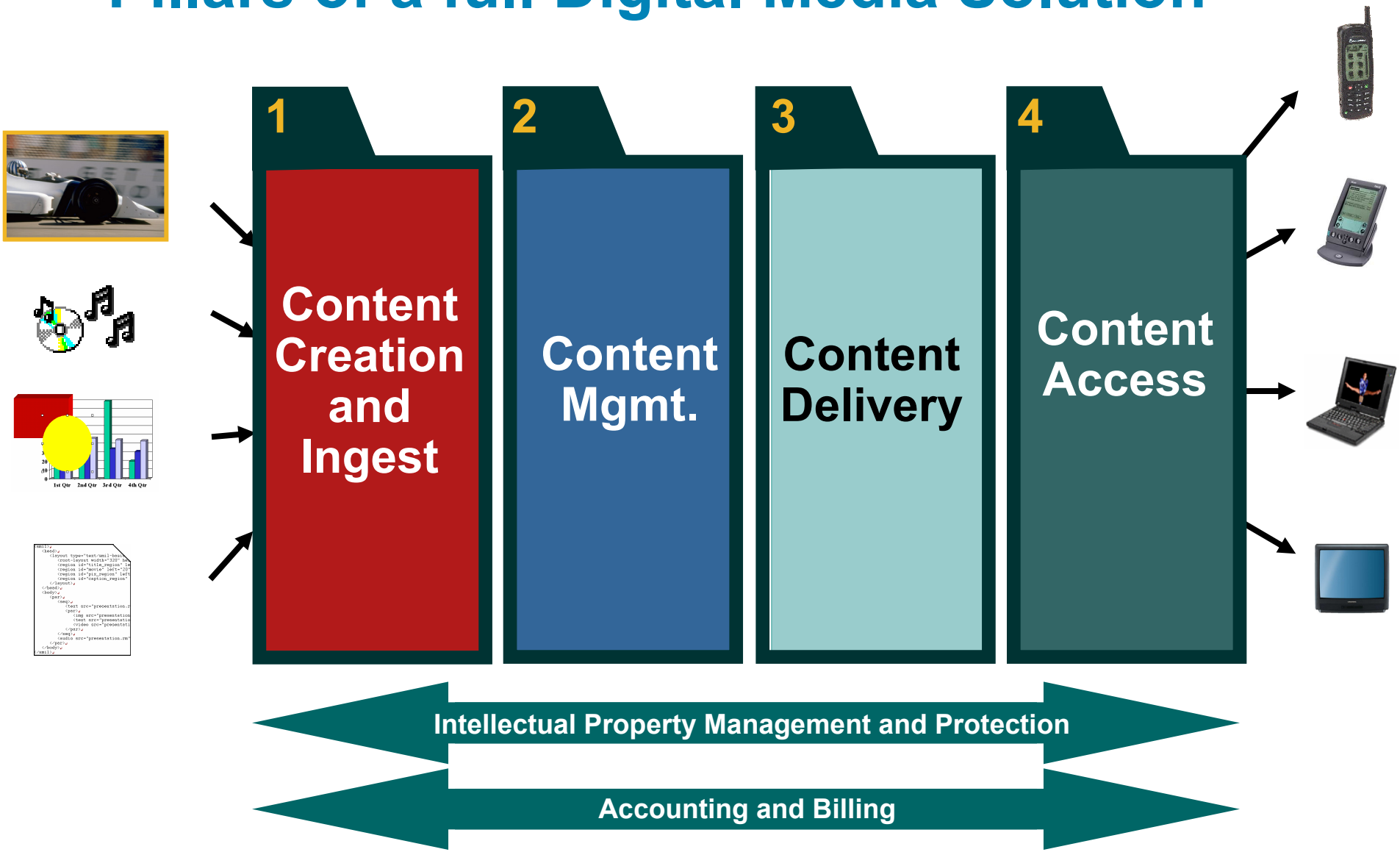
Pillars of a full Digital Media Solution



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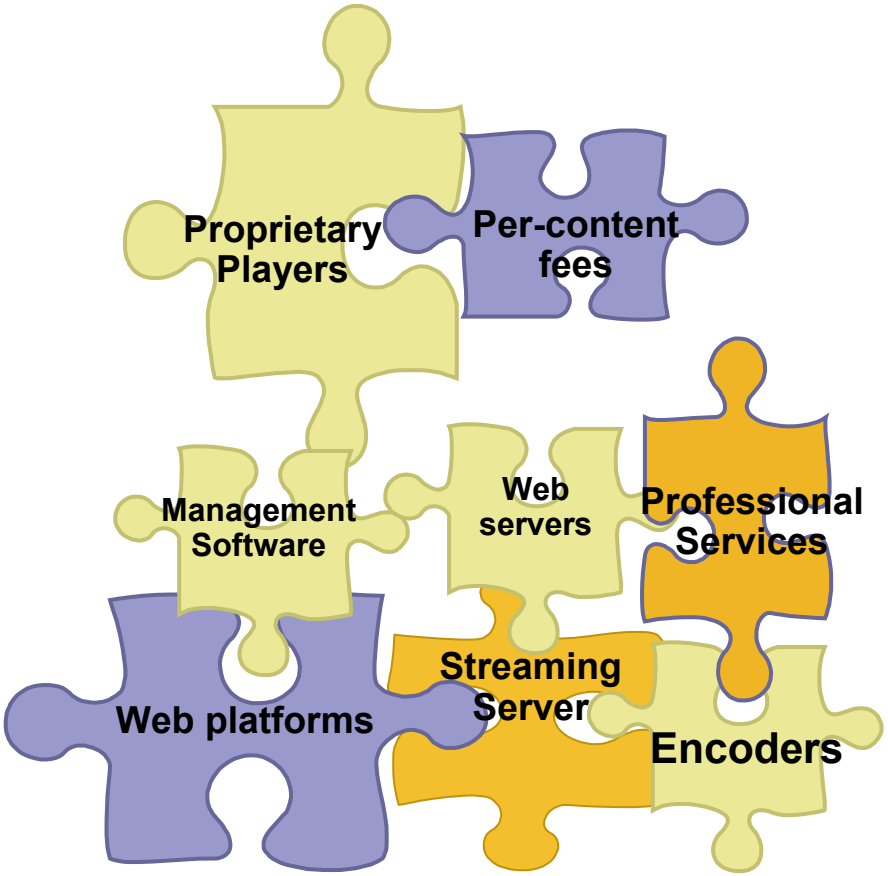
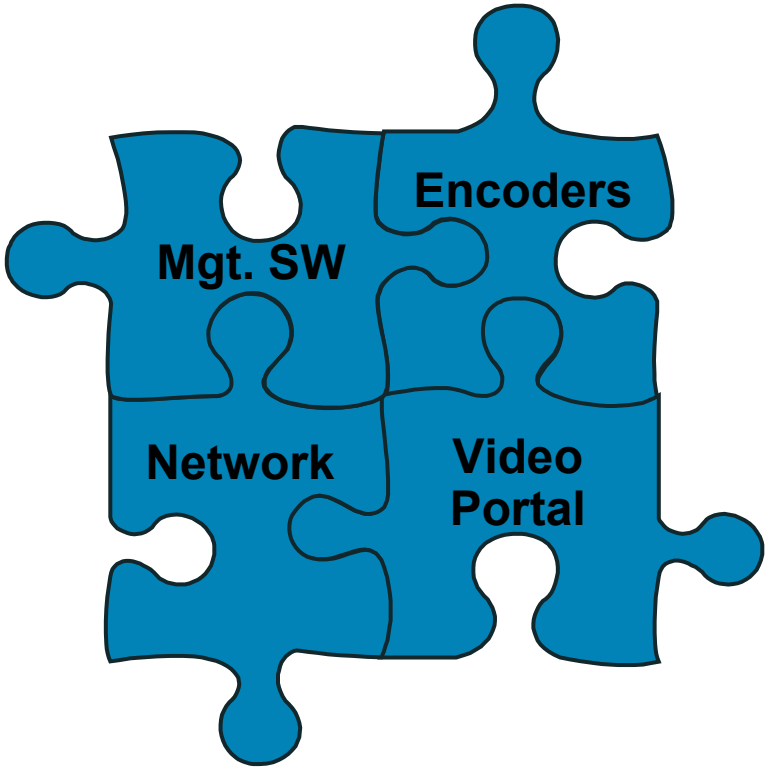
The reality on the Value Chain, and what we want

Reality: Not Integrated, Overlapping, Not End-to-End



What we want: Integrated solution spanning the entire value chain



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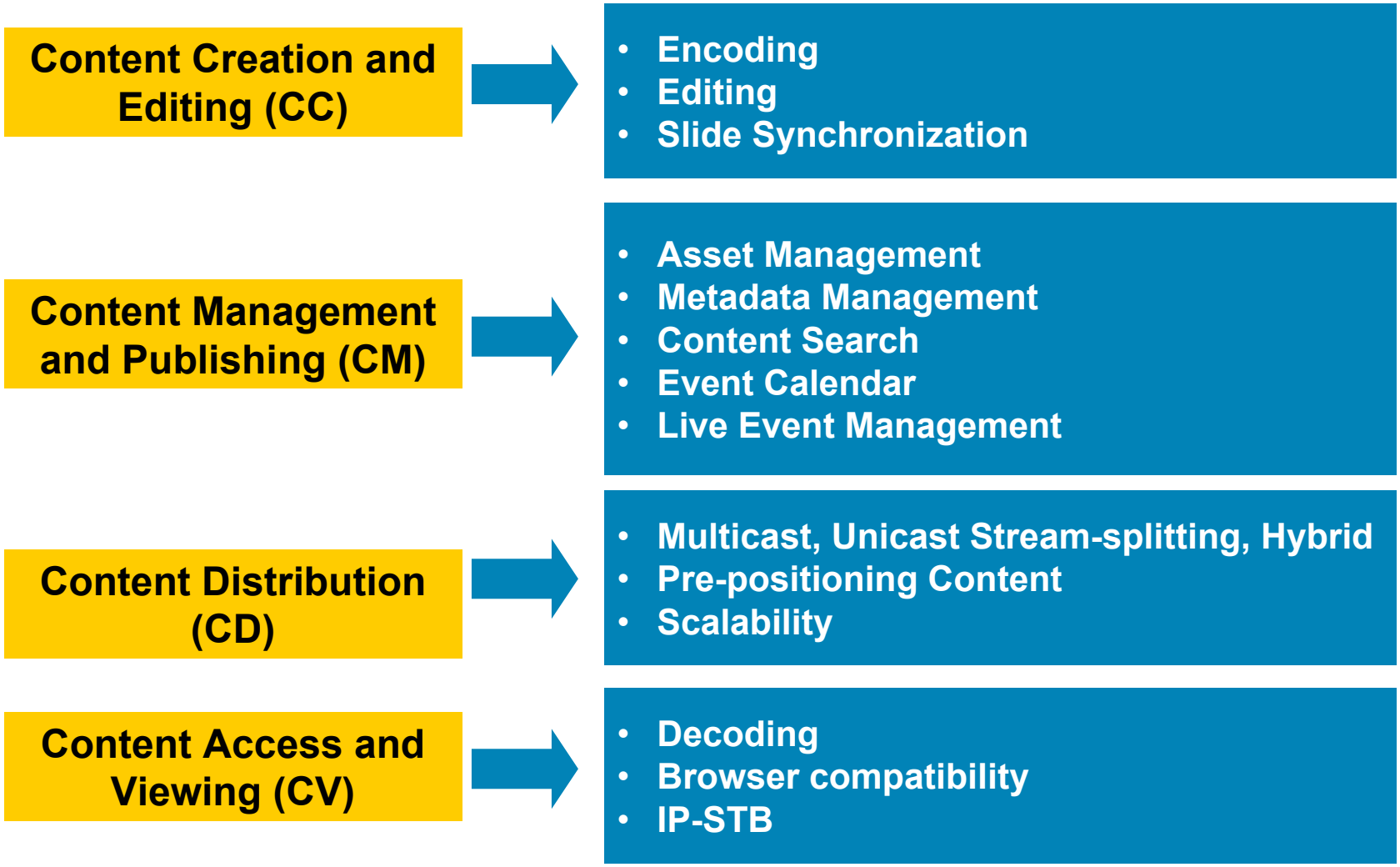
Planning
End-to-End Business Video Solution



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Video Architectures

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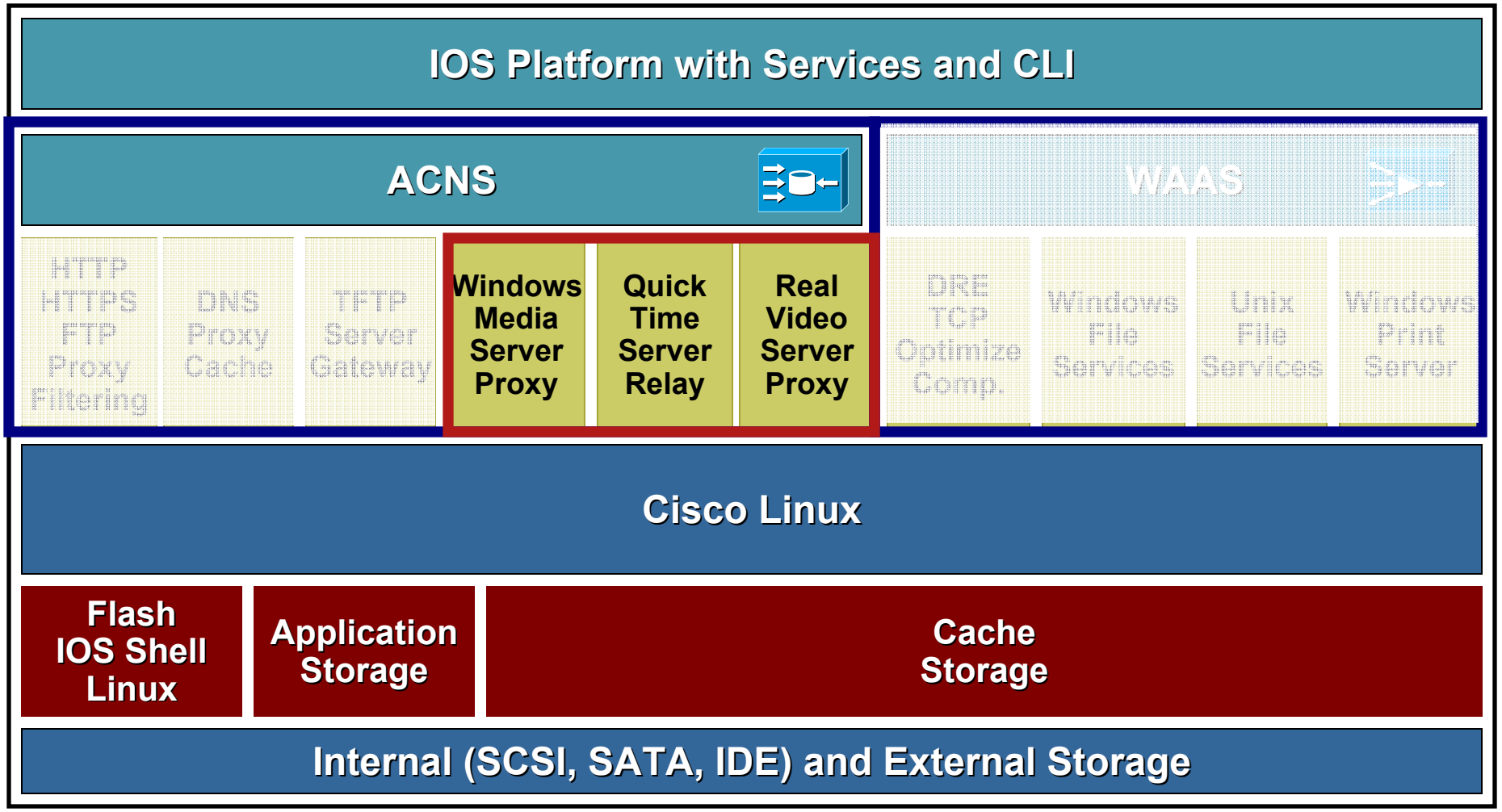
Wide Area Application Engine (WAE)

Application and Content Networking Software (ACNS)



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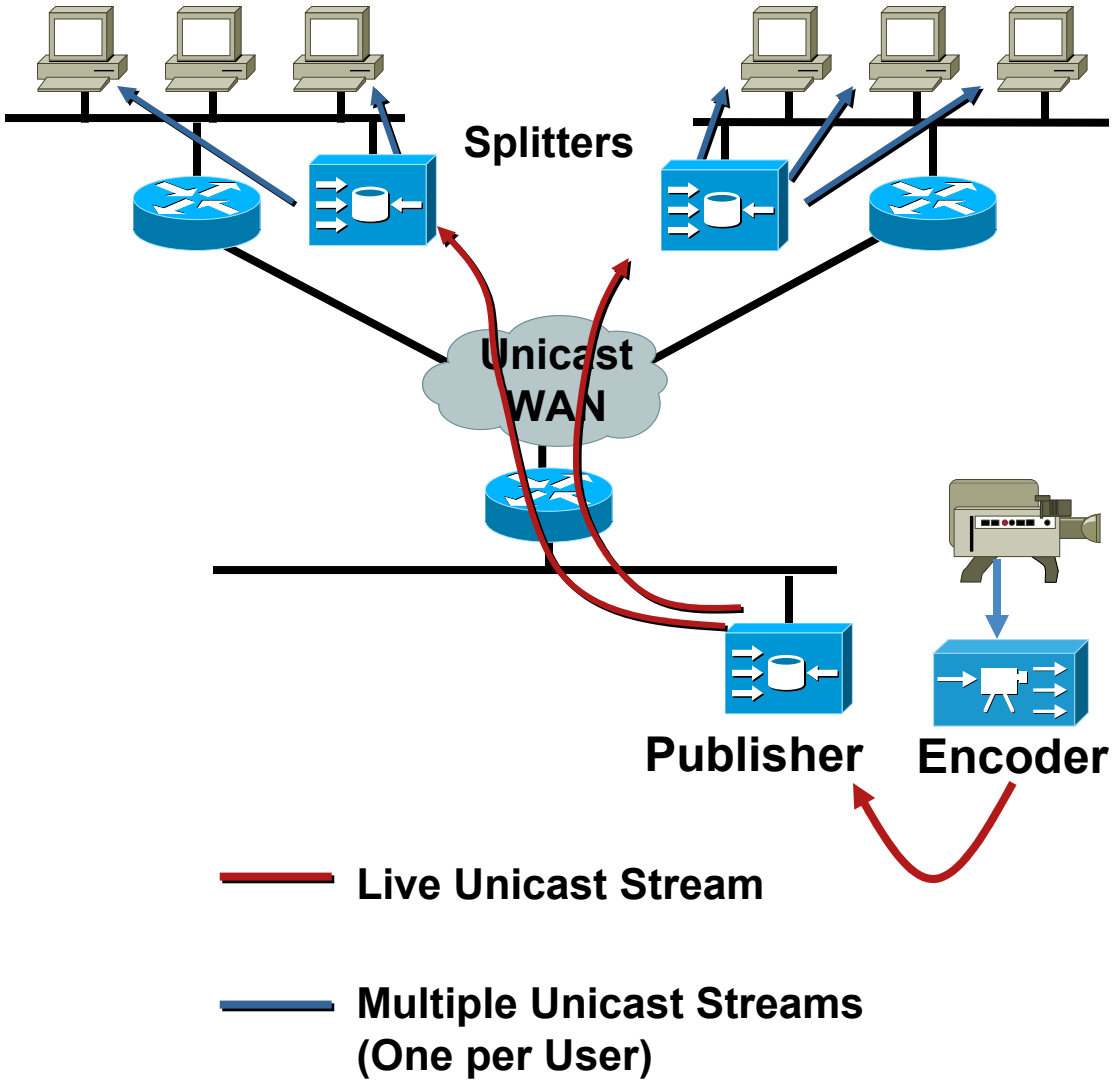
Video Architecture
Live Unicast Stream Splitting

- Overcomes WAN bandwidth bottleneck
- Only solution for adhoc Internet streaming
- Easy to administer since no event planning
- Requires WAE capacity planning



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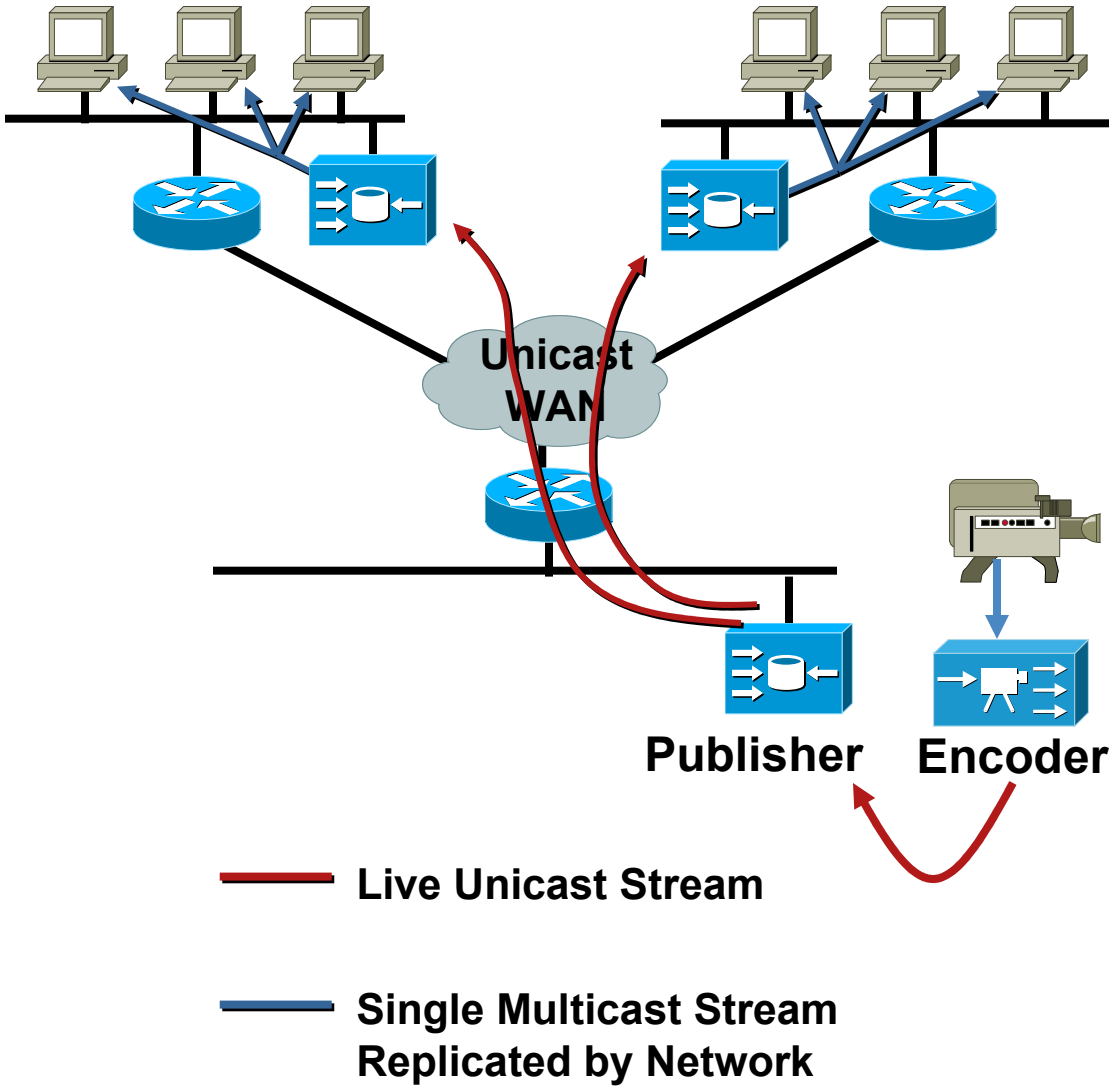
Video Architecture
Live Hybrid Unicast to Multicast

- Multicast enabled LAN only
- Multicast islands require separate Rendezvous Point (RP)
  - Auto-RP
  - Bootstrap router
  - Anycast RP
- WAE scales to many simultaneous programs
- Requires event planning and administration



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Video Architecture
Live Capacity Planning

- Identify
  - All participating sites
  - Number of employees/participants per site
  - Percentage of simultaneous participants per site
  - WAN bandwidth per site
  - Maximum portion of WAN bandwidth allocated for streaming
  - Format (Windows Media, QuickTime, Real, IPTV)
  - Standard encoding rate in Kilo Bits per Second (Kbps)
- Cisco provides streaming capacity for WAE's
- Unicast stream capacity in Maximum participants = (Node Stream Capacity)/(Encoding Rate)
- Example: 500 participants @ 300 Kbps Windows Media streams requires 150 Mbps (WAE-611 with 224 Mbps license)

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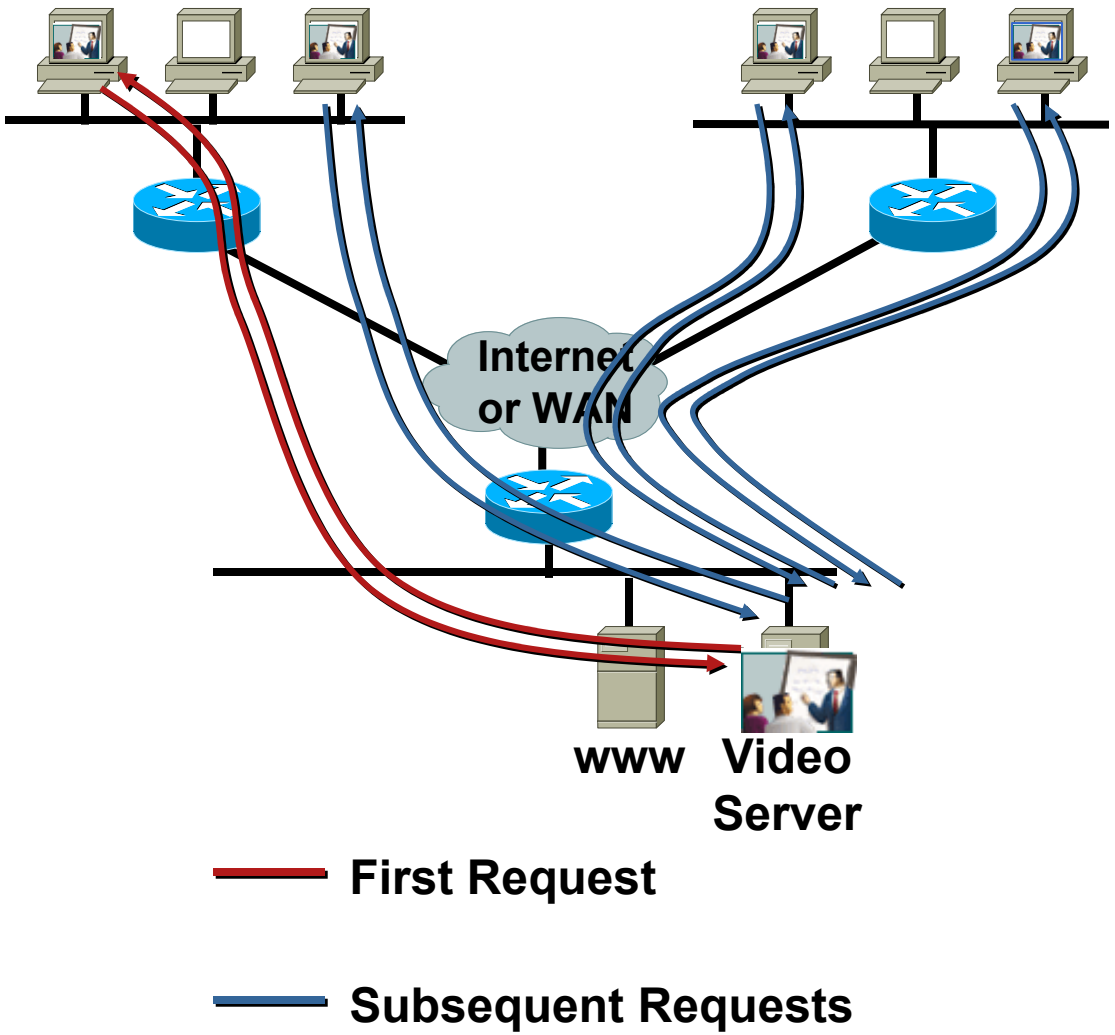
Video Architecture
Video on Demand on a non-optimized Network

- Separate stream for each client across the WAN
- Sum of all clients must be less than WAN bandwidth
- Expect <5% of clients normally
- VoD is like live
  - Announced VoD
  - Compliance training deadline



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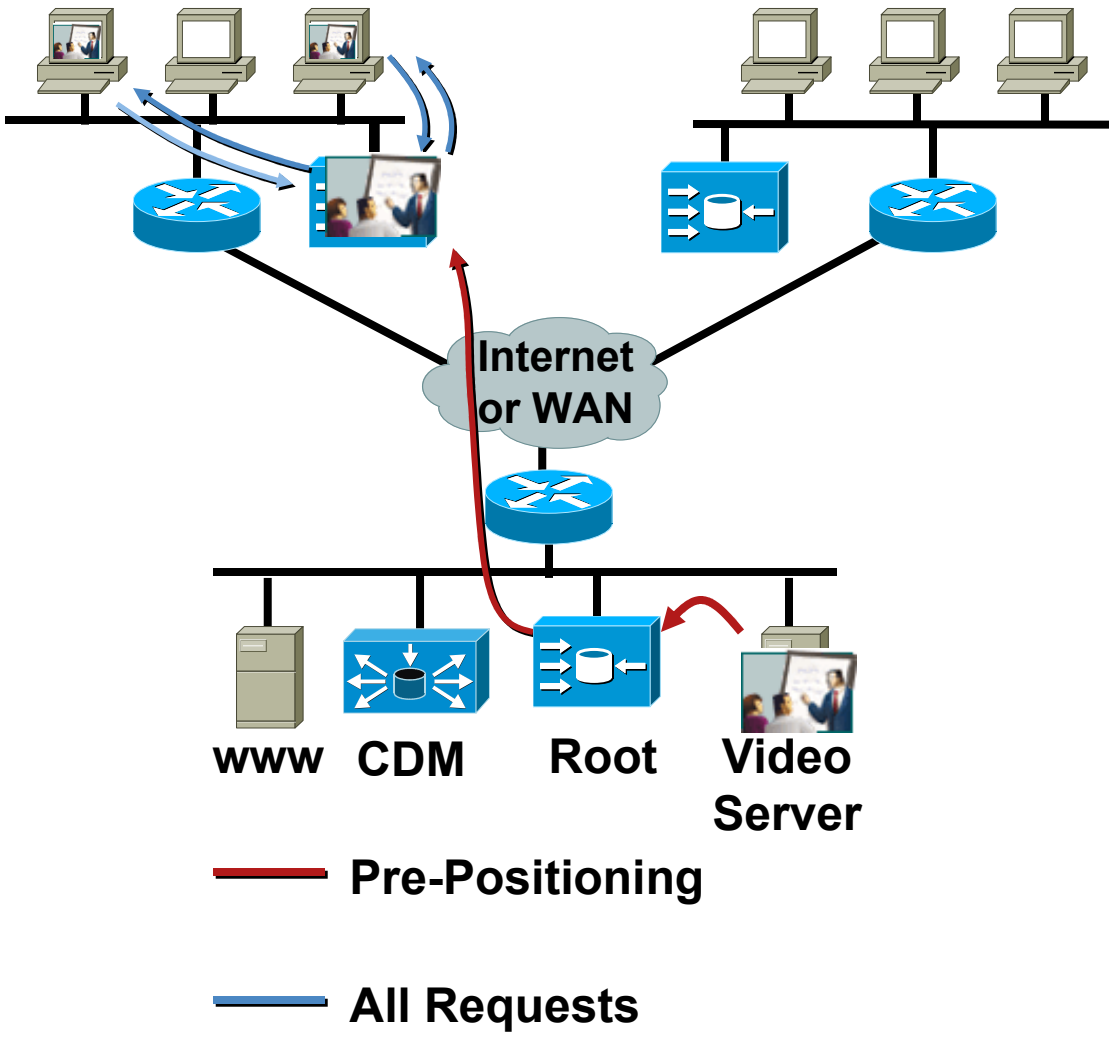
Video Architecture
Video on Demand Pre-Positioned

- Streamed bandwidth may be greater WAN bandwidth
- Extreme quality capable
- Edge WAE mirrors contents of video server
- Video files securely and controllably distributed



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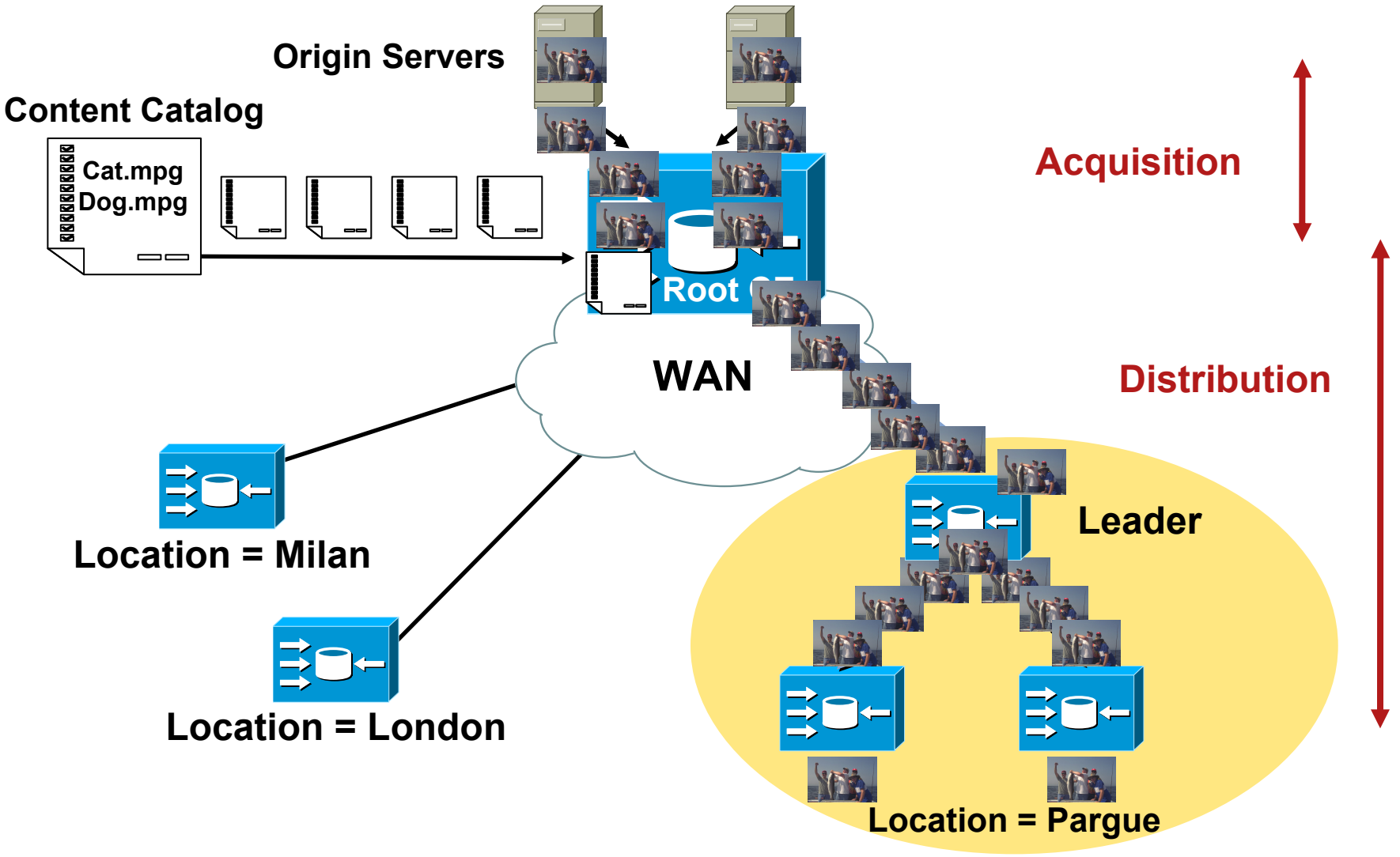
Scalable Content Distribution Solution



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Video Architecture
VoD Capacity Planning

- Same as live
- Generally WAE performance required is less than live
- Identify
  - Total existing hours or bytes of video
  - Shelf life of video
  - Popular life of video
  - New video added each week
  - Storage planning horizon
- Storage planning
  - One Hour Storage (Bytes) = (Encoding rate bps * 3600 seconds)/ (8 Bits/Byte)

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Video Services

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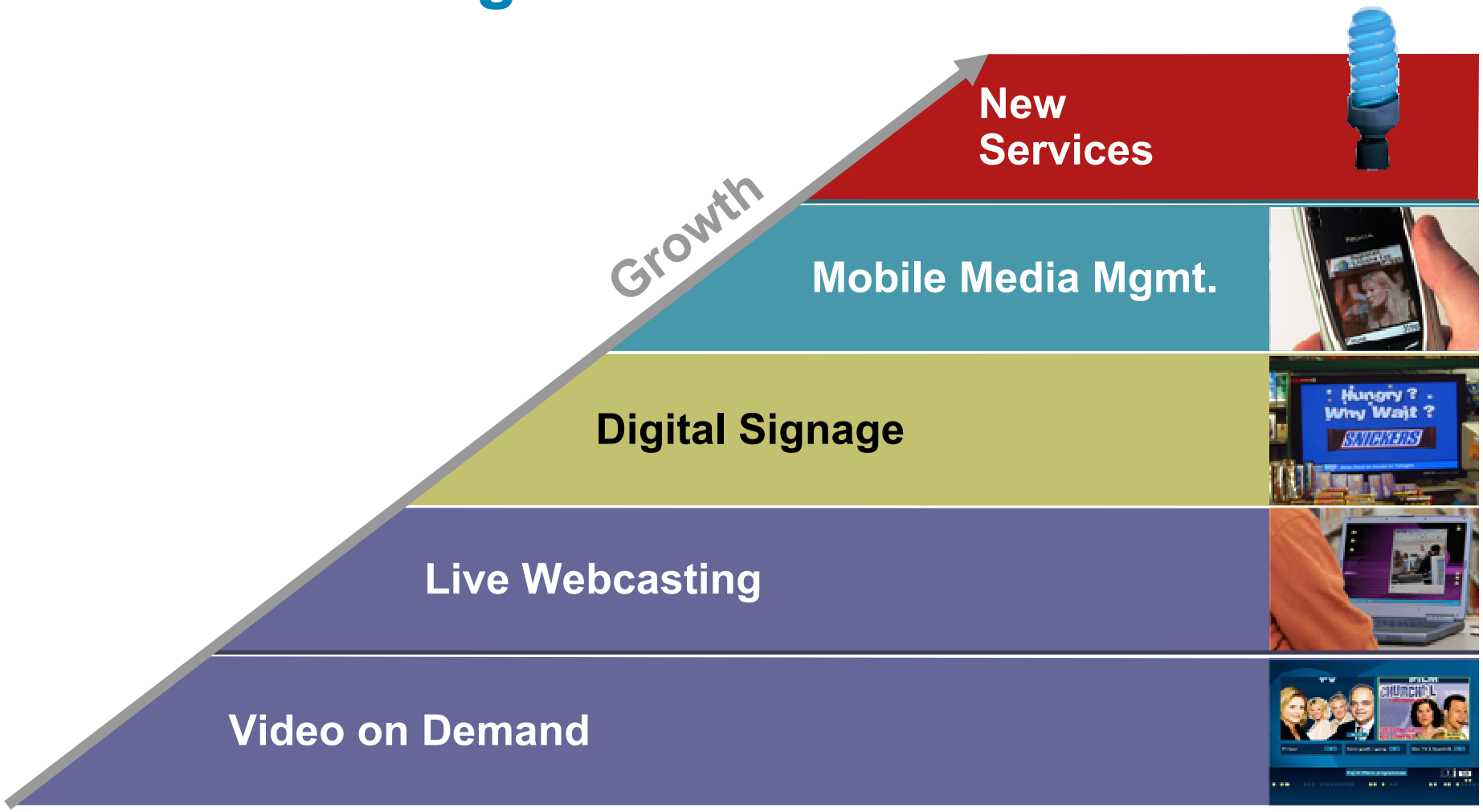
Video and Digital Media Services



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Digital Media Systems

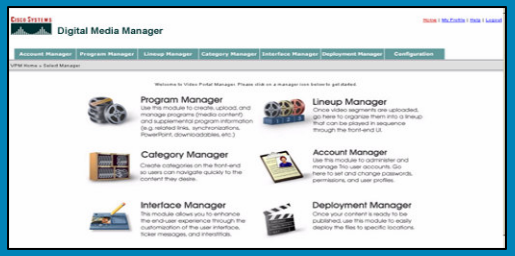
Content Creation

Digital Media Encoder 1000

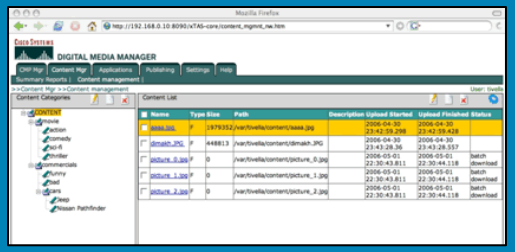
Digital Media Encoder 2000

Content Management

Digital Media Manager



Video Portal Enabler



Digital Signage Enabler

Content Presentation

Video Portal

Digital Media Player

Solution that Spans Across the Digital Media Value Chain

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Cisco Digital Media System Overview

Streaming server

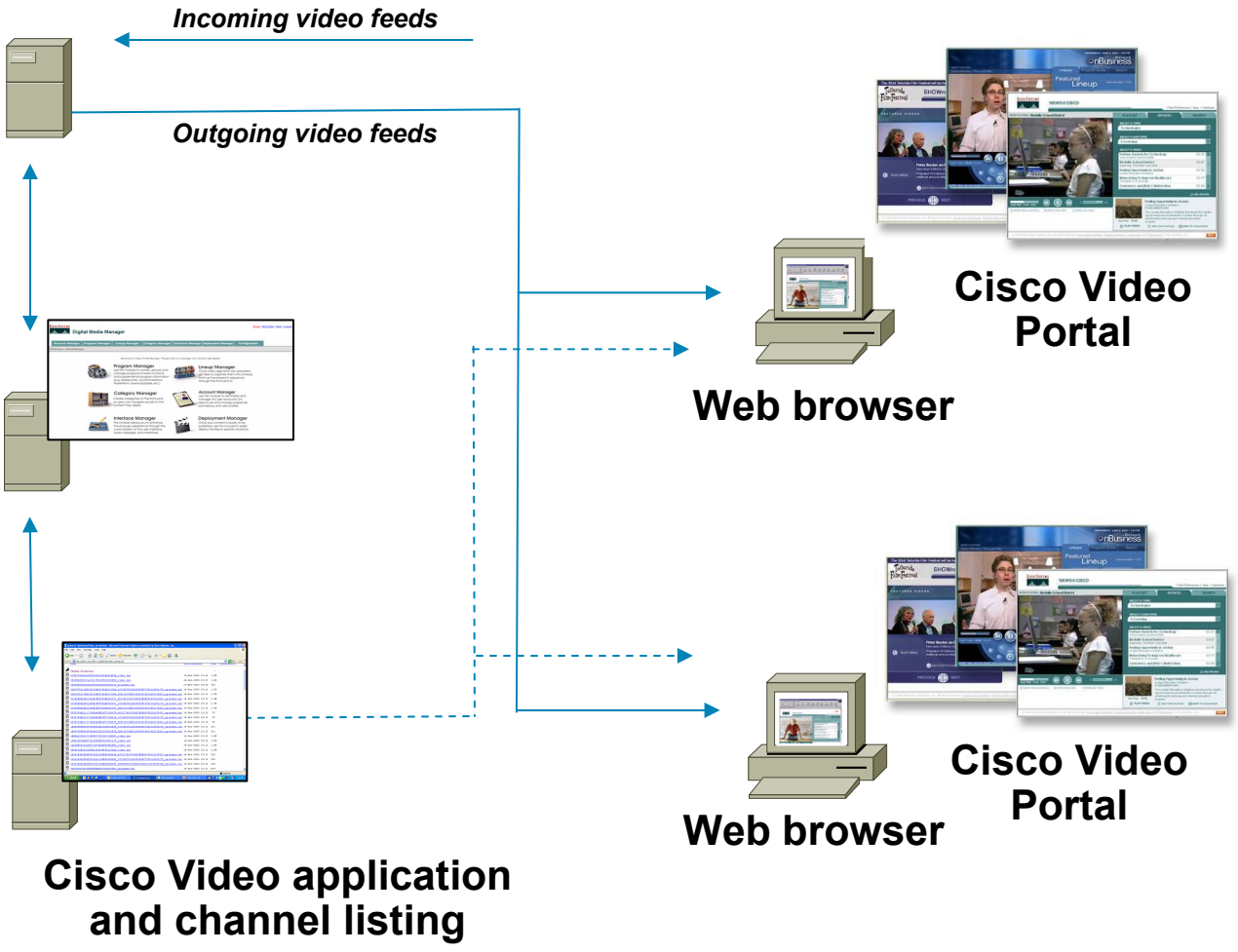
Receive video data and re-publish to Cisco Video Portal clients

Cisco Digital Media Manager

Administration of digital media channels and content publishing, Cisco Video Portal look-and-feel

Cisco Video Portal Server

Hosts Flash-based Cisco Video Portal, digital media channel listings and usage reporting tool



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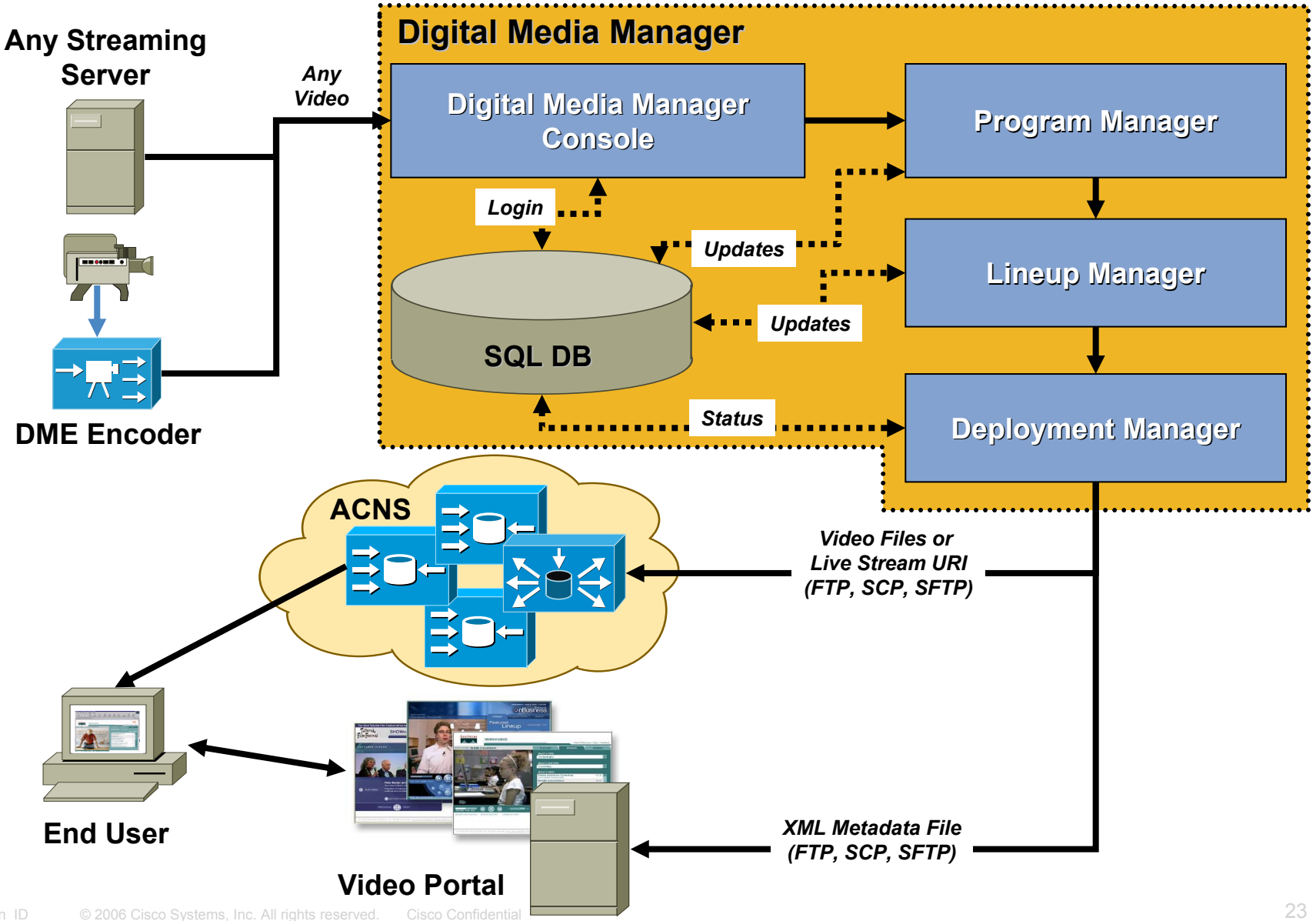
There is a strong relations between DMS components



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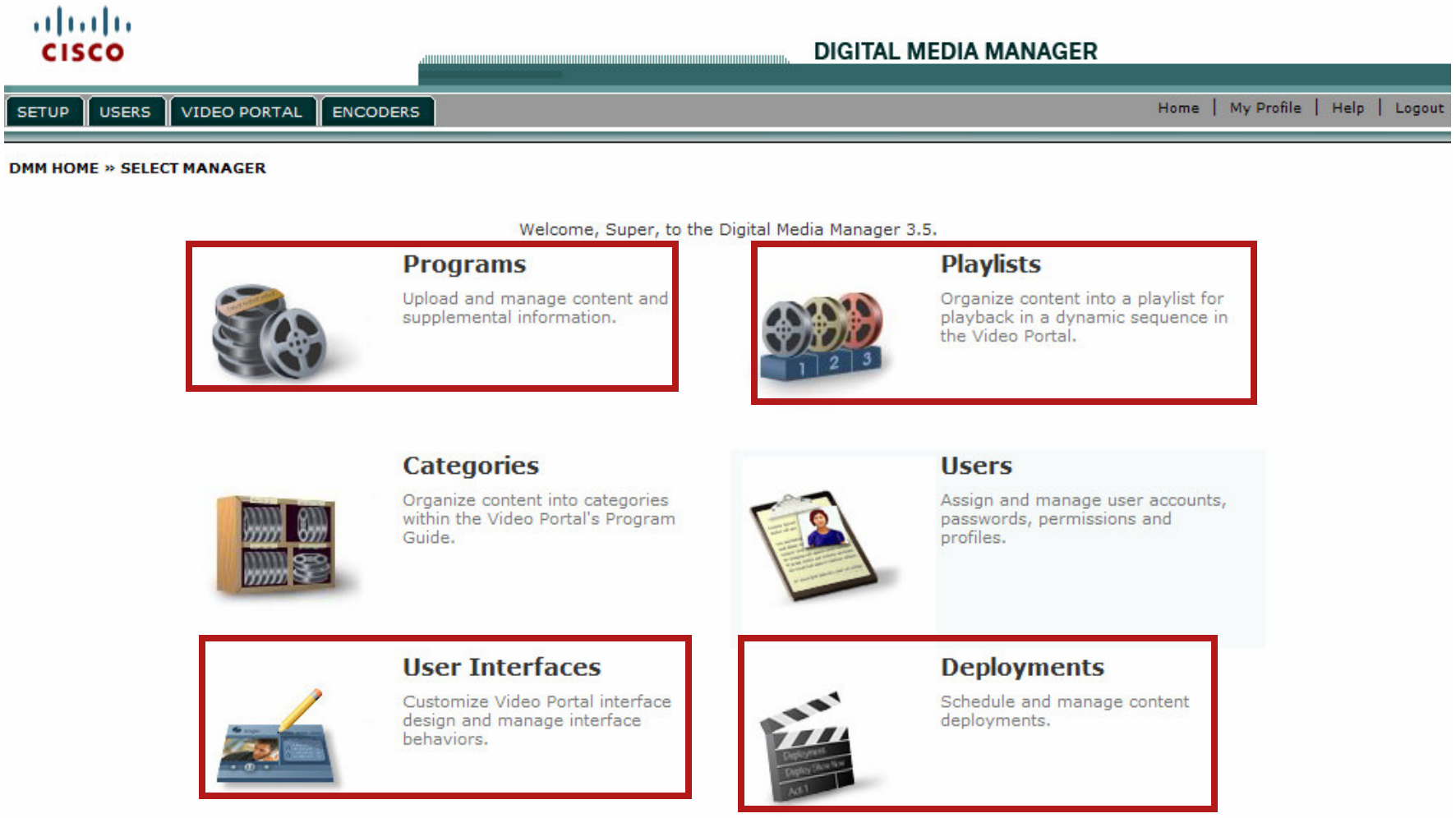
Digital Media Manager



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Cisco Video Portal with Video Player

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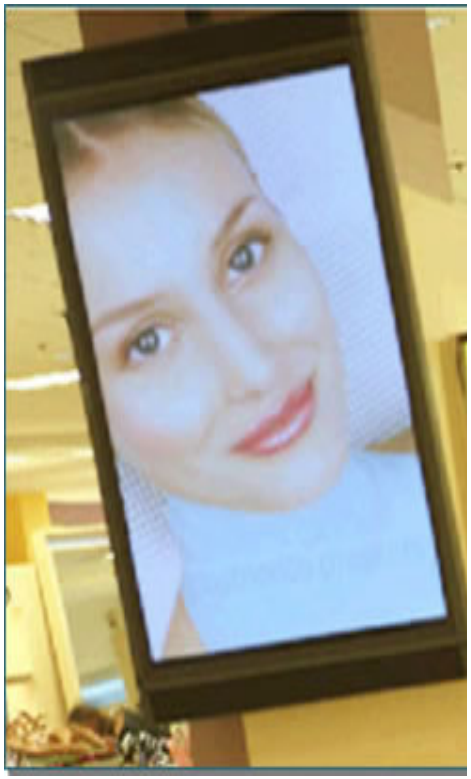
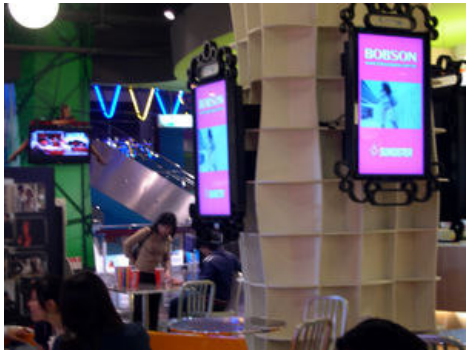
Digital Signage Examples...





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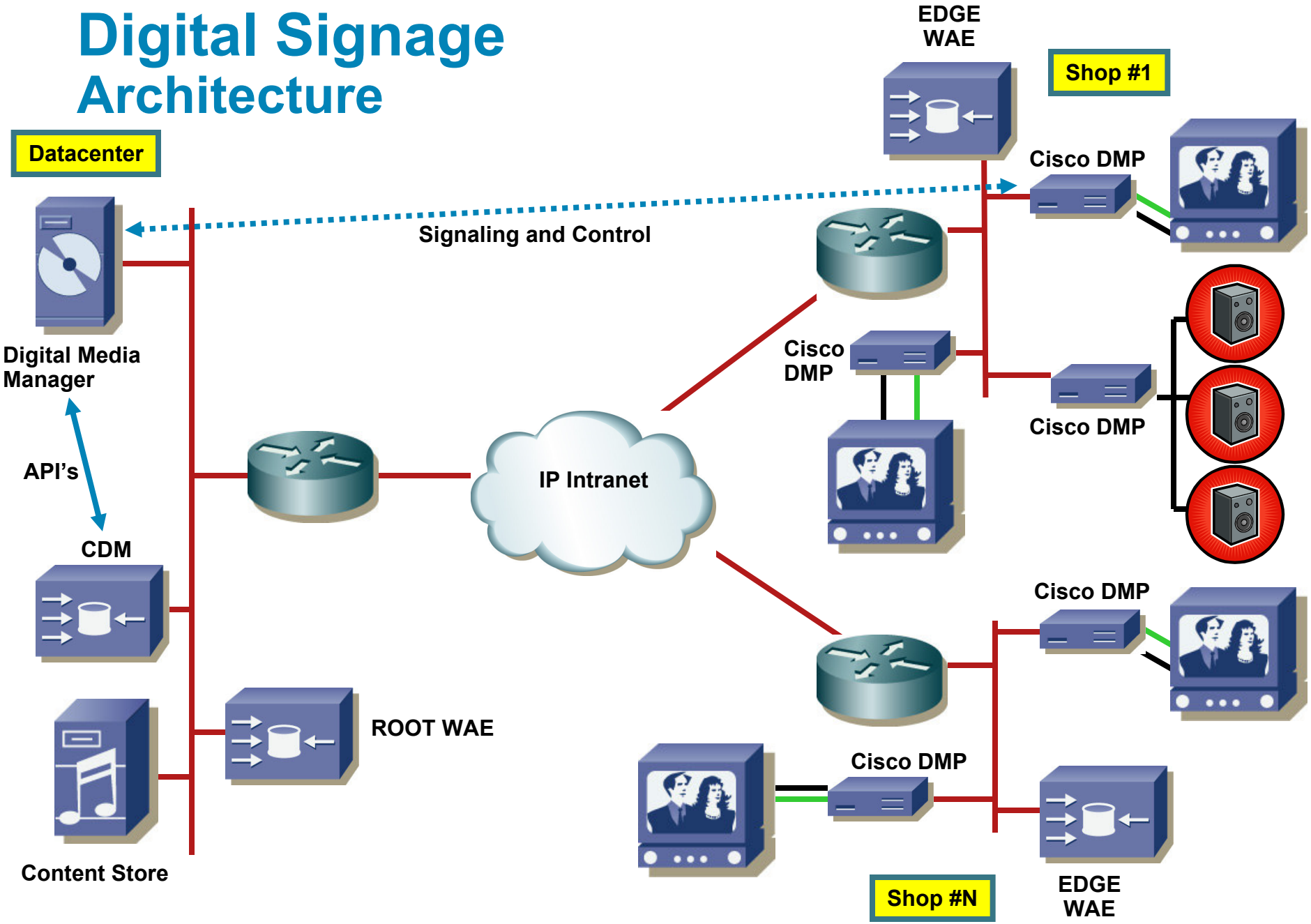
Digital Signage Architecture



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Digital Signage
Features that people need and to look for

- Multiple channels of simultaneous content
- Multiple media formats

  Audio, Video, Flash, Tickers, Static Images
- Multiple layouts

  Fullscreen, Video+Flash, Video+Flash+Ticker, many more
- Scale vertical (many branches) and horizontal (many displays in a branch) both to stores contents, playlists and DMP configs

  Content Delivery Network

  Local DMP storage
- Display parameters control via IP and RS232

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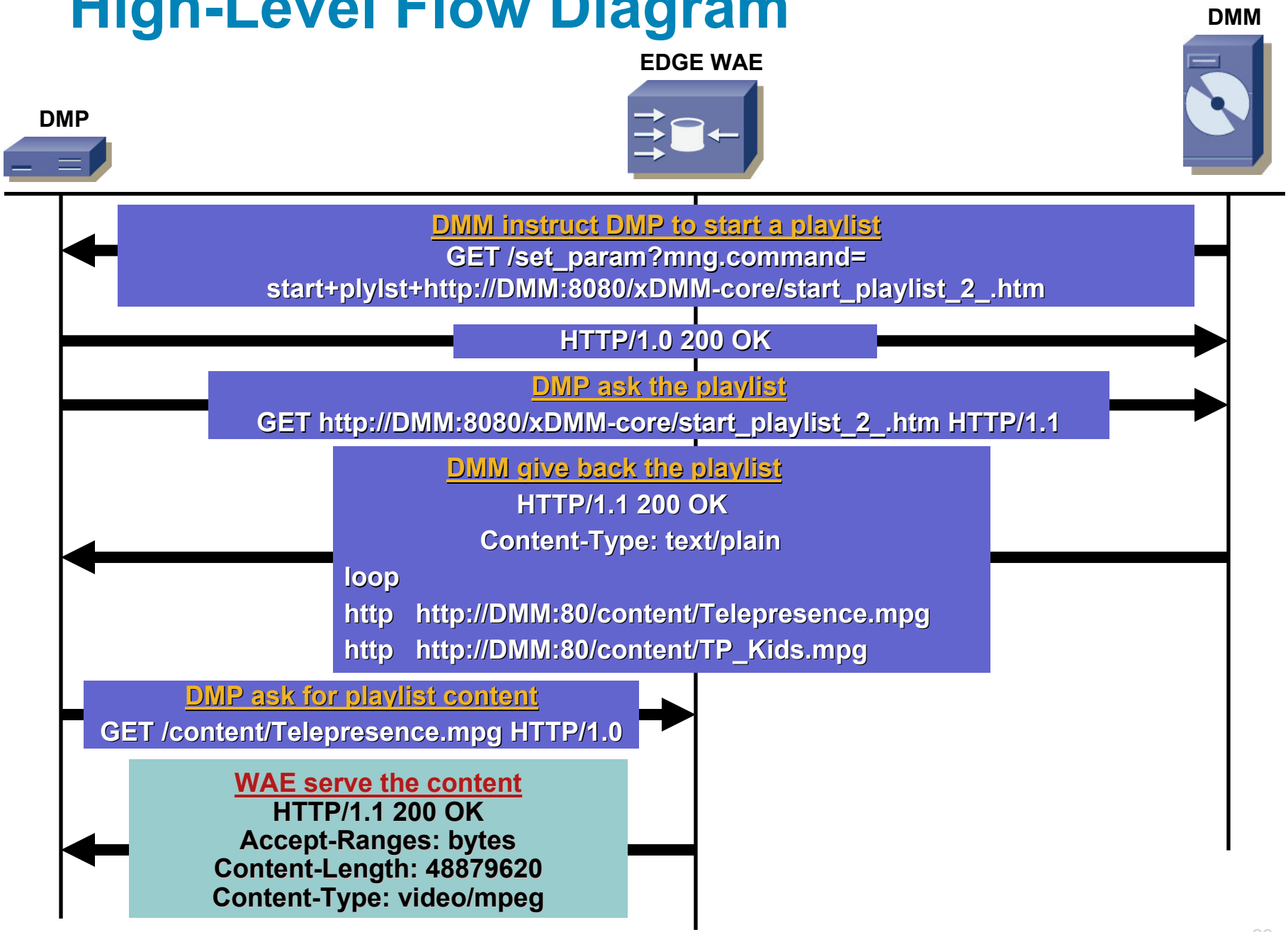
High-Level Flow Diagram



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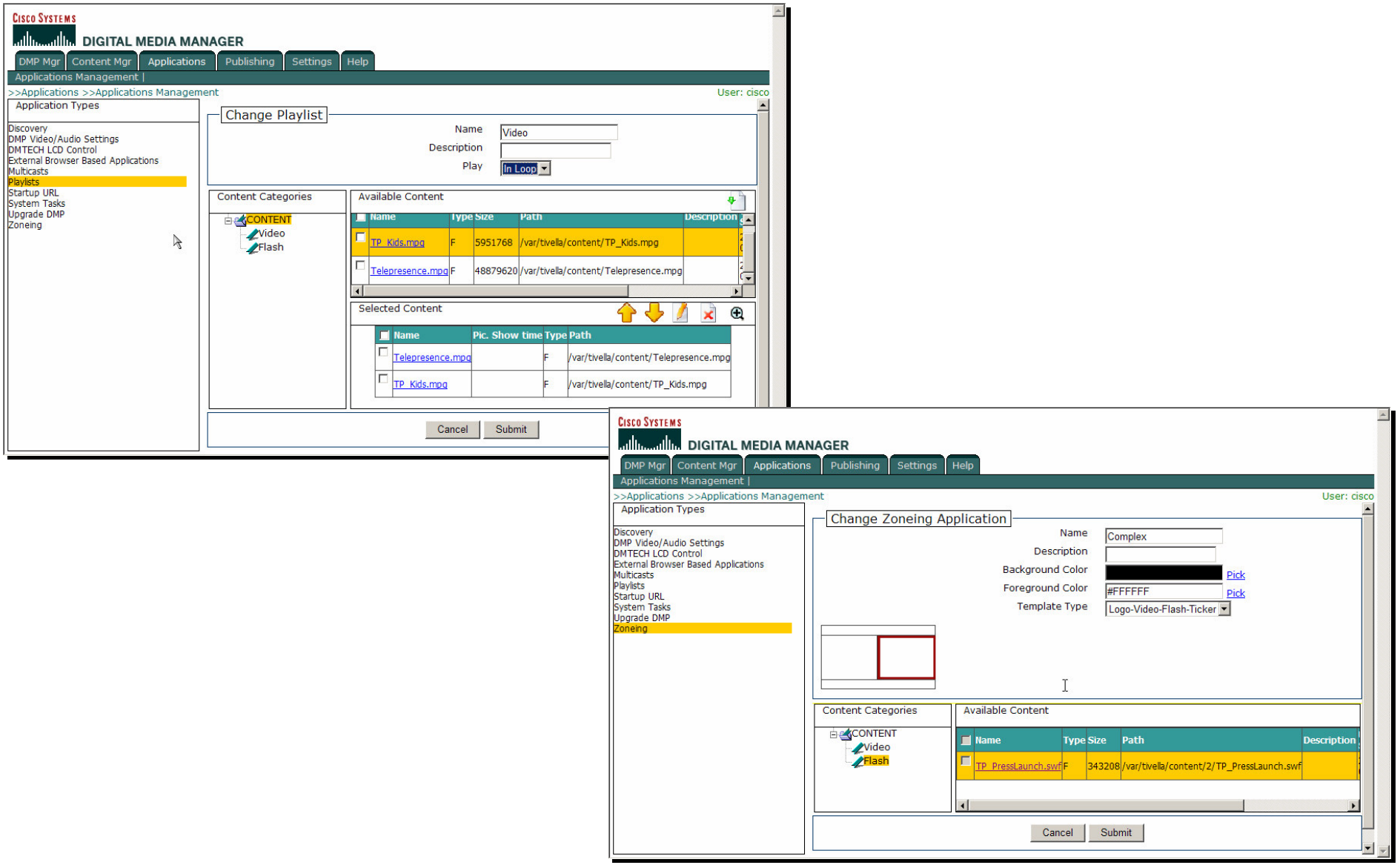
Content Management
Playlist and Zoneing



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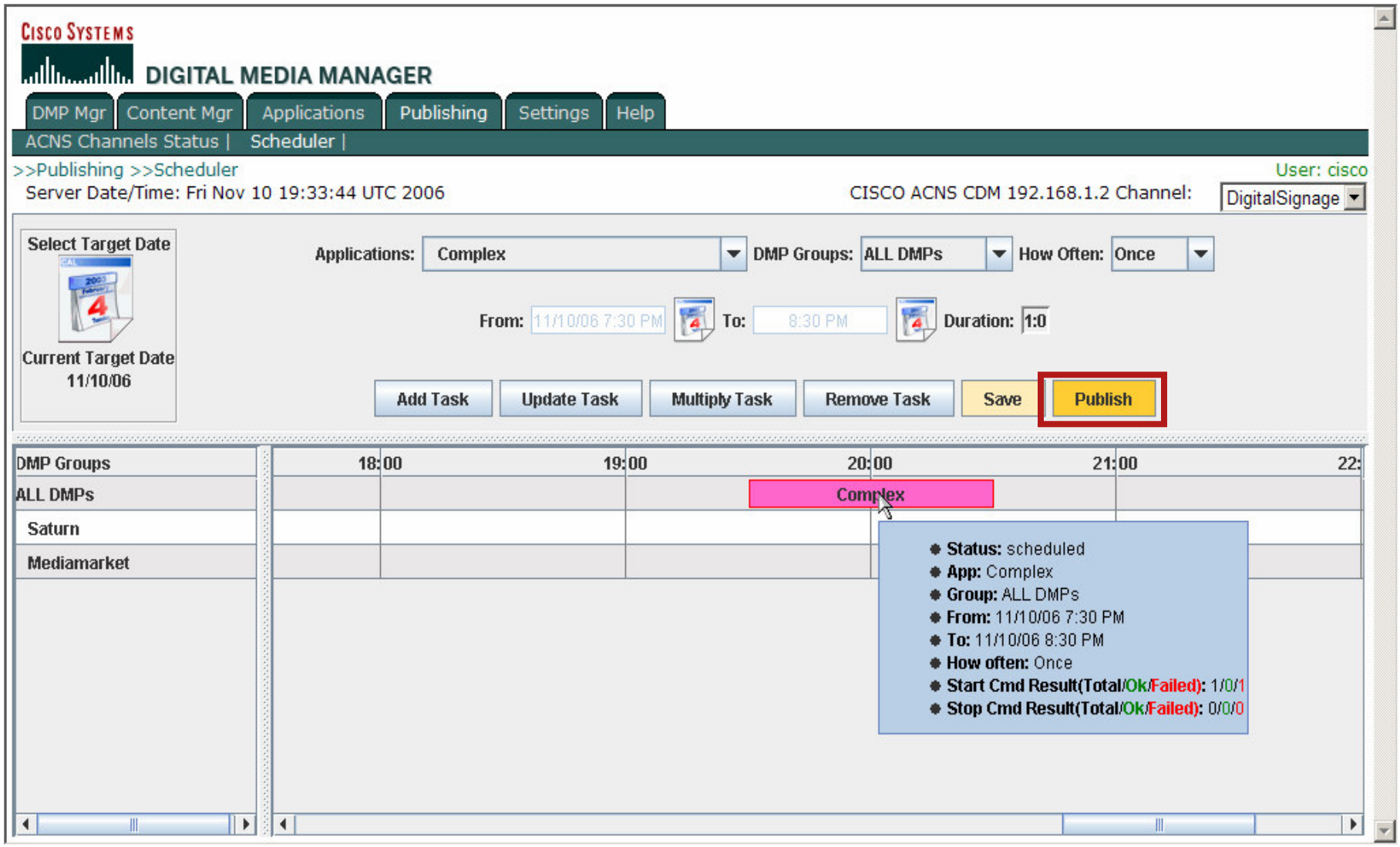
Scheduling and Publishing



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Simply Compelling Communications

Cisco makes it safe to deploy:

- QUALITY
- SCALABLE
- AVAILABLE
- ANYWARE, ANYTIME

Video and Digital Media Architectures, Solutions and Services

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Q and A

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