Video Your Network and You

Jeff Wang – Consulting Systems Engineer
From Video “Silo” to Pervasive Video

Video “Silo”

Point to Point
Fixed Room and Location
Connecting Rooms
Communicate Internally
Largely Proprietary

Pervasive Video

Many to Many
Any Device Anywhere
Connecting People
Collaborate Globally Across Organisations
Open Standard and Interoperability
Knowledge Workers: Cooperative Working

Different time
Different place

Same time
Different place

Same time
Same place

Individual work

Source: Forrester

© 2010 Cisco and/or its affiliates. All rights reserved.
Borderless Collaboration

**Internal Collaboration**
- Connect internal resources together
- Foster collaboration internally

**B2B Collaboration**
- Extend collaboration to suppliers, partners, and customers

**Borderless Collaboration**
- Foster collaboration between dispersed talents in different organisations in geographically diverse location

Question: How to plan for pervasive video and enable borderless collaboration?
1. TelePresence Immersion Curve
The Business Requirement Determines the Selection

- Desktop and Mobile
- Enhancing voice
- Enhanced presence: Office and Home
- Tactical meeting environment
- Strategic meeting environment

Video Enabled Workspace
Video Enabled Voice
Telepresence
Cisco TelePresence Endpoint Portfolio
One Size Does Not Fit All

**Immersive**
- CTS Series
  - CTS 3210
    - 18,14,10 Seat Configuration
  - CTS 3010
    - 6 Seats
  - CTS Custom
- T Series
  - T3
    - 6 Seats
  - T3 Custom
  - T1
    - 2 Seats

**Multipurpose**
- CTS Series
  - CTS 1300
- Profile Series
  - Profile 65
  - Profile Dual 65
  - Profile Dual 52
  - Profile 52
  - Profile 42

**Personal**
- Exec Conf. Room
  - CTS1100
- Exec Office
  - CTS500
- Desktop Appliance
  - EX90
  - 1700
- HD PC Mobility
  - Movi
- IP Video Telephony
  - E20
  - 9900 Series
  - Collaboration
    - WebEx OneTouch

**Solution Platforms**
- Vertical
- Virtual Classroom
- HealthPresence
- Horizontal
  - Live Desk
  - Active Collaboration Room
- Integrators
  - C90
  - C60
  - C40
- Quick Sets
  - C20 Quick Set
  - MXP Edge

© 2010 Cisco and/or its affiliates. All rights reserved.
TelePresence for Everyone, Everywhere
Customer Example of Adoption of the Immersion Curve

- 12 Immersive TelePresence globally
- 1.5M video minutes per month
- 20M Webex minutes per month

HSBC

Global TelePresence Service

Immersive

Multipurpose / Solutions

Personal

PC-Based Desktop

Soft clients, Video phones etc
345,000 Phones

65,000
2,000

6,000
1,700

3,000
900

12
60

Quality/Service Level

Today = 1-3 Years

1-3 Years =

TMS CT MAN

VCS CUCM

CTMS

TCS

MXE

TP Server & MCUs

CUVC
2. Single Architecture for Voice & Video
Cisco Unified Communication Manager

Single call control platform for voice and video
CUCM at the Core for Video and Voice
Enhancing with VCS and TelePresence Application Servers

- H.323 Gatekeeper
- H.323-to-SIP GW
- SIP grooming
- IP PBX trunking (video)

- Advanced Conferencing Services
- Expressway™ Firewall Traversal

- B2B and Remote Worker
- Distributed Conferencing Services

3rd Party/H.323 video endpoints

© 2010 Cisco and/or its affiliates. All rights reserved.
3. Media-Aware Network
More than Just Video Communication

- TelePresence
- IP Video Surveillance
- Streaming Digital Media
- Desktop and Mobile Collaboration

Enterprise Network (Wired & Wireless)
Challenges for the Enterprise Network
Different Video Traffic with Different Requirements

Streaming Digital Media
- Bandwidth
- Concurrent Sessions
- Dynamic Sessions
- Multicast
- Latency, Loss, Jitter

Telepresence
- Bandwidth
- Concurrent Sessions
- Dynamic Sessions
- Multicast
- Latency, Loss, Jitter

IP Video Surveillance
- Bandwidth
- Concurrent Sessions
- Dynamic Sessions
- Multicast

Desktop Collaboration
- Bandwidth
- Concurrent Sessions
- Dynamic Sessions
- Multicast

- Digital Signage
- Video on Demand
- TelePresence
- Video on Demand
- IP Video Surveillance
- CCTV
- Collaboration
- WebCam
Medianet Architecture
End-to-End Architecture for Rich Media Collaboration

- End-to-End Architecture
- Endpoint-aware
- Network-aware
- Media-aware
- Key technologies embedded into Cisco networking:
  - RSVP
  - PfR
  - SAF
  - Multicast
  - QoS

Medianet Service Interface APIs
Enable Rich Media Solutions
Optimize User Experience

Media Aware Routing
Content virtualization

Borderless Network / Seamless Security
System Elements - Medianet 2.0 Capabilities

Resource Control (CAC)
- WAN & Wireless
- On-path signaling
- Policies based on media & call type (scheduled vs. ad-hoc)
- Proxy for legacy devices

Flow Metadata
- Encrypted traffic
- DPI not available to all platforms
- Need multi-stream co-ordination
- Need explicit description of video application stream

Video Monitoring
- Lost pkts detected
- End-to-End monitoring, location of problem
- Media-trace (which path)
- Assessment of network with realistic media traffic, diagnostic without involving video endpoint

Auto Configuration
- Switch automatically configures DMP based on Cisco’s best configuration practice
- Switch provides location / capacity information
- Auto registration with DMM
- Same apply to video surveillance

AAA - DHCP Server
DMM
DMM Addr= 10.2.3.1
Location= Bldg 24, Rm 205
Network-Based Resource Control

Predictable and controlled QoE in the event of resource contention
Service reservation indicative of dynamic application session requirements
Intelligent use of links based on capacity & bandwidth is not the only metric
Sanctioned applications given preference
Support for many WAN topologies (DMVPN, etc.), wireless and multicast

Event detected, camera requests additional 1Mbps bandwidth
Collaborate Beyond Network Boundaries
Rich Choices for Borderless Collaboration

1. Cisco TelePresence Exchange
   - Guaranteed experience for Immersive
   - CUBE/ASA

2. Cisco Intercompany Media Engine
   - Premise-based for video, voice, UC
   - Opt-in over the Internet / extranet

3. Cisco Expressway
   - Premise-based for video / immersive
   - URI dialling over the Internet / extranet
Video as the New Voice
Crossing the Chasm

1. Comprehensive TelePresence Portfolio
2. Unified Video/Voice Architecture in CUCM
3. Borderless Network / Medianet Architecture

Pervasive Video
Borderless Collaboration

Innovators
Early Adopters
Early Majority
Late Majority
Laggards

Scary Chasm

© 2010 Cisco and/or its affiliates. All rights reserved.