



# Asia Pacific Speaker Series



**October 10, 2008**

# Agenda

- Segment 1: Executive Update
- Segment 2: Recent Solution Introductions
- Segment 3: Customer Wins

There will be a Questions and Answers session after each segment

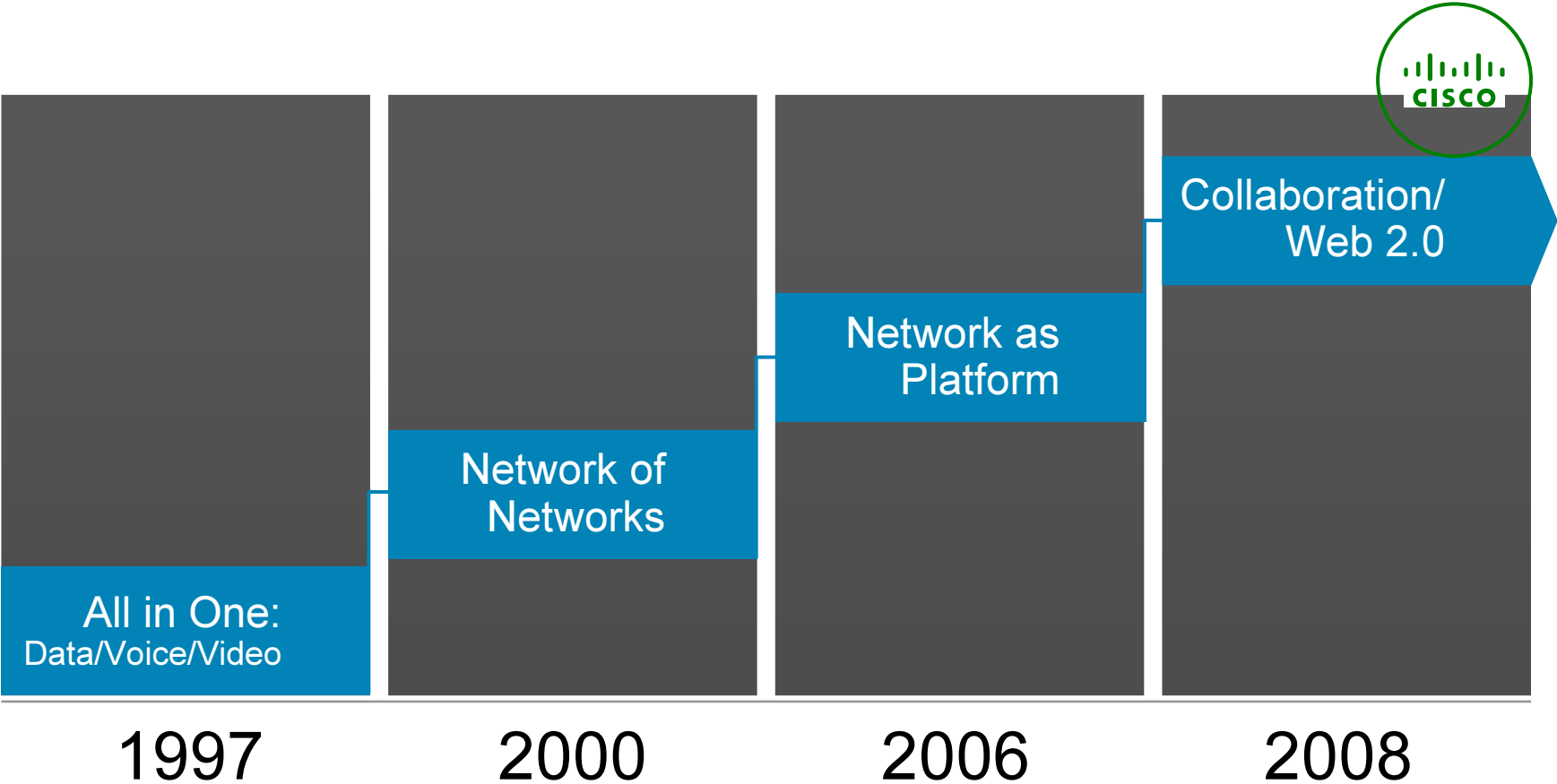


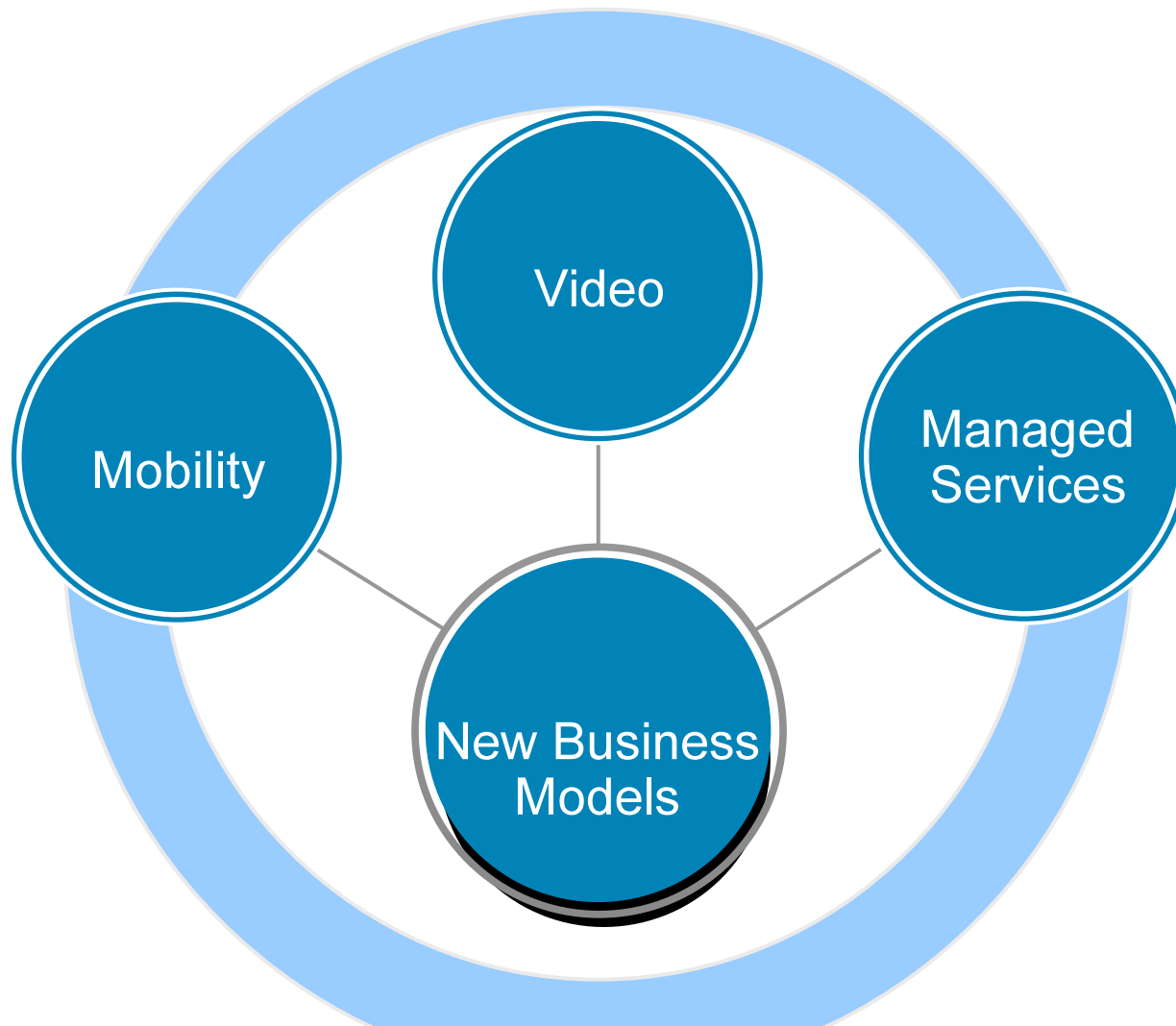
# Leading in Market Transitions

**Hanh Tu**  
**Vice President**  
**APAC Service Provider Operations**

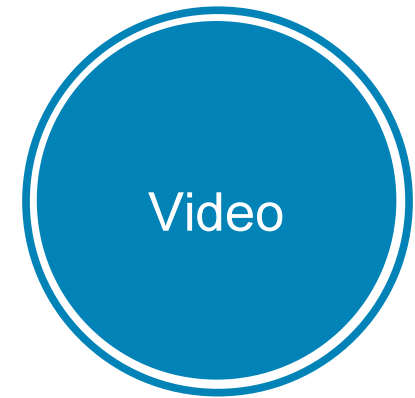
# Market Transitions

Our strategy is guided by the market transitions that affect our customers.





## Capturing Market Transitions in APAC



## APAC Market Transitions

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- Analog to Digital
- IPTV
- Connected Home
- Visual and Social Networking

# APAC Market Transitions

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- Applications, Services Innovation
- 3G/4G, IP-RAN, smart device transition
- Mobile IP NGN

## APAC Market Transitions

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- Network based CPE and Network Services
- Managed total solutions – Telepresence, Webex, etc
- Future delivery of applications over the internet



## APAC Market Transitions

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- Deployment of new ICT capability /models – Pricing and financial models, Outsourcing/BOT/BOM, JV models, Low cost architecture models
- Regulatory push towards Structure/Operational Separation and/or NetCo/ServCo
- Expansion into content / new (digital) media, cloud computing

# Why Cisco



**Cisco's in all segments: Enterprise, SP, SMB, Commercial Consumer**



## Why Cisco

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- Innovation is critical to growth and sustainability
- Cisco takes a broad approach to innovate
  - Internal Innovation, \$5.2B a year on R&D
  - Acquisition
  - Partnership



## Why Cisco

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- Cisco's commitment: 25% reduction in GHG emission by 2012
- Driving environmental initiative in **responsible operations, product stewardship, network architecture and solutions**

# Summary

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- Cisco focuses on capturing and leading market transitions. The next stage is Collaboration which changes the way we work, live, learn and play
- Explosive growth in **Video, Mobility, and Managed Services play straight in Cisco strength. Service Providers are looking to Cisco for closer partnership which might require New Business Models**
- Cisco continues its leading position in innovation by investing more than \$5B annually and by leveraging our collaboration portfolio using network as a platform for speed and scale
- Green initiatives



**CISCO**

# Questions & Answers





# The Cisco IPoDWDM Solution

Transport for the  
approaching Zettabyte Era

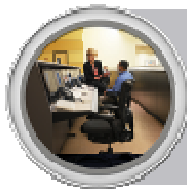
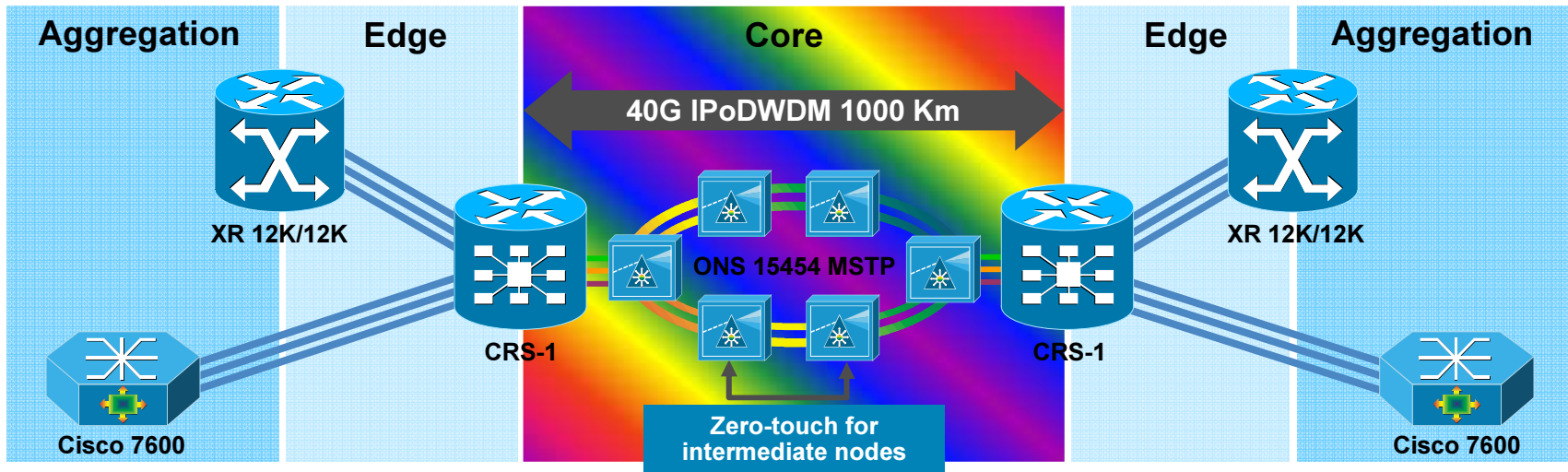


**Pravin Mahajan**  
**Solution Marketing Manager**  
**Routing & Switching**

# Pioneered IPoDWDM Transport

## Phase I: Introduced 2005

6 of top 20 SPs globally,  
over 20 customers



### Increase Service Flexibility

- Faster service provisioning
- New revenue generating services



### Manage Traffic Growth Efficiently

- Video / Rich IP Media growth



### Increase Reliability

- Meet service level agreements (SLAs) for customer loyalty
- Fewer devices/active components



### Lower Expenses

- Fewer truck rolls; fewer shelves (Space, cooling, power)
- 50% Optics reduction in the Core

# IPoDWDM Momentum

## Increasing Customer Success



Comcast Cable, USA

Largest IPoDWDM, 40G global deployment  
Triple-play services core backbone  
Interoperating with Nortel DWDM  
100G piloted



TeliaSonera, Sweden

World's largest gaming festival with 40G  
IPoDWDM on CRS-1

[http://www.world-television.se/world\\_television.se/mnr\\_stat/mnr/TeliaSonera/294/](http://www.world-television.se/world_television.se/mnr_stat/mnr/TeliaSonera/294/)



Sprint, USA

Converging all types of business apps (voice, video, data) on a flexible 40G IPoDWDM core network interoperating with Ciena optical system



T-Com, Germany

Using IPoDWDM to cost-effectively increase throughput of existing fiber for IPTV/video services

6 of top 20 SPs globally  
Over 20 customers worldwide

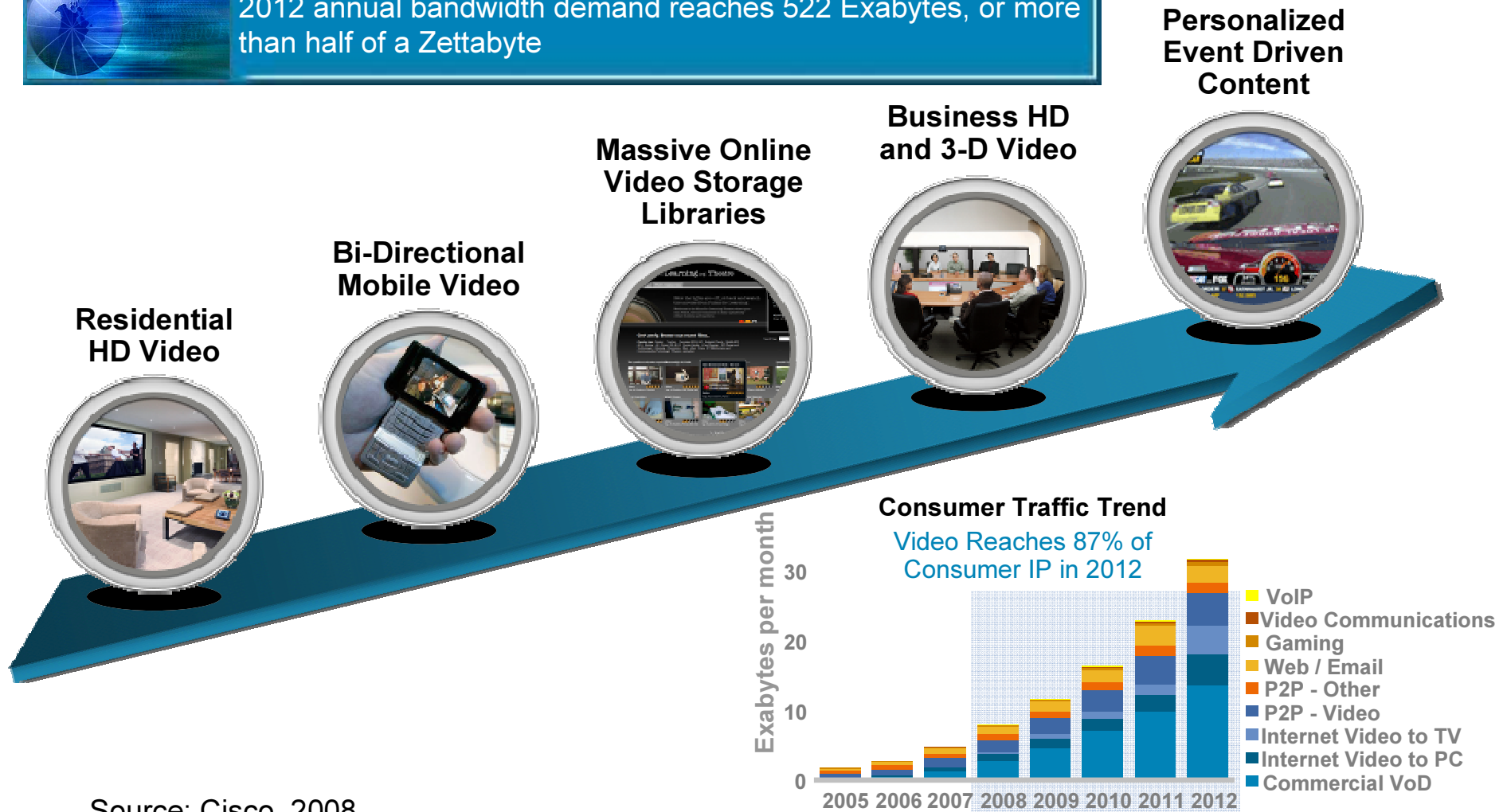
# Video Apps Approach the Zettabyte Era

## Increasingly Bandwidth Intensive and Complex



**44 Exabytes per month Total Traffic by 2012**

2012 annual bandwidth demand reaches 522 Exabytes, or more than half of a Zettabyte

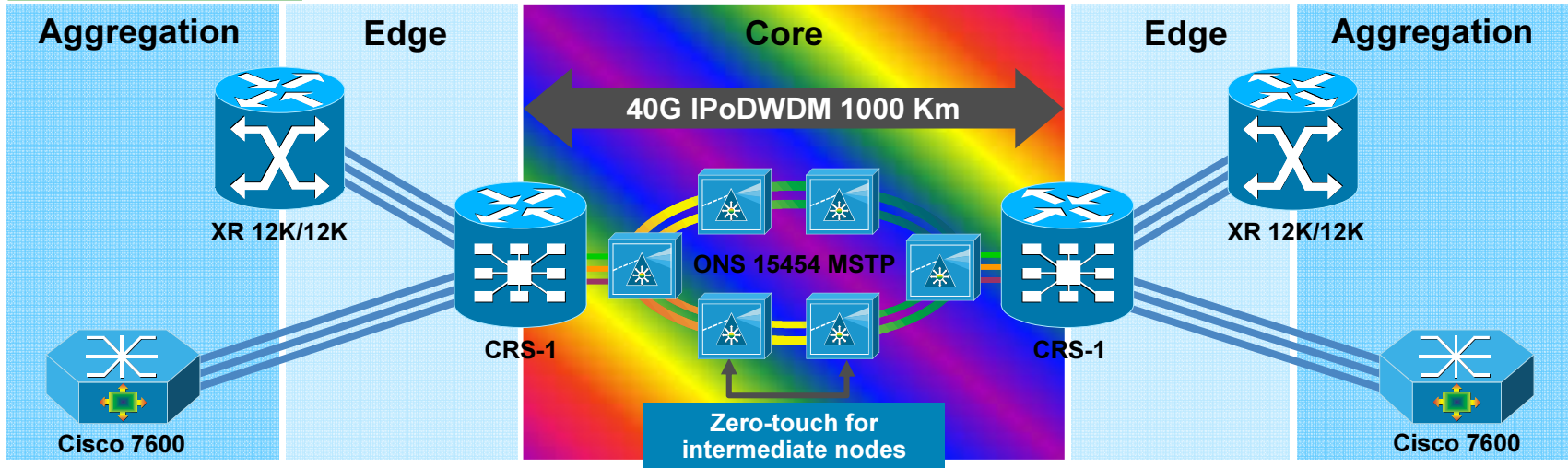


Source: Cisco, 2008

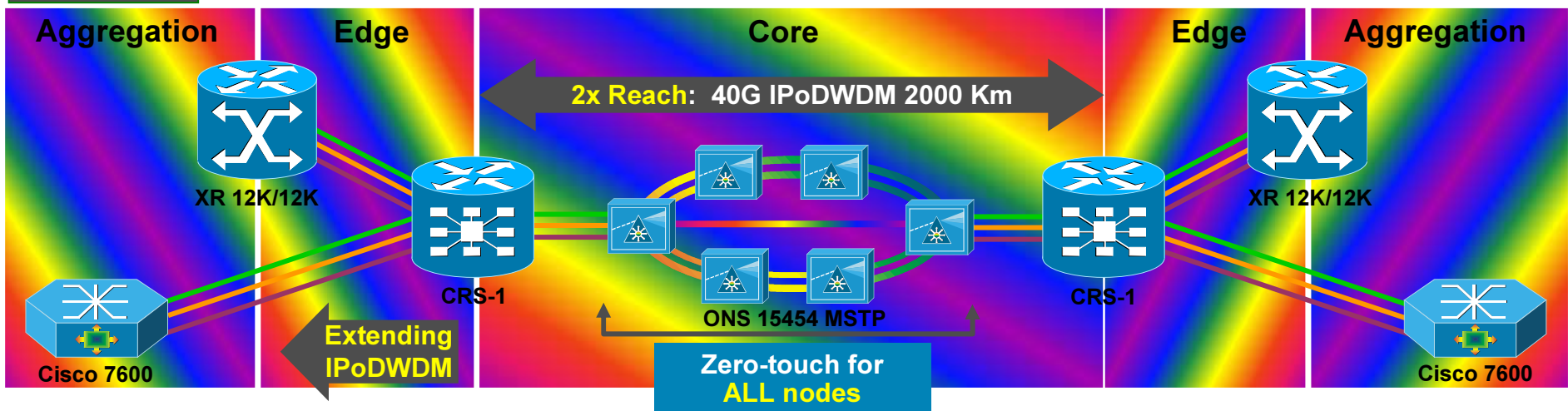
# Introducing: IPoDWDM for the approaching Zettabyte Era

## Doubling Reach, Extending beyond Core, Zero Touch

December 2005

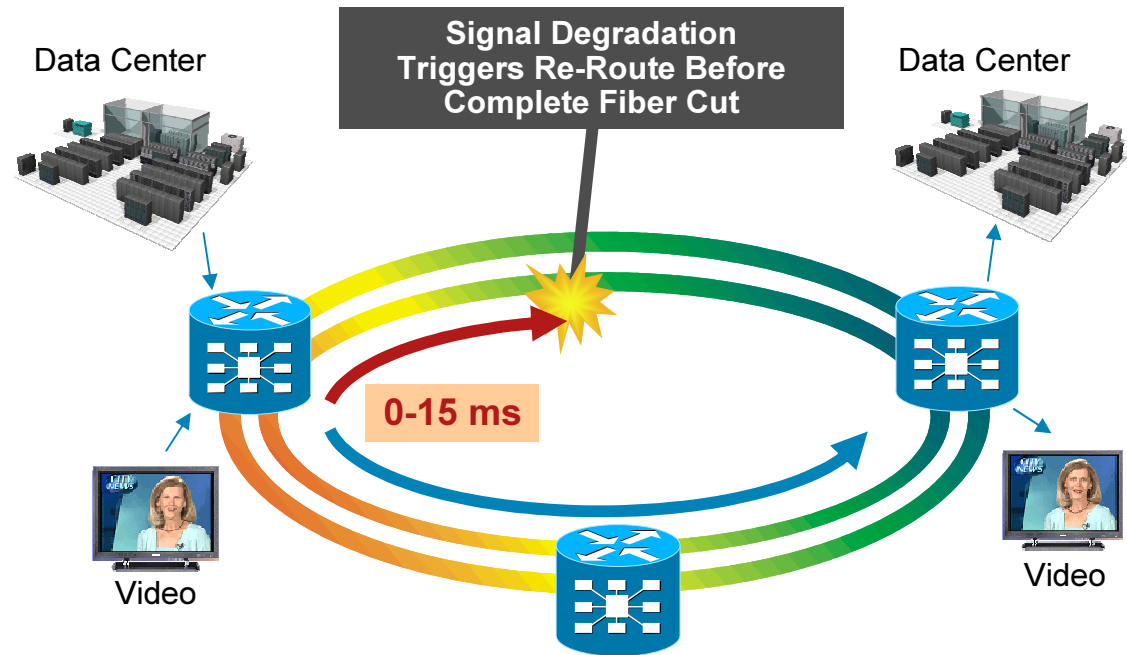
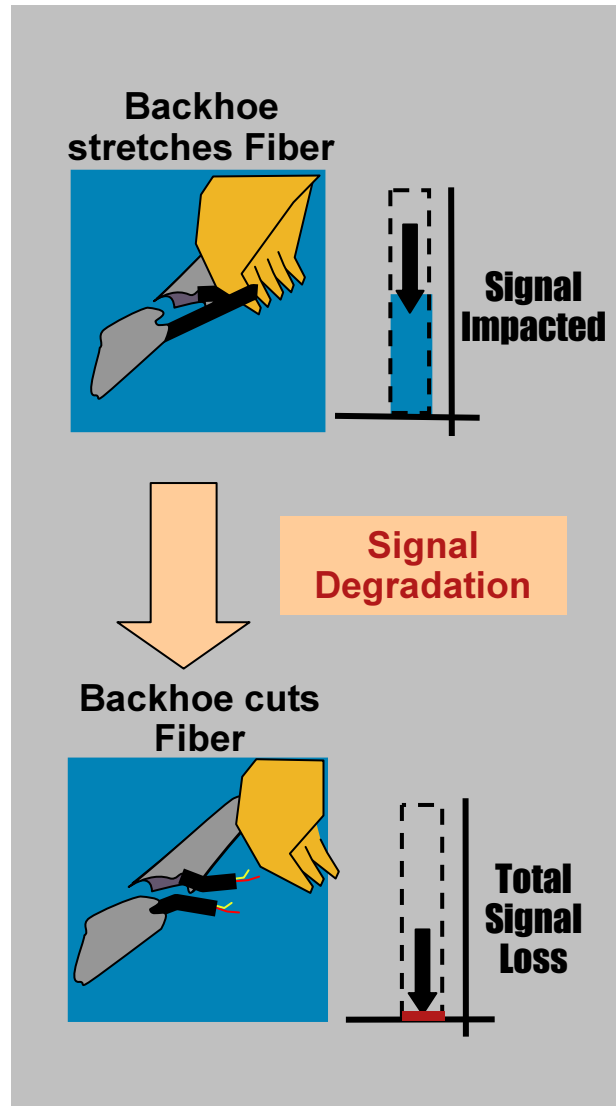


Today



# IPoDWDM: Re-setting the Standard for QoE

## With Proactive Protection: IP Trumps SONET/SDH



- Innovative early detection triggers failover on signal degradation, not loss
- 3x Faster recovery (<15ms) than SONET / SDH standards for near hitless video experience
- Unsurpassed reliability protects mission-critical data from loss

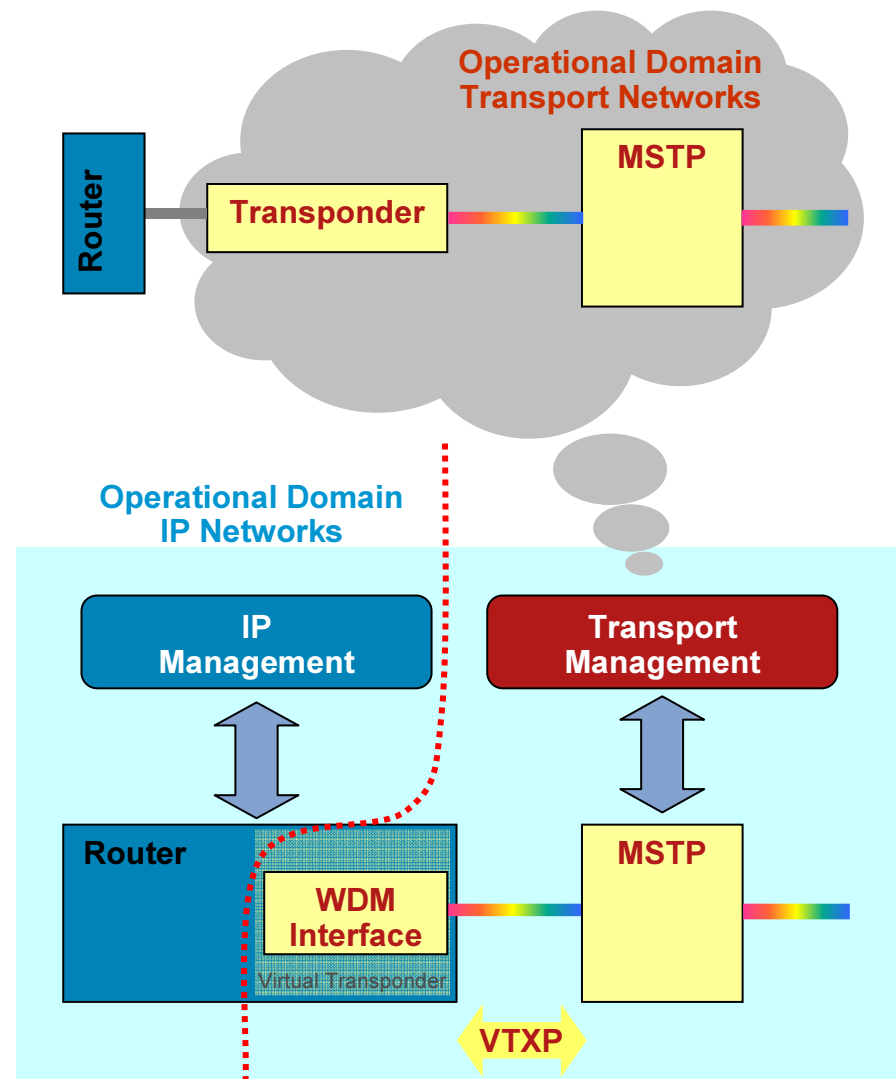
# IPoWDM Innovations

## Virtual Transponder Management

- **Pioneering** feature: Virtual Transponder Protocol (VTP)
- **Open standards** (XML) based interoperating with 3<sup>rd</sup> party MSTP
- Full FCAPS Management for Router WDM interfaces

### Flexible Management

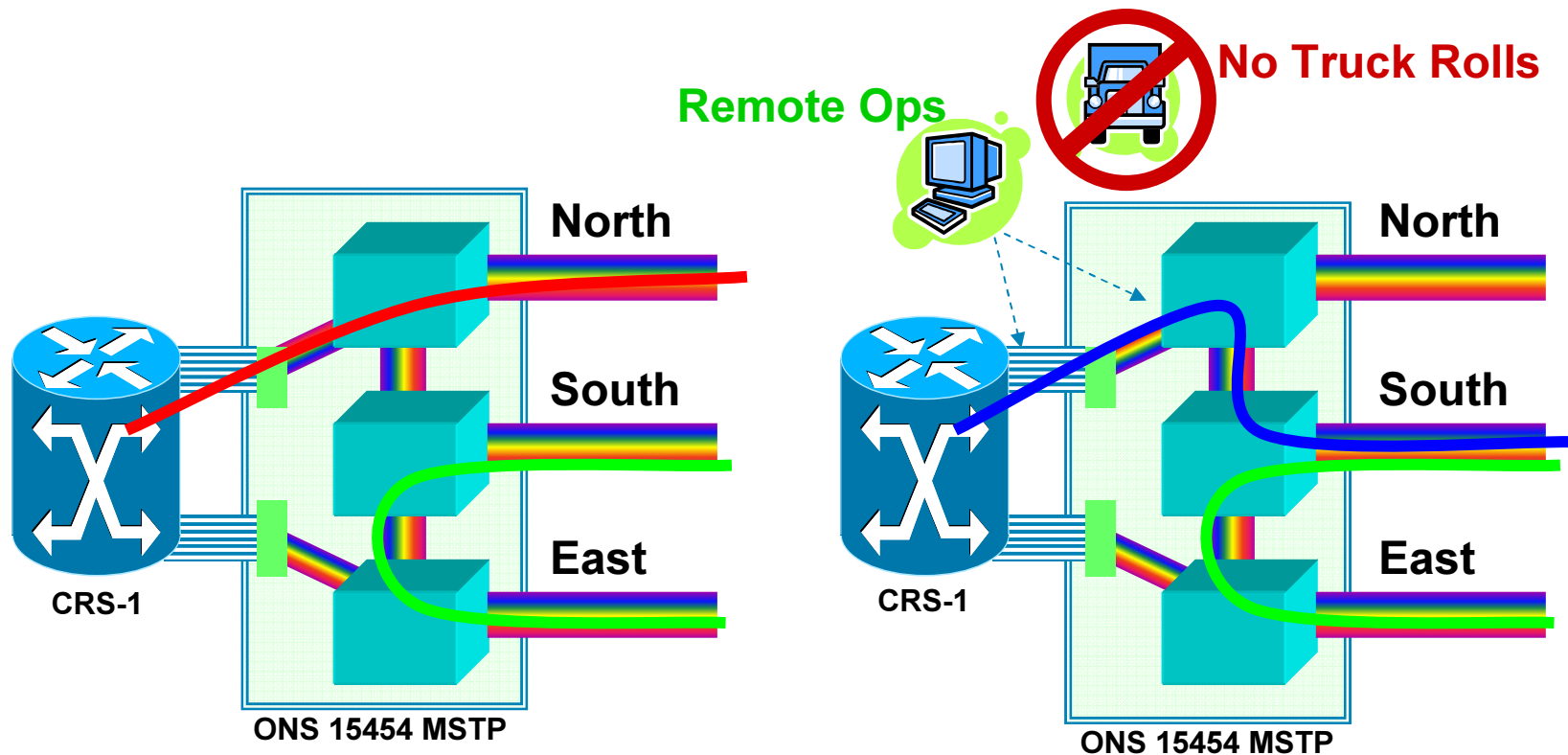
- Segmented: No change to existing NMS/OSS, operational models
- Integrated Management



# Zero Touch Operations

## Omni-directional & Colorless Capabilities

- Remotely re-configure wavelengths in any color and any direction on ALL nodes without re-wiring fiber
- Rapidly reconfigurable bandwidth; capitalize on changes in network demand and transitory events



# Cisco IPoDWDM

## Industry's Only Comprehensive Solution



	CISCO	Juniper	Alcatel-Lucent	HUAWEI	ERICSSON
Integrated IP and Optical Solution					
10G IPoDWDM		*			
40G IPoDWDM					
Virtual Transponder					
Omni-Directional and Colorless Transport					

\*Note: Requires additional DWDM elements, No EFEC

Full Product Offering

No Product Offering

# Industry's Most Eco-Friendly Transport

## Cisco IPoDWDM vs. Competition

**IPoDWDM  
Cisco Solution**

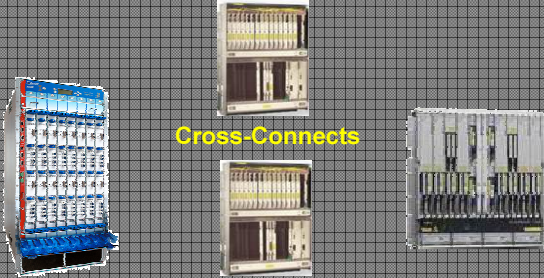


**CRS-1    ONS 15454 MSTP**

**51% Less Opex**

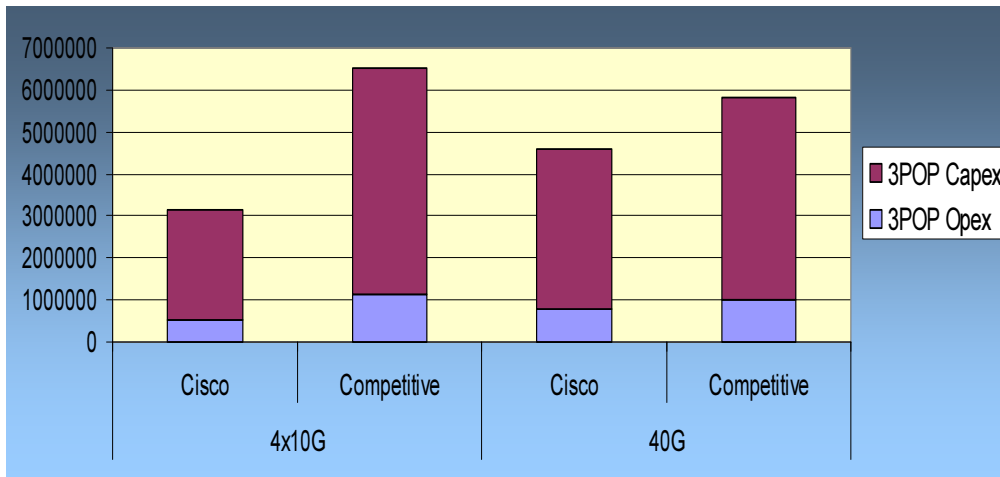


**Traditional Solution**



**Core Router    Transponders    ROADM**

**Higher Power, Space, Cooling**



<b>27,124</b> Gallons of gasoline	<b>6,887</b> 60w incandescent light bulbs	<b>558</b> Barrels of crude oil
<b>121</b> Tons of coal	<b>51.5</b> Cars driven for a year	<b>30.6</b> Years of house electricity
<b>2 Acres of trees</b>		

Scenario: 3 POPs meshed with 4x10G / 40G links, Calculations based on US metrics for CO2 emissions with US\$ industry standard pricing  
Additional Scenarios at <http://www.cisco.com/go/ipodwdm>

# Cisco IPoDWDM

## Phase 2 Solution Enhanced

Phase 1 Solution  
6 of top 20 SPs globally,  
over 20 customers

### CRS-1



Introducing:

- 40G IPoDWDM PLIM w/DPSK modulation
- Doubling reach (to 2000KM) w/o regen

### XR 12000/12000



Introducing:

- 10GE SPA w/NRZ modulation
- IPoDWDM to the Edge, 2000 km w/o regen

### 7600



Introducing:

- 10GE XFP
- IPoDWDM to the Aggregation

### ONS 15454 MSTP



Introducing:

- Omni-directional and colorless ROADM
- Zero touch provisioning on all nodes

### IPoDWDM Enhancements

**2000 KM reach:**  
Deployable in virtually any  
geography; further  
**reductions** in power,  
space, cooling & capex

**Zero touch:** Speeds  
provisioning, reduces  
opex & carbon emission  
from truck rolls

**Proactive Protection:** Link  
recovery tested at <15ms,  
increasing quality of  
experience

**Virtual Transponder:**  
Deployable by carriers with  
transport data depts.



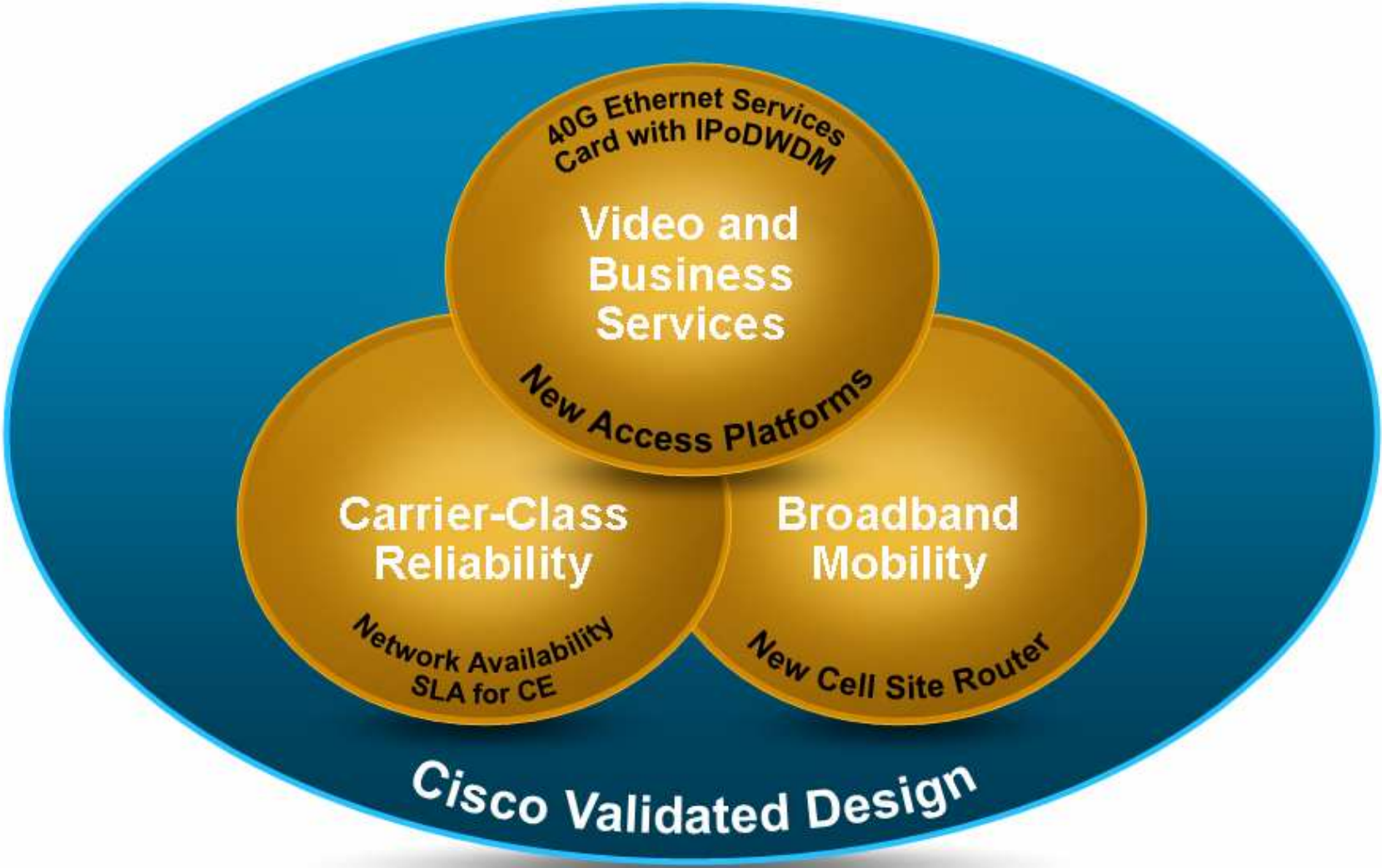


# Powering The Connected Life in the Zettabyte Era: Carrier Ethernet Innovations



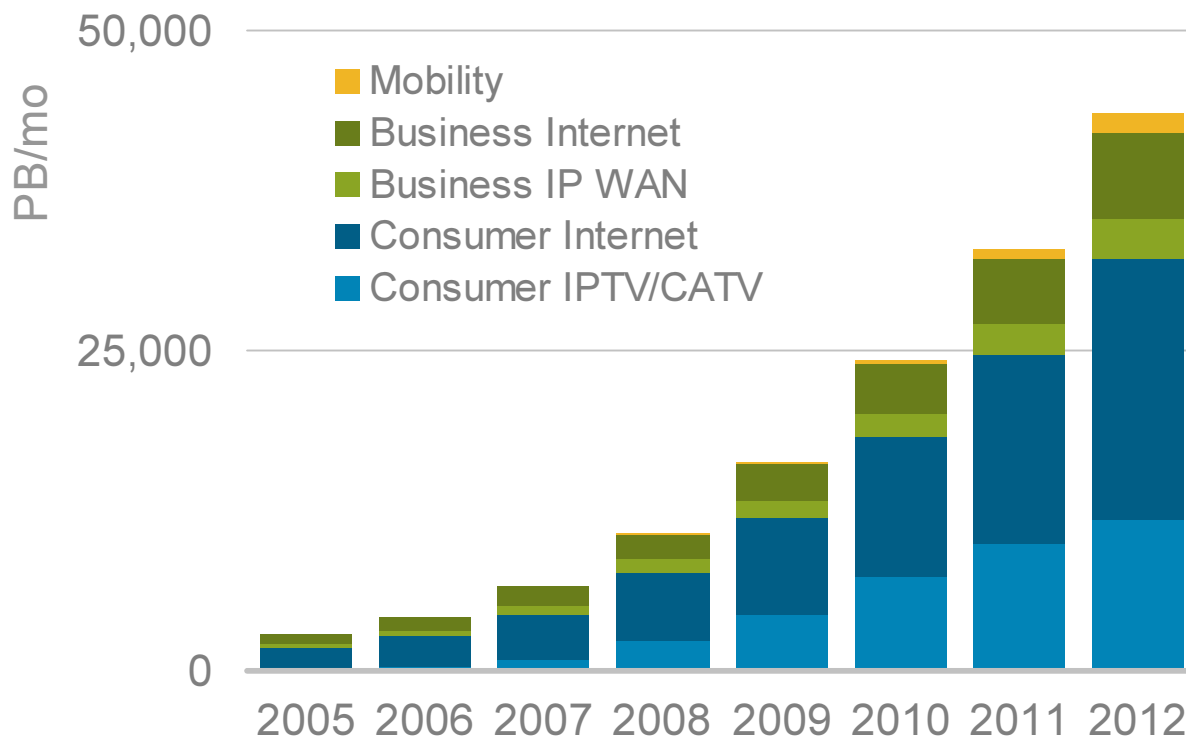
**Ian A. Hood**  
**Senior Manager, Product Marketing**  
**Carrier Ethernet**

# New Announcements



# Global IP Traffic Growth

IP Traffic will increase 6X from 2007 to 2012  
In 2012, half a zettabyte will cross the global network



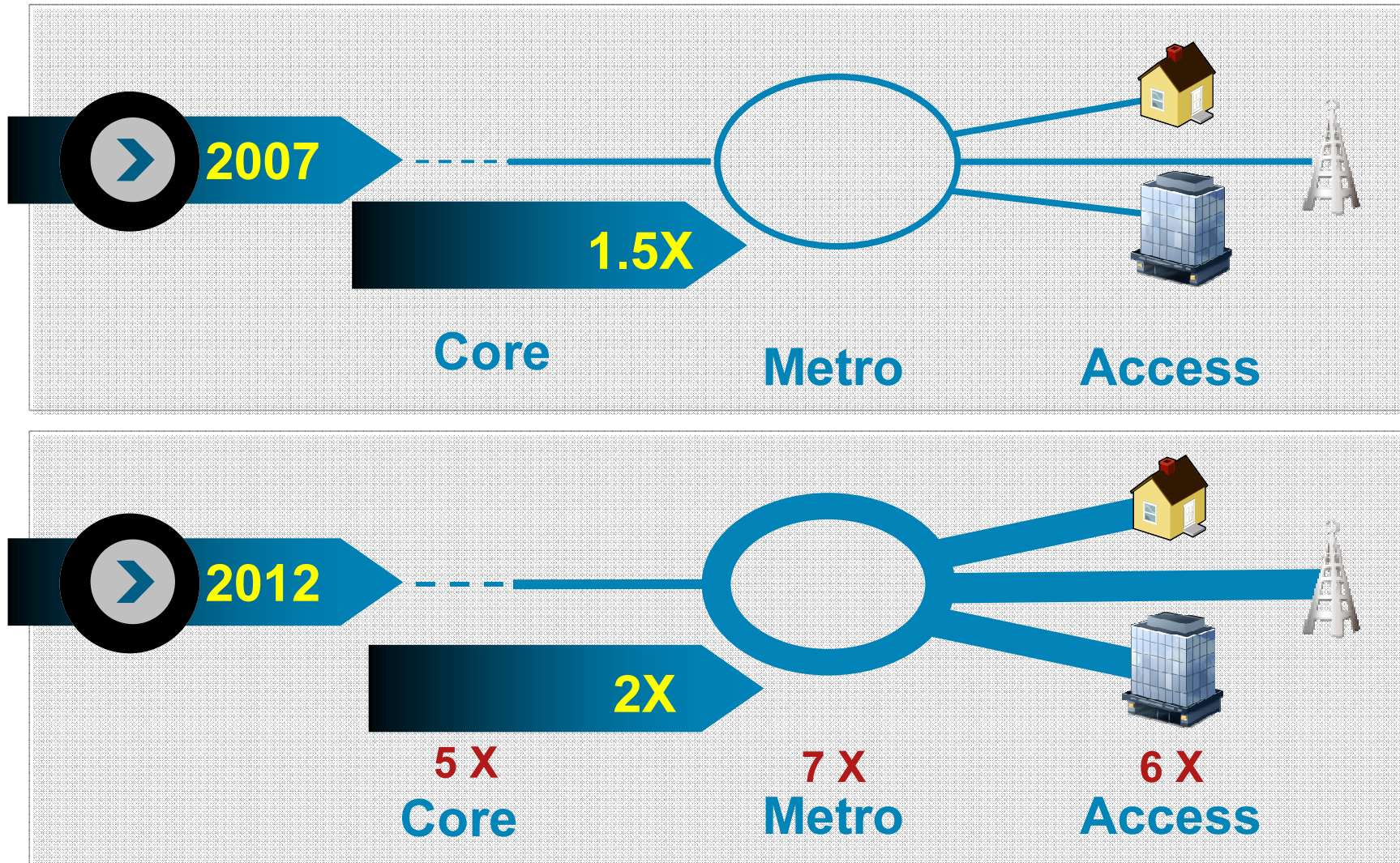
**Mobile Data to  
Grow at 125%  
CAGR 2007–2012**

**With Video,  
Consumer IP  
Quadruples  
by 2012**

Source: Cisco Visual Networking Index—Forecast, 2007–2012

# Exponential Network Traffic Growth

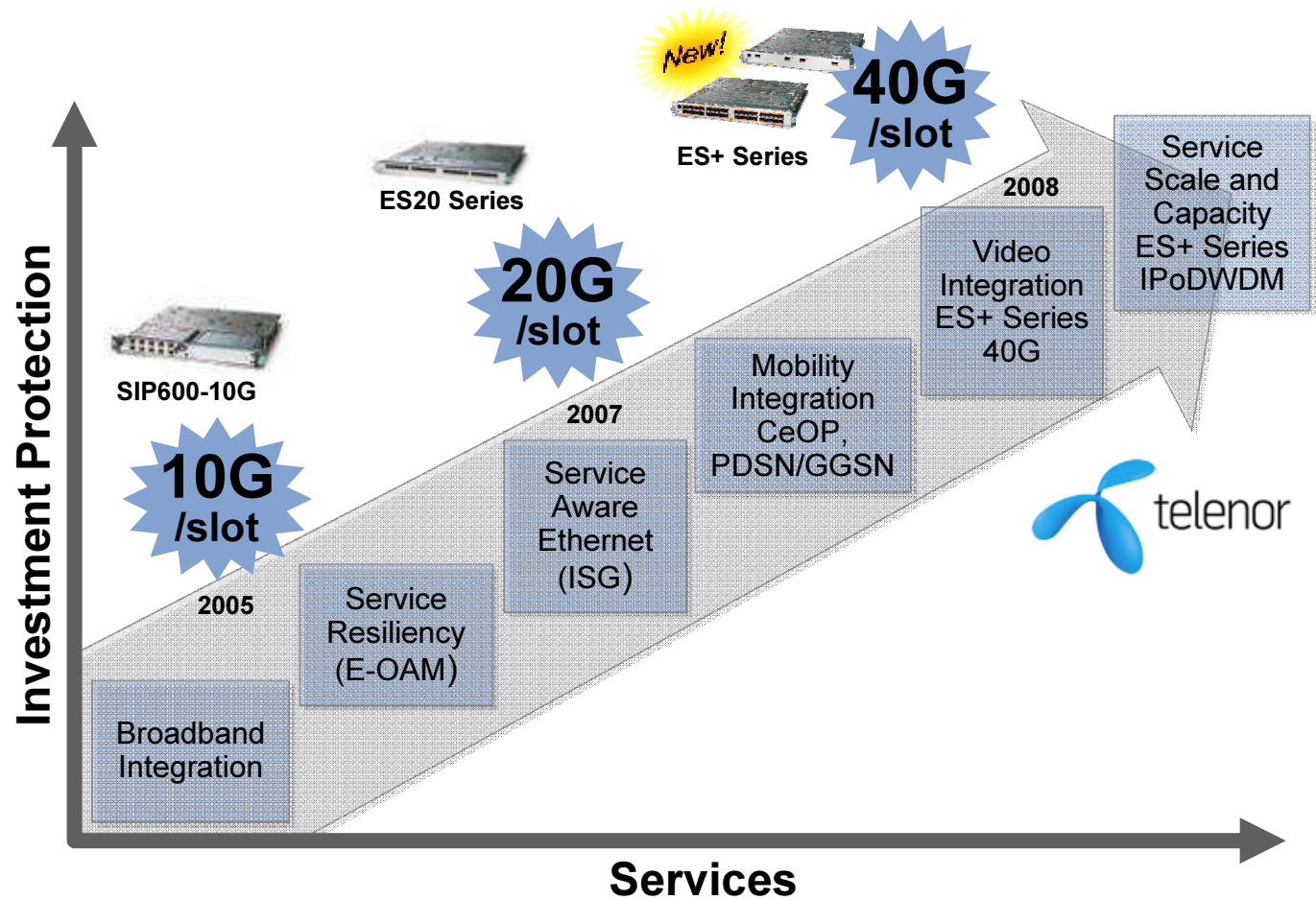
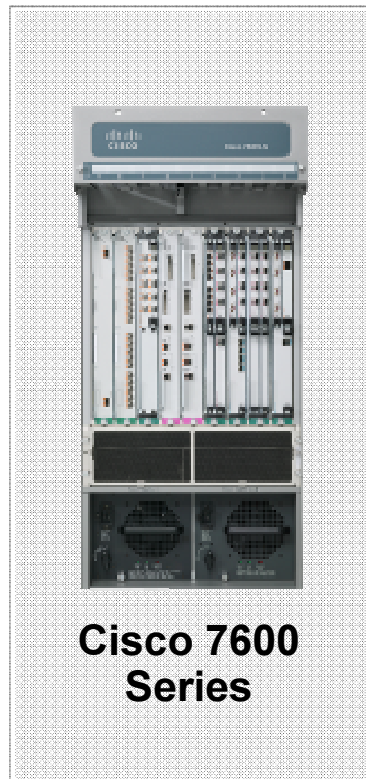
## Metro IP Traffic Growth Fastest



Source: Cisco 2008

# Scaling to 40G Without a Forklift Upgrade

## Doubling the Capacity, Enhancing a Rich Feature Set



**Investment Protection for More than 70,000 Nodes Installed**

# Extending IPoDDM into Aggregation

Video and Business Services

40G+ IPoDWDM



ES+40  
4 X 10GE  
IPoDWDM



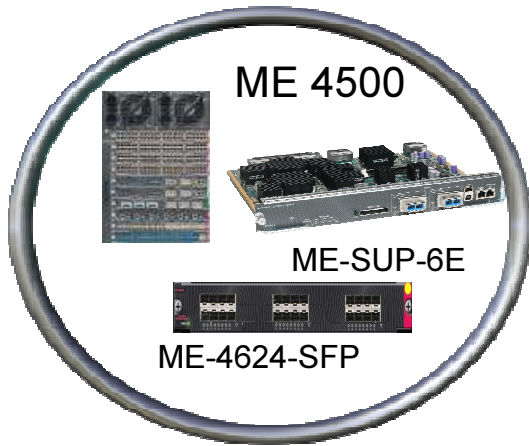
## IPoDWDM with Ethernet Services:

- High speed aggregation and intelligence
- Transponder integrated into 7600
- Reduces network complexity and costs
- Environmentally friendly

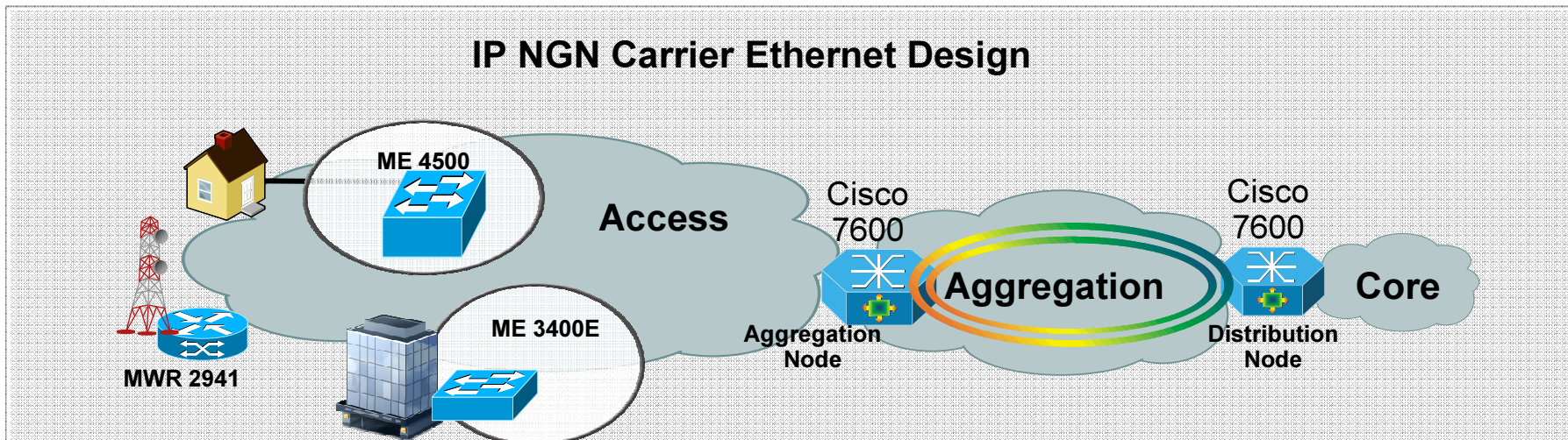
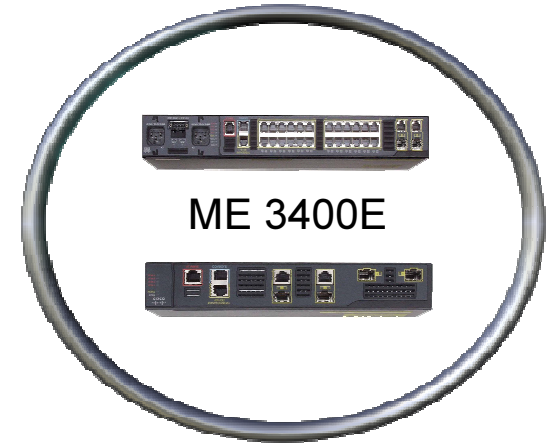
Complements CRS-1 and XR 12000

# Innovation in Ethernet Access

## Introducing ME 4500 and ME 3400E



- **Services Flexibility**
- **Services Availability**
- **Enhanced H-QoS**
- **Investment Protection**
- **ME 4500: 4X Services Scale (24 Gbps / Slot)**

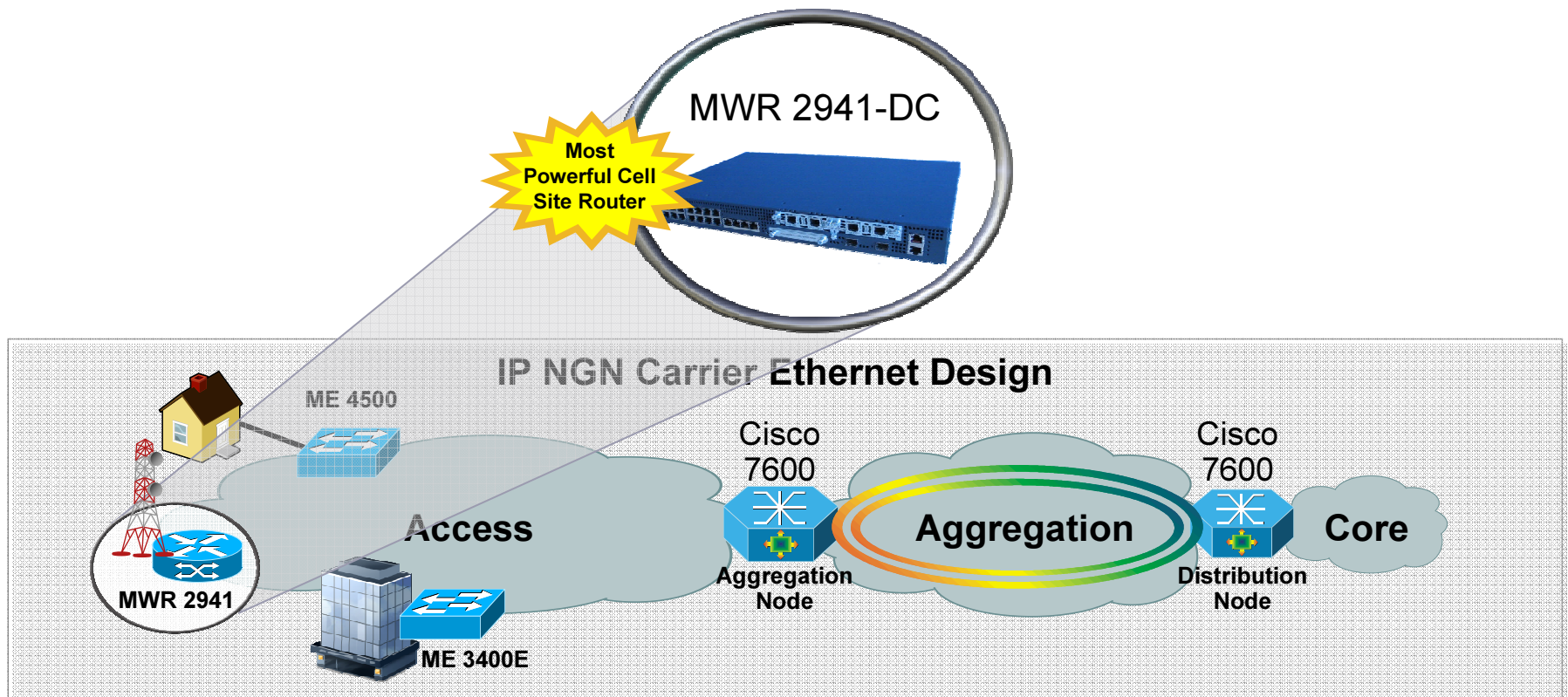


# Introducing the MWR 2941-DC

## Extending Carrier Ethernet to the Cell Site

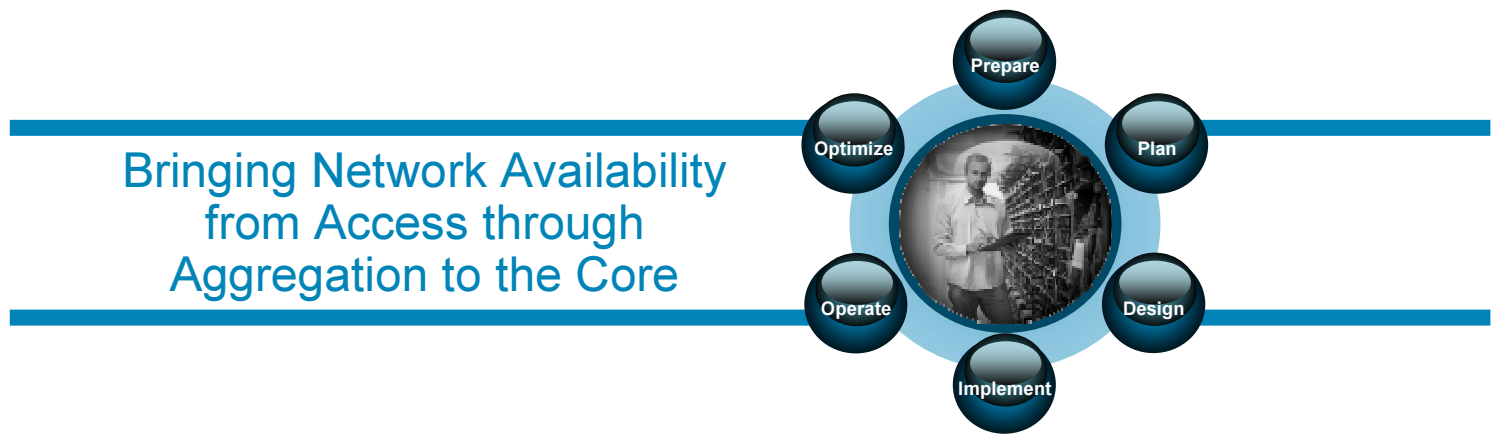
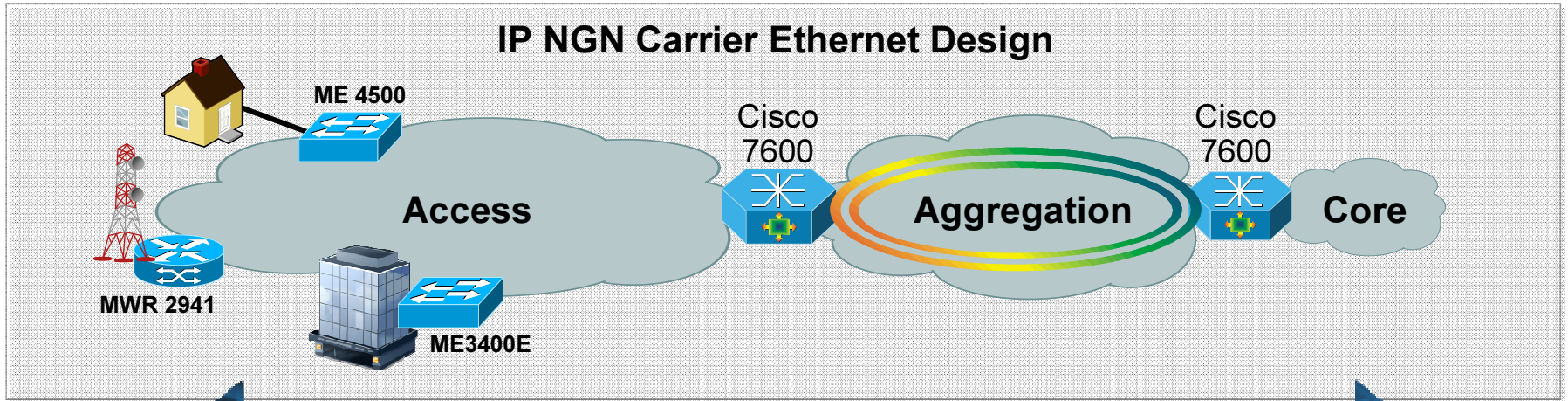


- Industry Leading Cell Site Router - TDM/ATM/Ethernet, MPLS and IP
- Flexible Clock Synchronization – 2G/3G and 4G Mobility
- Reduce backhaul costs while increasing available bandwidth






# Cisco CE Delivers Network Reliability

## Introducing Network Availability SLA



# IP NGN Carrier Ethernet Design

## Competitive Advantages

		Alcatel-Lucent 	
<b>Optimized Services Transport</b>			
Industry First IPoDWDM Aggregation	Yes	No	No
Integrated Broadband Aggregation	Yes	Yes	No
Scalable H-QoS	256K/LC	128K/LC	64K/LC
<b>Unmatched Video Quality of Experience</b>	Yes	No	No
VQE, VCAC, 40G Line Rate Multicast / Unicast	Yes	No	No
<b>Seamless Fixed Mobile Convergence</b>			
Mobile IP—PDSN/GGSN, WiMAX, WiMesh	Yes	No	No
Zero-Touch Deployment	Yes	Yes	No
Automated Mobile IP SLA Measurement	Yes	No	No
Integrated Session Border Control	Yes	No	No
Lawful Intercept	Yes	Yes	No

# IP NGN Carrier Ethernet Design

## Confidence in Consistent Global Service Delivery



### Converged

Single Network for Business and Residential Services



### Resilient

Industry's Most Resilient Carrier Class End-to-End Solution



### Intelligent

Enhances Service Level Agreements and Time to Market



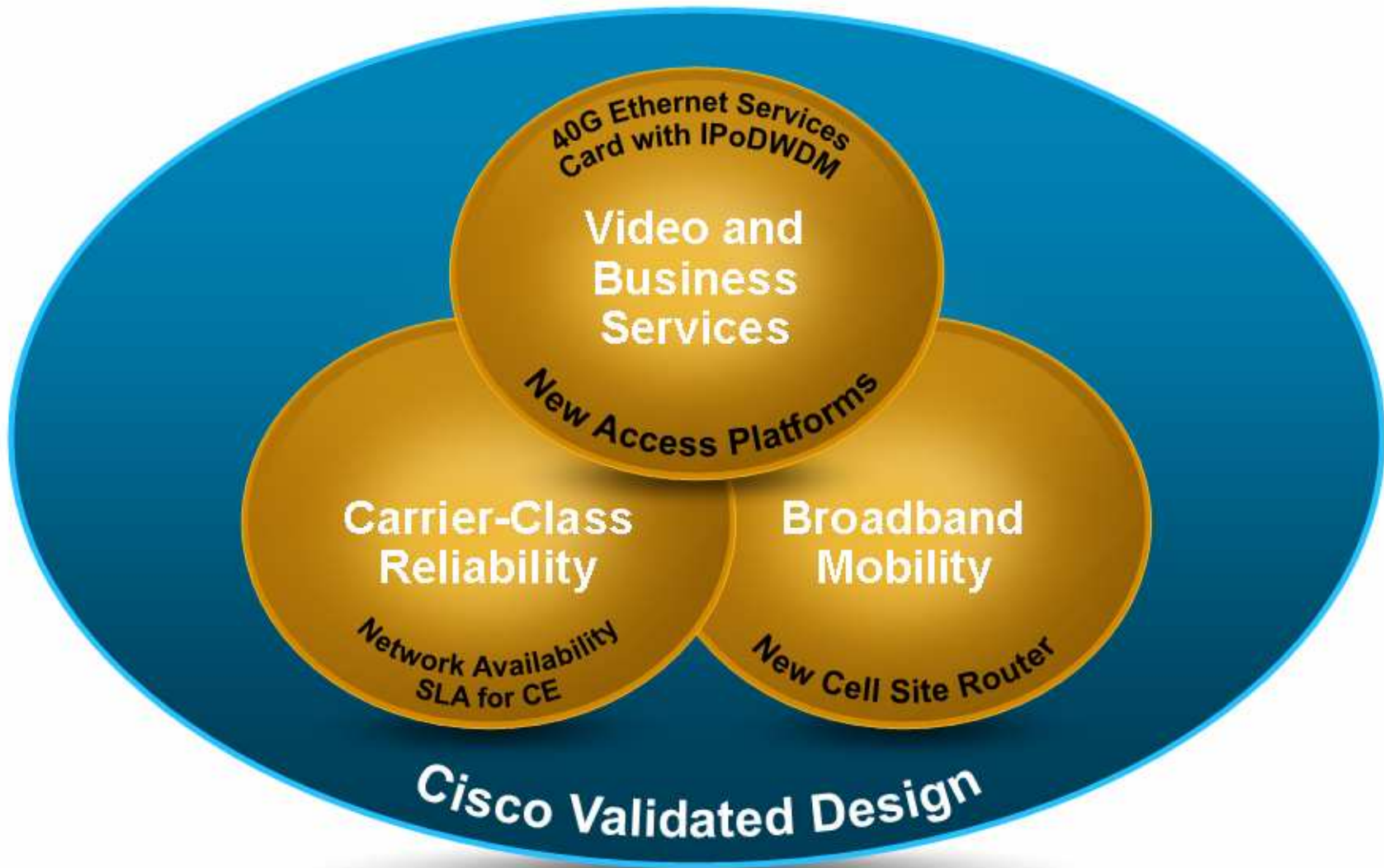
### Scalable

Dramatic Increases in Bandwidth, Subscribers, and Services

**End-to-End Solution Tested as Cisco Validated Design**

# Furthering Cisco's Carrier Ethernet Leadership

## Powering The Connected Life in the Zettabyte Era







# Enabling The Success of The Managed Service Provider



**Will Scott**  
**Director, Solution Marketing**  
**Managed Services**

# Agenda

- What are managed services ?
- Why are managed services important to Cisco, its service providers, our customers ?
- What are we doing to enable success ?
- What is our focus for FY09 ?

# What Are Managed Services?



Information technologies delivered as finished solutions, managed remotely by highly skilled professionals from a network operation center (NOC)



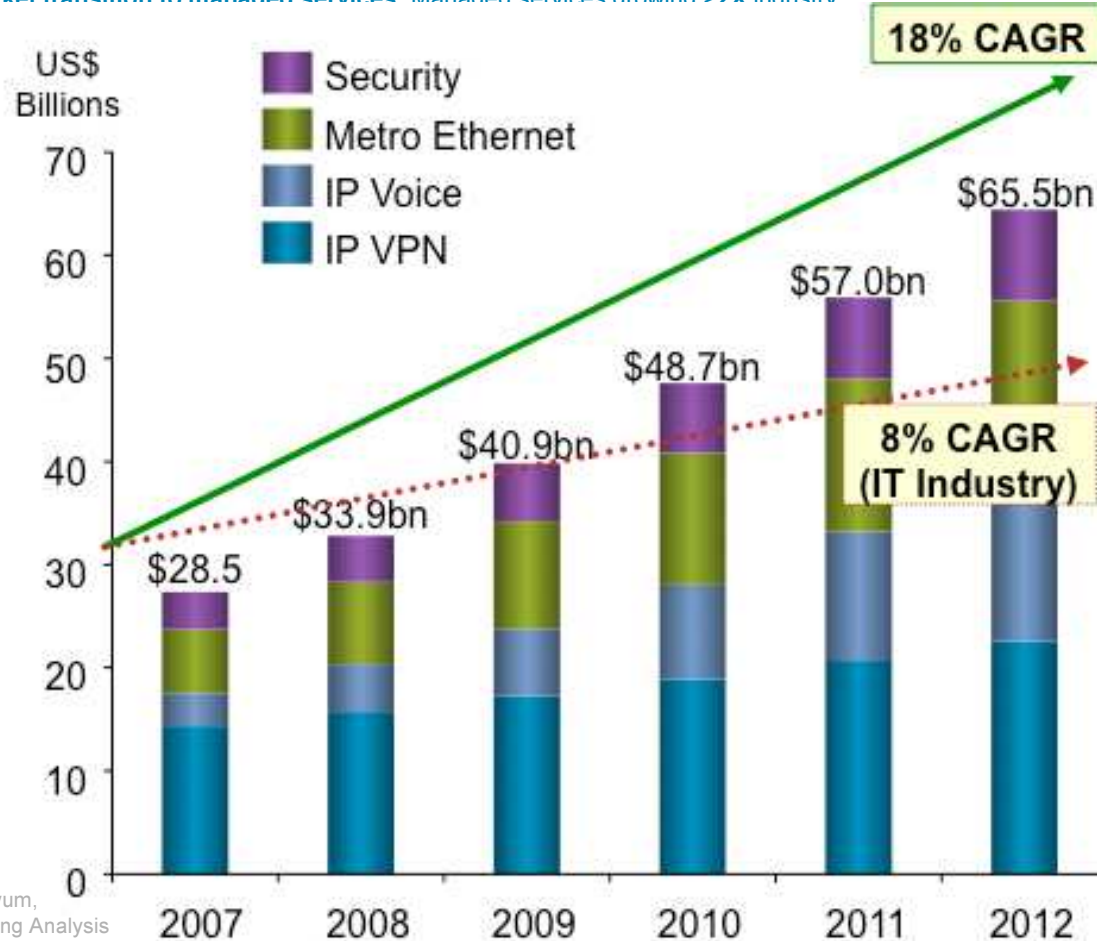
Managed services are proactively monitored and providers can troubleshoot incidents from the NOC, according to defined service level agreements (SLAs) negotiated with end users



Managed services are often offered on an operating expense basis that requires no capital outlay for the end-user customer

# Why are managed services important to Cisco, its service providers, our customers?

Market transition to managed services: Managed services growing >2X industry



Source: Ovum, SP Marketing Analysis

**NETWORKWORLD** April 2008

"In 2008, 63% of organizations plan to use some form of managed services, up from 46% in 2007." - Nemerates

**TMCnet** March 2008

"SMB Channel Partners Betting on Managed Services..."

**FORRESTER** Oct 2007

"SMBs...turning to managed services ... to efficiently address telecomm technology and networking needs... reducing the total cost of ownership of IT operations."

**Managed Services is a key way to enable the success of our partners businesses and our customers success with Cisco technologies**

# Going beyond our technology solutions – enabling success for the MSP.....



**Cisco has great technologies, to enable the success of the managed service provider we build on these throughout the managed services lifecycle**

# What are our Managed Service Priorities for FY09?



Managed Services for the SMB



Managed Business Video and Collaboration Services



Application Aware networks and application performance management services

**Helping our partners develop RIGHT managed services portfolios drives their success, our customers success and ultimately Cisco's success**



# Questions & Answers





## **Tata VSNL - Cisco Managed Telepresence**



**Sharat Sinha**  
**Director**  
**APAC Service Provider Operations**

# Tata VSNL Communications: Overview

- **India's leading telecommunications services provider**
- **135 years history, experience & expertise**
- **Part of the Tata Group since 2002**
- **Listed in India (NSE, BSE) and the USA (NYSE ADRs)**
- **Six Acquisitions since 2003, incl. Tyco Global Network (TGN) & Teleglobe**

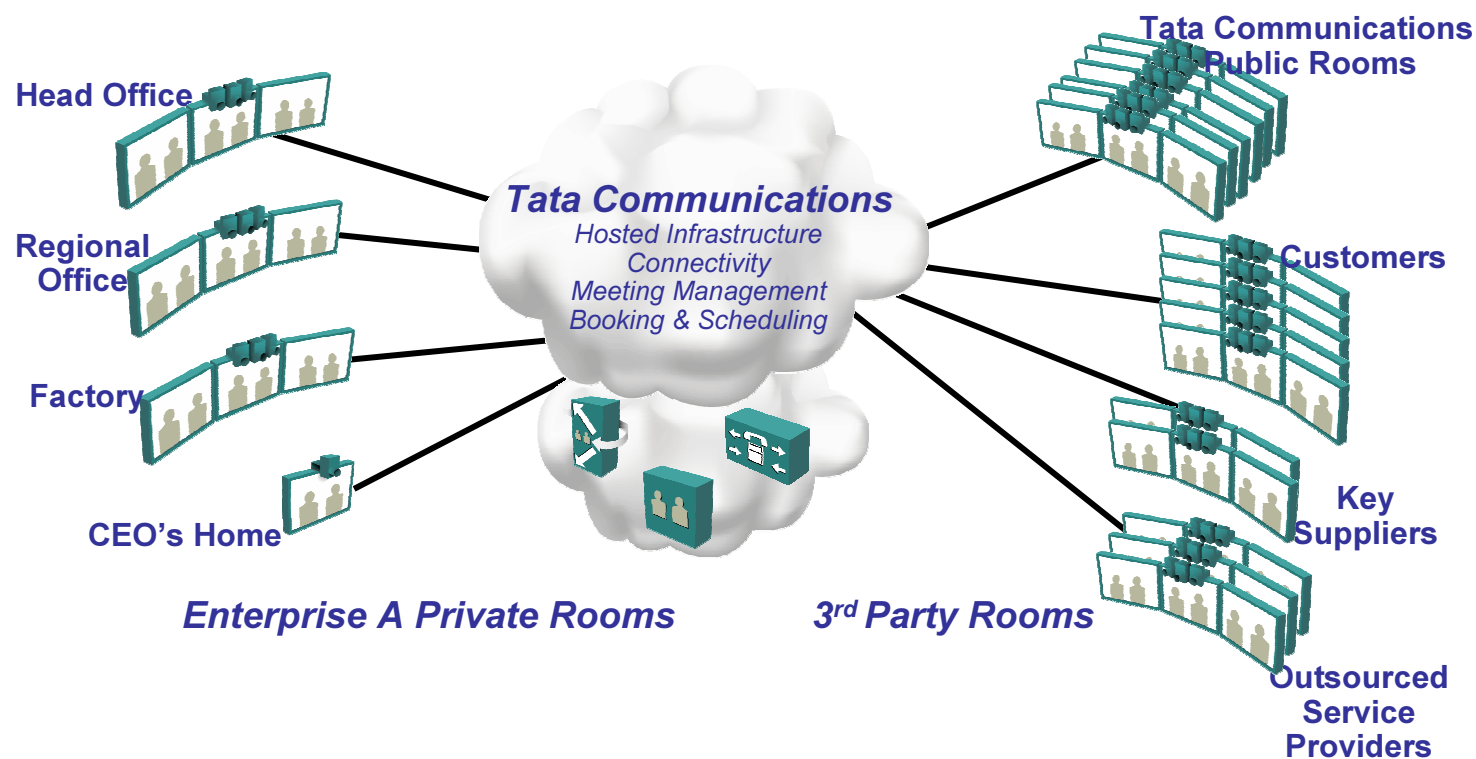
# Virtual Meetings Drive Deeper Business Collaboration

## Direct Benefits

- Reduce travel, cut cost, while boosting productivity
- Accelerate Growth: Scale Yourself, Your Teams, Your Business
- New business models in sales, support, supply chain
- Reduce distance as constraint to deploying expertise
- Improved customer intimacy
- More frequent, higher-quality interaction amongst leadership & staff
- Greater organizational responsiveness & *crisis management*
- Lower turnover through improved employee experience
- Green Benefits: corporate social responsibility & reduced carbon footprint

## Indirect Benefits

# Tata / VSNL - Managed Telepresence Model



- Service announced in July 2008
- Telepresence infrastructure hosted and managed "in the cloud"
- Network of Public Telepresence rooms in hotels & serviced offices available on pay-per-use basis
- Managed meeting services within a single company or across multiple companies
- Single Point of Accountability for Network, TP Equipment, Conference Facilitation

# Tata Communications Managed Services Value Proposition

- Lower TCO
  - No need to buy rooms where shared locations can be leveraged (NRC)
  - No capital outlay to buy centralized infrastructure (NRC)
  - Avoid system integration, particularly if messaging infrastructure is not ready (NRC)
- Greater ROI through Higher Utilization
  - Better user experience
  - More interconnection options, including internal and external meetings
- Connect to broad community of interest for expanded business opportunities
  - Improve interaction and business relationships with customers, suppliers, service providers
  - New revenue opportunities by leveraging Telepresence in billable services
  - Deliver experience commensurate with your brand
- Single Point of Accountability for Network, Equipment, Scheduling, Meeting Facilitation
  - One throat to choke
  - SLA-based managed service
  - No need to ramp up internal resources & retain skills in house
- Technology protection through hosted model
  - Upgrades, enhancements, interconnectivity options managed centrally in hosted model
  - Capacity planning & scalability are provider's responsibility
  - Planning for buy-back and refresh options at end of contract
- Simplified Billing models
  - Single monthly invoice for connectivity, managed service, and equipment (TBC)
  - Individual sites or entities can each receive own bill
  - No need to cross charge centralized, shared infrastructure and services

# Media Coverage

Tata Communications Launches Telepresence Services Worldwide -> News@Cisco

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## **Tata Communications Launches Telepresence Services Worldwide** First Provider to Launch Public and Private Cisco TelePresence Rooms Internationally

SINGAPORE - July 1, 2008 - Tata Communications (NYSE: TCL) announced the launch of its Telepresence services, the first ever offering to deliver both private and public Cisco TelePresence rooms to businesses across the world. This groundbreaking service will enable a broader ecosystem of connected rooms for enterprises and their partners.

Telepresence provides life-like, high definition conferencing facilities with superior audio, video and environmental qualities to provide a viable alternative to traditional face-to-face meetings. Businesses can achieve substantial cost savings through reducing travel while accelerating productivity, and improving long-distance collaboration and decision making. In addition, they can significantly increase employee satisfaction with this "smart technology" by enabling executives to have meetings in the comfort of their own offices. Telepresence also promotes environmental benefits, such as decreased CO2 emission from reduction in travel.

"Tata Communications is committed to offering its worldwide customers innovative, cost-effective and efficient ways to conduct their business," said Vinod Kumar, President, Global Data and Mobility Solutions, Tata Communications. "Through our unique combined public and private room model, we are bringing our customers access to a unique "in-person" experience to enhance their global real-time collaboration."



Business<sup>®</sup>Rich







# OCN – Cisco Video Solution



**Peter Papaioannou**  
**Operations Director**  
**APAC Video & Cable Solutions**

# APAC Cable & Video

## Executive Summary

### Cable Market

- Drive to digitization & Conditional Access Systems
- 2-Way Infrastructure to improve services
- HD upgrades - just starting

### Broadcast and Satellite

- Drive to digitization to free up spectrum
- HD has started
- Increasing satellite up-link bandwidth

### IPTV

- Regulation changes
- Government funded BB increasing quality of BB
- New Service models been adopted
- Increasing amount of trials



# About OCN



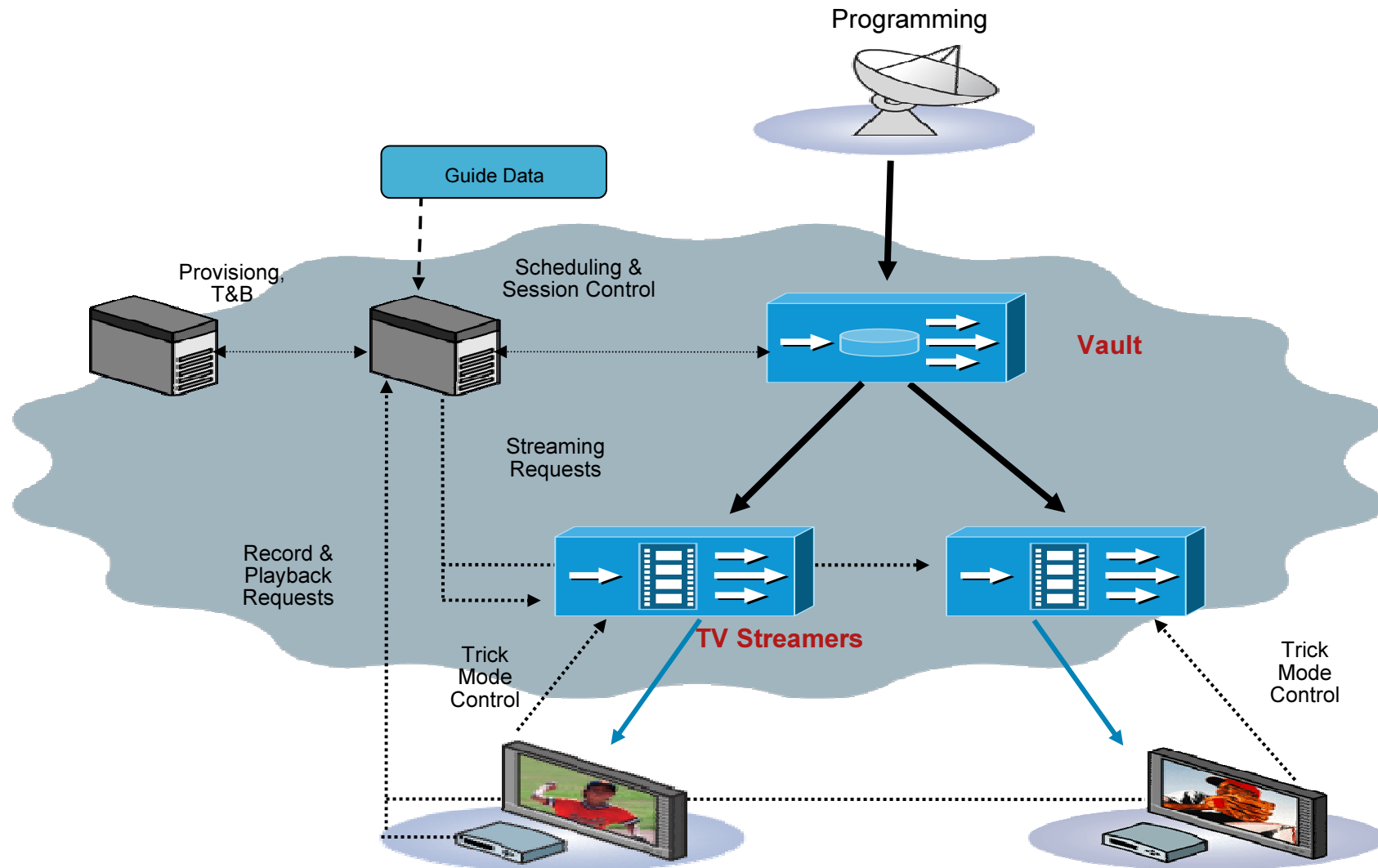
- OCN is a network service provider in Shanghai
- Service includes Cable Digital TV, Broadband Access and Enterprise VPN
- The largest and most service rich of the 400 cable operators within mainland China
- Awarded “The Global Best Cable TV Network” by “Cable TV of the World” of US in 1997
- Award as the 3<sup>rd</sup> “The Best CATV Network In The world” by SA of US in 2004;
- Received “The Creative Award” By China government in Nov 2005;

# History of our Partnership



- Starting in 1999 with first CMTS trial service - as the trial, now there are over 300K broadband subscribers
- OCN has selected Cisco's
  - Optical 15454 Multiservice Transport Platform (MSTP)
  - HFC Transmission and Digital Video Head-End system
  - Data Centre & IP Backbone/Metro Routing and Switching
- Most recently
  - Cisco's CDS-TV No-Demand Video Solution

# OCN's VoD Service Architecture



# Services Currently Delivered



- Digital TV Advanced Service

  - 100 TV channels to more than 3M subscribers

  - Time shift TV and TV review – 7000 streams live today

- High Speed Data Services

  - Internet Access – both consumer and commercial customers

  - Lease Line (VPN) – to commercial customers

  - VoIP transmission and termination services

  - Hosted Data Centre Services

- Yet to be Launched....

  - Developing a solution with Cisco's PowerKey Conditional

  - Access to deliver secure digital content & high end Set-Top-Box



# Questions & Answers



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**Thank You**



Analyst Relations contact: Miin Leong,  
[hmluong@cisco.com](mailto:hmluong@cisco.com)