



# IP Next-Generation Networks

## IP NGN rejsen...



**Henrik Boye**

Marts 2007

# SP Breakout

- **11.15 - 12.00** Service provider markedet – IP NGN Overview  
*Henrik Boye, Regional Sales Manager, Cisco Danmark*
- **12.00 - 12.45** The technology behind IP NGN  
*Simon Sprags, Distinguished Consulting Engineer , Cisco*
- **12.45 - 13.30** Break
- **13.30 – 14.15** IP-TV - The Key to Quality Multimedia Experiences  
*Dominique De Paepe, Product Manager, Cisco SA*
- **14.15 - 15.00** Infrastrukturen bag IPTV  
*Michael Nielsen, System Engineer, Cisco Danmark*

Margrethe, endelig efter et liv i armod og total fattigdom har mit hårde slid endelig fundet den perfekte løsning! Denne dims vil gøre os rige ...



Dennis Hansen på 15 år! Du har lavet en fildelingstjeneste med tåbelige videoklip, som alle i din aldersgruppe bruger! Vi betaler med glæde 4 milliarder kroner for den! Mange tak!



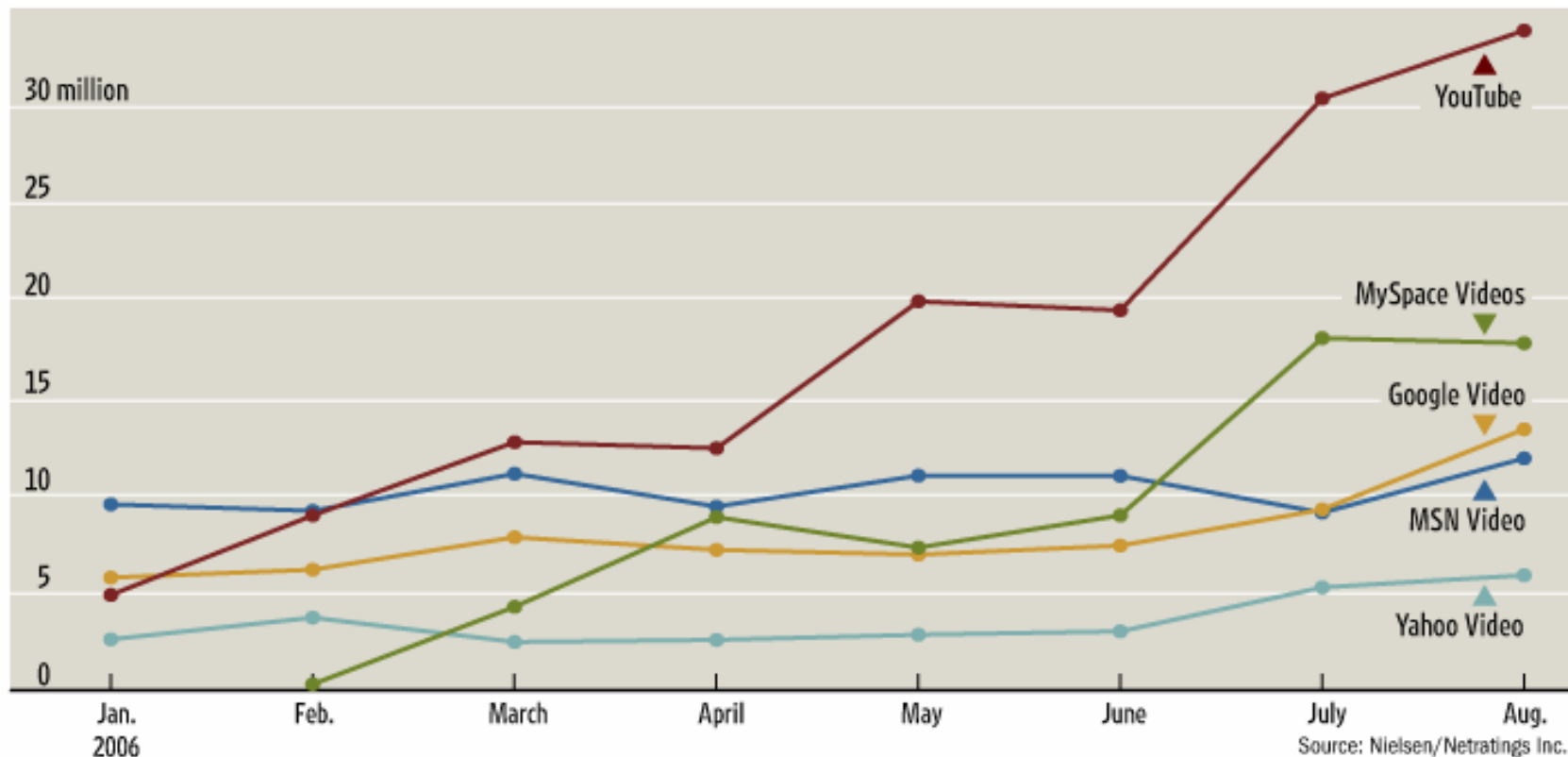
Forskellen på, hvordan en formue skabtes for 100 år siden og i dag

# OTT Video Sites Unikke besøgende



## All Eyes on YouTube

**YOUTUBE'S POPULARITY** has surged since the start of the year, putting the start-up well ahead of Web heavyweights like Yahoo and Google. The chart below shows YouTube's monthly unique audience compared with other top video sites.



# Web 2.0 Stimulerer nye forretningsområder

Segment	Examples	2010 Revenues	Top 5 Share
Content Aggregators		<b>\$80 Billion Business</b>	80%
Online Content Producers			60%
E-Commerce Enablers			76%
Social Networks			77%

Source: Cisco IBSG, March 2007

# Teknologi adoption

**Forbrugerne** driver udviklingen

## Early Internet Days...

Universities



Money Center Banks



Enterprise



Service Provider



## Today...

Universities



Consumer



Service Provider



Enterprise



# Forbrugeren stiller krav og driver udvikling

Entire  
Internet Traffic

1995

Only 20 Homes

2010

“By the year 2010... bandwidth for 20 homes will generate more traffic than entire Internet in 1995”

Source: Cisco estimates, Ovum, Gartner, IDC, Merrill Lynch, MRG, MPA, Public company data



# Markedsudvikling

1990'erne

I dag



Blive forbundet

Blive forbundet & **interagere**

**Virksomhedsdrevet** Produktivitet

**Slutbruger-dreven** Produktivitet

Applikationer og indhold leveres til medarbejdere, partnere og kunder **af virksomhederne**

Samarbejde og indhold **skabes af slutbrugerne** og udnyttes af virksomhederne

Styrken ved det **fysiske netværk**

Styrken ved det **levende netværk**



# Service Provider Trends

- Forbrugerne vil stille krav til operatørerne og dermed også til Cisco
- Operatørerne har mulighed for at konkurrere el. samarbejde med OTT spillerne om marketing budgetterne
- Operatørerne har mulighed for at konkurrere el. samarbejde med IT leverandørerne om virksomhedernes IT budgetter

# Next Generation Networks

- Hvad er det?

# Hvad er Next Generation Network

## *To beskrivelser*

### Fundamental Characteristics (from ITU 2004 Description):

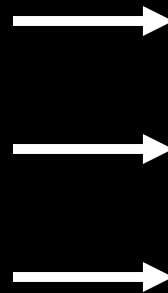
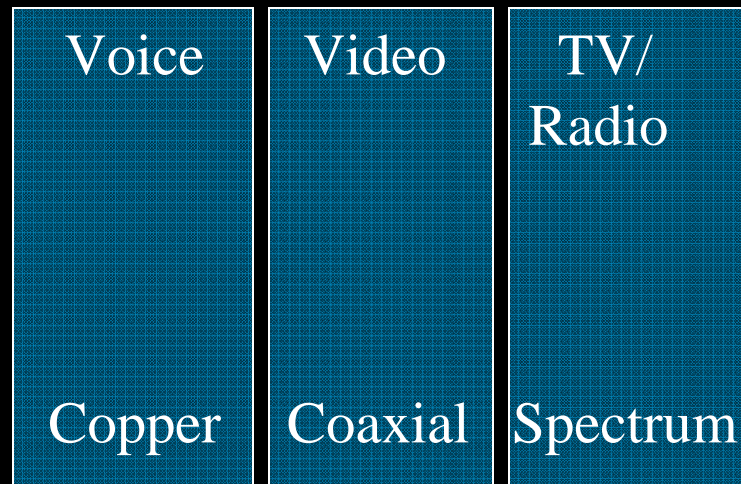
- All kinds of services over all kinds of media...
- Decoupling of services from networks...
- Interworking...
- Open interfaces...
- Generalized mobility...
- End-to-end quality of service

### Fundamental Characteristics (from ETSI Description):

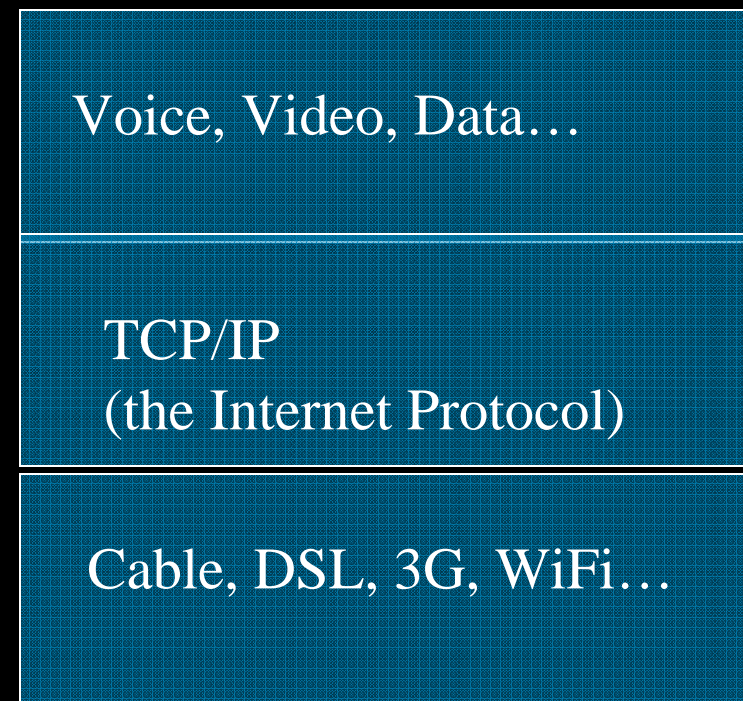
- Uncoupling of services and networks
- All kinds of services possible using service related APIs
- NGN will support both existing and "NGN aware" End Terminal Devices.
- Quality of Service
- Security mechanisms

# Konvergerede netværk og tjenester

## Traditional “silos” of service

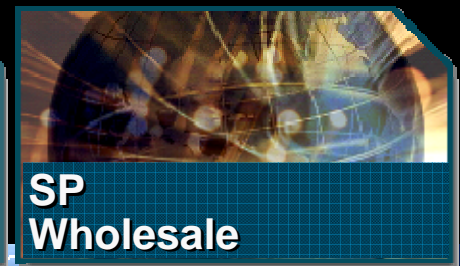


## Converged services



# Cisco Service Provider Vision

**At forbinde kunder med services, services med netværk og netværk med hinanden**

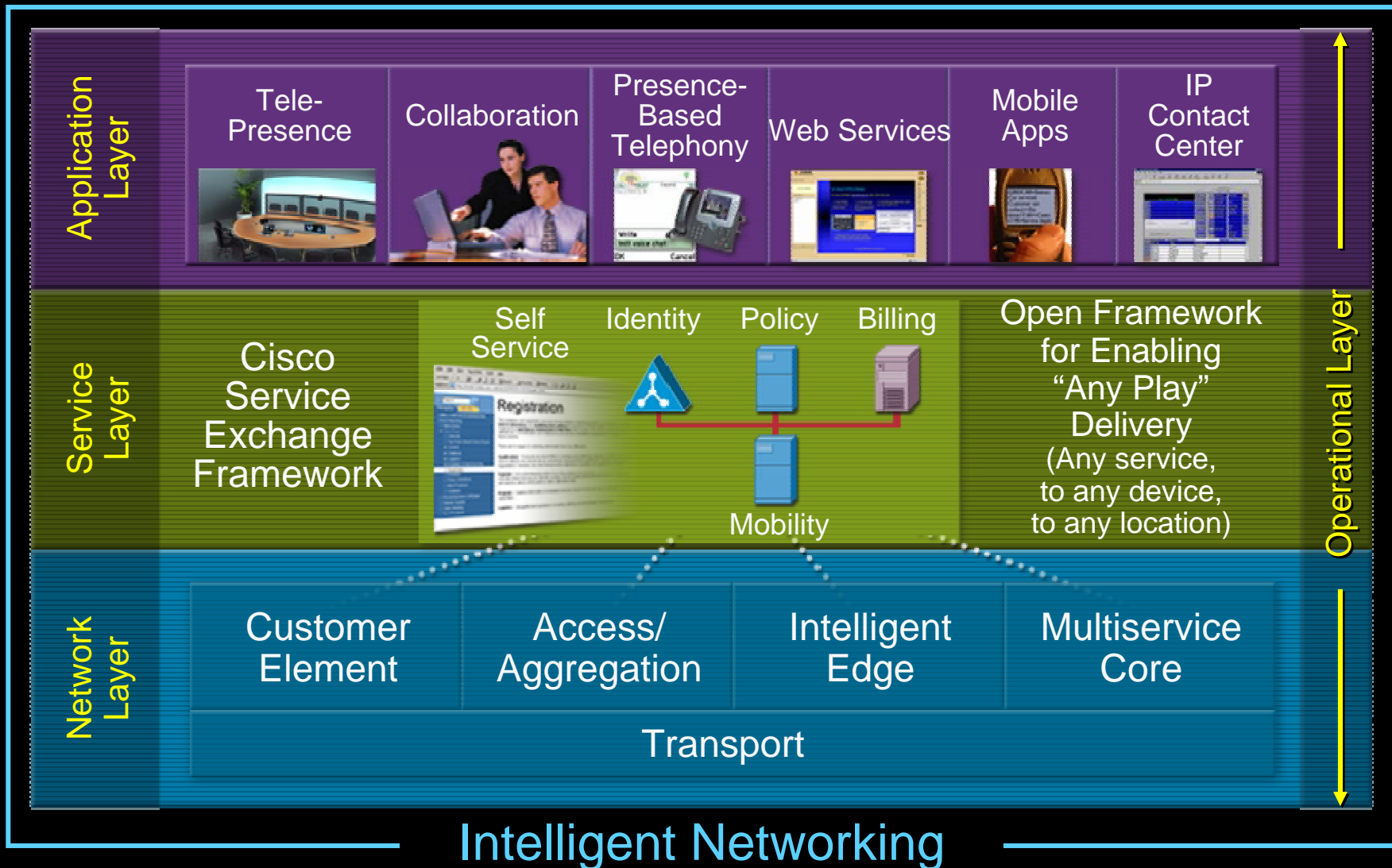


## IP Next-Generation Network

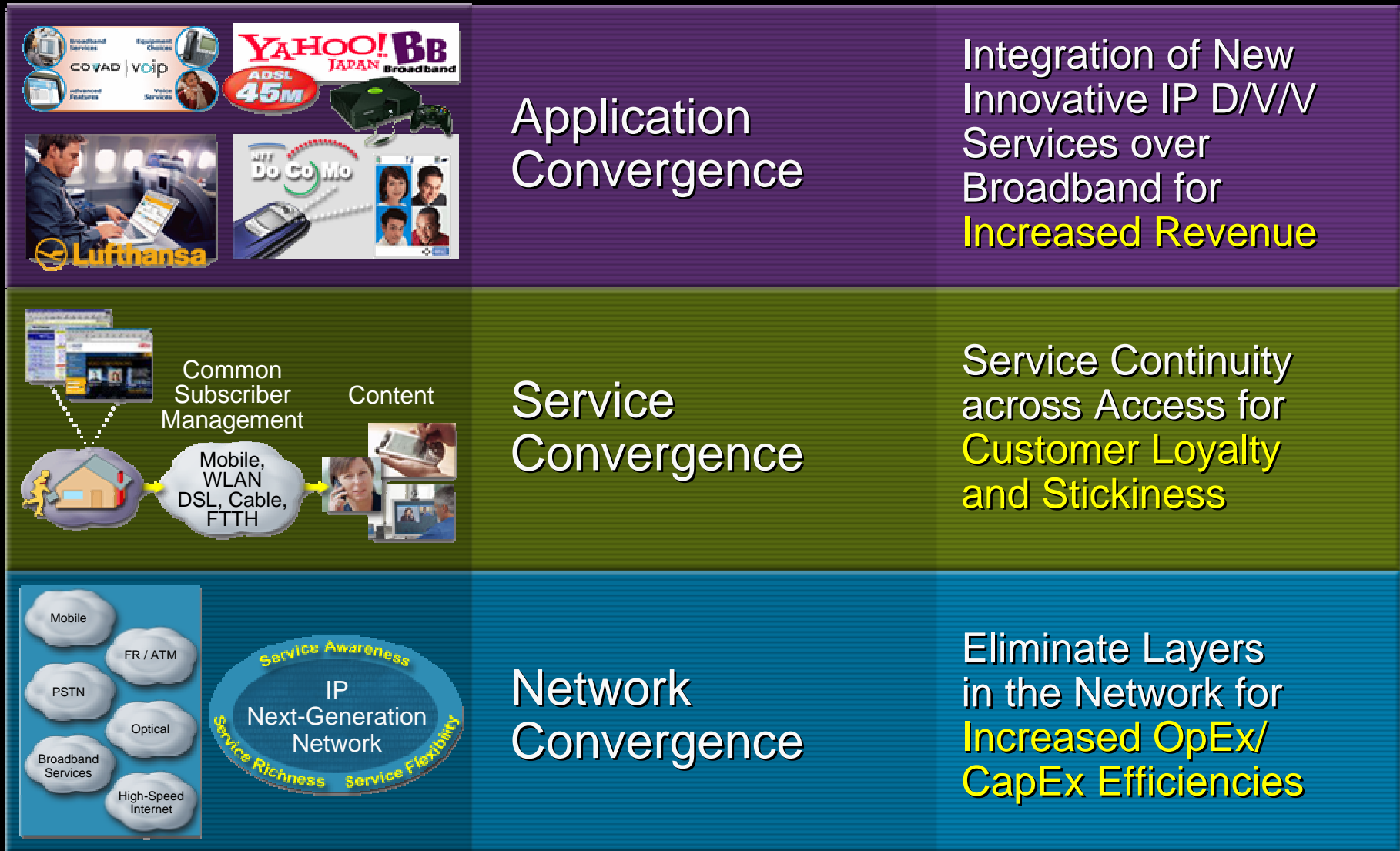


# Cisco IP NGN Architecture

## Achieving a Whole Greater Than the Sum of the Parts

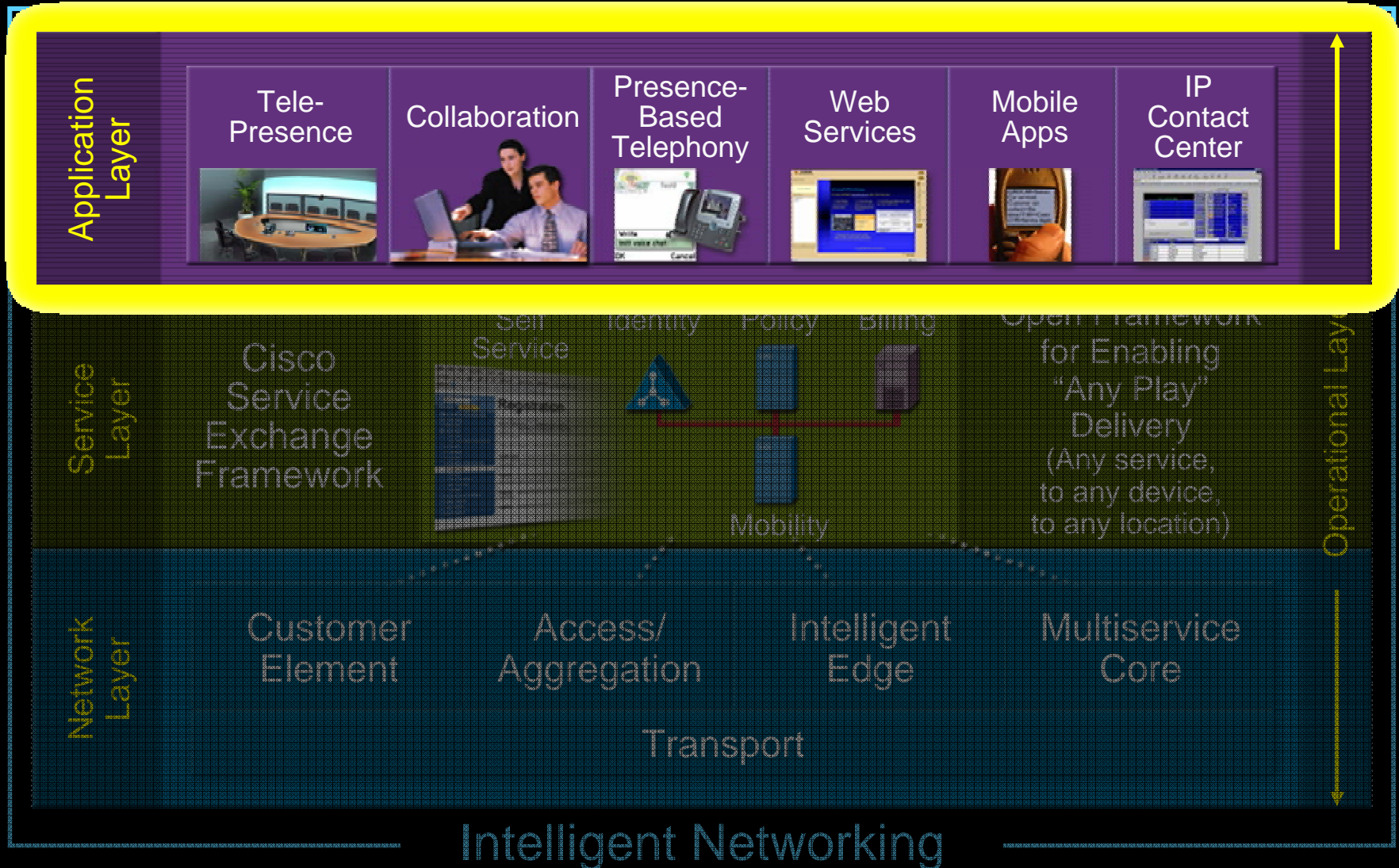


# IP NGN Journey Requires Multiple Layers of Convergence





# Application Convergence



Intelligent Networking

# New Service Provider Offer: **“Many Services to Many Screens”**

VoIP	Custom Ring Tones / MP3 Player	High-Speed Internet /VPN	Text / Instant Messaging
Push-to-Talk / Intercom	Video Conferencing	Digital TV / VOD	PDA / Email



Data

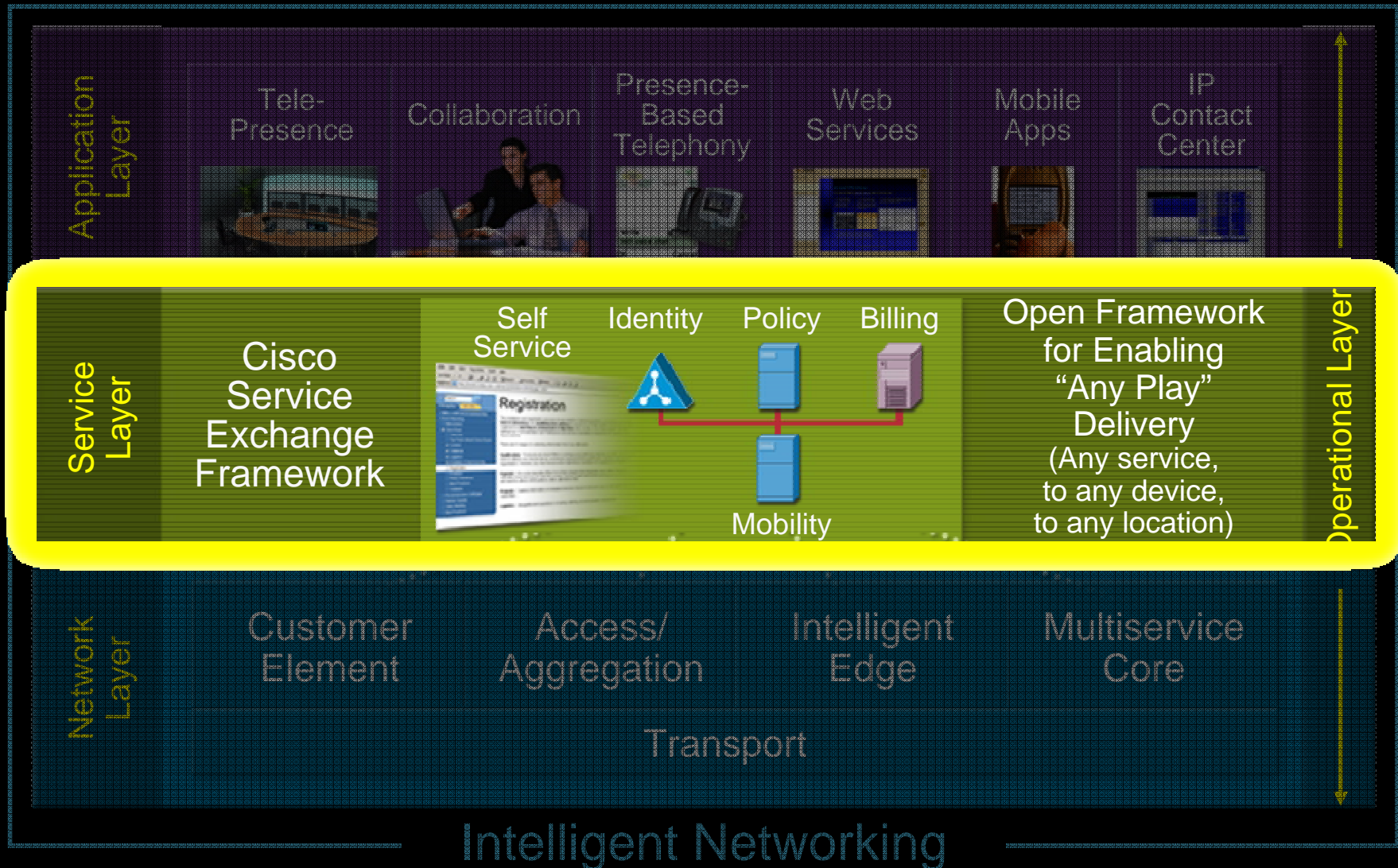
Voice

Video



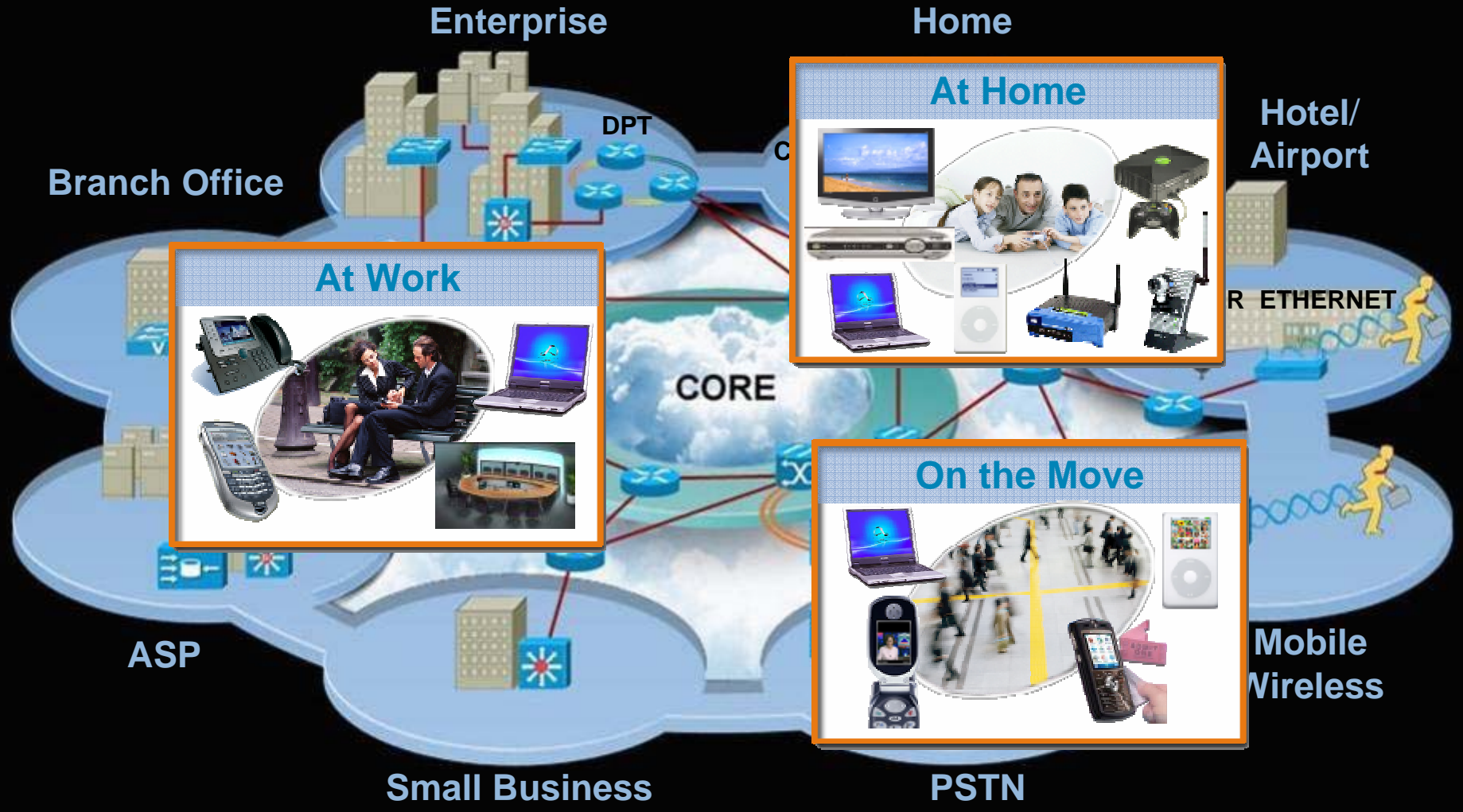
At Work, At Home, On The Move

# Service Convergence



# Personalizing “Any Play” Experiences

Providing Means for Service Continuity, Customer Stickiness





# Service Exchange Framework

## Making “Any Play” Real

### Who?

Who is the user?

- Device
- Profile
- Location
- Presence

### Where?

Where can the user roam?

- Track/recognize the devices across carriers
- Maintain the session across multiple networks
- Offer all services in all locations

### What?

What can the user do?

- Within what timeframe
- To what extent
- Under what rules

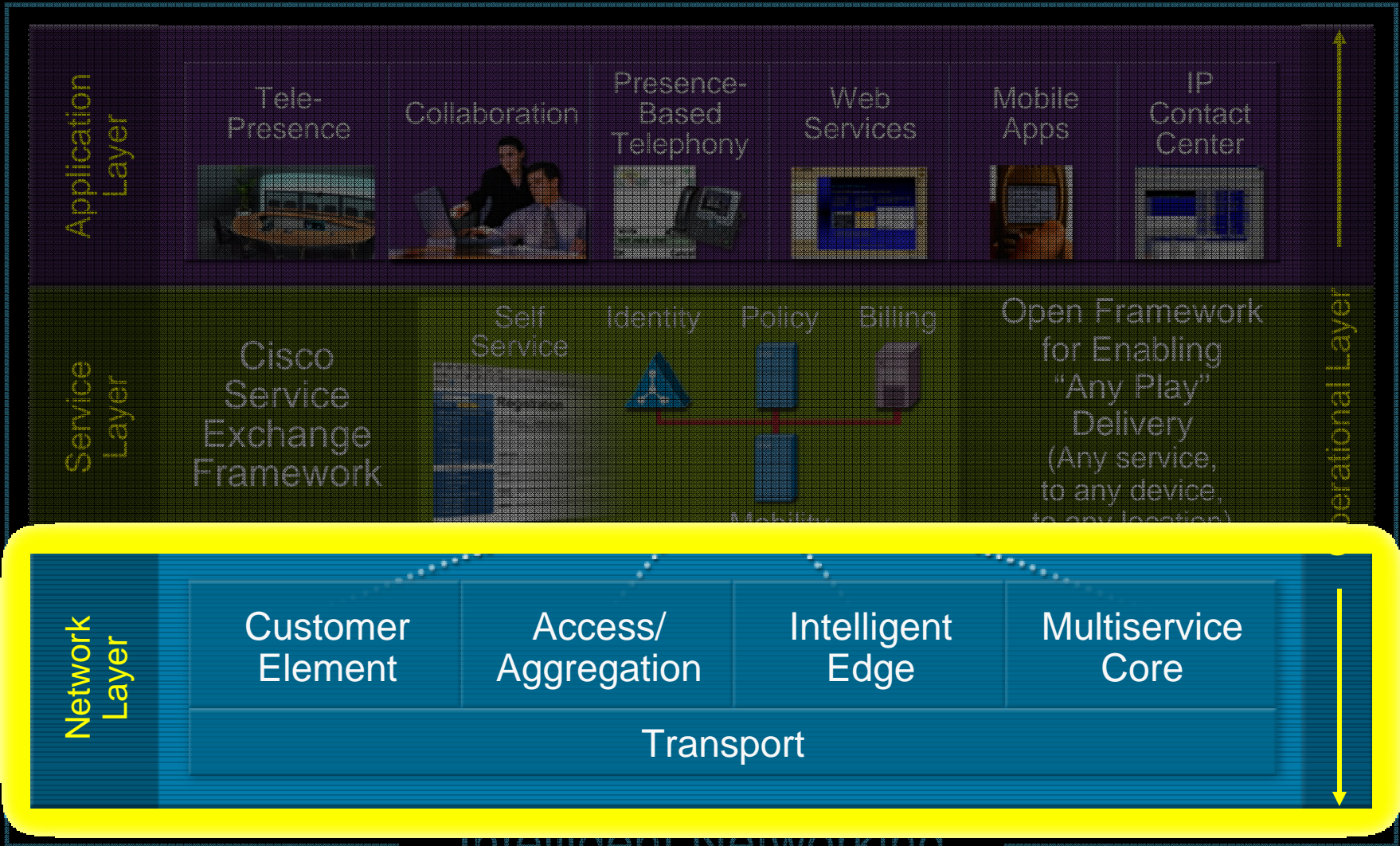
### How?

How can resources be dynamically controlled?

- Interwork and provide rich media control
- Monitor and charge on a per-service, per-user basis
- Enable application awareness

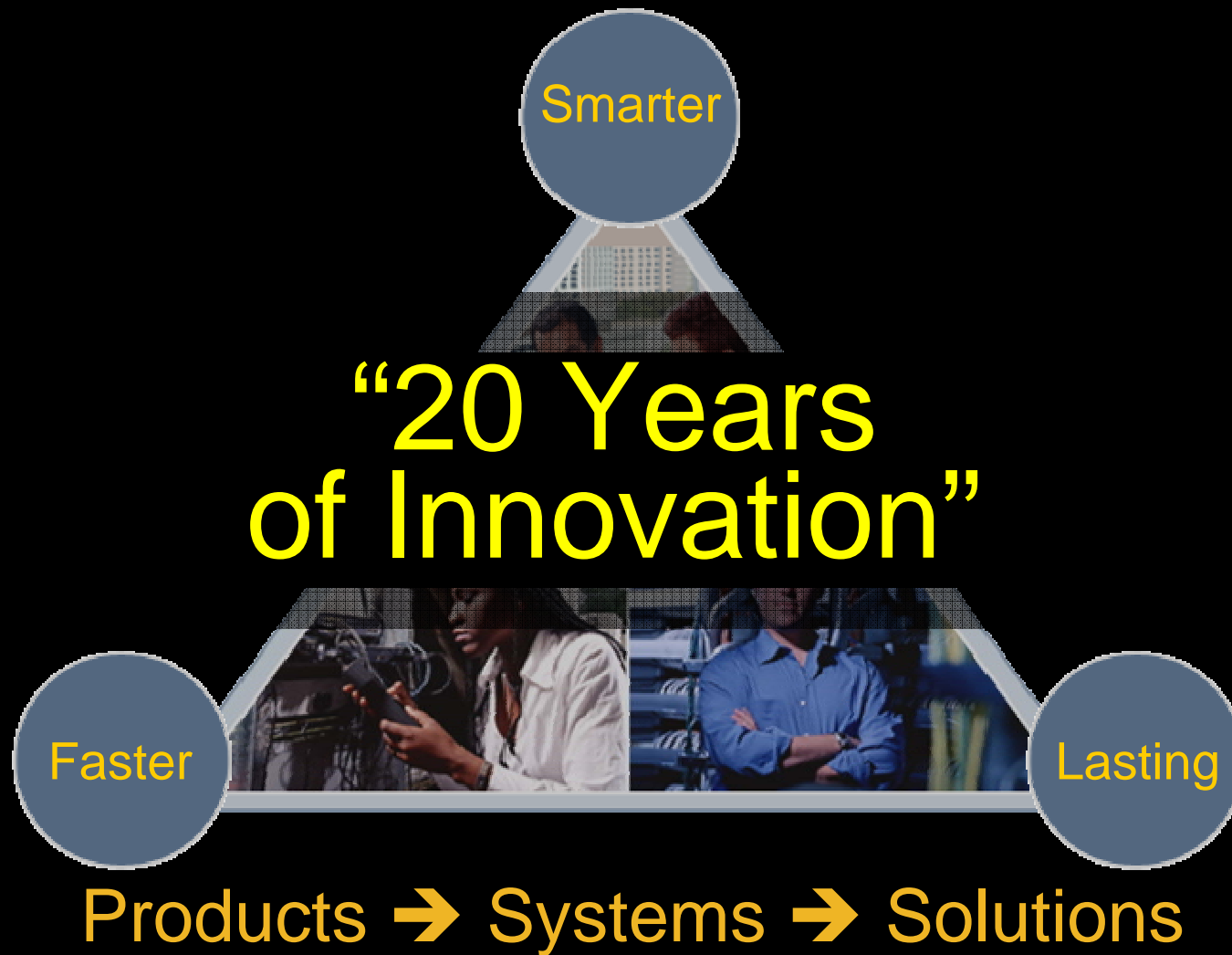
**Cisco  
Service  
Exchange  
Framework**

# Network Convergence



Intelligent Networking

# Technology Strategy





# Service Exchange Framework

## Making “Any Play” Real

### Identity and Mobility Management

- User / Device ID
- Subscriber Awareness
- Location / Presence
- Service Registration
- Audit / Logging
- Assured Authentication
- Device Roaming
- Service Mobility
- User Mobility

### Cisco Service Exchange Framework



### Service Policy and Resource Management

- Subscriber Policy
- Application / Chaining
- Per-Subscriber Service
- Service Invocation

### Session and Media Management

- Call Control
- Session Border Control
- Rich-Media Control
- Diff Bandwidth & QoS per Session
- Accounting / Billing

# Customer Element

## Evolution of the Home Network: Separate to Converged



# Cisco IP NGN Momentum

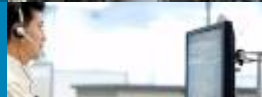
## Across Segments, Across Continents



Over 250 MPLS VPN networks in production



Over four million IP phones installed—Replacing 6000 TDM phones every day



Over 14 million VoIP gateway ports



Over ten million cable VoD subscribers supported in the U.S. alone



Core for IP NGN



The all digital NGN for Cable



Core for IP NGN



PSTN Migration to IP NGN



Broadband for triple play



Largest MPLS/ MetroE deployment



Biggest broadband MetroE for triple play



MS edge + core for IP NGN



# IP NGN Visionen udvikler sig...

## Resources

Comprehensive IP NGN Portfolio

## IP DNA

Unmatched IP Expertise and Experience

## Commitment

Over \$1.4B for SPs

## Build

CRS-1, XR 12000, 7600, ISR, More...

## Partner

Italtel, Fujitsu, More...

## Acquire

Scientific-Atlanta, Linksys, Others...

### Cisco Service Provider Vision

Connecting Customers with Services,  
Services with Networks,  
and Networks with Each Other



### IP Next-Generation Network



# Cisco Danmark Service Provider status

- NGN debat
- En række spændende NGN projekter er i gang
  - På applikations-, service- og netværkslaget
- Sammensmeltning Cisco og Scientific Atlanta
- Linksys (KiSS) arbejder med "Det digitale hjem"
- SP markedet ser øget kapital tilførsel
- Forvent konsolidering

# Opsummering

- Forbrugeren kommer til at drive udviklingen
- NGN er en lang rejse..
- Cisco vil gerne med på rejsen

