



# Upgrade to Catalyst 3750 & 3750-E



**Ramesh Bijor**  
**CMO – Network Systems Marketing**  
**Technical Presentation**

# Overview

- Why Upgrade to Catalyst 3750 and 3750-E Series?
- Evolving the Network with the Business
- Why Cisco?

# Many customers are still using these legacy switches



Catalyst 1900



Catalyst 2900XL



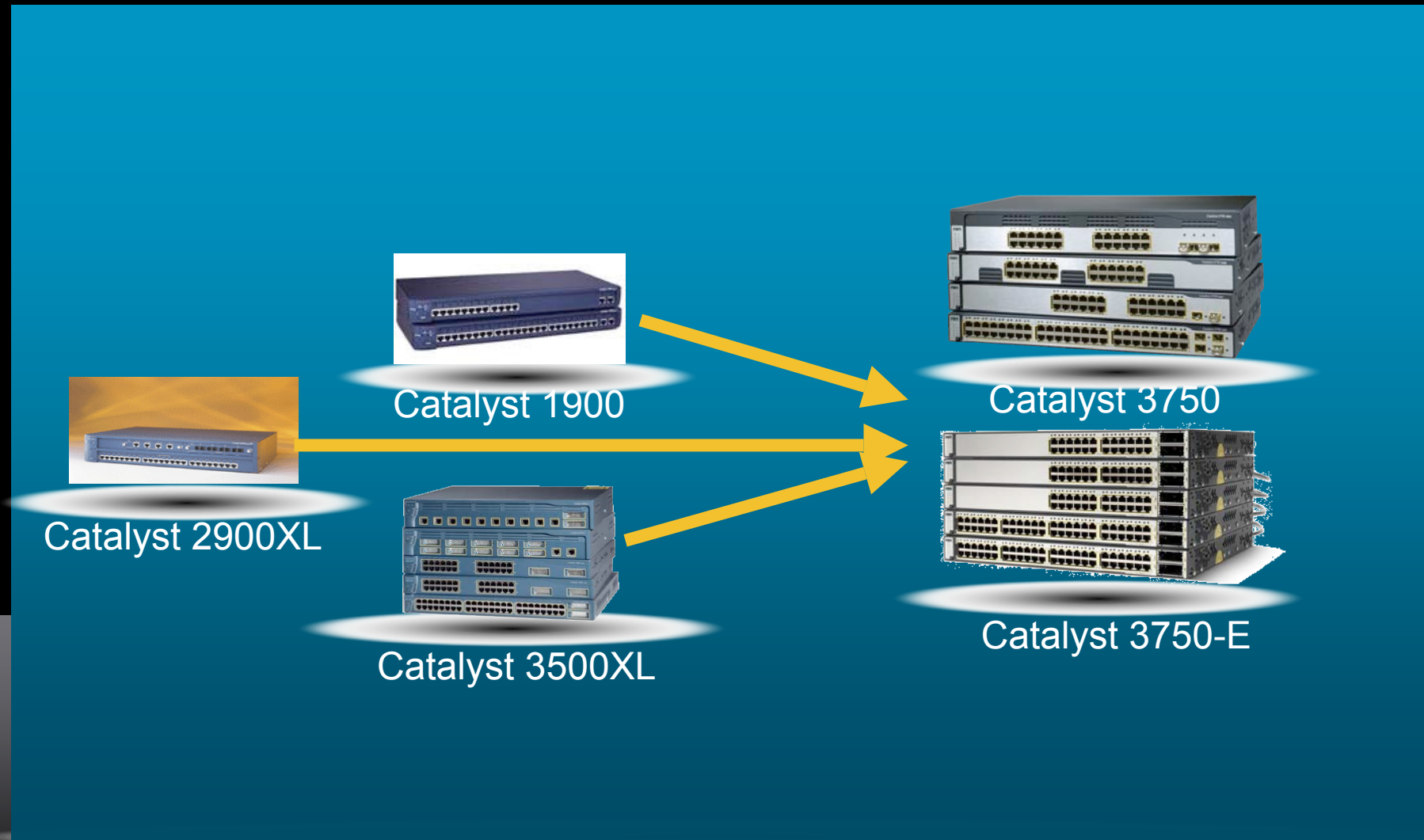
Catalyst 3500XL

- These switches have reached **End-of-Sale**
- Most have reached **End-of-Support**
- Service Contracts are not renewable
- Now is the time to upgrade the network to evolve with business demands

# Why Upgrade?

- **Bandwidth demands are increasing**
- **Security threats are continuing to grow**
- **New business applications need support for voice, video & data**
- **Power over Ethernet (PoE) has become prevalent**
- **Network downtime can be very expensive**
- **End-of-Sale/End-of-Support put your network at hardware and software risk**

# Upgrade to a new platform – Catalyst 3750/3750-E



# Catalyst 3750 & 3750-E Features

## Catalyst 3750

- Gigabit desktop connectivity
- Power over Ethernet
- StackWise technology – 32 G
- Layer 3 routing



**Catalyst 3750**

## Catalyst 3750-E

- Full Power over Ethernet on every port
- Enhanced PoE support for 802.11n devices
- Dual 10 Gig connectivity with TwinGig
- StackWise Plus Technology – 64 G
- Modular Power Supply and fans
- Includes all features of Catalyst 3750



**Catalyst 3750-E**

[www.cisco.com/go/catalyst3750](http://www.cisco.com/go/catalyst3750)  
[www.cisco.com/go/3750e](http://www.cisco.com/go/3750e)

**Convergence support. Performance. Future-proofing**

# Feature Comparison

Feature	C1900	C2900 XL	C3500 XL	C3750	C3750-E
PoE	No	No	3524-XL-PWR	Yes	Yes, Full PoE
Advanced QoS	No	No	No	Yes	Yes
Advanced Security	No	No	No	Yes	Yes
Advanced L3 Routing	No	No	No	Yes	Yes
StackWise	No	No	No	Yes, 32 G	Yes, 64 G
10 Gb	No	No	No	No	Yes
Removable power supply and fans	No	No	No	No	Yes

# Top Three Reasons to Deploy the Catalyst 3750-E

- **Power over Ethernet Scaling**

First switch in the industry to provide Class 3 PoE (15.4W) on all 48-ports



- **802.11n support**

ePoE supports Cisco Aironet 1250 Access Point, which increases wireless bandwidth up to 600 Mbps with improved wireless reliability



- **Increase Uplink bandwidth by 10 X**

Dual 10 Gig ports  
Replace TwinGig adapter with a 10Gig module  
10 seconds is all it takes!  
Investment protection



**Innovation. Performance. Future-proofing**

# Evolving the Network with the Business



# Business Needs Are Changing



Collaboration



Empowered User



SLA Metrics



Global Availability



Reg. Compliance

## New Business Pressures



## Operational Limitations

Rising Costs



Changing Traffic



Bandwidth Needs



Security Threats



Bus. Continuanace



# Campus Access Challenges



# Catalyst 3750-E/3560-E Address Campus Access Challenges



## Goals

Non-Stop  
Communications

## Catalyst 3750-E/3560-E

- Sub 50 msec convergence
- Field replaceable power supply and fan
- Redundant power system 2300
- Online diagnostics

# Catalyst 3750-E/3560-E Address Campus Access Challenges



## Goals

Enhance Existing Investment  
with Migration Flexibility

## Catalyst 3750-E/3560-E

- Full 15.4W PoE on all 48 ports
- 10 second 10 Gig upgrade (TwinGig)
- Backwards compatible StackWise Plus (64Gbps)
- 24 or 48 10/100/1000 ports
- 2x10 Gig uplinks: all models
- Expandable power capacity

# Catalyst 3750-E/3560-E Address Campus Access Challenges



## Goals

Operational Efficiency and  
Increased Productivity

## Catalyst 3750-E/3560-E

- Management simplicity with StackWise Plus
- Online diagnostics
- Intelligent power management
- Out-of-band management
- Robust CiscoWorks

# Catalyst 3750-E/3560-E Address Campus Access Challenges



## Goals

Self Defending  
Networks

## Catalyst 3750-E/3560-E

- Supports NAC
- Identity Based services - 802.1x and extensions
- Catalyst Integrated Security Framework (CISF)
- Unicast Reverse Path Forwarding (RPF)
- Secure Management
- Port, L2, IPv4, and IPv6 based ACLs

# Catalyst 3750-E and 3560-E Series Switches

- 24 or 48 10/100/1000 ports
- Two 10 Gigabit uplinks on all models
- 10 second 10 Gigabit upgrade with TwinGig converter module
- Full Class 3 (15.4W) Power over Ethernet support on all 48 ports
- Enhanced PoE support for 802.11n devices
- StackWise Plus: Backwards compatible, 64 Gbps and local switching
- Field replaceable power supply and fan
- Redundant power system 2300 support
- High performance IP routing

Innovative Stacking  
Sets New Standards  
for Resiliency and  
Management



# Cisco Catalyst 3750 Series Switches

- Innovative StackWise stacking technology allows integration with ISR 2800 and 3800 in the Branch
- Unified communications and wireless services
  - Integrated wireless controller
  - Quality of Service
  - Power over Ethernet
  - Intelligent power management
  - Redundant power supply support across the stack
- Simple deployment and configuration with Cisco Network Assistant
- Secure routing and switching with Fast, Gigabit and 10 Gigabit Ethernet interfaces



[www.cisco.com/go/catalyst3750](http://www.cisco.com/go/catalyst3750)

# Technology Overview



# StackWise Plus

- **64Gbps Stacking Throughput\***
- **Local switching**
- **Intelligently traffic forwarding**
- **Backward compatible with the original StackWise**
- **Fault-tolerant, Bi-directional stack interconnection**
- **Automated Configuration & Management**
- **Single network instance (IP, SNMP, CLI, STP Protocol , VLAN)**
- **Master/secondary architecture with master failover**
- **Cross-Stack EtherChannel®, cross-stack QoS**

## Unified Stacking, Behaving As a Single Unit



\* For typical traffic patterns, actual performance may be higher or lower

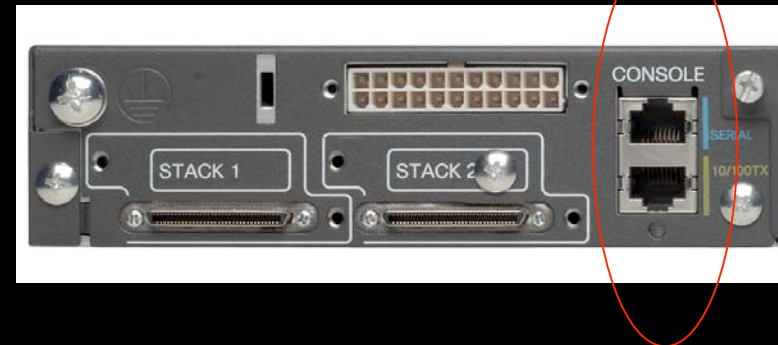
# 10 Gigabit Ethernet

- **Two 10GE uplink interfaces**
- **Wire rate forwarding performance**
- **Supported X2 Transceivers**
  - SR (MMF)
  - LR (SMF 10km)
  - ER (SMF 40km)
  - LRM
  - CX4 (Copper)
  - LX4 (MMF - 300m SMF - 10km)
- **TwinGig Adapter converts an X2 interface into dual SFP interfaces**
- **All SFPs supported on 3750 platform are supported with the TwinGig Adapter**
- **TwinGig Adapters are hot swappable with X2 modules**



# Out-of-band Management

- Two management ports
  - RS-232 serial console port
  - 10/100BASE-TX Ethernet port
- Out-of-band management supports Telnet, TFTP, and SSHv2
- One interface can manage the entire stack of switches
- If multiple out-of-band ports are connected to different switches in a stack, one is selected for active use



# Field Replaceable Power Supplies

- Wide variety of power supply options
  - 48 port POE, 24 port POE, and data only options
  - DC power available in every model for data only
- With the RPS 2300, a power supply can be replaced without powering down the switch

Cisco Catalyst 3750-E and 3560-E Switch Type	Power Supply					
	C3K-PWR-1225WAC	C3K-PWR-750WAC	C3K-PWR-265WAC	C3K-PWR-265WDC	C3K-PWR-300WAC	C3K-PWR-300WDC
48-Port PoE	✓	✓				
24-Port PoE	✓	✓				
48-Port	✓	✓	✓	✓		
24-Port	✓	✓	✓	✓		
12-Port					✓	✓
RPS 2300	✓					

Shipping Option



Switch with 1225WAC Supply



AC Supply



DC Supply

300WAC Supply



# Redundant Power System – RPS 2300

- Seamless failover from switch to RPS when PS fails
- Automatic back-off to switch when its power supply returns
- RPS and switches support dual AC power circuits
- Connect up to six switches
- Two switches can be actively backed up
- Dual modular power supplies allow the RPS to match the switches' supplies
- Field replaceable blower module



## Backwards Compatible

Switches: 2950, 2960, 2970, 3550, 3560, and 3750

Routers: 2811, 2821, 2851, and 3825

# Power Over Ethernet

- Prepare the network for IP Telephony and Wireless access
- Eliminate the need for separate electrical wiring
- Protect your investment and avoid a costly upgrade
- Cisco pre-standard POE and 802.3af are fully supported
- Cisco IOS provides intelligent power management with granular control
- Modular power supplies let you grow your POE capacity as requirements increase, up to 48 ports of full power
- Wide selection of standards-based IEEE 802.3af powered devices

IP Phones

Wireless Access Points

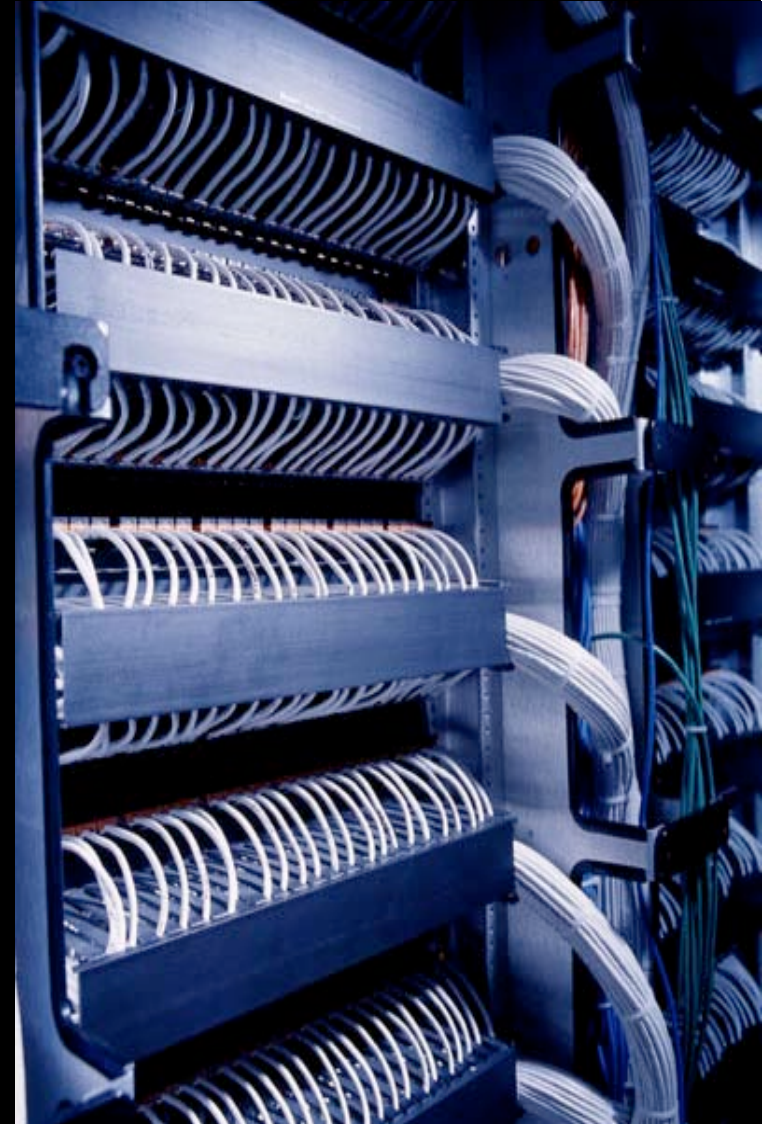
Surveillance cameras

Access Card Readers



# IOS Software Feature Sets

- Three IOS feature sets
  - IP Base
    - Layer 2 Forwarding
    - Base IPv6 Services
    - Basic Routing
    - Security
  - IP Services
    - Full EIGRP and OSPF Routing
    - Multicast Routing
    - Policy Based Routing
  - Advanced IP Services
    - IPv6 Routing



# Configurable Resources

- Optimize switch resources to match network requirements
- Ability to assign dedicated resources for:
  - Dense Layer 2 switching
  - Larger Layer 3 routing topologies
  - Complex ACL configurations
- Default configuration is optimized for typical deployments
- Performance can be tuned or changed when a switch is redeployed to a different network



# Advanced Diagnostics



## **Generic On-Line Diagnostics (GOLD)**

- Performs a series of internal self tests to verify the state of hardware components
- Saves time by finding the cause of hardware errors quickly
- Diagnostics can be run manually or on an automatic schedule

## **On Board Failure Log (OBFL)**

- Collects operational data (voltages, temp, etc.) and stores data in switch
- Data can be provided to TAC or repair personnel for faster troubleshooting

# Network Management

- Cisco Network Assistant

Intuitive GUI easily applies common services across Cisco switches, routers, and access points

- CiscoWorks LAN Management

Network discovery, mapping, monitoring, diagnosis, and Cisco IOS Software deployment

- CiscoWorks Network Compliance Manager

Change, compliance, and configuration manager enabling scheduled and automated network changes

- Cisco Secure Access Server

Protects the network from unauthenticated access





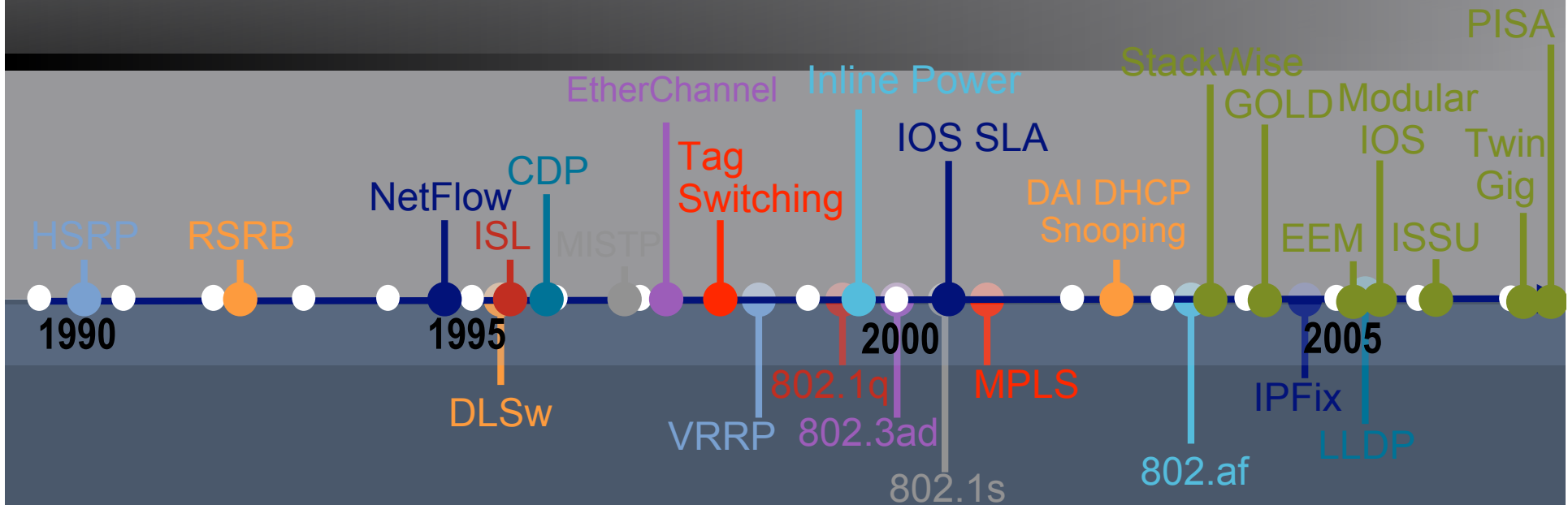
# Why Cisco?



# Pushing the Technology Curve

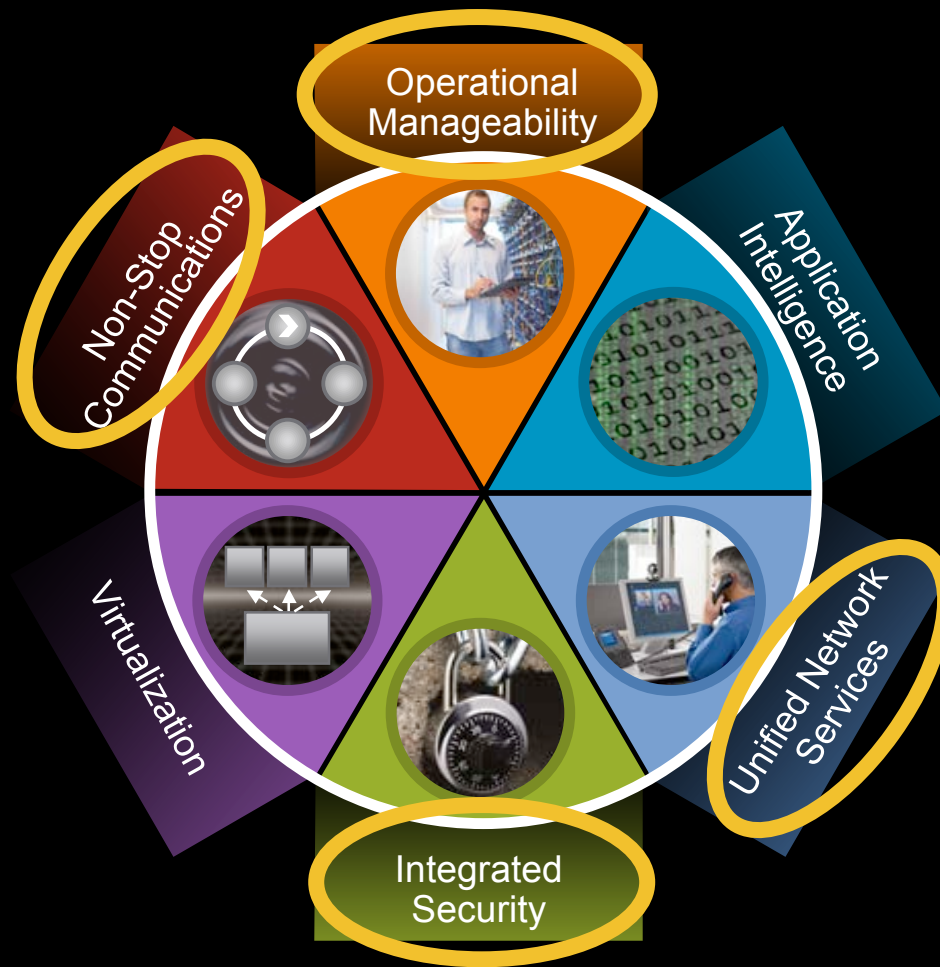
## Cisco Technology Innovator

- \$4 billion R&D investment annually
- 17,000 engineers in 10 global labs
- Over 100 companies acquired
- More than 2,300 patents in last 10 years



- Cisco employees chair over 20 IETF working groups and are on IEEE committees

## Cisco Contributing to Standards

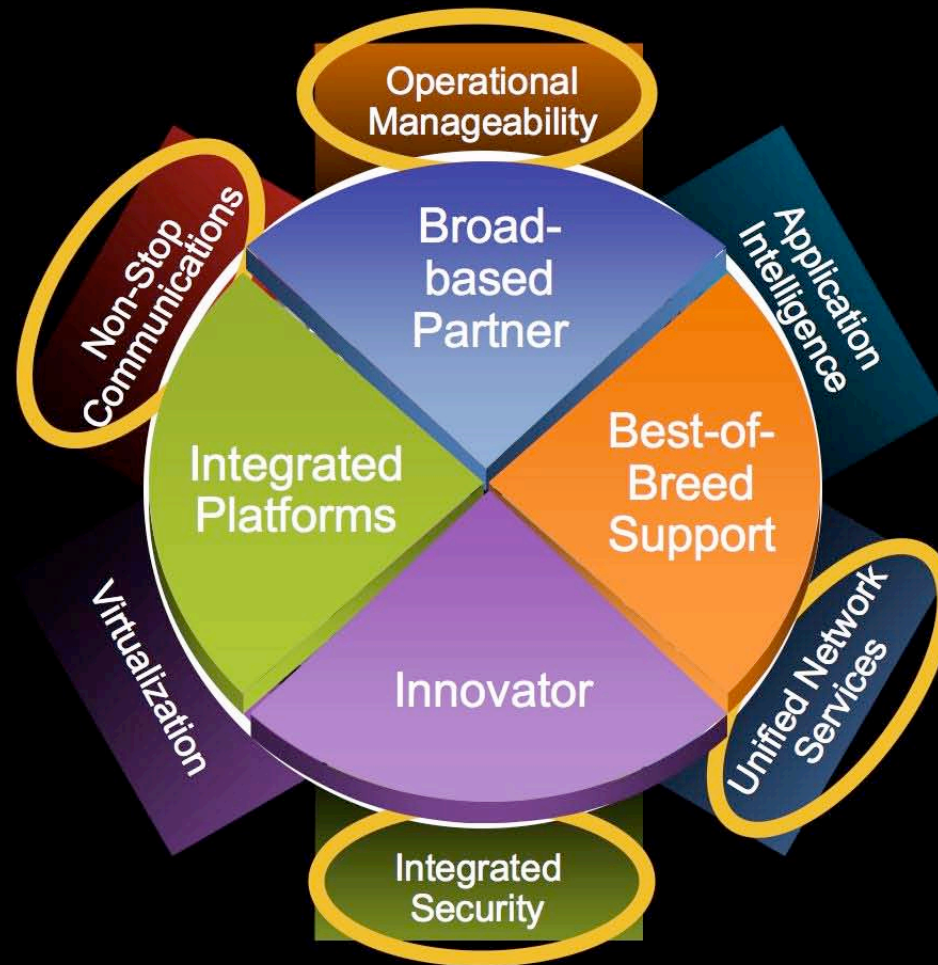


# Catalyst 3750-E Advantage

Flexibility and Investment Protection

# The Cisco Advantage

## Moving Your Network and Business Forward



Catalyst 3750-E Advantage  
Flexibility and Investment Protection

# **This Changes Everything**

**Welcome to a  
network where...**

**...Businesses transform themselves  
...Network Systems makes it all possible**

**Welcome to  
the human network**

