



Cisco's Technology Vision

The Cisco Strategy for new technologies

Instrutores: Networking Academy

Marcelo Ehalt, CCIE #5951
Systems Engineer Manager

Agenda

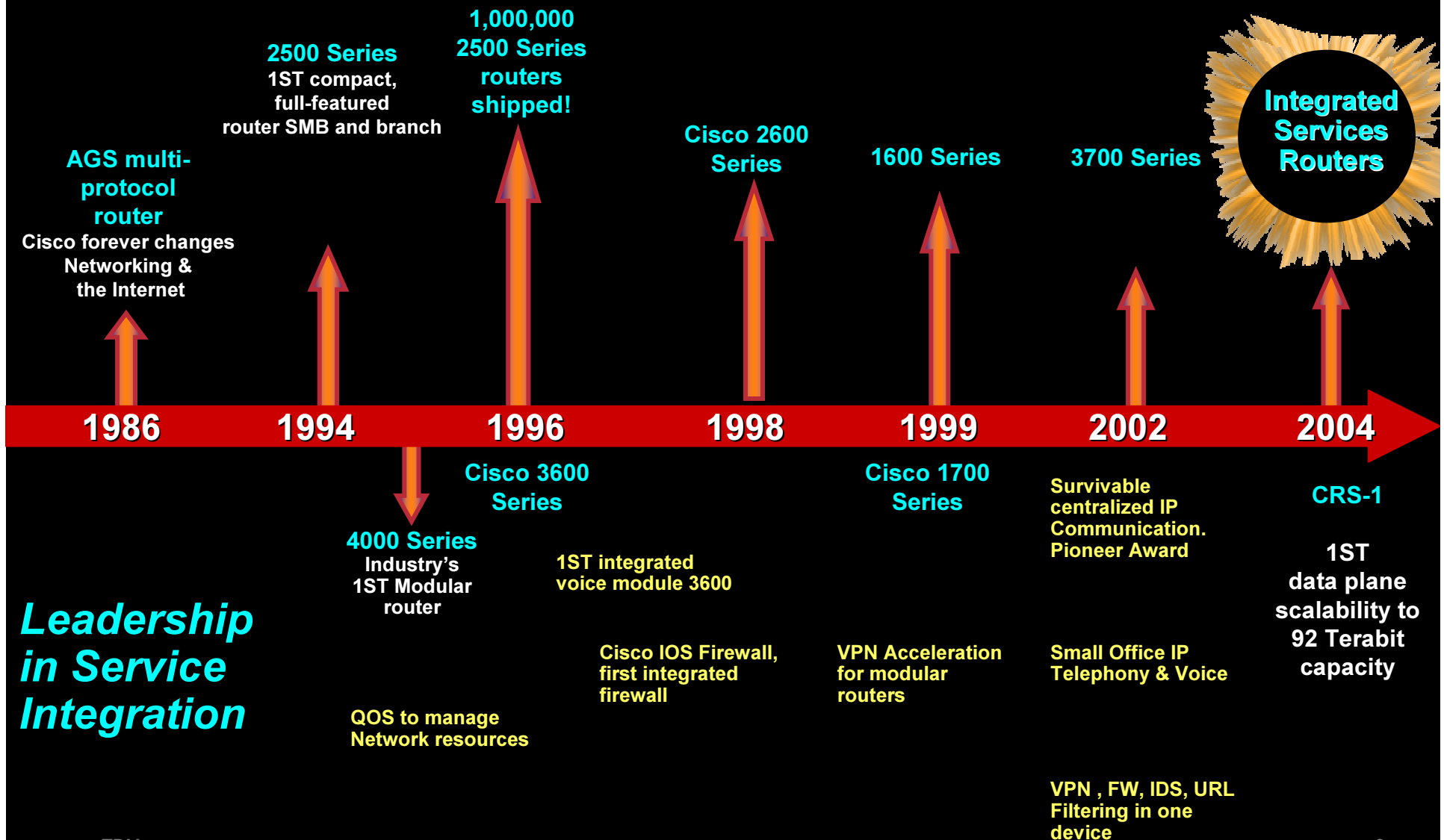
Cisco.com

- **Intelligent Information Networks**
- **Next Generation Routers**
- **Advanced Technologies**
 - Security**
 - IP Communication**

Cisco Leads the Industry

20 Years of Innovation

Cisco.com



Leadership in Service Integration

Cisco's 3-5 Year Technology Vision

The Intelligent Information Network: A Global Systems Approach

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Encompasses
The Network
Infrastructure

Global Systems



Encompasses
Resources,
Applications,
Service Creation

Integrated Applications

Phase

3

Application-Oriented
Network and Services

Integrated Services

Phase

2

Virtualized Networking Resources

Integrated Transport

Phase

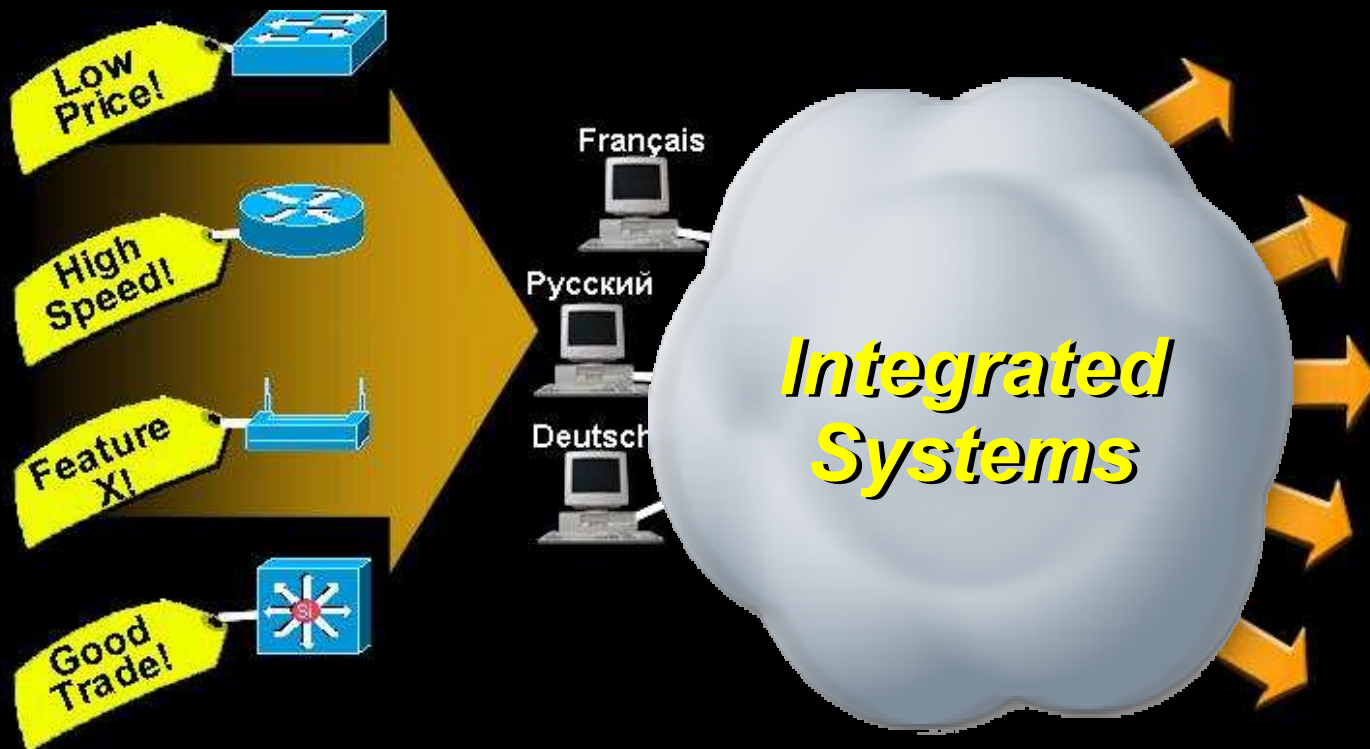
1

The Intelligent Movement of Data/Voice/Video
Across a System of Networks

A Systems Approach

Reduces Costs of a Non-Integrated Network

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Benefits

- **Active participation** in application and service delivery
- **Systems approach** enables intelligence without added complexity
- **Policy controls** flexibly adapt this intelligent system to **your** customer's business process

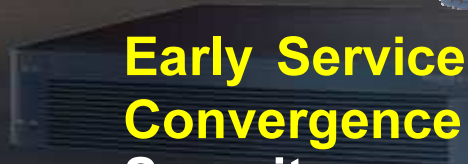
From Basic Connectivity to Secure, Embedded Voice, Data, & Video Services

1995

Pure Data Delivery

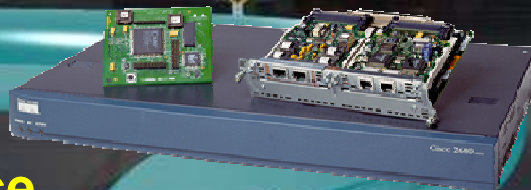


Early Service Convergence
Security, Firewall, VPN

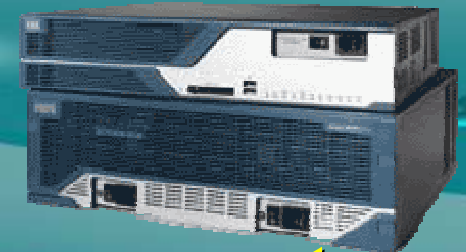
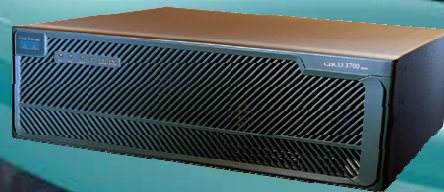


Integrated Data, Security, IP Telephony, and Intelligent Application Services

Cisco Routers



2004



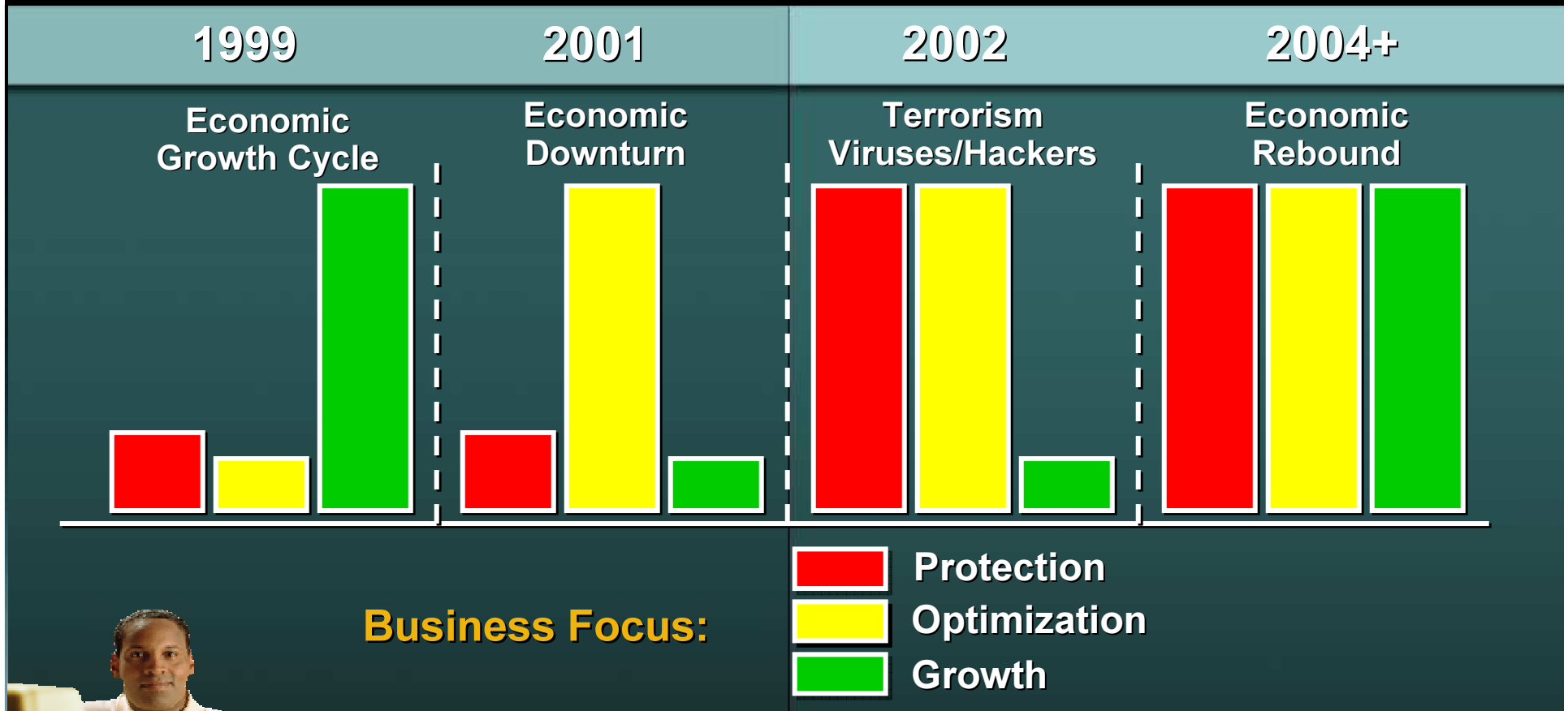
Secure, Concurrent Services at Wire Speed

Slide 6

tsollars1 update the photo of the router to provide a better aspect
Therese Sollars (tsollars); 02/09/2004

Different Times, Different Focus

Cisco.com



- **Protection** a must have
- **Optimization** gains expected to continue
- **Growth** a must with economic rebound

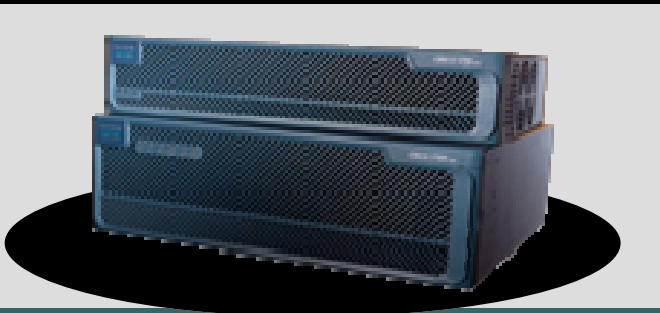
Agenda

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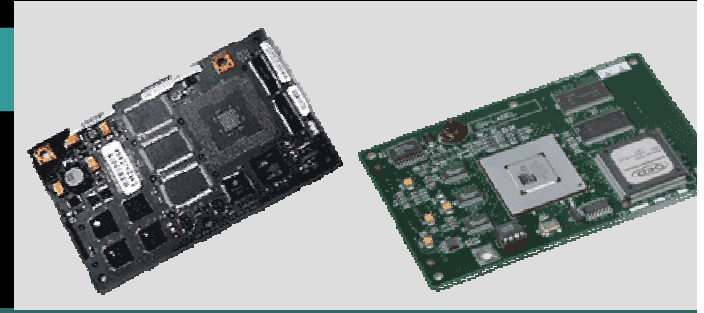
- Intelligent Information Networks
- **Next Generation Routers**
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 - Security
 - IP Communication

Integrated Systems Approach Redefines Best in Class

Cisco.com



Multiservice Access Router



Voice and Security Processors



Integrated Services Routers

- Deliver secure, wire-speed, concurrent data, voice, and video
- Speed application deployment and reduce costs and complexity

Slide 9

tsollars2 Call out the 3rd bullet separate from other 2
Therese Sollars (tsollars); 02/09/2004

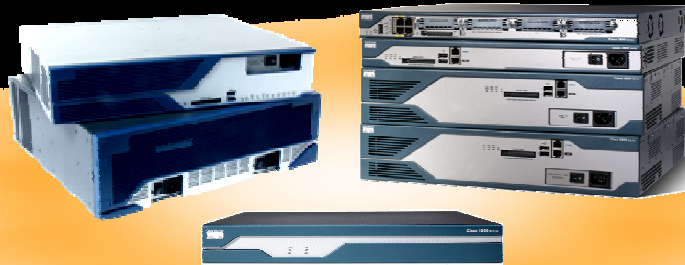
Cisco's New Integrated Services Routers

Cisco.com

Secure Concurrent Services at Wire Speed

Up to... 5X service density
7X **performance**
4X memory!

Embedded **security**,
tightly integrated with
voice



Backward compatibility with
existing router modules -
solid **investment protection**

Industry-leading network
availability & resilience

Plus **headroom** to grow!

Routing Renaissance

Building 4th Generation Networks!

Cisco.com

- 3 years research and development
- Over 1 million software and hardware engineering hours
- Complete portfolio: 11 new models and single Cisco IOS® Software train

Only Cisco delivers...

- **IP Communications**
- **World-Class Security**
- **Content Engine (Web Caching)**
- **Network Analysis Module**
- **Wireless**
- **Video**
- **PoE Layer 2 Switching**

Simultaneously at wire speed

Slide 11

tsollars3 need to look at list of what we deliver to make them all services (currently a mix of services and products)
Therese Sollars (tsollars); 02/09/2004

Scalable from Small Business to Large Enterprises Right-Sized Routers for Customer Requirements

Cisco.com

Performance and Services Density

3800 Series



Highest Density and Performance for Concurrent Services

Embedded, Advanced Voice, Video, Data & Security Services

Integrated Security & Data

Enterprise Branch Office

2800 Series



Small Branch

Increased Value Extended to New Markets

- Substantial increase in price/performance!
- Greater service densities across the portfolio!

1800 Series



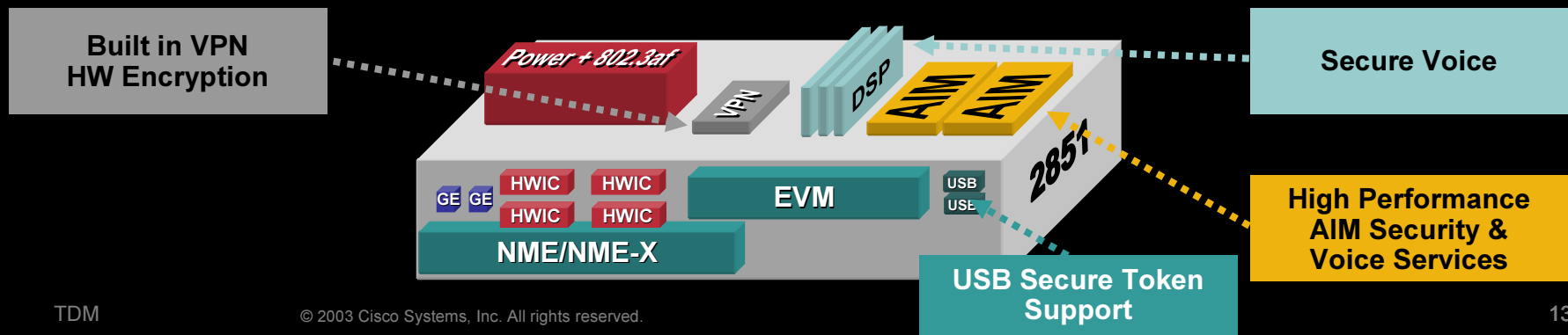
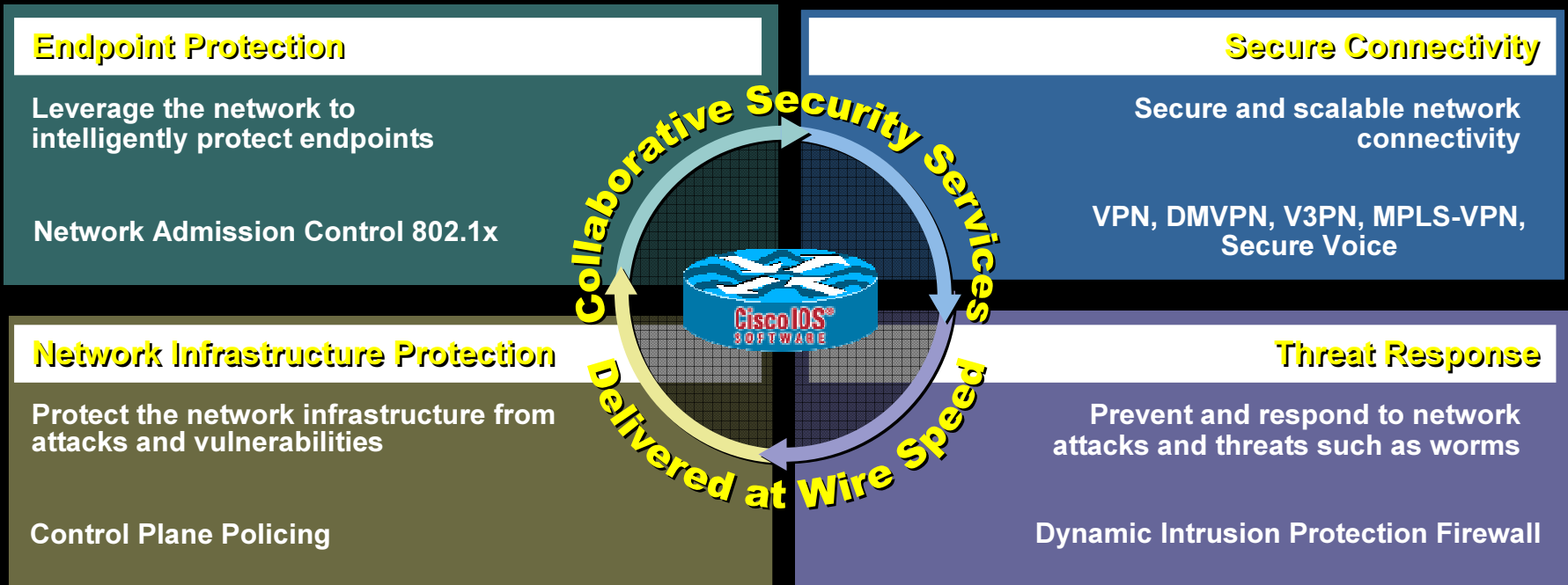
SMB

Hardware Innovation Raises Security Leadership

Cisco Self-defending Network At Wire-speed!

Cisco.com

Complete, Preventative, Scalable Security Solutions

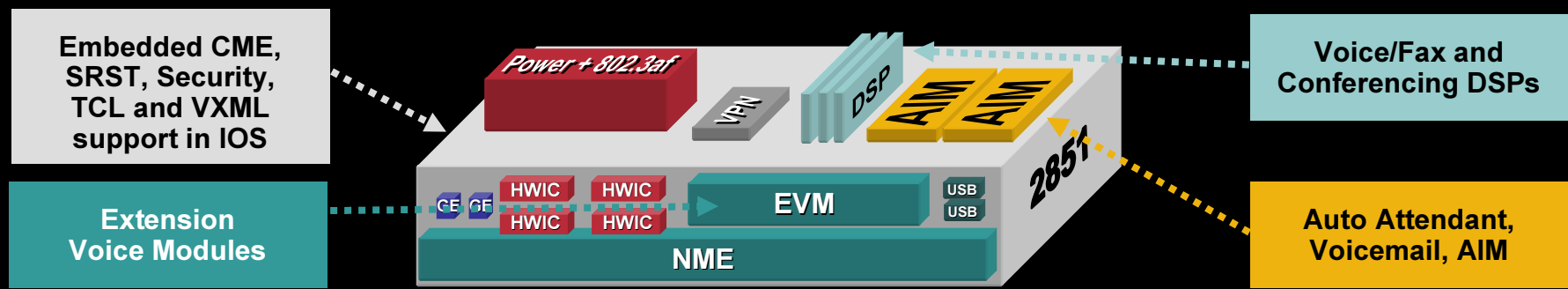
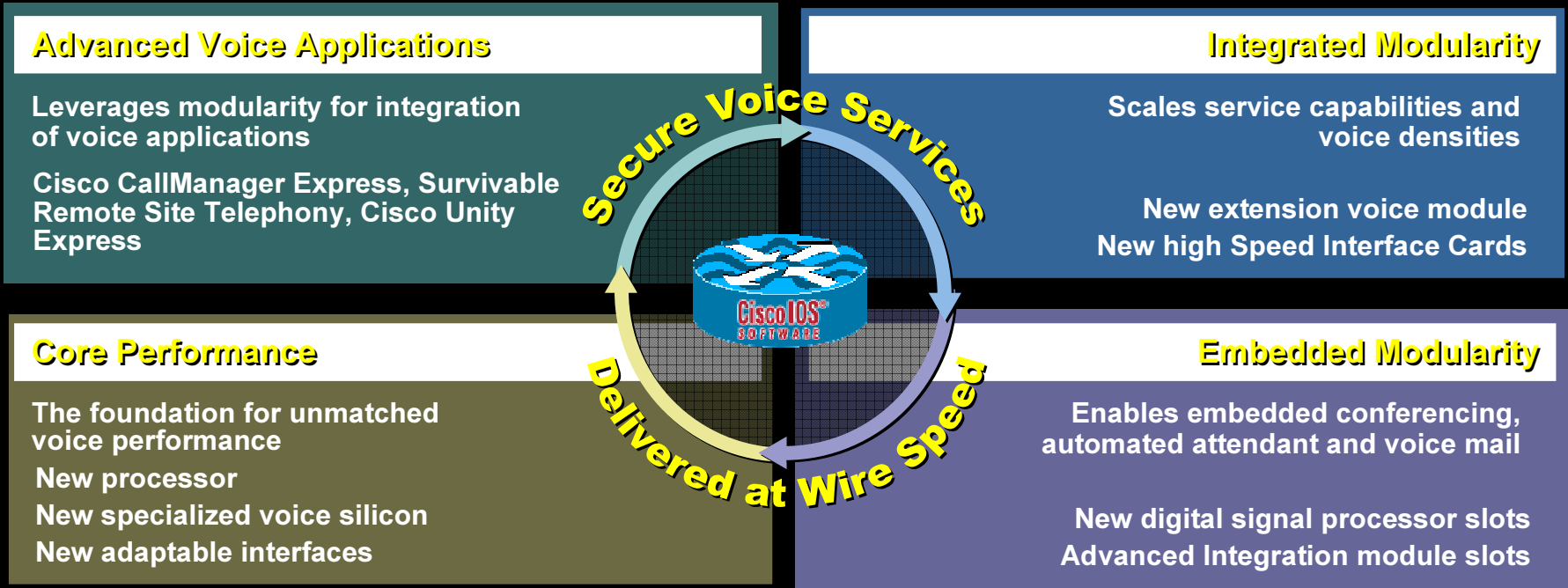


Hardware Innovation Raises Voice Leadership

Cisco Services and Applications At Wire-speed!

Cisco.com

Affordable, Secure, Scalable Voice Solutions



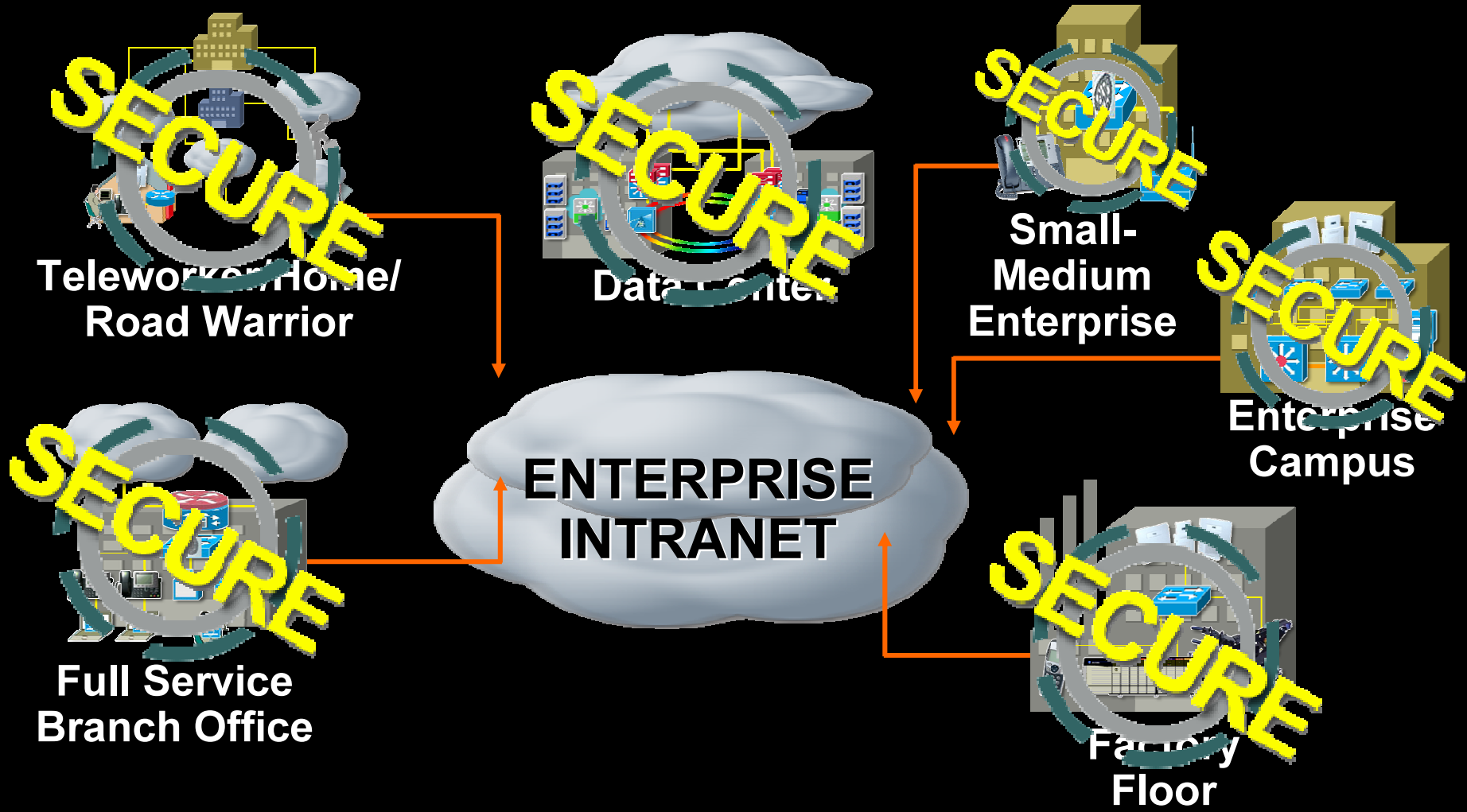
Agenda

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- **Intelligent Information Networks**
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 - Security**
 - IP Communication**

Security is Required for All Places in the Network

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Self Defending Network Strategy

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SELF-DEFENDING NETWORK

Cisco strategy to dramatically improve the network's ability to identify, prevent, and adapt to threats

SECURE INFRASTRUCTURE

- Secure Connectivity
- Threat Defense
- Trust & Identity

ADVANCED SECURITY TECHNOLOGIES

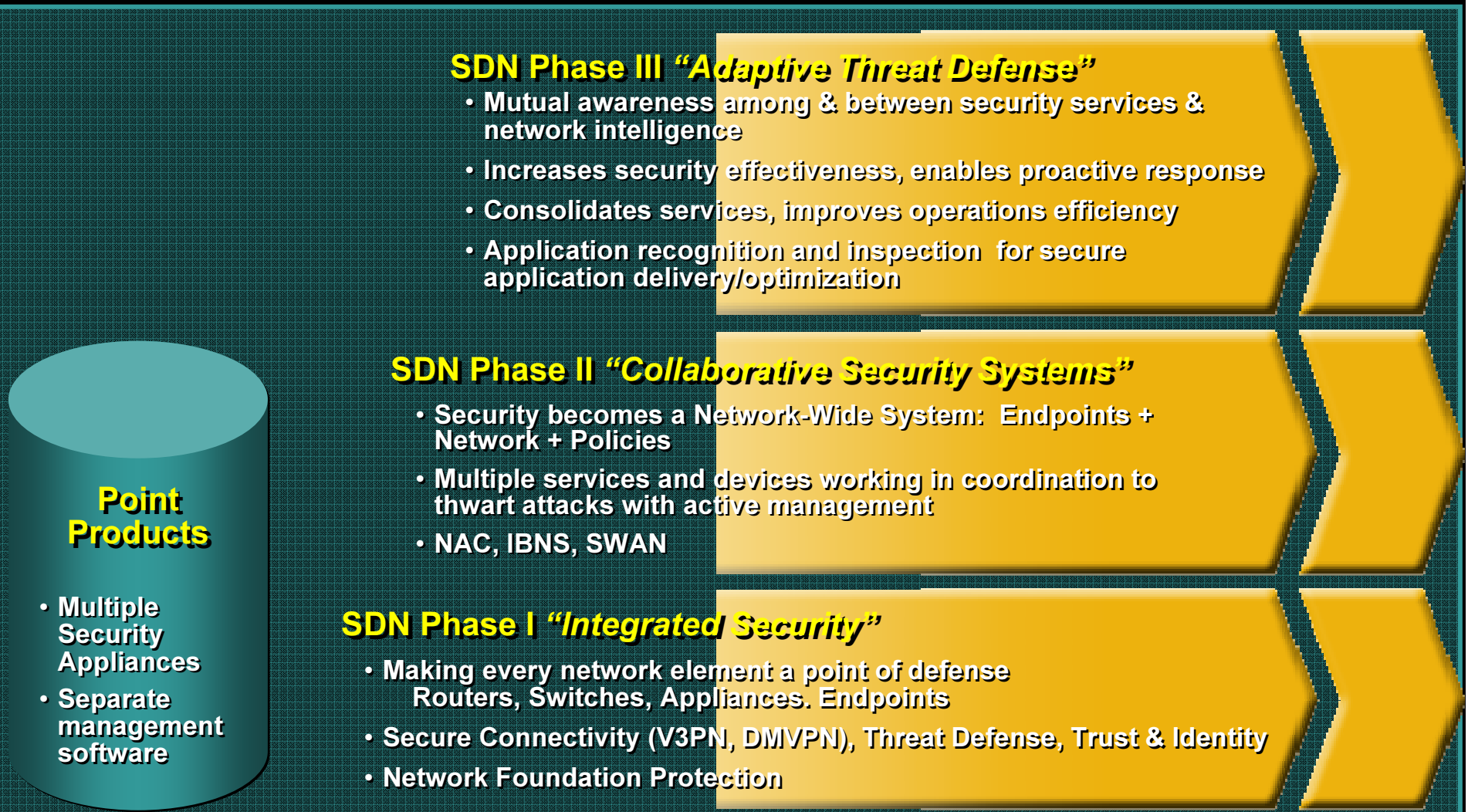
- Endpoint Convergence
- Application Firewall
- SSL VPN
- Network Anomaly

SYSTEM LEVEL SOLUTIONS

- Endpoints + Networks + Policies
- Partnerships
- Services

Evolution of Cisco Security Strategy

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Adaptive Threat Defense in Action

Products, Services and Architecture Example

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Access Control,
Packet Inspection
Firewall Services

Application Intelligence, Content
Inspection, Virus Mitigation
IPS & NW-AV Services

Identity, Virtualization, QoS
Segmentation, Traffic Visibility
Network Intelligence

App Inspection, Use
Enforcement, Web Control
Application Security

Malware/Content Defense,
Anomaly Detection
Anti-X Defenses

Traffic/Admission Control,
Proactive Response
Containment & Control

CSA



Cisco DDoS

Catalyst



SELF-DEFENDING NETWORK

How the Trust and Identity System Works

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1. **Who are you?** 802.1x authenticates user in conjunction with ACS



2. **Are you healthy?** Using NAC, the end-station and network can check whether the device has the correct virus software and protection.



3. **Where can you go?** Based on authentication, user is placed in correct workgroup or VLAN

4. **What service level to you receive?** The user can be put into a firewalled VPN or given specific QoS priority on the network



5. **What are you doing?** Using the identity and location of the user, tracking and accounting can be better managed



Comprehensive Security

Integrated in All Cisco Technologies Now!

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Agenda

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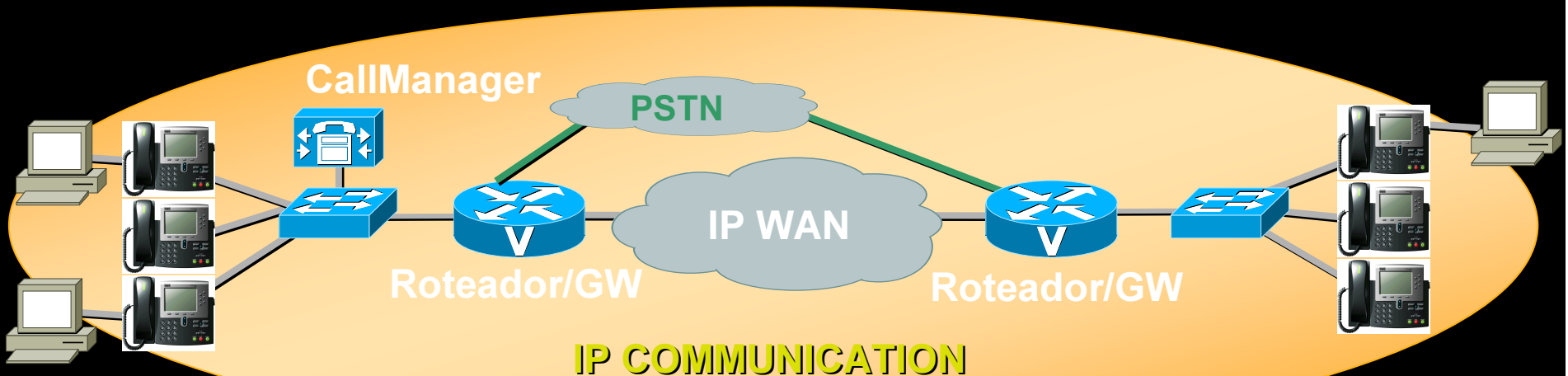
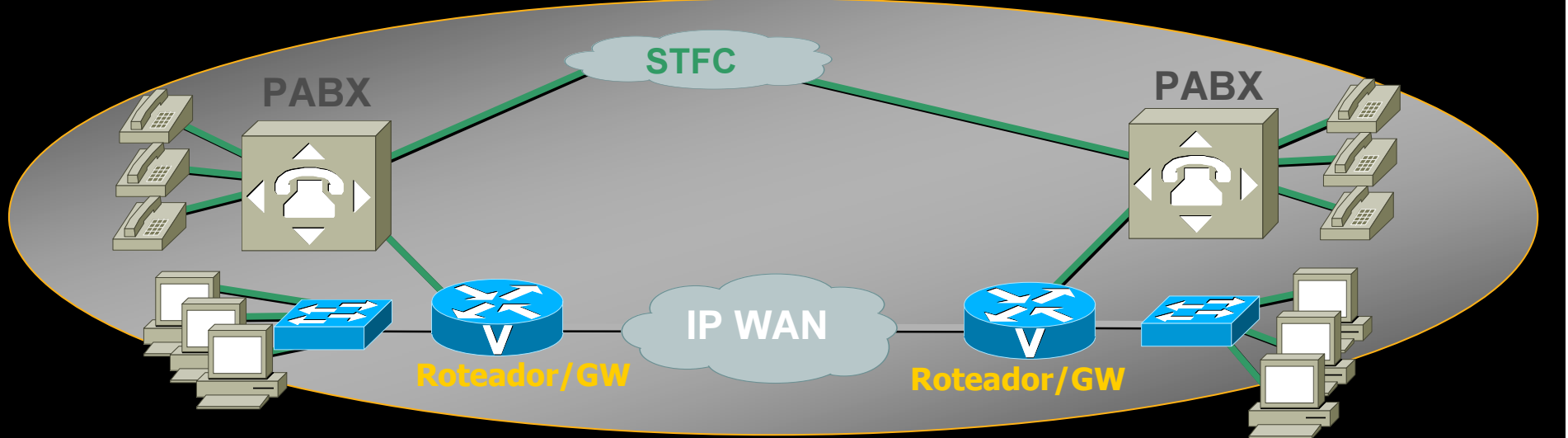
- **Intelligent Information Networks Next Generation Routers**
- **Advanced Technologies**
 - **Security**
 - **IP Communication**

Primeiro: definindo conceitos

VoIP vs Telefonia IP

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Voice over Internet Protocol - VoIP



Evolution of Communications Paradigm Addressed By Cisco, 1988-Today

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1988



i. Network to Network

Multiprotocol
Routing

1993



ii. Desktop to Desktop

LAN
Switching

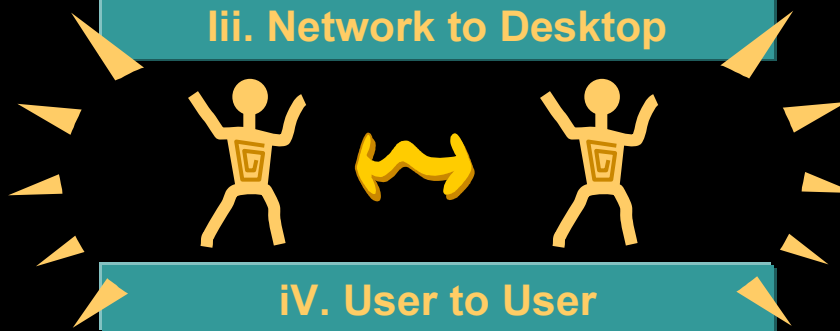
1996



iii. Network to Desktop

Dial, DSL,
Cable, VPN

2002



iv. User to User

Rich Media
Communications,
Security, Wireless

IP Communications Changing the Way Businesses Communicate

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Traditional Telephone Network



Audio Only



Traditional Data Network



Visual Only

Cisco's IPC Architecture Vision

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Shift to Separation of Hardware and Software

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PBX Software

Applications Software

TDM Switch Matrix

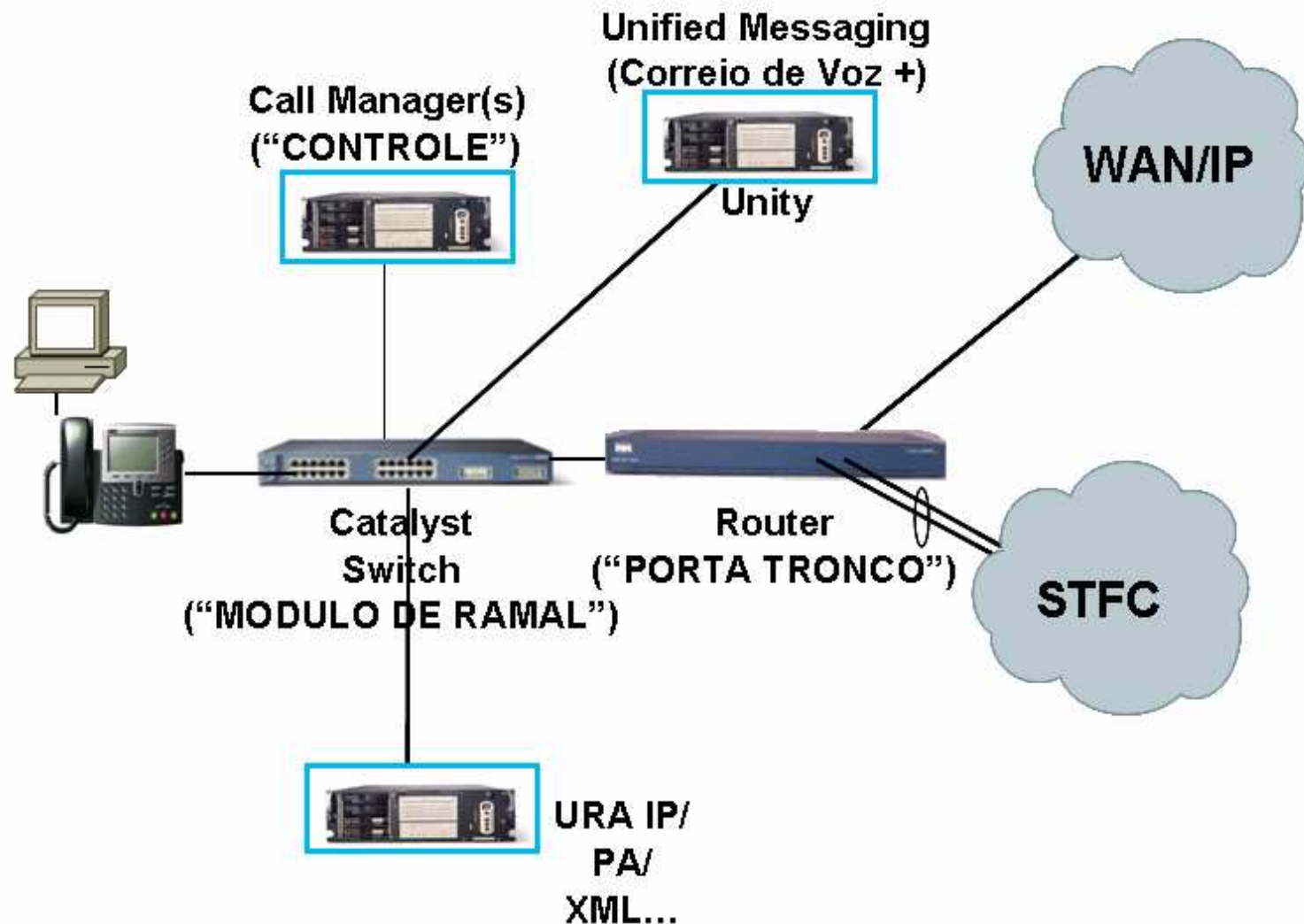
Trunk Cards

Line Cards



Componentes da Telefonia IP

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Cisco IP Communications

Advantages of Unique Systems Approach

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Tight integration of IP communications **applications** and **Cisco infrastructure** enable all components to work together as ***an effective system***



BENEFITS

- Automated configuration reduces opex and speeds deployment
- IPC security integrated with the infrastructure
- Easily extend business resilience strategy to IP communications

Complete suite of integrated applications for communication and collaboration

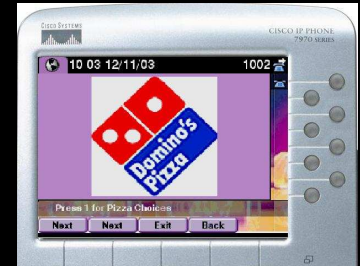
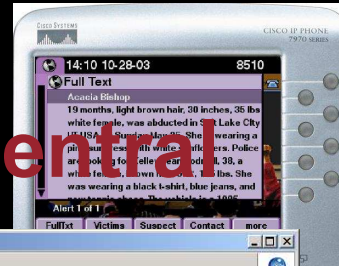
Many "Lethal Apps" for IP Communications

Cisco.com

Applications Central



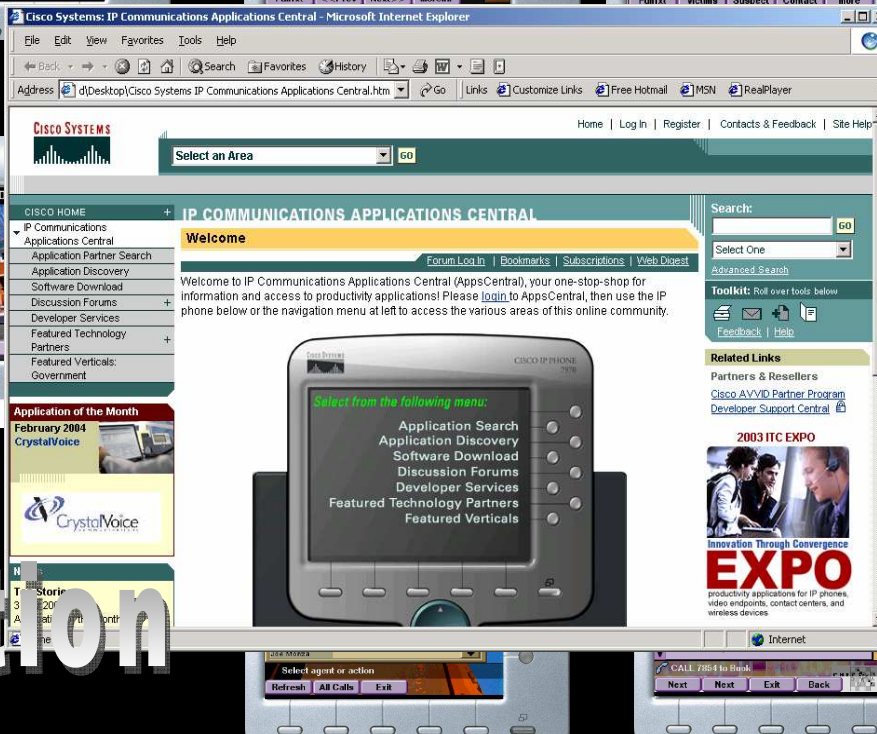
Cisco MeetingPlace



Retail

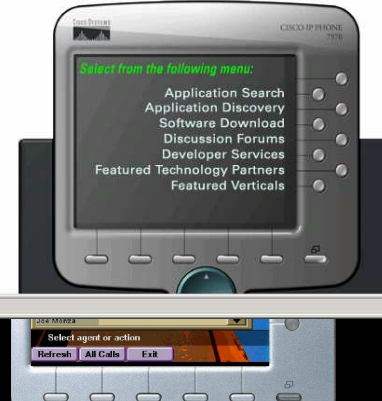


Real Estate



Attendance

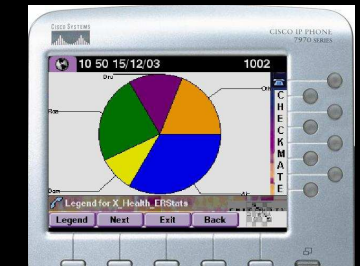
Imagination



Call Center

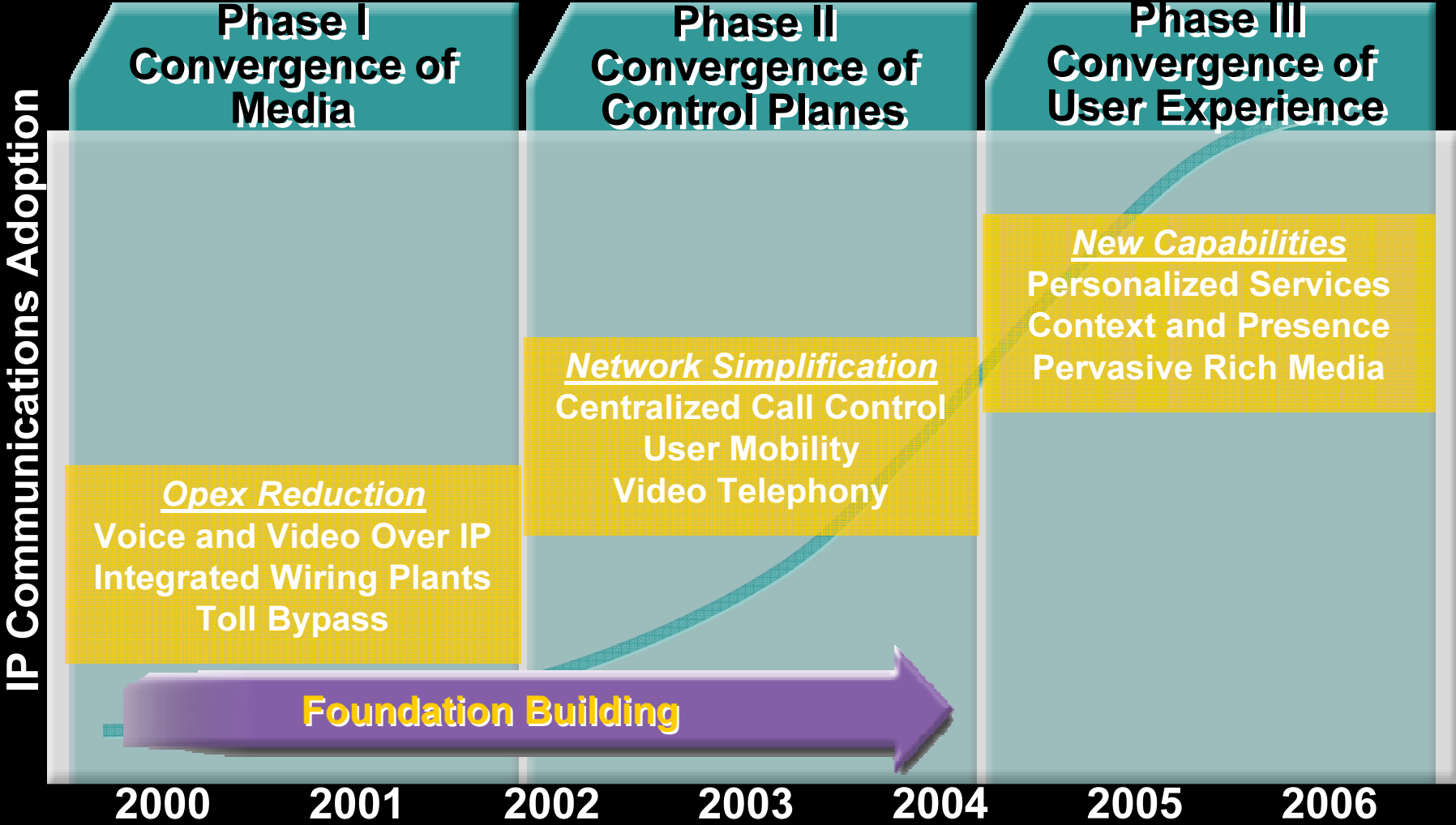


Health Care



ER Stats

Industry View: Moving to Phase III of Convergence



The Power of IP Converging Users' Experience Today

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Collaboration

Calendar



E-Mail

Audio-Conferencing

Telephony



Web Applications

On-Demand Video

Voice Messaging

Instant Messaging

Customer Contact

Uma Plataforma, qualquer implementação

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Wiring Closet



Segurança



Core and Distribution



Internet Edge

*Uma plataforma estratégica
De fim a fim*



Datacenter



Remote office



**Service Provider
Edge**

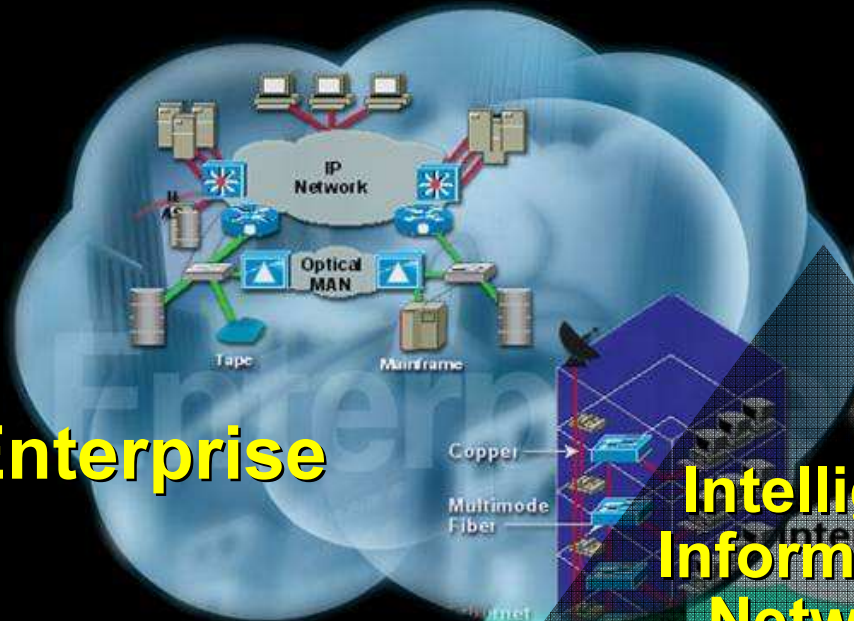


Mobility

Adding Intelligence to the Network of Networks

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Enterprise



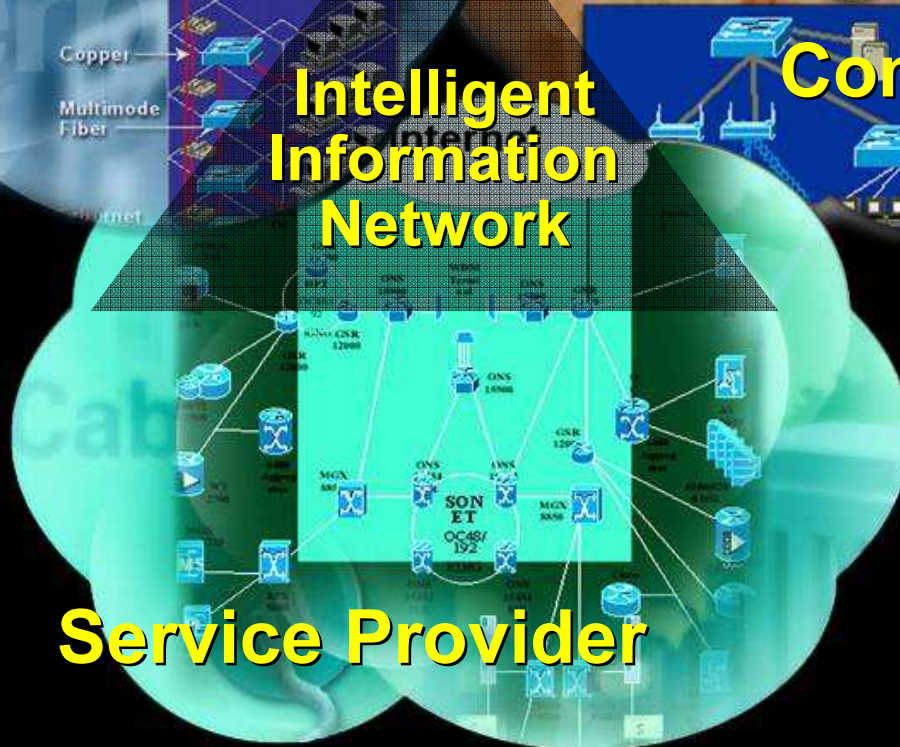
PSTN

Commercial

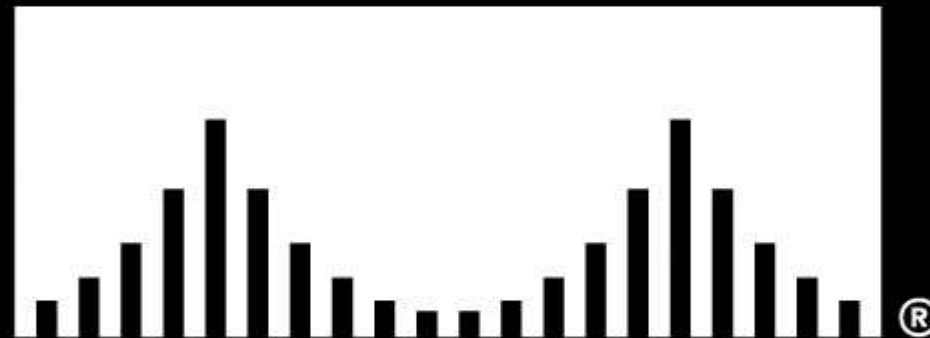


**Intelligent
Information
Network**

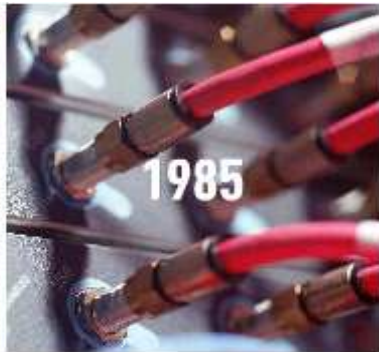
Service Provider



CISCO SYSTEMS



Muito Obrigado!



Cisco Networking Academies

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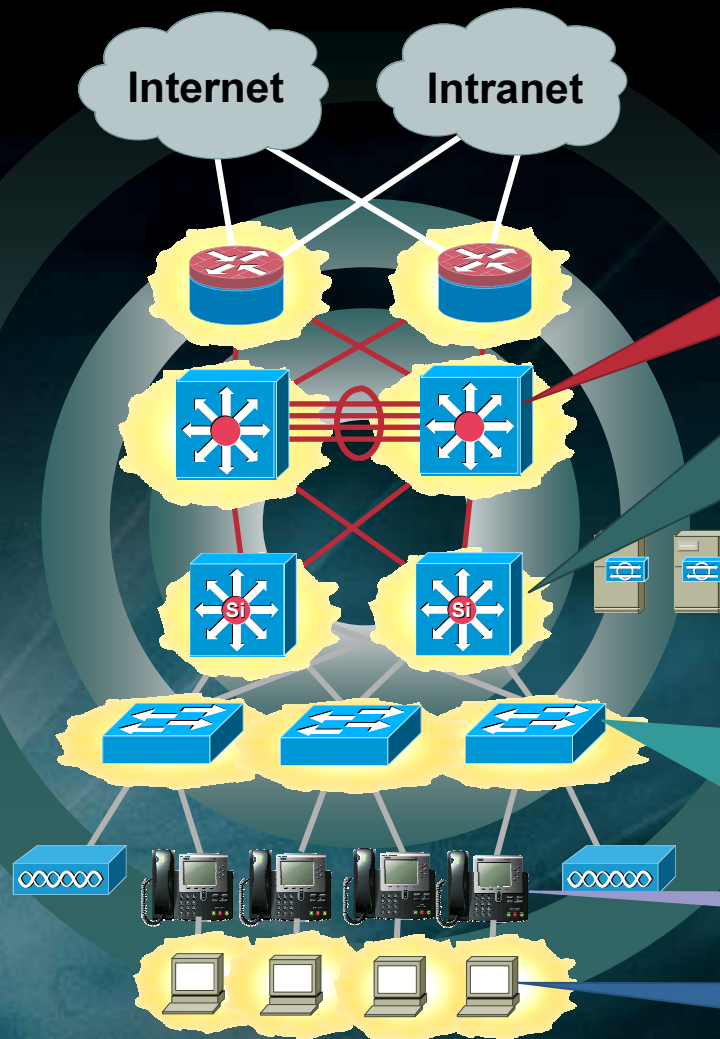
- Preparing students for careers in networking
- More than 400,000 students enrolled
- More than 192,000 graduates
- More than 10,000 academies
- 151 countries
- 9 languages



Business Ready Self-Defending Network

Comprehensive Integrated Network Security - Everywhere

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Hardware CEF Switching
QoS & Netflow
Sup720 Rate Limiters & SPD
Segmentation – VRF & MPLS

HW CEF Switching
SUp720 Rate Limiters & Storm Control
HW Security and QoS ACL's
TCP Intercept & uRPF
Netflow
FWSM, NAM & NIDS
QoS Microflow Policing & CAR

DHCP Snooping, DAI, IP source Guard
Port Security
QoS Per Port/VLAN Policing and Marking
HW Security and QoS ACL's
Storm Control
Private VLAN's
802.1x

Extended QoS Trust Boundary

Cisco Security Agent (CSA)
Network Admission Control

Intelligent Networking Benefits

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Secure infrastructure

- **Self-defending network mitigates threats, both known and unknown**

Faster deployment of service and applications

- **Applications run better**
- **Integrated, modular systems and management reduce custom integration**
- **Granular policy controls couple network with business processes and services**

Reduced complexity and lower TCO

- **New capabilities and technologies are simpler to integrate**
- **Integrated systems and management reduce OpEx and systems integration**



CUSTOMER FOCUS

“CUSTOMER SUCCESS AND SATISFACTION ARE AT THE HEART OF CISCO’S BUSINESS STRATEGY AND KEY DRIVERS OF OUR CURRENT AND FUTURE SUCCESS.”



JOHN CHAMBERS, PRESIDENT AND CEO