

Networking Communications Devices



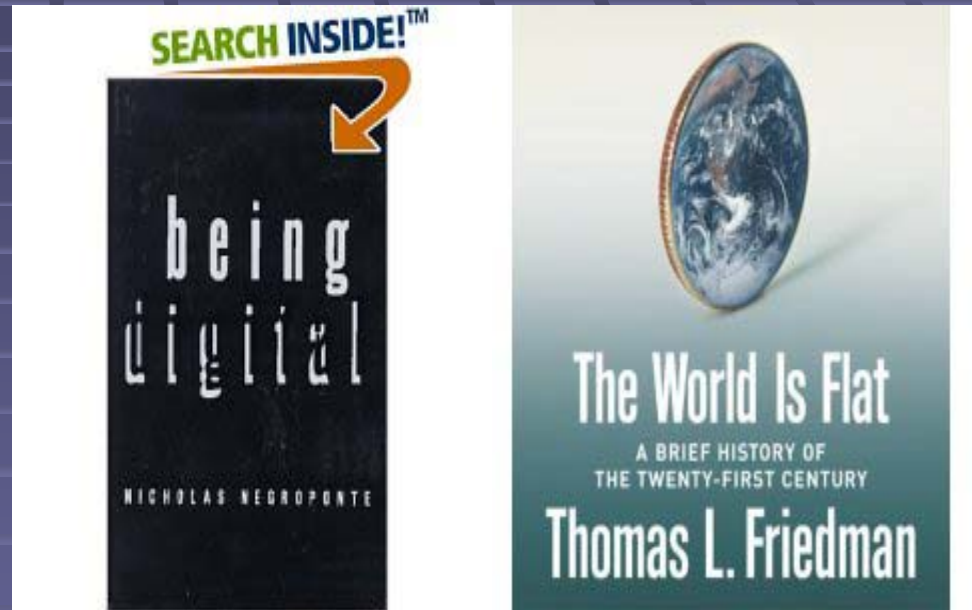
Presented by Trifecta

- Kevin Sok
- Charles Grant
- Melanie Evans
- Rick Epperson
- Scott Anderson



Overview

- Convergence 101
- Networking
Communications
Devices Industry
- Cisco Systems
- Economic
Implications
- Convergence 601?



Convergence

101

VOICE












VIDEO

DATA



Binary Digits (Bits)

Convergence Rewrites the Rules...

	Voice 	Data 	Video 
Telcos			
Satellite Operators			
Cable Operators			
ISPs			

Ubiquitous broadband enables Cable, Satellite & Telco players to compete with one another to offer triple play of voice, video & data

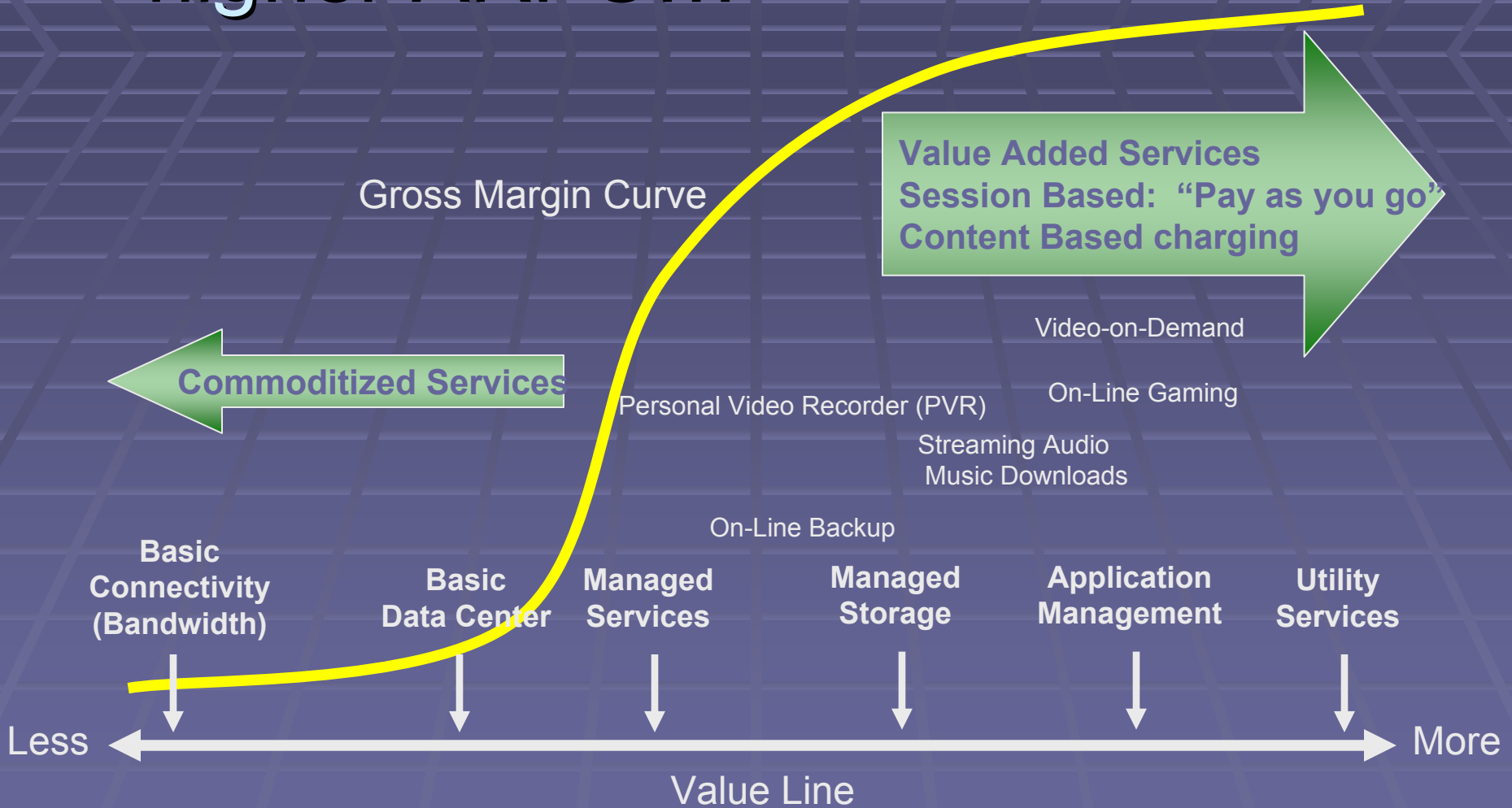
Convergence Creates New \$ervice Opportunitie\$...



Integrated Networks, Content and Entertainment Systems

Source: Cisco Systems

Convergence fuels the battle for higher ARPU...



Networking Communications Devices Industry

Industry Analysis: Networking and Communication Devices

Diversified set of networking devices and supporting software which control the flow and routing of bits across the network



Industry Analysis: Networking and Communication Devices

SELECT VENDOR OPERATIONS

VENDOR	BROADBAND ACCESS	OPTICAL	PRIVATE BRANCH EXCHANGE	ROUTING	SWITCHING	WIRELESS HANDSETS	WIRELESS INFRASTRUCTURE
3Com			○		●		○
Alcatel	●	●	●	○	○	○	○
Avaya			●		○		○
Cisco	●	○	○	●	●		○
Ericsson						○	●
Huawei	○	○			○	○	
Juniper				●			
Lucent	○	●			○		
Motorola	○					●	●
NEC	○	○	○			○	○
Nokia						●	●
Nortel		●	●	●	●		○
Siemens	●	○				●	○

All vendors indicated with ○ or ● are participants in that industry. ● Denotes top three vendors in each industry area, based on 2004 market share data.

Source: Company reports.

Industry Drivers

- Government Regulation (FCC)
- Convergence
 - Voice, Video, Data
 - Devices
 - Competition
- Customer Demand
 - One Stop Shopping
 - More features, higher quality, lower cost
- Technology
 - VoIP
 - WiMax
 - Security

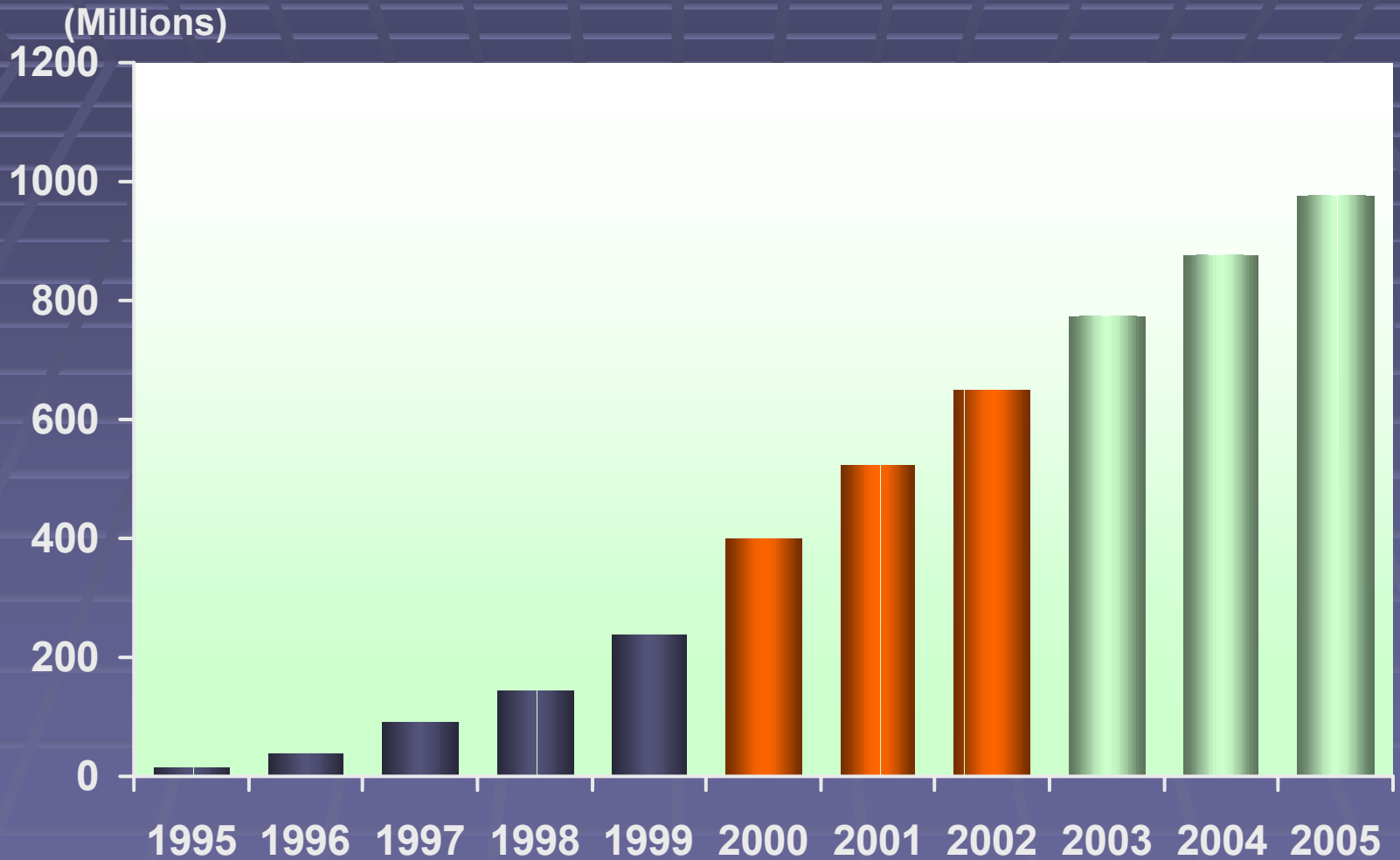


Metcalfe's Law:

"The power of the network increases exponentially by the number of computers connected to it. Therefore, every computer added to the network both uses it as a resource while adding resources in a spiral of increasing value and choice."

Increases Network Traffic and Demand!

Industry Trends: Internet Users



Source: IDC

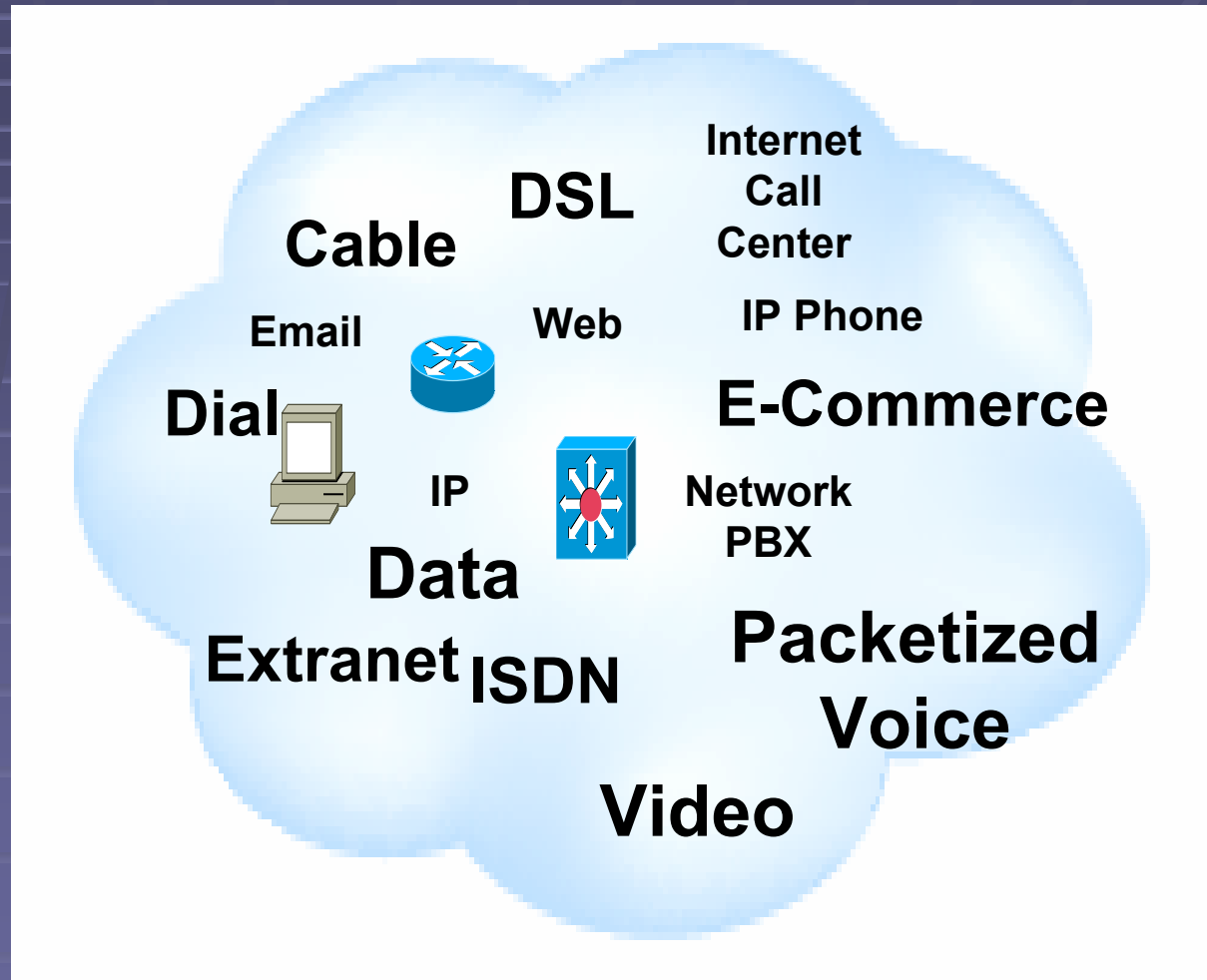
Key Market Segments

- Fixed Line
- Wireless
- Customers
 - Carriers
 - Commercial
 - Consumer



Key Product Features

- Performance
- Reliability
- Security
- Flexibility
- Personalization
- Standards-based



Convergence changes everything!

One Dominant Company



CISCO SYSTEMS



Company Overview

- Cisco Systems is the worldwide leader in the networking and communication devices industry.
- Cisco Systems manufactures products that are used in major corporations, universities, small-to-medium-sized businesses, and individuals.
- The company is headquartered in San Jose, CA, with offices located throughout the Americas, Europe, Asia, Africa, the Middle East, the Caribbean, and Australia.
- It currently has approximately 38,000 employees
- Cisco Systems is currently ranked number 91 on the “*Fortune 500*”.
- Founded in 1984 by a group of computer scientists from Stanford University.

Products and Services

- Core Technologies
 - Routers and Switches
- Advanced Technologies
 - IP Communications
 - Home networking
 - Optical Networking
 - Security
 - Storage Area Networking
 - Wireless
- Technical Support Services
- Advanced Services
- Other Products
 - Access
 - Network management software

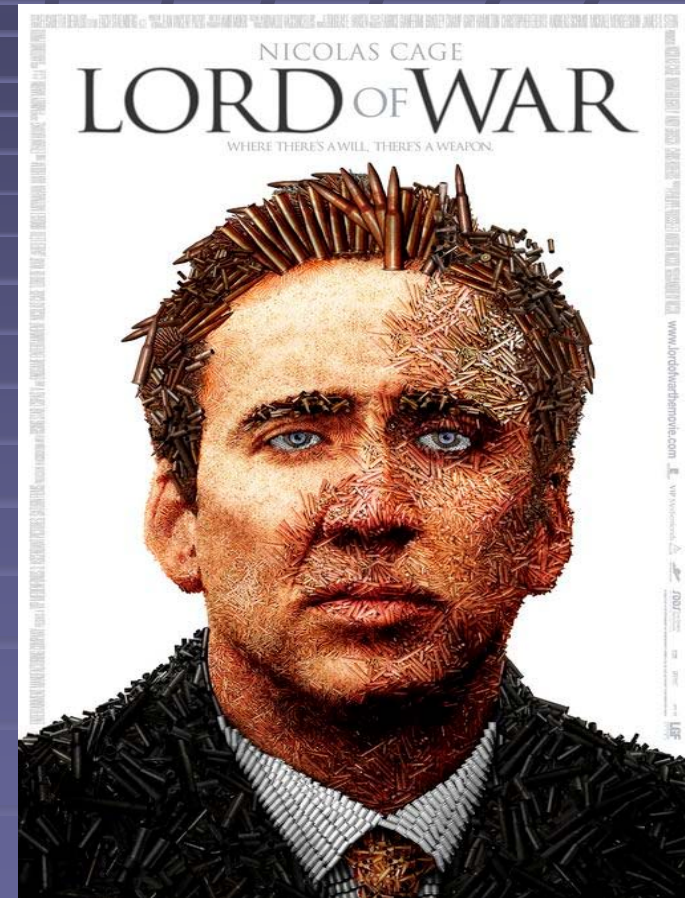


Top Competitors

				
Sales (\$ mil)	24,801	4,902	1,336	9,828
Employees	38,413	18,550	2,948	34,150
Market Cap (\$ mil)	121,377	4,826	10,849	12,831
Net Trade Cycle (days)	50	104	130	132

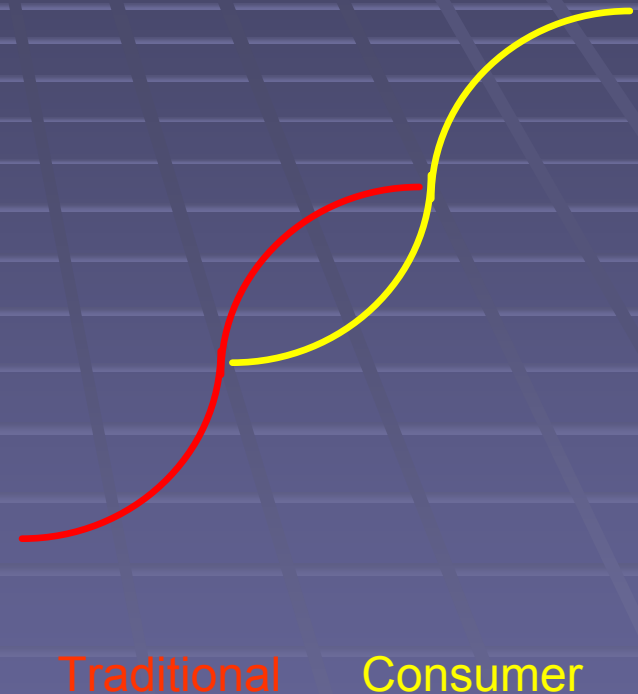
Cisco Strategies

- Growth
 - Acquisitions
 - R&D
 - Target Markets
- Cisco on Cisco
- Manufacturing
- Distribution
 - Channel Partners
 - UPS



Trifecta Recommendations

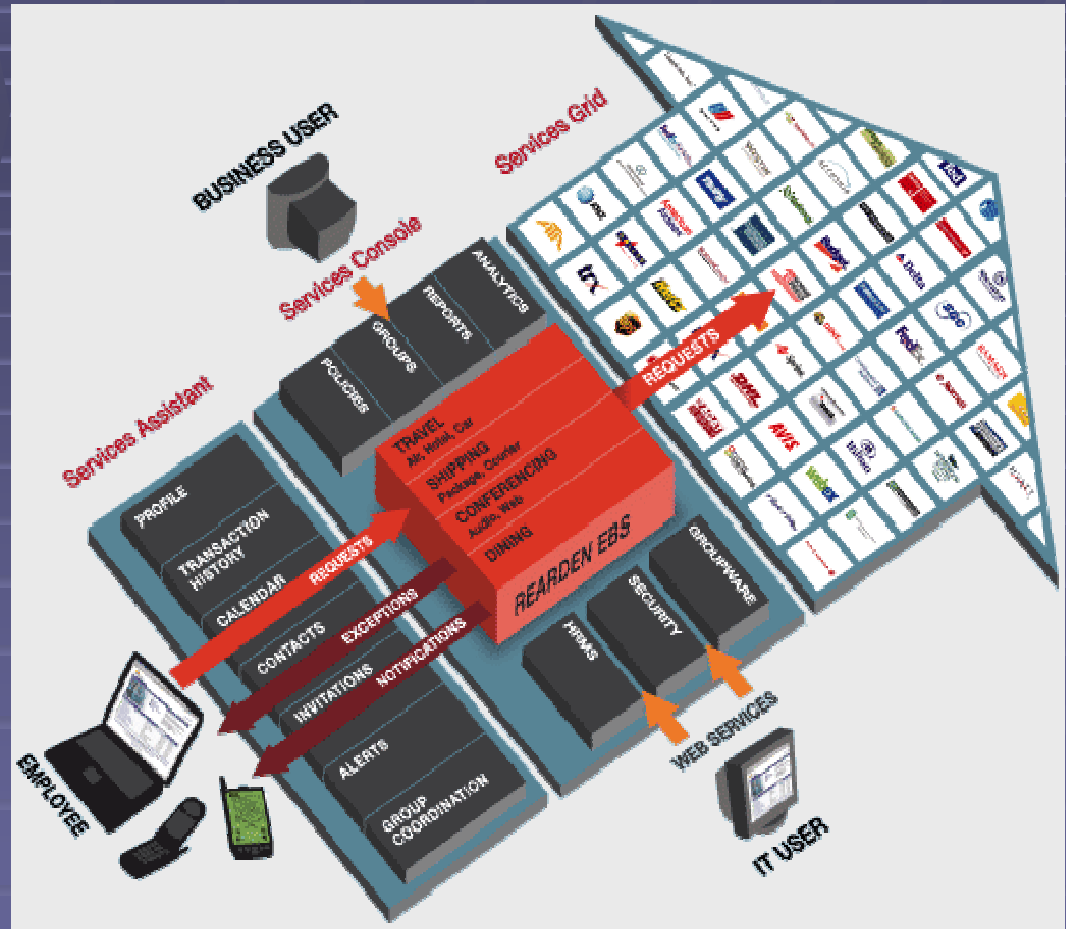
- Target Growth Areas
 - Internet
 - Wireless
- Influence standards organizations
 - IPv6, W3C, IEEE, etc.
 - FCC, Commerce Department, etc.
- Promote “Cisco Inside”
 - Technology leadership
 - End-to-end reliability and security
- Link revenue to network traffic
- Ride the “S” curve waves



Economic Implications

Information Economy

- Digital Producers and Consumers
- Increased Investment
- Government Policy
 - Regulation
 - Deregulation
- Government Spending
- Outsourcing
 - Absolute Advantage
 - Comparative Advantage



Source: www.reardencommerce.com

$$Y = C + I + G + NX$$

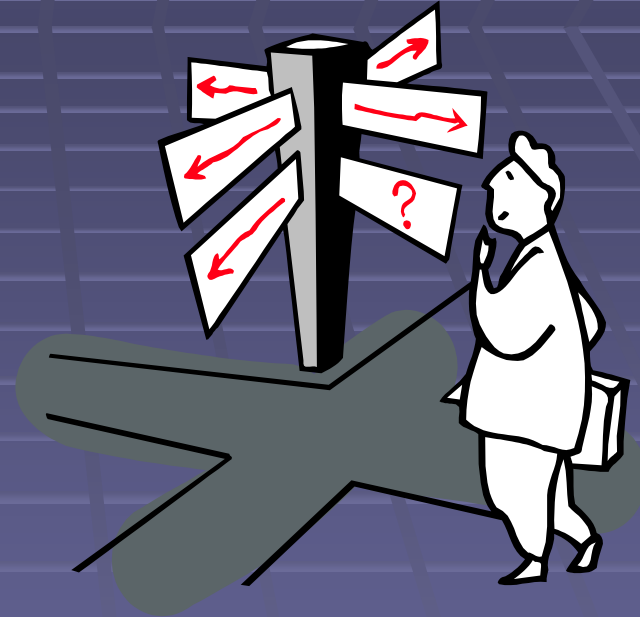
Outsourcing Data

- Outsourcing 'industry': to exceed \$1 trillion by 2006
- \$6.7 bn (2003) to \$20.9 bn (2008) in savings
- Outsourcing: North-South issue? Hardly...
 - More North-North trade- 68% of trade
 - North America, largest market: 60% of total
 - Canada, largest exporter of private services to US
- Net creation of 22 million new jobs in the US (from 2000-2010); shortage of 10 million in 2010
- Estimates for outsourcing: job creation: 317,000 net new jobs by 2008 in the US
- 2003: 98% of total contract value for outsourced business process service delivery in the US is done domestically (only 2% off-shored)
- India accounted for only 1% of total US imports of private services (of which, 2% - business services)

Convergence 601?

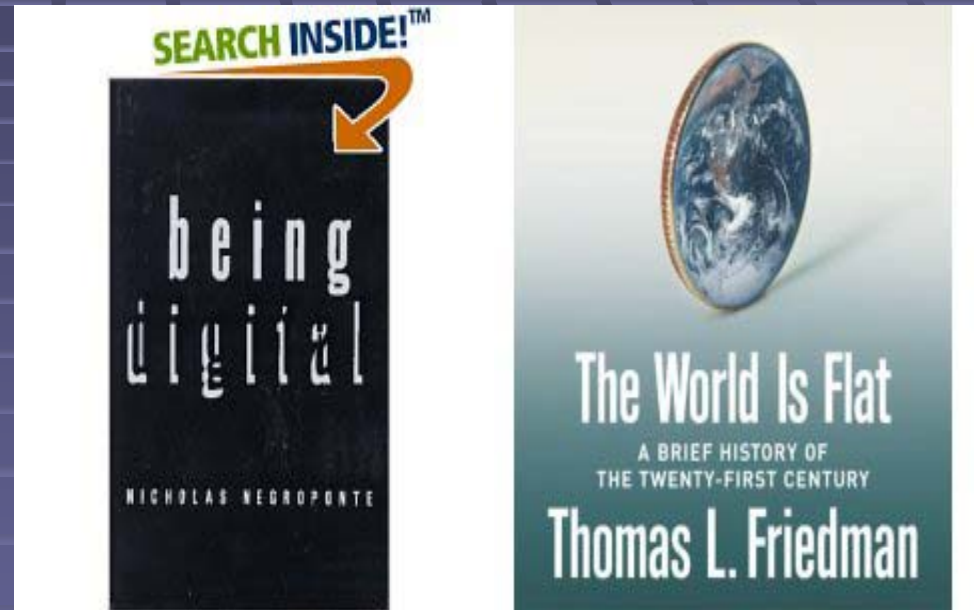
Too Much Convergence?

- Privacy
 - Anonymity
 - Security
- Commercialization
- Network Neutrality



Closing

- Convergence 101
- Networking Communications Industry
- Cisco Systems
- Economic Implications
- Convergence 601?



Appendix

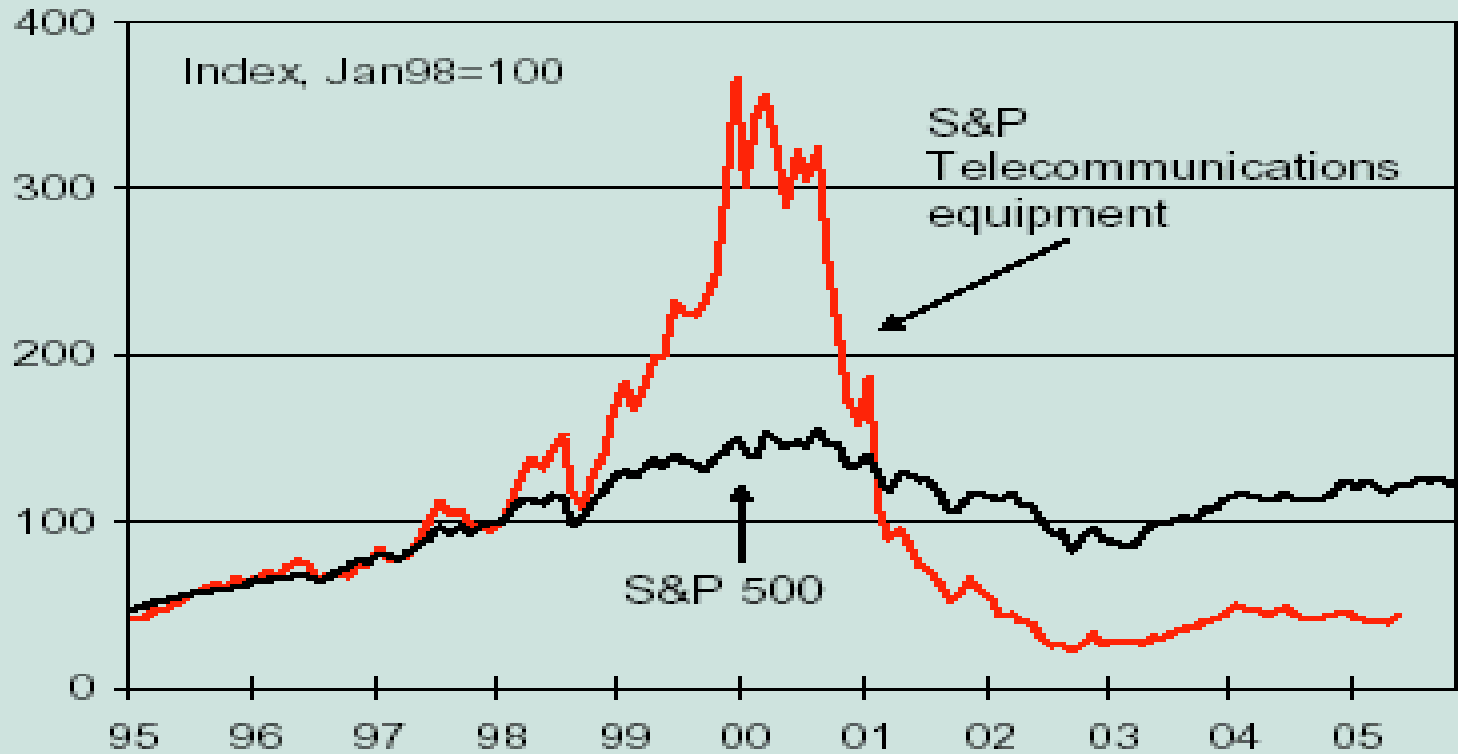
Industry Analysis: Networking and Communication Devices

Industry Size

2005 Revenue: \$30.814 Billion (0.25% of GDP)

Source: Yahoo Finance

Industry Performance



Source: economy.com

Industry Analysis: Networking and Communication Devices

Demand Factors

- Speed of communication/Real-time decision
- Productivity improvement
- Increase customer satisfaction
- Competitive advantage

Industry Analysis: Networking and Communication Devices

Market Structure

- An oligopolistic market structure, dominated by small number of manufacturers around the world.

Alcatel (France)

Nortel (Canada)

Fujitsu (Japan)

Siemens AG (Germany)

NEC Corp (Japan)

Nokia (Finland)

Cisco Systems (US)

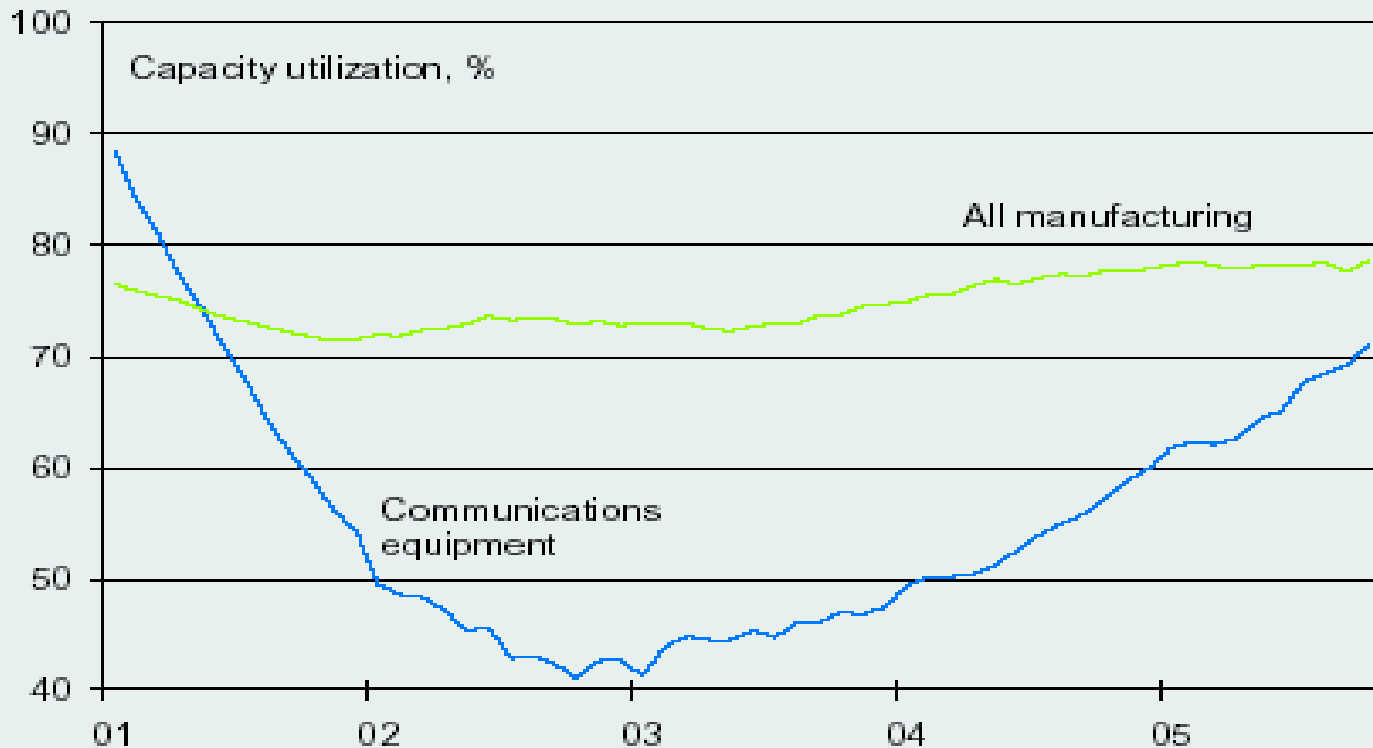
Industry Analysis: Networking and Communication Devices

Production and Cost Issues

- R & D: Big investment in R & D and human capital to stay ahead of competition.
- Acquisitions: Transition and integration issues that can jeopardize operating results and competitive position.

Industry Trend: Capacity Utilization

Inching Back Toward the Industry Mean



Source: economy.com

Pricing Power is Limited!

Industry Trend: Changes in Production

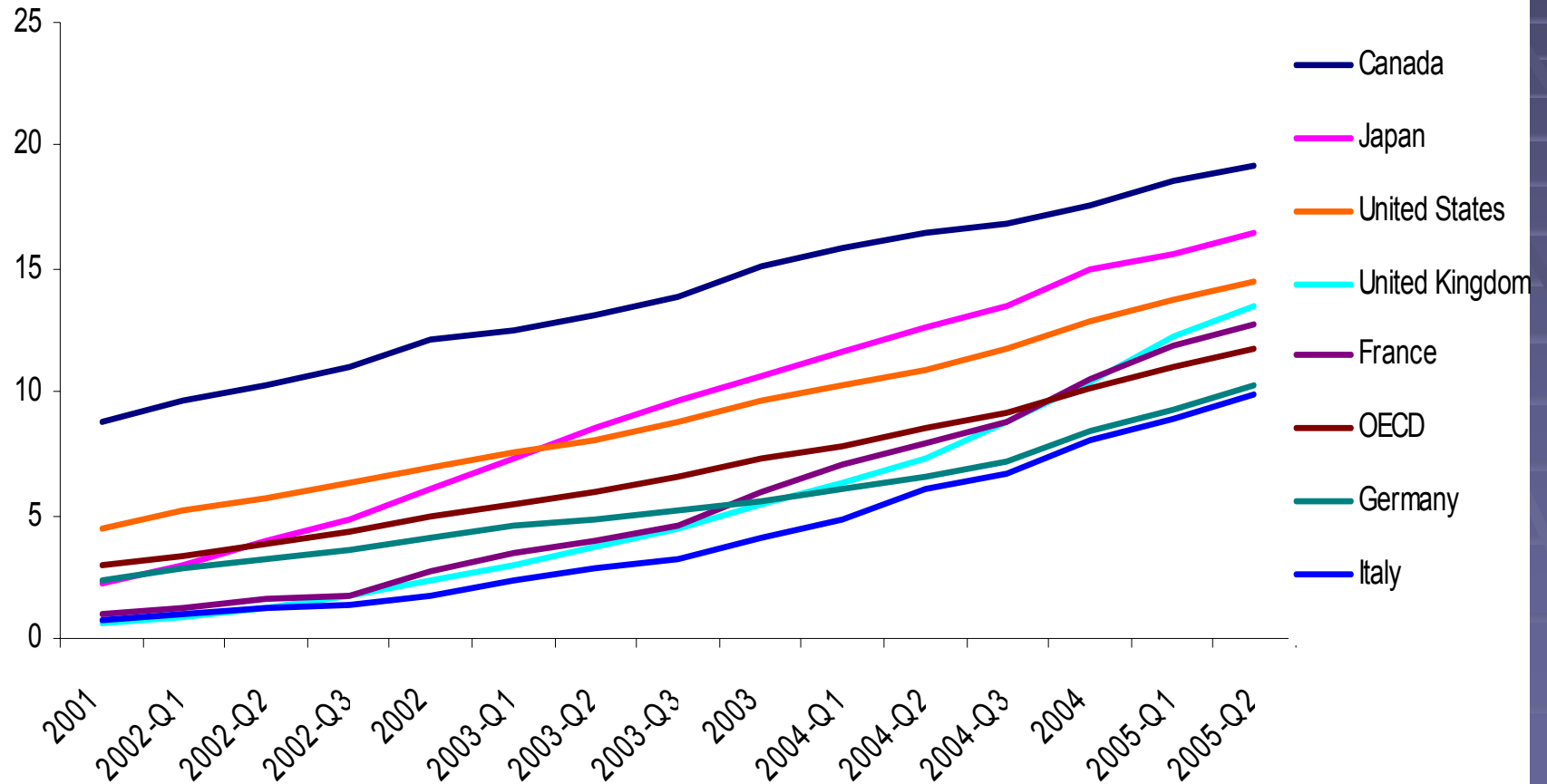
Strong and Steady Production Helps Revive Industry



Source: economy.com

Industry Trends: Broadband Penetration

Broadband penetration, historic, G7 countries



Source : OECD

Cisco: Industry Codes

SIC Codes

3577	Computer peripheral equipment, nec
3661	Telephone and telegraph apparatus
3669	Communications equipment, nec

NAICS Codes

33411	Computer and Peripheral Equipment Manufacturing
334119	Other Computer Peripheral Equipment Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing

Source: Hoovers

Cisco: Key Numbers

Ranked "Highest in Investor Satisfaction Among Online Trading Services"

- **Company Type**Public (NASDAQ: [CSCO](#))
- **Fiscal Year-End**July2005
- **Sales (mil.)**\$24,801.0
- **1-Year Sales Growth**12.5%
- **2005 Net Income (mil.)**\$5,741.0
- **1-Year Net Income Growth**30.4%
- **2004 Employees**34,000
- **1-Year Employee**



Cisco: Annual Income



Year	Revenue	Gross Profit	Operating Income	Total Net Income
July 2005	24,801	17,453	7,442	5,741
July 2004	22,045	16,327	6,295	4,401
July 2003	18,878	14,430	4,886	3,578

Comparison to Industry & Market

Valuation	Cisco	Industry*	Market**
Price/Sales Ratio	4.78	4.81	1.46
Price/Earnings Ratio	22.98	28.32	20.65
Price/Book Ratio	5.66	4.23	2.77
Price/Cash Flow Ratio	18.47	21.24	12.06

Source: Hoovers

*Industry : Networking & Communication Devices

** Market: Public Companies trading on the NYSE,AMEX, and NASDAQ

Global Reach

All Over the World



Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

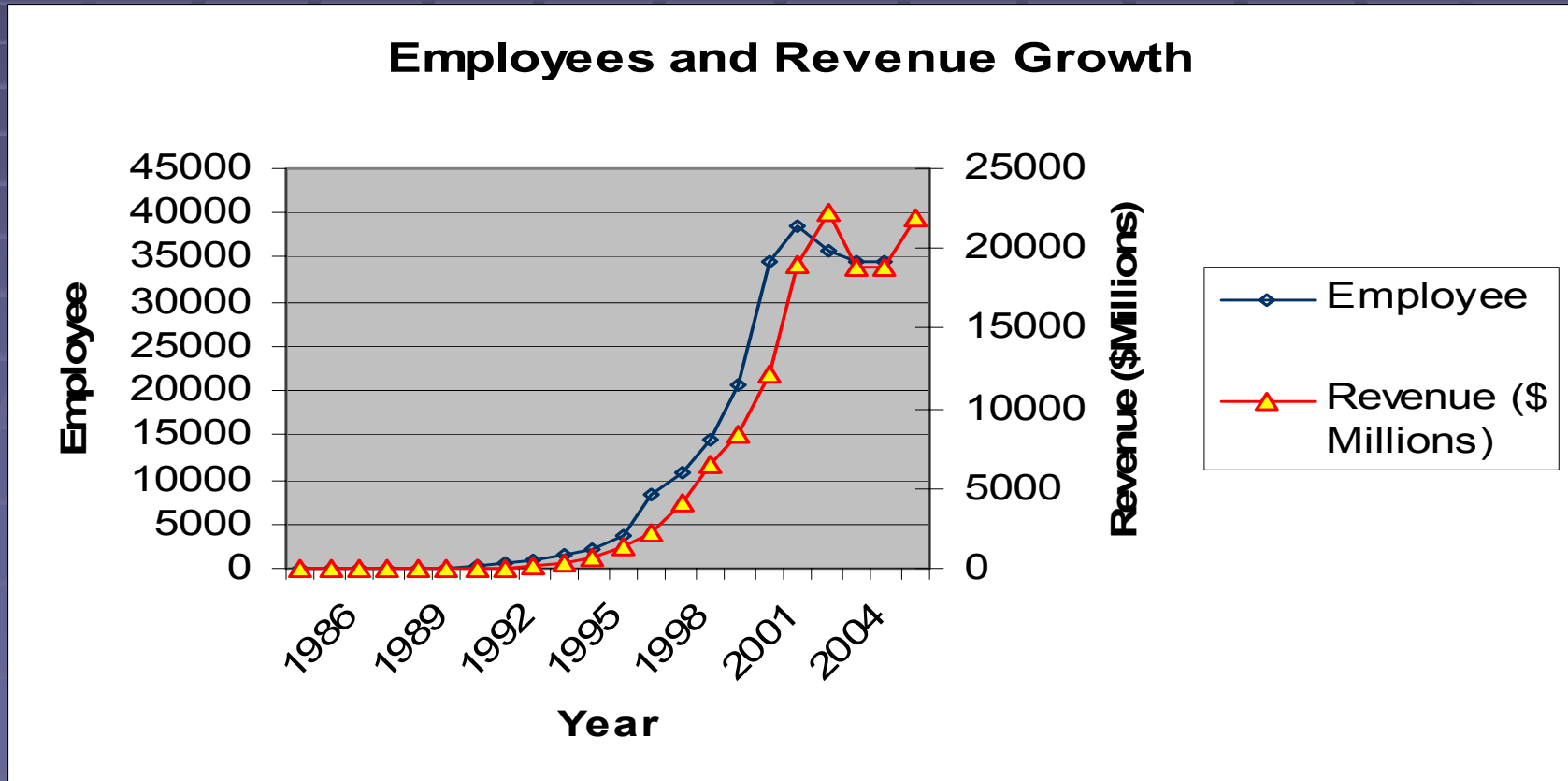
Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the

Cisco Web site at www.cisco.com/go/offices

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia
Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland
Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland
Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden
Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Firm Analysis: Cisco

Timeline (1984-2004)



Firm Analysis: Cisco

Market Segments

Enterprise

Large corporations
government agencies
educational institutions

Service Providers

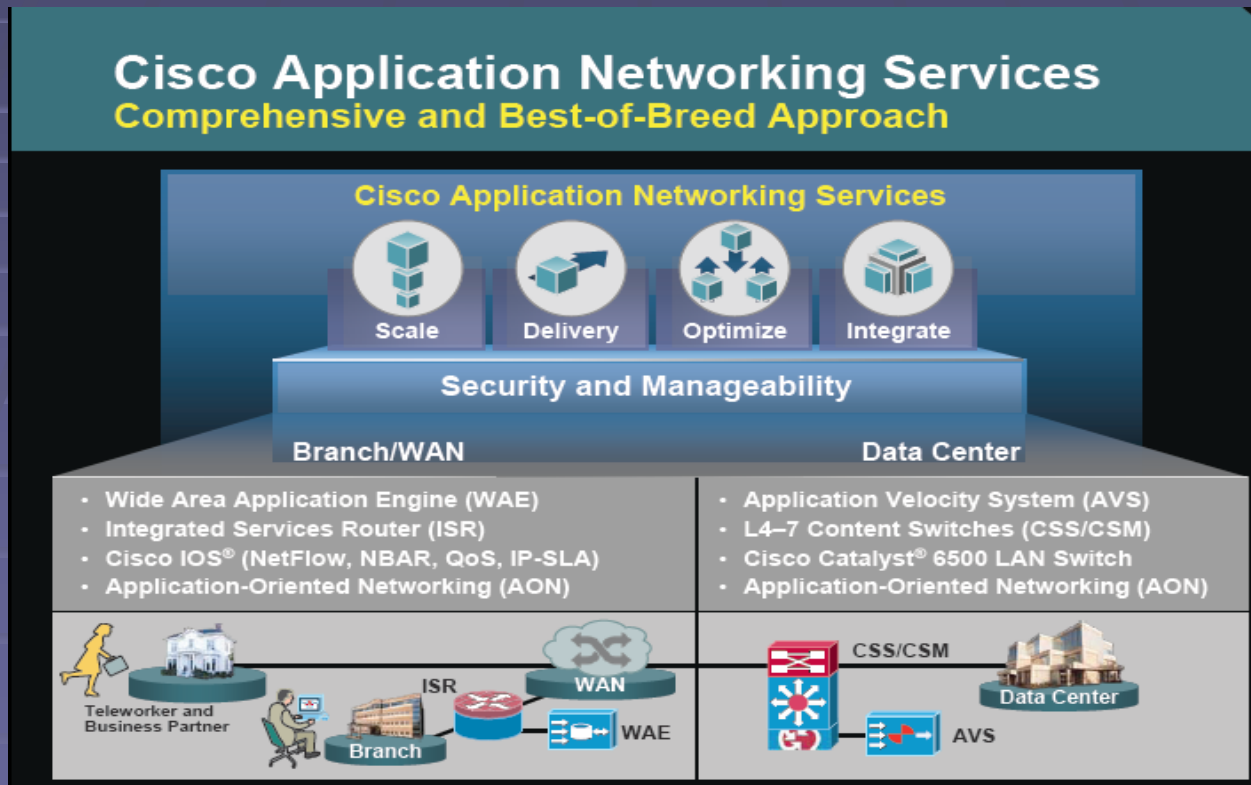
Telecom carriers
Cable companies
Wireless providers
Internet service providers

Commercial/Consumer

Small to midsize businesses
Residential users

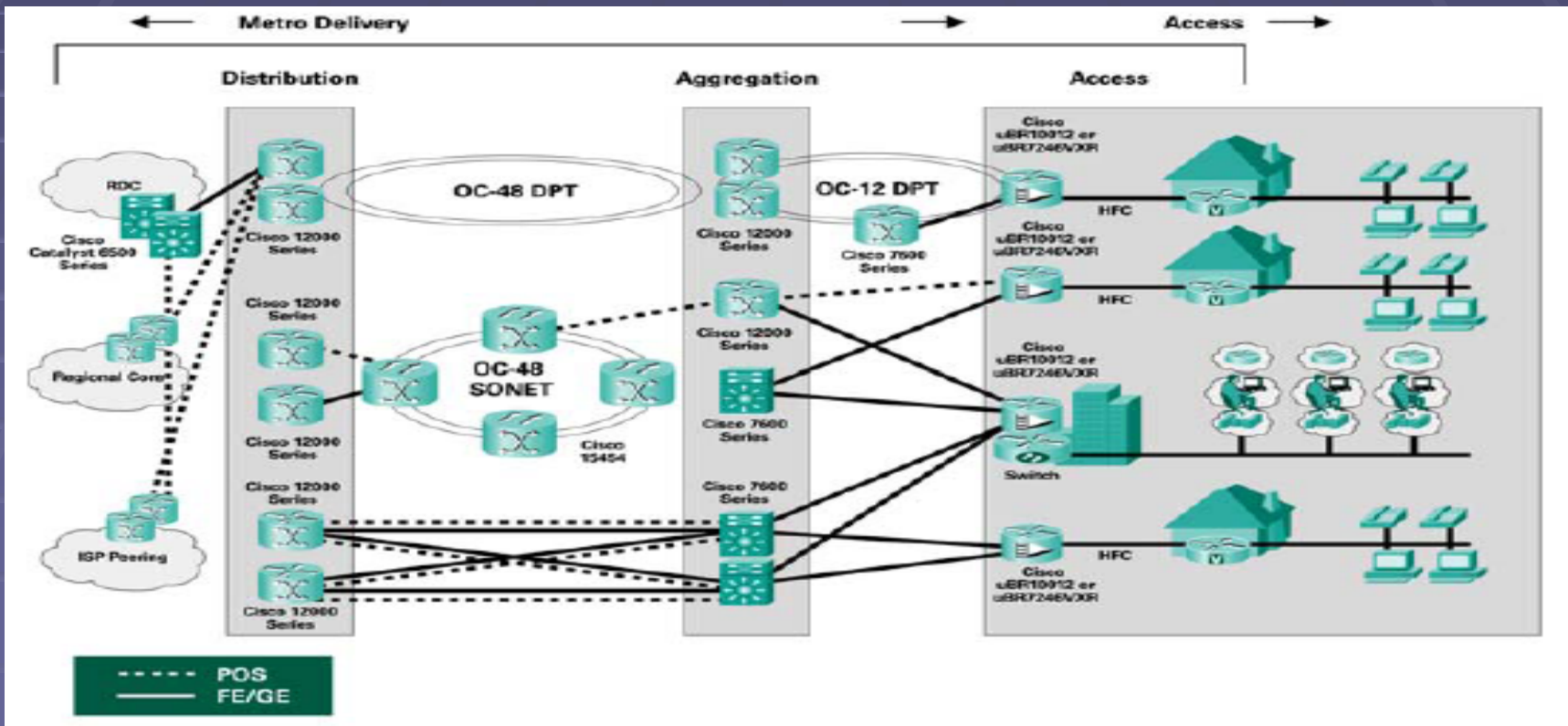
Firm Analysis: Cisco

Products: Application Network Services



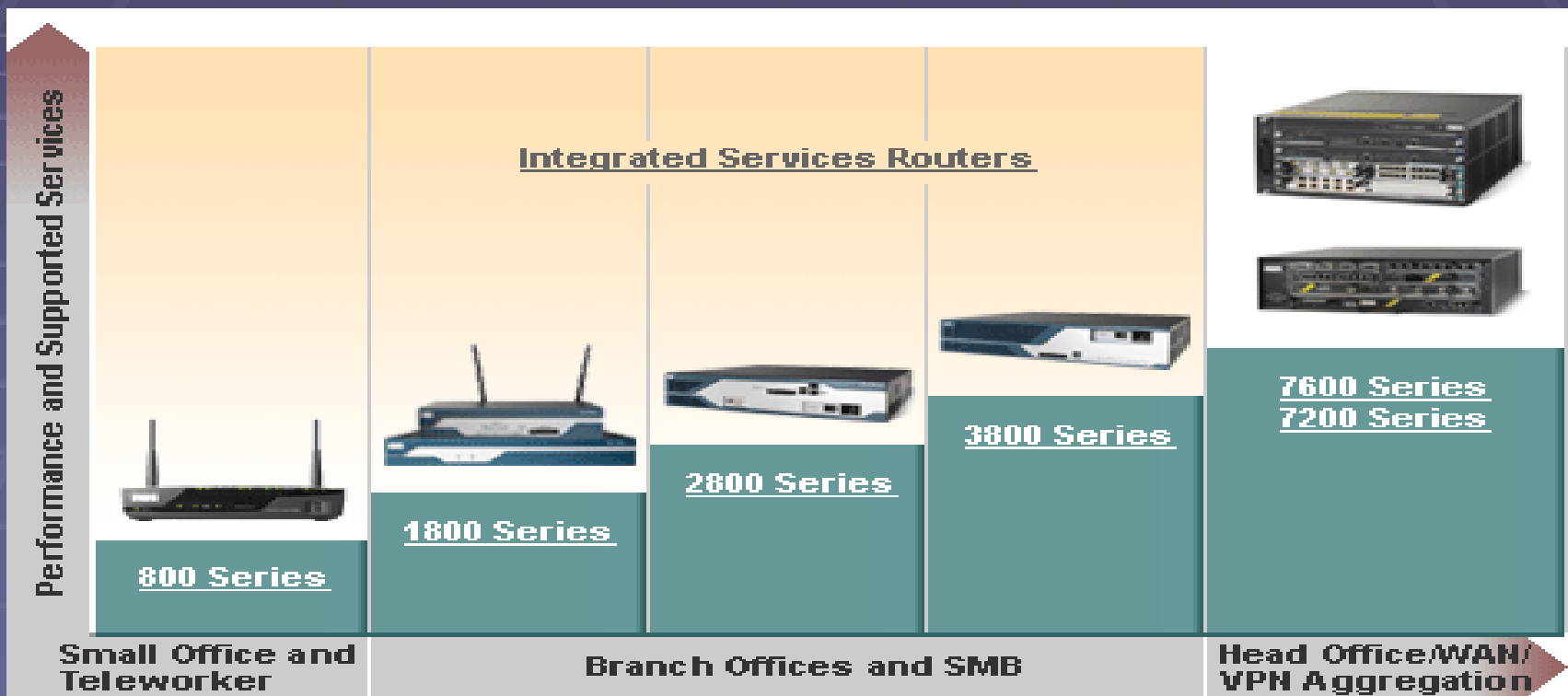
Firm Analysis: Cisco

Products: Multiservice Broadband Cable



Firm Analysis: Cisco

Products: Routers



Firm Analysis: Cisco

Products: Switches



Firm Analysis: Cisco

Other Products

- DSL and Long-Reach Ethernet
- Interfaces and Modules
- Interoperability Systems
- Network Management
- Optical Networking
- Security and VPN
- Server Networking and Virtualization
- Storage Networking
- Universal Gateways and Access Servers
- Video
- Voice and IP Communications
- Wireless

Firm Analysis: Cisco

Strategy

- Innovation
- Acquisitions
- Strategic Alliances

Firm Analysis: Cisco

Market Power

- Size

2005 Cisco Revenue: \$25.6 B

Industry Total Revenue: \$30.9 B

- Diversified customer base

Sell to telecom companies, internet providers, cable carriers, commercial businesses, and individuals

Firm Analysis: Cisco

Market Power

- Intellectual property
 - As of 2004: 825 patents filed, 447 patents issued
 - From 1984-2004, Cisco has acquired 98 companies along with their technologies.

Firm Analysis: Cisco

Production & Cost Issues

- Innovation
- Acquisitions
- Bringing Product to Market

Friedman's 10 Flatteners

- Fall of communism
- Internet browser (Netscape)
- Workflow software
- Open Source Software
- Outsourcing (Y2K)
- Offshoring
- Supply-chaining (Walmart)
- Insourcing (UPS)
- In-forming (Google, Yahoo, MSN)
- “Steroids”
 - Digital
 - Mobile
 - Personal

