

# **FUJITSU'S NETWORK BUSINESS**

**March 3, 2005**

**Chiaki Ito**

**Corporate Executive Vice President  
Fujitsu Limited**

# Outline of Today's Presentation

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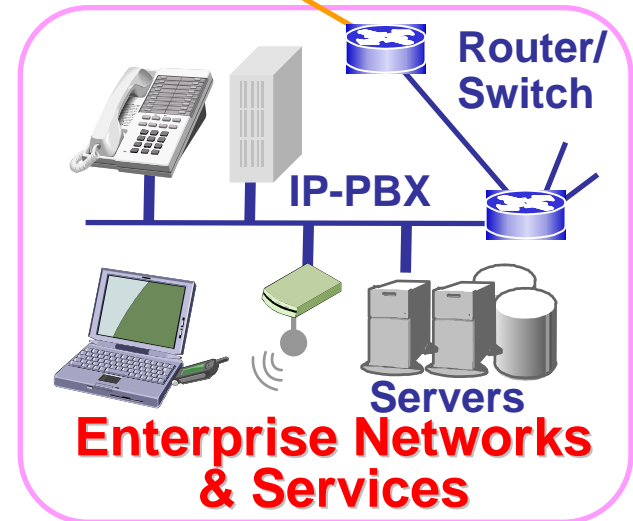
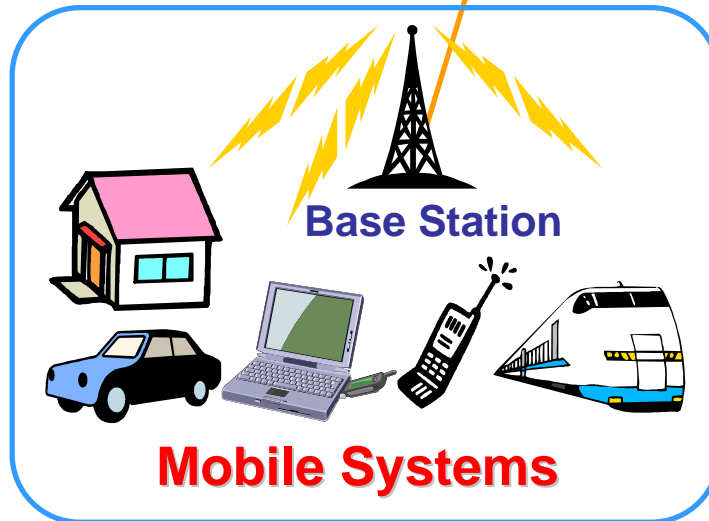
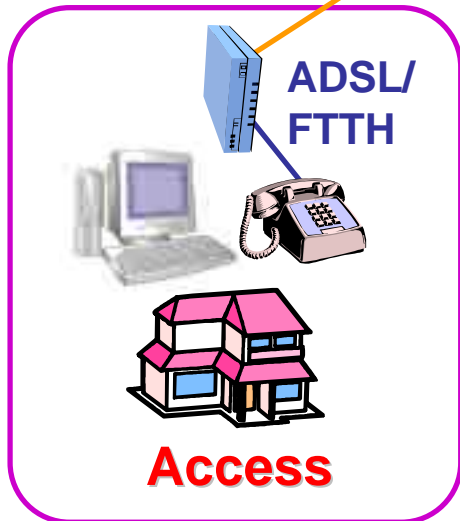
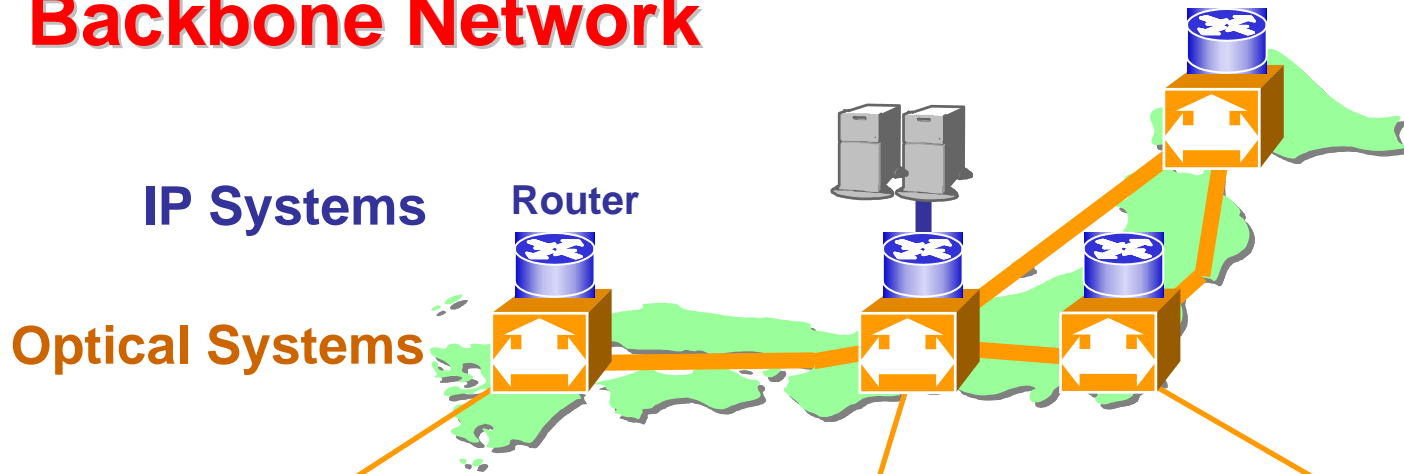
- 1. Current Status of Network Business**
- 2. Activities by Segment**
- 3. Quality, Manufacturing Innovation and Environmental Initiatives**
- 4. Conclusion**

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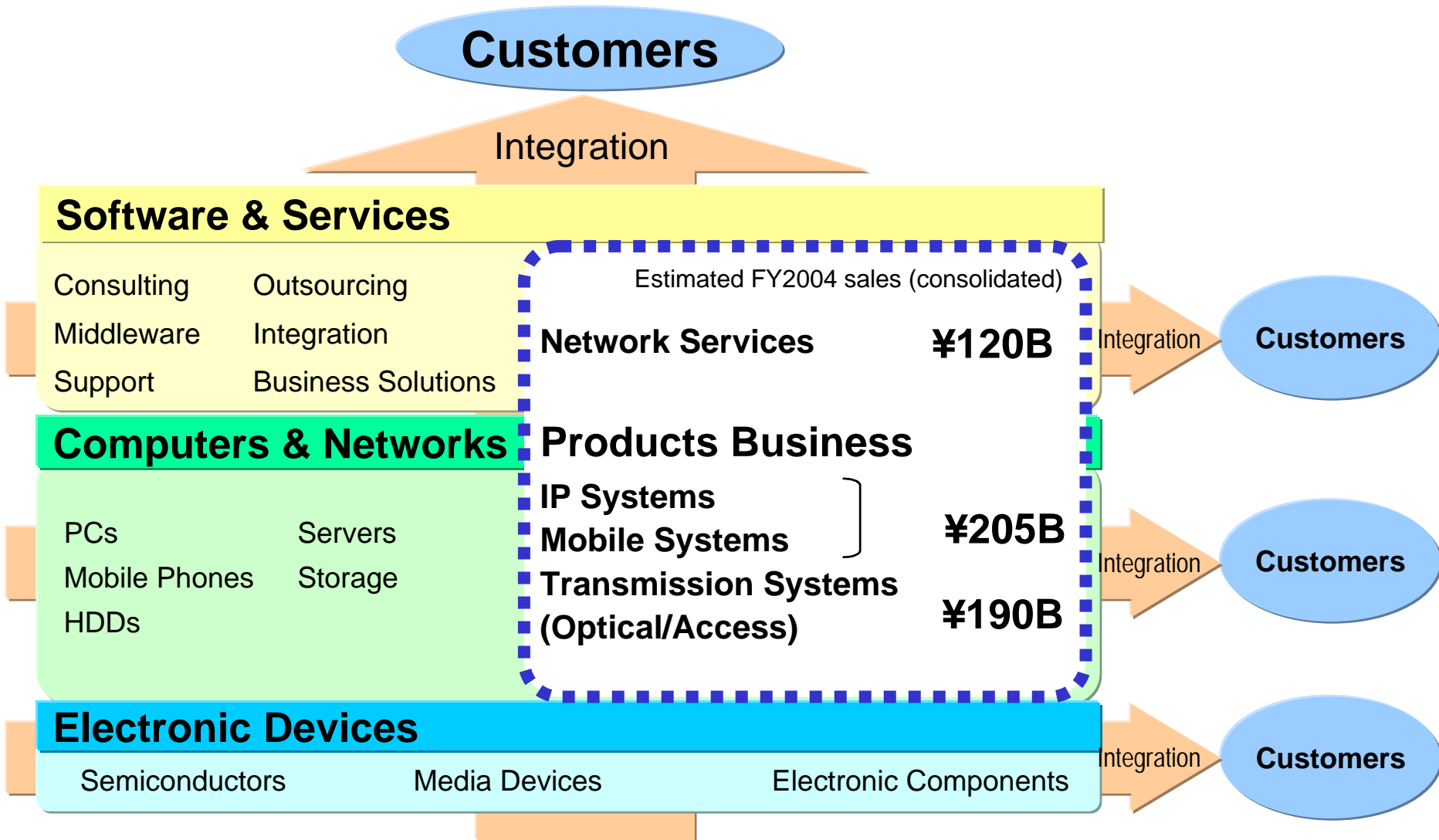
# **1. Current Status of Network Business**

# Networks

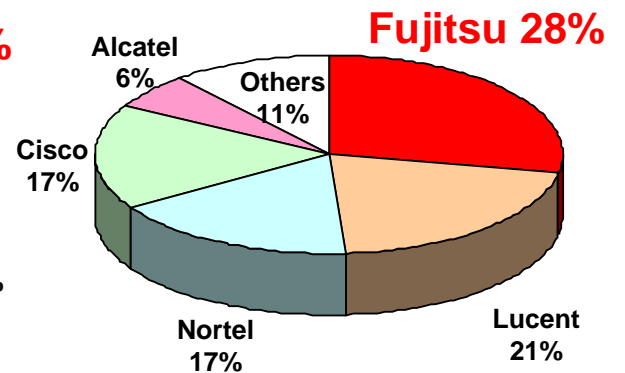
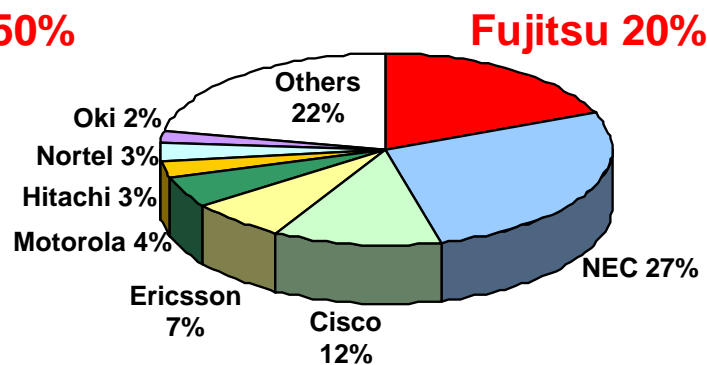
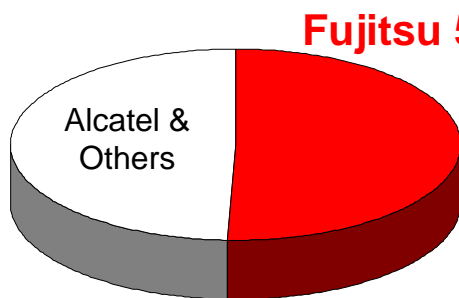
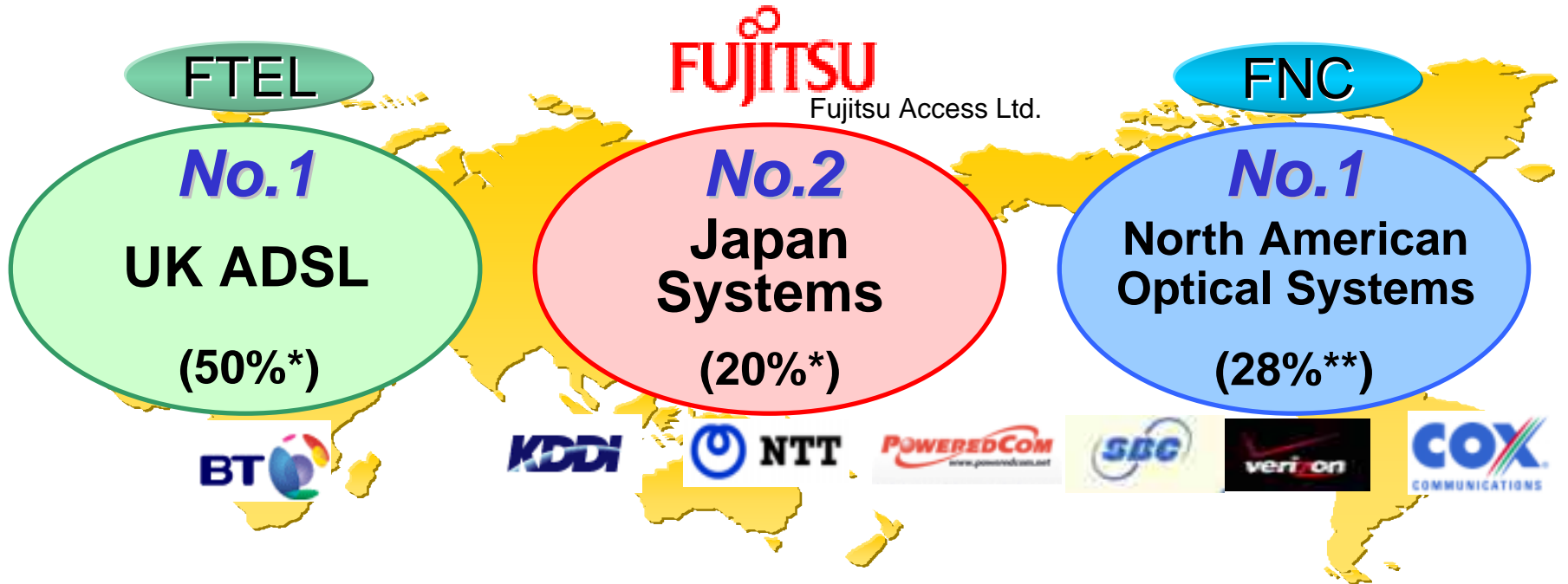
## Backbone Network



# Our Network-related Business



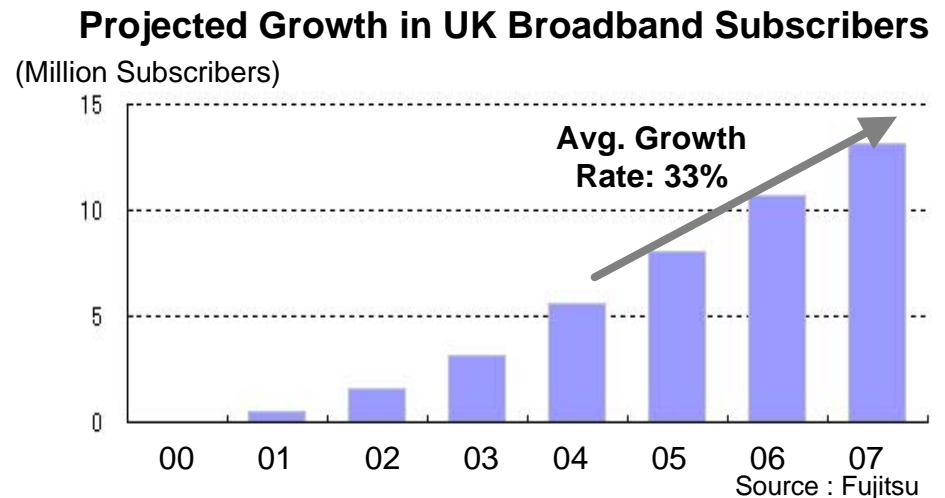
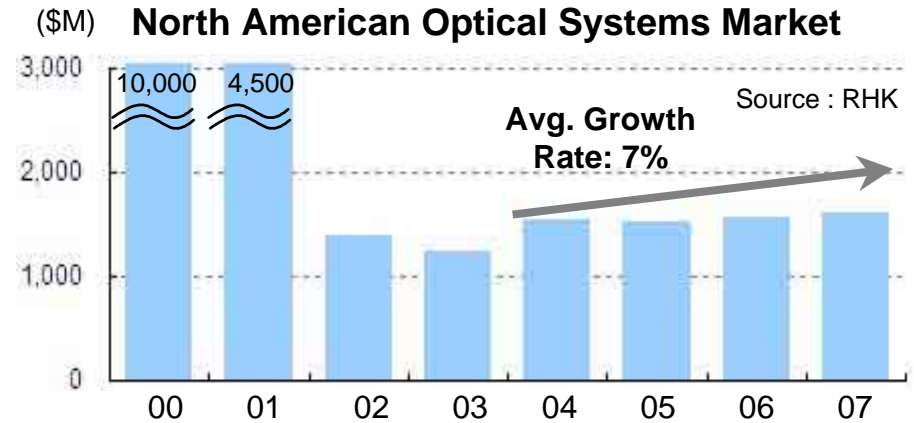
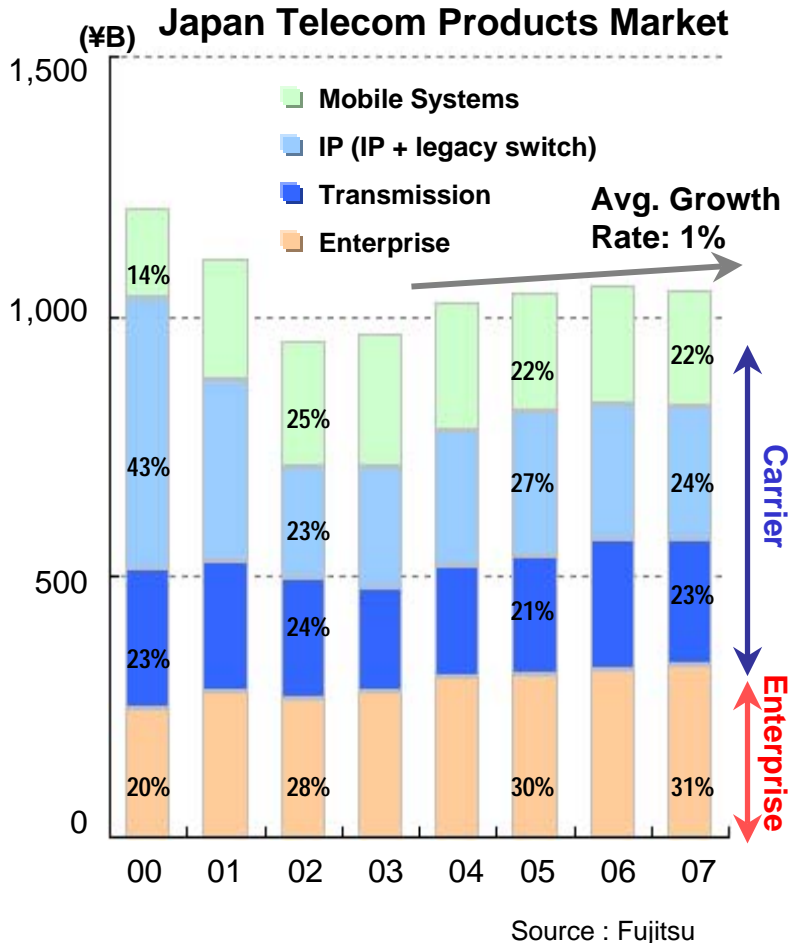
# Carrier Products Business



\* Source: Fujitsu \*\* Source: RHK (Results from 4Q03-3Q04)

# Market Trends (Products)

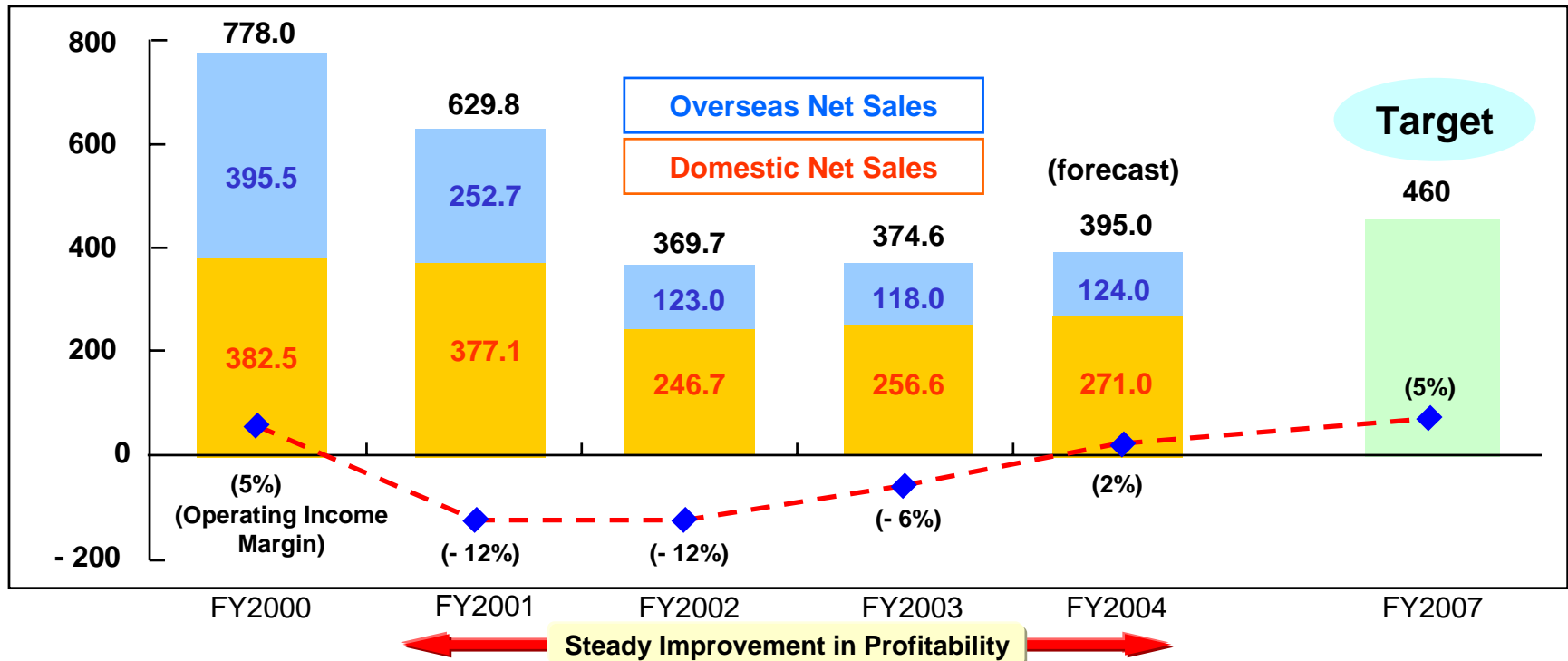
- Japan market bottomed out in 2002, growing slightly; investment shifting to optical, IP
- 7% CAGR in N. America optical market since the collapse of telecom bubble
- Strong growth in UK broadband (ADSL, cable, FTTx) subscribers



# Change in Our Products Business Results

## Forecast Return to Profitability in FY 2004

(¥B)



### Business Recovery Measures

#### 1) Streamlined operations per reduced business scale

- Rationalized R&D and manufacturing in Japan
- Reduced headcount overseas (FNC in US and FTEL in UK)
- Exited PBX business in North America










#### 2) Business Focus

- Focus on optical, IP and 3G mobile
- Consolidate access business at specialized affiliate
- Joint development with Alcatel and Cisco






# Business Outlook

## Operating Income Trends by Segment

Segment	FY03	FY04	FY05	Future Direction
Transmission Systems (Optical / Access)				Shift to optical / broadband
Mobile Systems				Increase in 3G customers in Japan and abroad
IP Systems				Expansion of router capacity

## Reference

Network Services	 →  → 	Move to High Value-Added Services
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Good



Difficult



Operating loss

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## **2. Activities by Segment**

**2.1 Optical Systems**

**2.2 Access Systems**

**2.3 Mobile Systems**

**2.4 IP Systems**

**2.5 Enterprise Networks & Services**

# Investment Trends

## **Optical, Access, IP Systems: Focus on shift to optical and IP**

- **NTT: ¥5 trillion over 6 years (through 2010; focus on optical access, IP)**
- **KDDI: World-leading IP telephone network, ¥40–60 billion (through 2008)**
- **BT: 21<sup>st</sup> Century Network (IP telephone network), ¥400 billion/year**
- **Verizon, etc.: FTTP\* (100Mb/s) to compete with cable TV**

\*FTTP: Fiber to the Premises

## **Mobile Systems: Focus on 3G and higher speed**

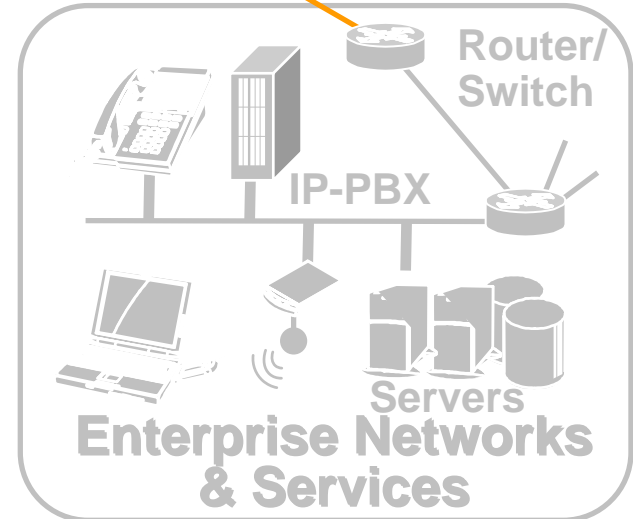
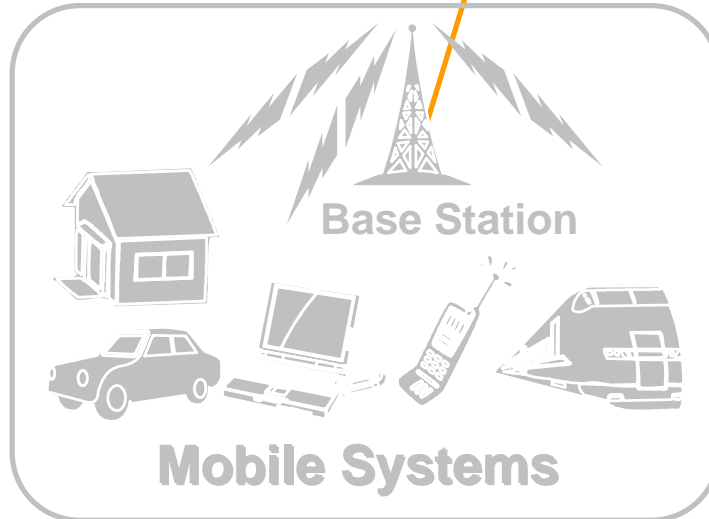
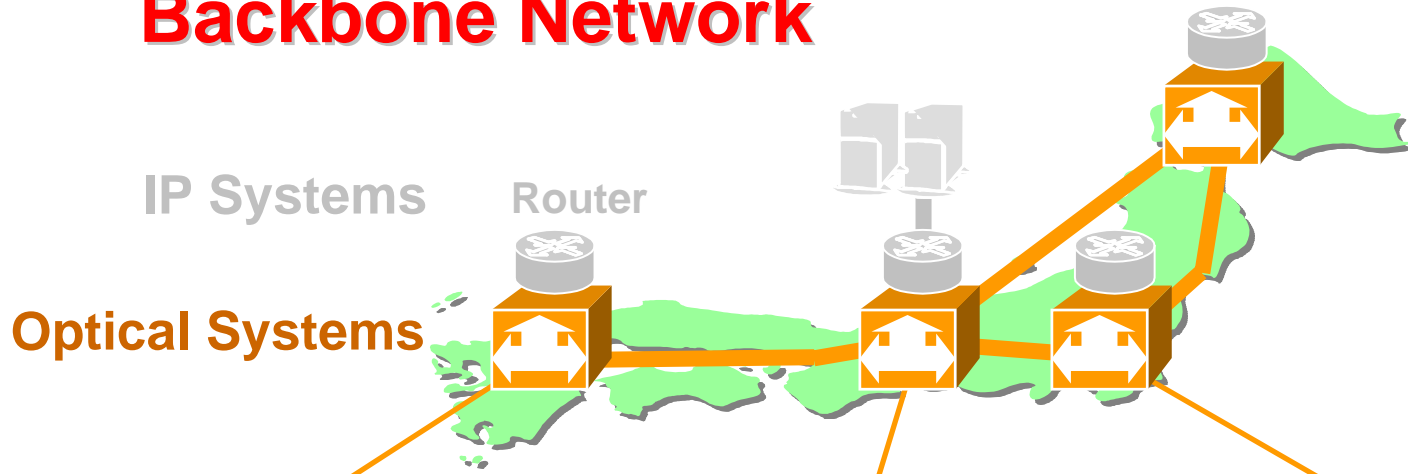
- **NTT DoCoMo: Higher speed, IP, enterprise network interconnectivity, super 3G, 4G**
- **eAccess: Ultra–high-speed fixed/mobile seamless services, ¥300 billion**
- **Overseas: Europe picking up; China beginning investment**

## **Enterprise Networks: Increase competitiveness, reduce TCO, speed up operations, security**

- **Interoperable IP telephony and business systems (IP/IT convergence), security**
- **Outsourcing (Mobile Centrex, etc.)**

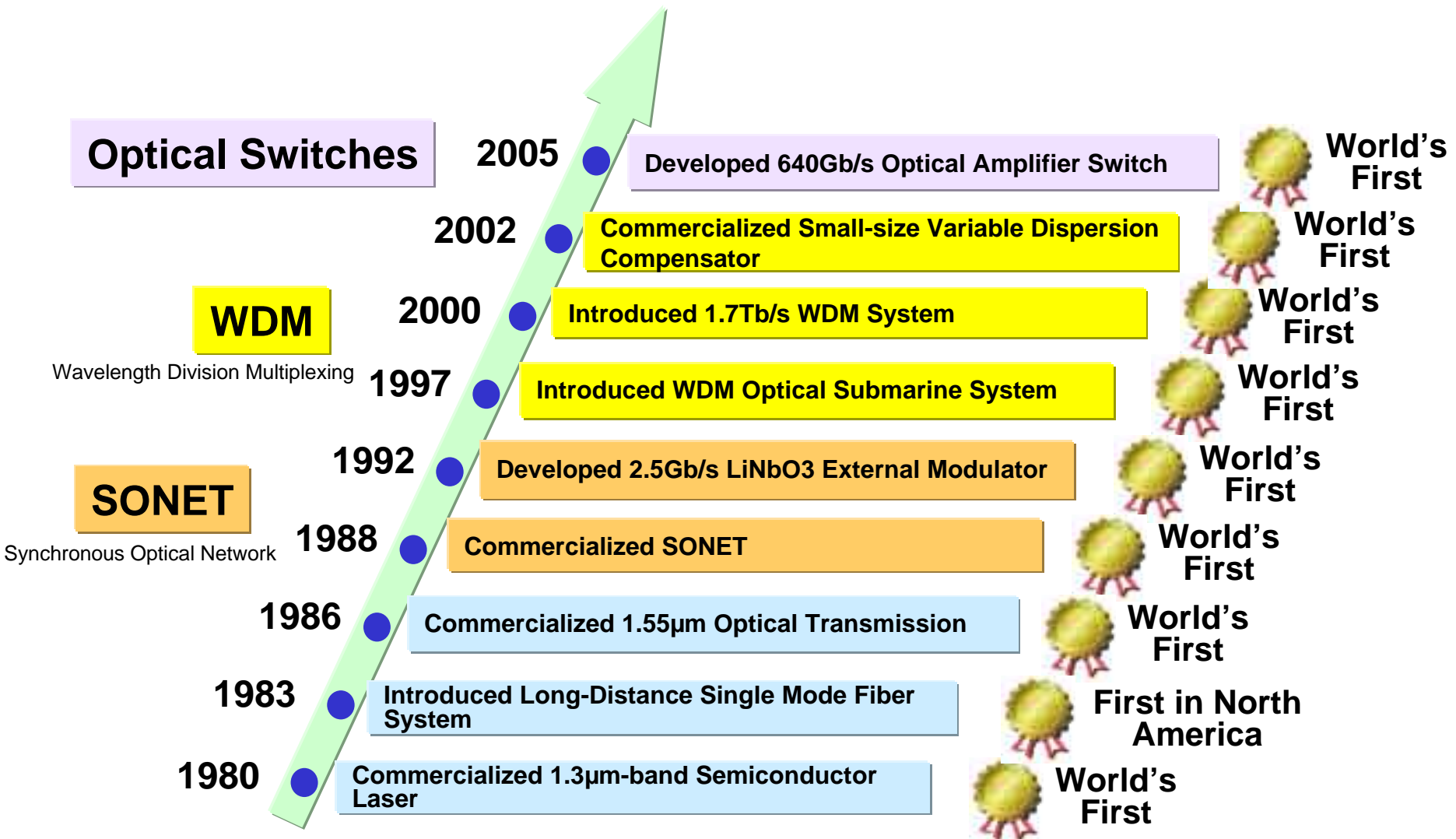
# 2.1 Optical Systems

## Backbone Network



# Fujitsu's Optical Technology

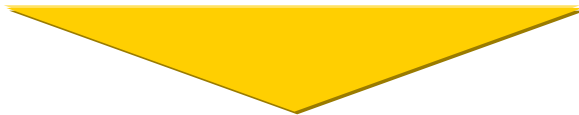
## World Leader in Cutting-Edge Technology



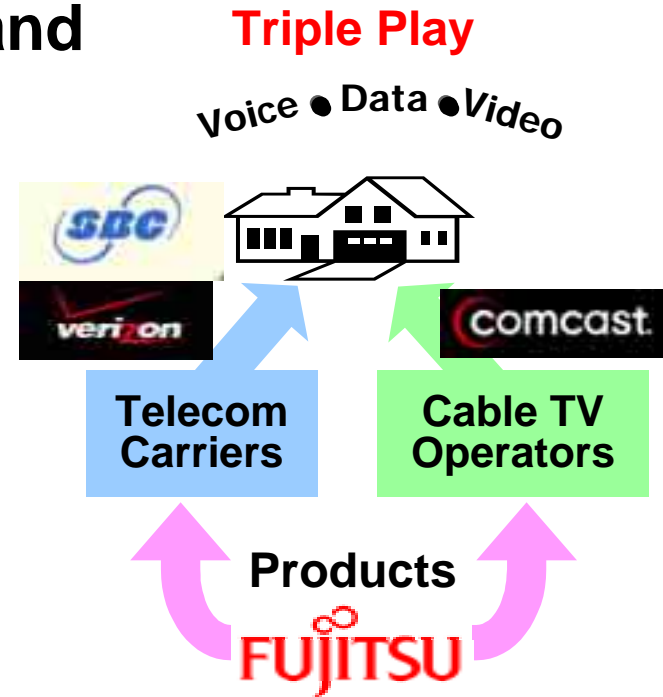
# North American Market

- Solid growth in optical system demand based on shift to broadband and “Triple Play” capability

7% CAGR (2003: \$1.2B → 2007: \$1.6B)



- Telecom Carriers: Leverage track record to steadily expand business
- Cable TV Operators: Win new customers by offering leading-edge products



## SBC Communications Inc.

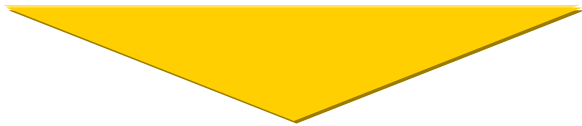
*"We succeed because strategic partners like Fujitsu consistently go above and beyond in meeting our needs."*



Further increase market share (2004: 28% → 2007: Exceed 30%), Build on No.1 Position

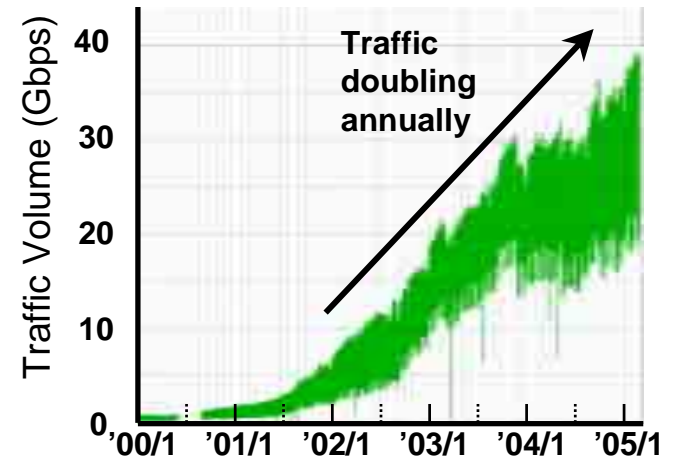
# Japan Market

- Continuous growth in traffic due to access shift to broadband
- Increase backbone capacity to eliminate bottlenecks



- Provide optical systems that deliver multi-functionality and higher capacity
  - World-leading optical technology
  - Common platforms for US and Japan

Change in traffic among providers



Source: JPIX Website  
JPIX: Japan Internet Exchange



[FLASHWAVE]

# UK Market

## ■ Received ISPA's Best Hardware Award

- Performance, installation support, support quality

ISPA: Internet Service Providers' Association



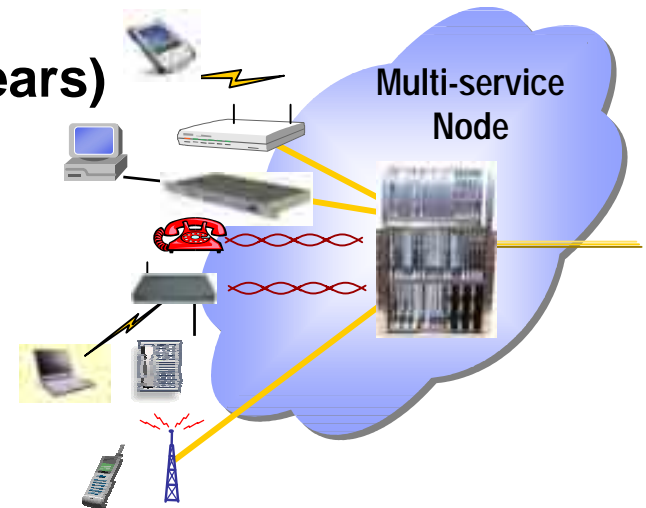
## ■ Experience with BT

- Top share in ADSL
- Network upgrade orders (¥25B over 3 years)



**BT's 21<sup>st</sup> Century Network Plan**  
Upgrade to All-IP network by 2008

## ■ Leverage position as BT's strategic partner to expand business



**Estimated investment in multi-service nodes:  
¥50 ~ 100B per year**

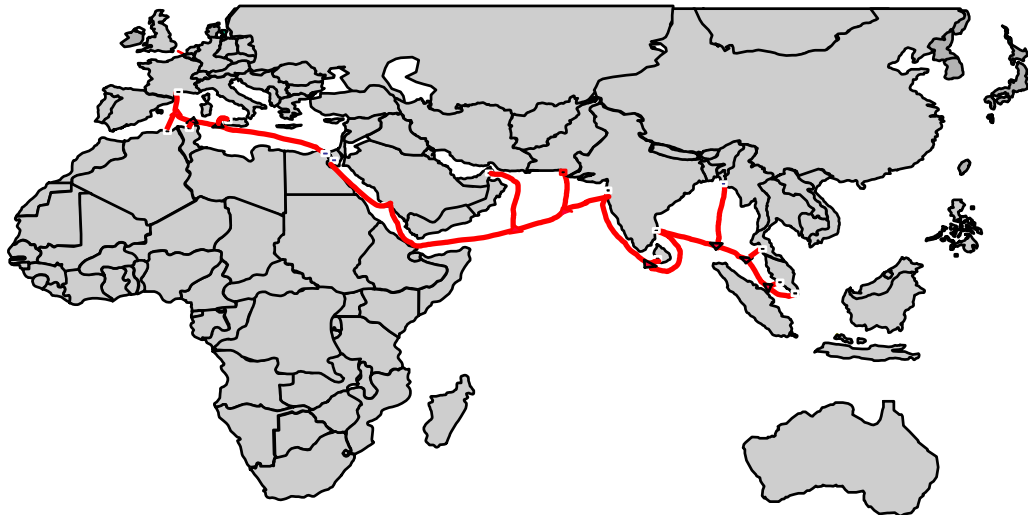


# Submarine Optical Network Business

- Major series of submarine cable systems deployed; shifting to submarine line terminal expansion
- Capacity-expansion projects in response to traffic increases (received orders to expand FEA and SEA-ME-WE)



- Continuing business applying leading-edge WDM technology



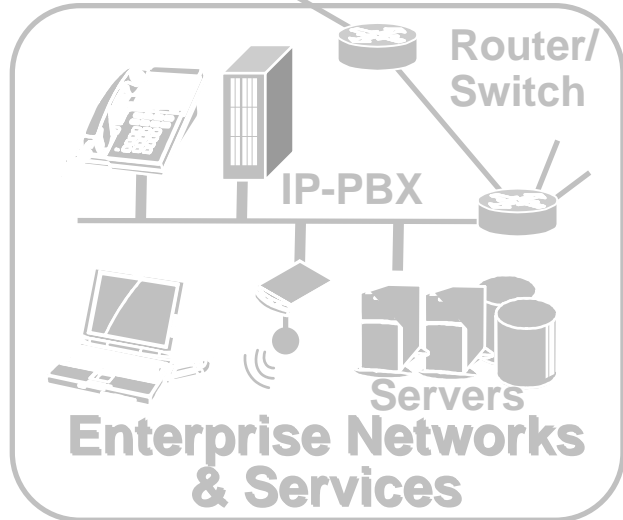
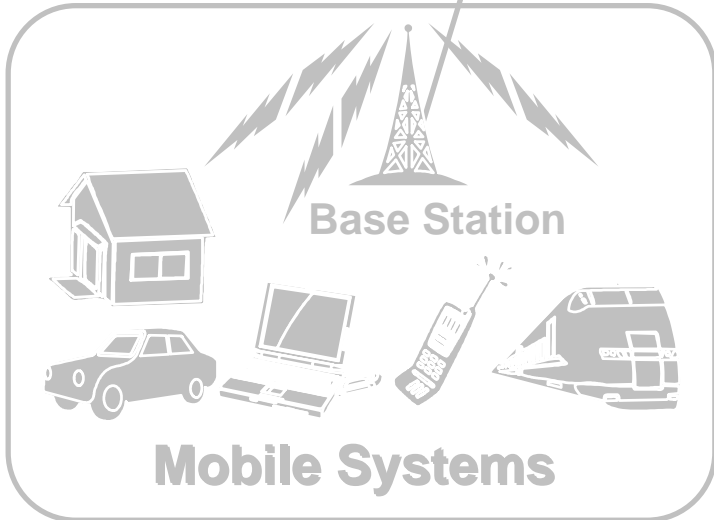
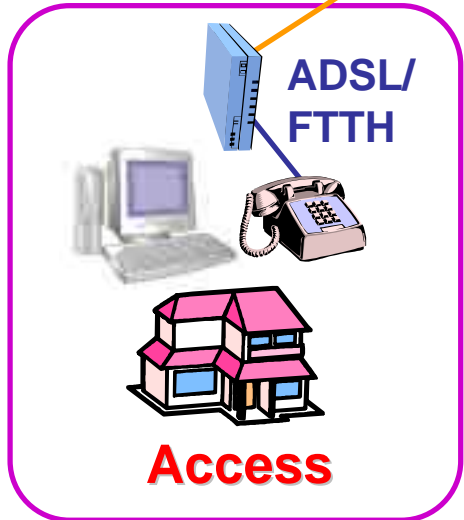
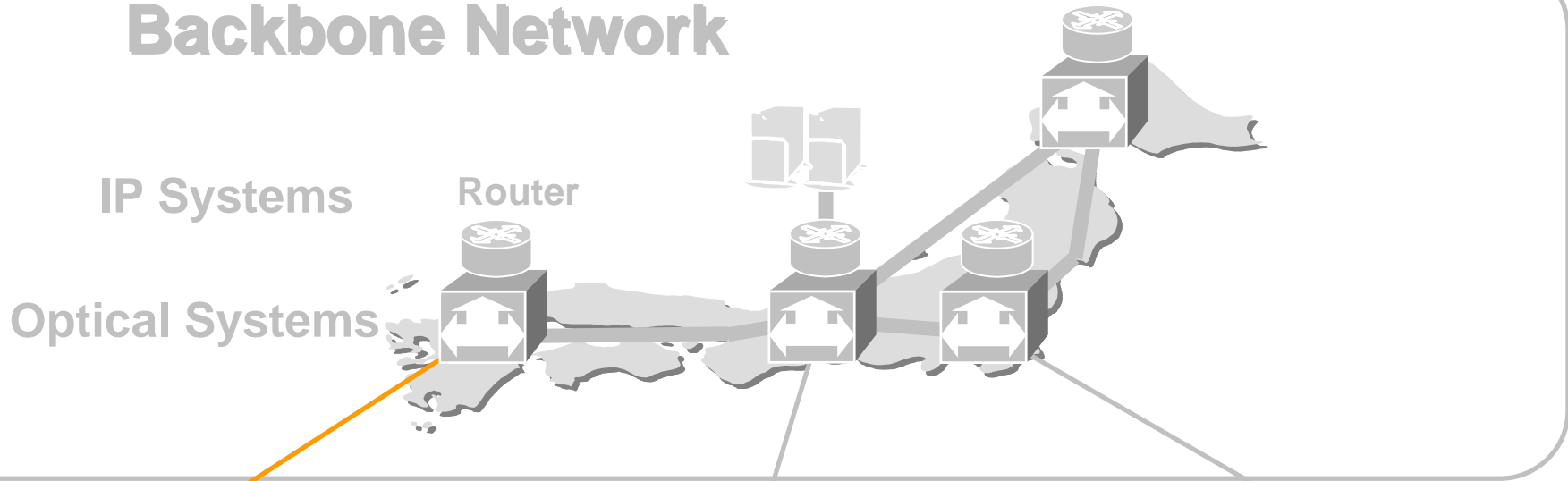
**SEA-ME-WE Project**



**Submarine Line Terminal**

# 2.2 Access Systems

## Backbone Network

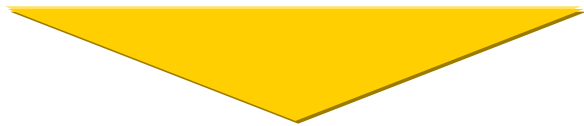


# Japan Access Market

## Japan as Broadband Leader: Shift from ADSL to Optical Access

### ■ Focusing investment on optical access

- NTT: 30 million optical subscribers by 2010
- KDDI: “Hikari Plus” nationwide roll-out
- TEPCO: Expanding “TEPCO Hikari” service

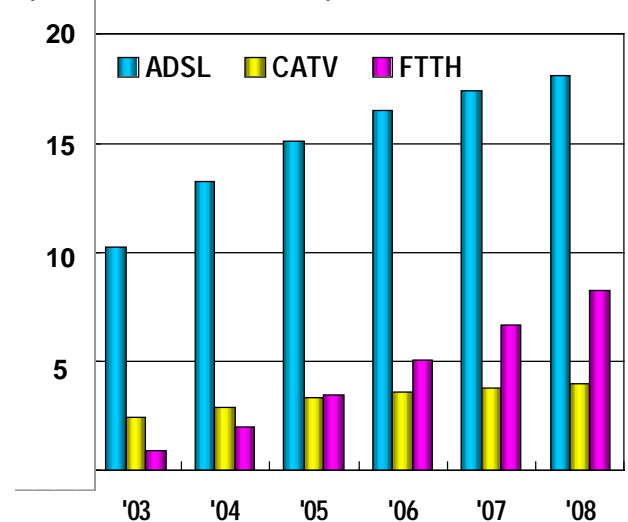


### ■ Business expansion at Fujitsu Access

- Boost speed and lower cost through dedicated business structure
- Utilize carrier-grade know-how developed as supplier of NTT’s optical backbone infrastructure
- GE-PON, ADSL equipment (DSLAMs, modems), Home Gateways

GE-PON: Gigabit Ethernet – Passive Optical Network  
DSLAM: Digital Subscriber Line Access Multiplexer

Changes in Broadband  
Subscribers in Japan  
(millions of subscribers)



Source: IDC Japan, Nov. 2004  
Japan Broadband Services: 2003 Review  
and 2004 – 2008 Forecast (J42108)  
REPRODUCTION PROHIBITED

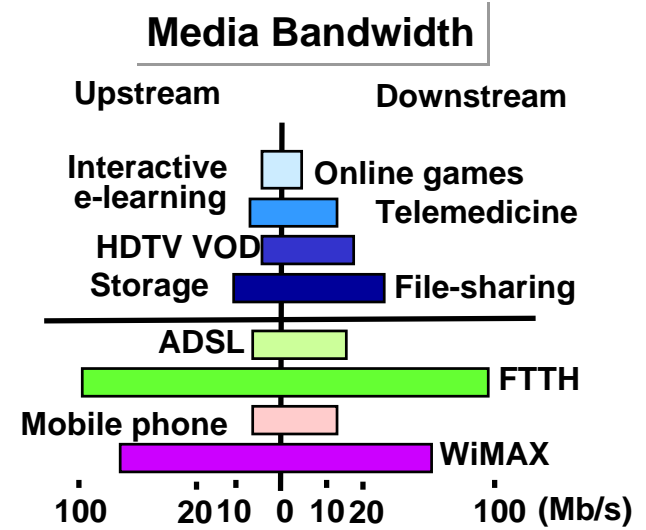
# New Access Technology Initiatives

## Access Technology for Hot Wireless Market

### ■ WiMAX: High speed, long distance, mobility

- Complements ADSL, high-speed mobile packet service

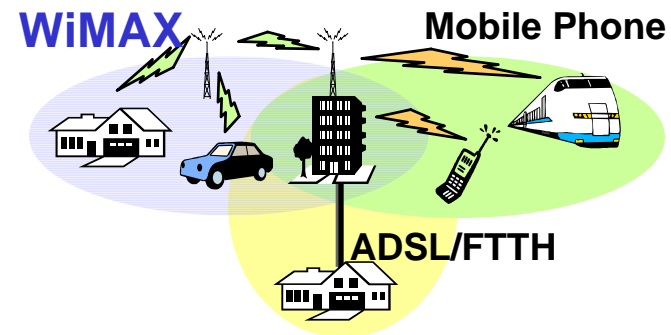
Technology		Speed (mbps)	Range (Km)
Fixed	ADSL	50	5
	FTTH	100	20
Wireless	Mobile phone	10	5
	WiMAX	70	50



### ■ Leverage future technologies to grow business

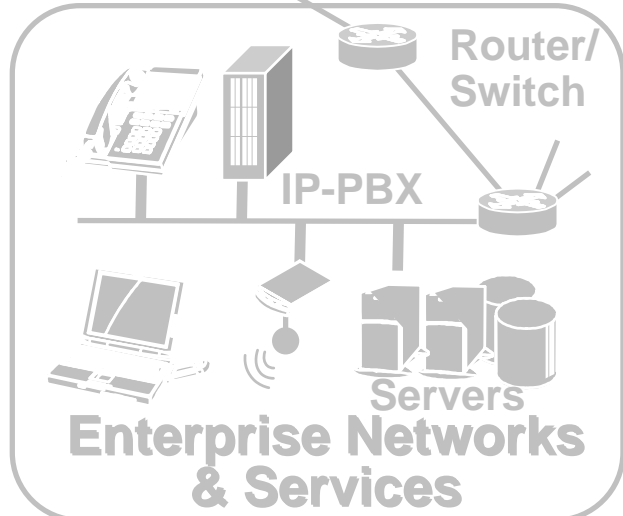
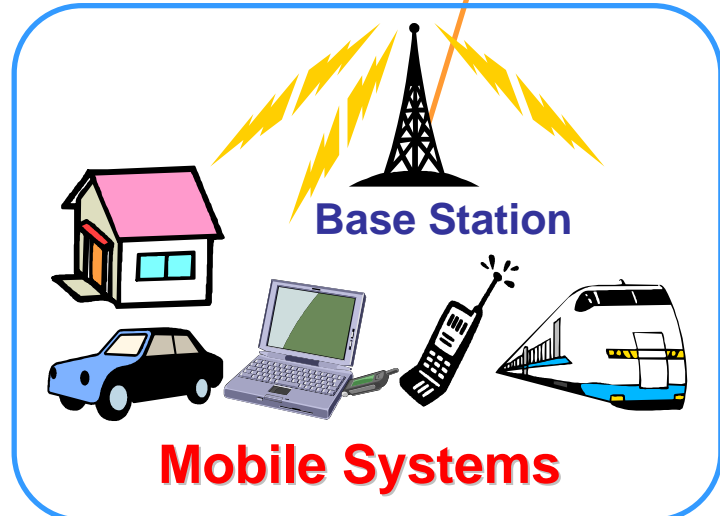
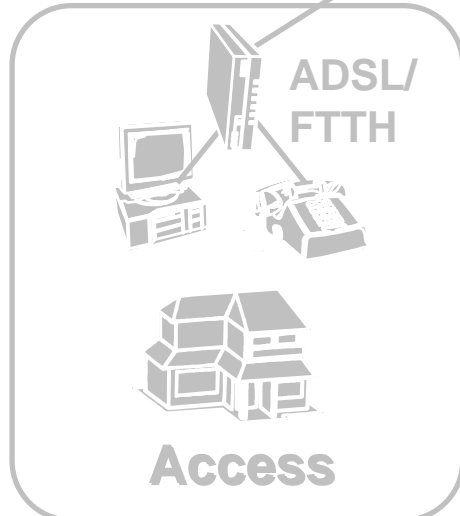
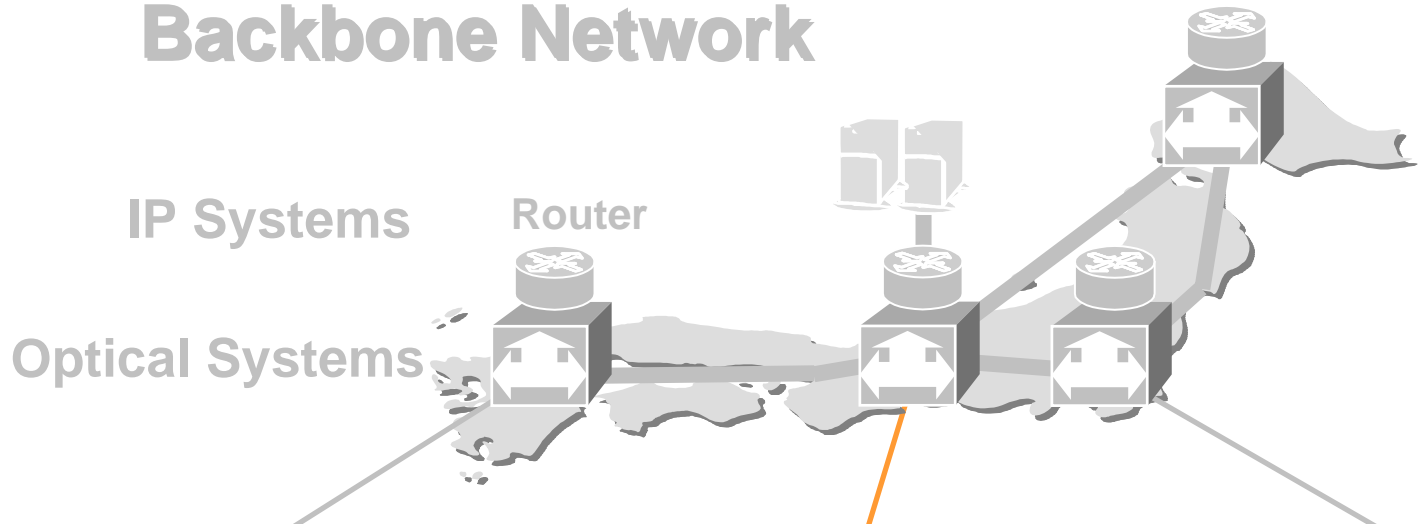
- WiMAX chip, wireless multiplexing technology, high-efficiency amplifiers
- Considering trials with Japanese and overseas carriers

### WiMAX Application Model



# 2.3 Mobile Systems

## Backbone Network



# W-CDMA (3G) Infrastructure in Japan

## ■ Continuing strong equipment investment: ¥300 billion/year

- Subscriber growth, expansion of high-speed packet service
- Next-generation system: Super 3G/4G



## ■ Maintain and strengthen position in NTT DoCoMo market

- World's most efficient amplifier
- Utilize high-reliability server technology

## ■ Trials with eAccess

- Participate in trials aiming for FY2006 commercial introduction



Base Station for  
NTT DoCoMo

Transmission amplifier  
energy efficiency



Higher capacity  
(2X higher than competitors)

# Overseas Market Strategy

## ■ Accelerating W-CDMA investment (2005)

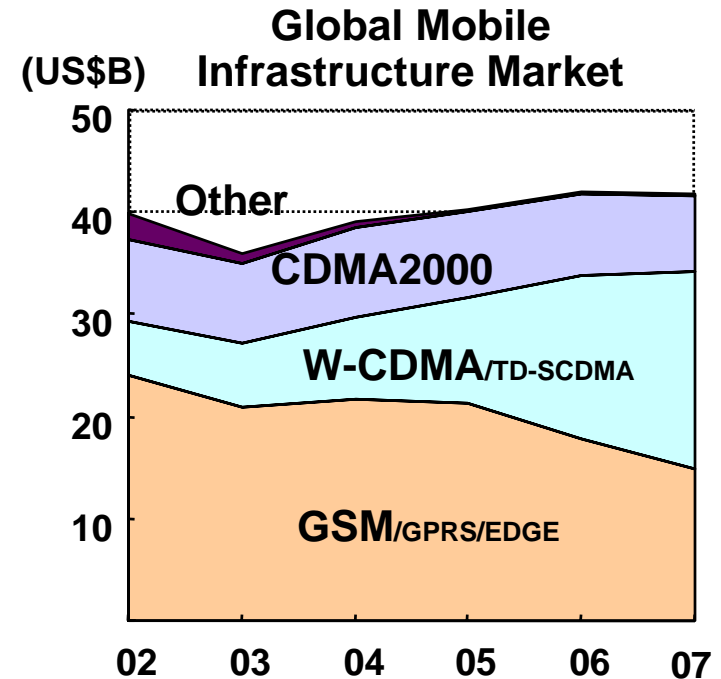
- Europe: Begin full-scale service
- China: Expect licensing to begin this year



## ■ Collaboration with Alcatel

- Evolium: JV in R&D (established 2000)  
Hybrid base station (WCDMA/GSM (2G)),  
low cost, scalable
- Deployed by 24 carriers (including Orange)  
in 20 countries

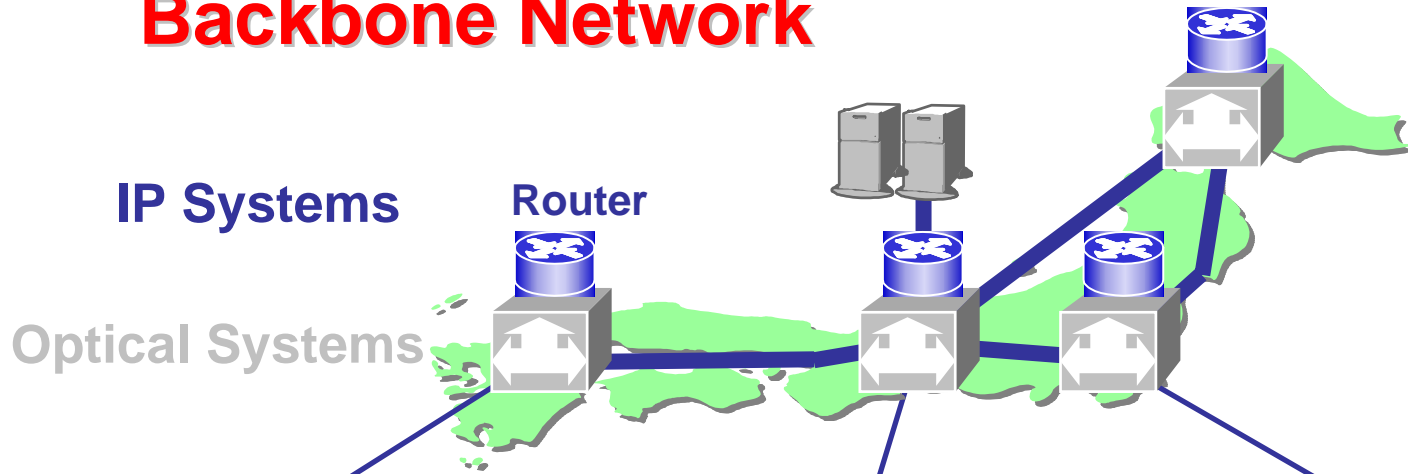
**Targeting 15% share of W-CDMA market in 2007  
(Fujitsu and Alcatel)**



Source: Gartner Dataquest  
Sep. 2004 GJ05064

# 2.4 IP Systems

## Backbone Network

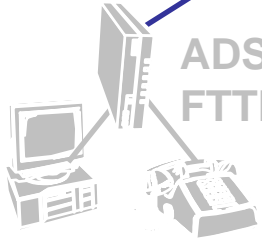


IP Systems

Optical Systems

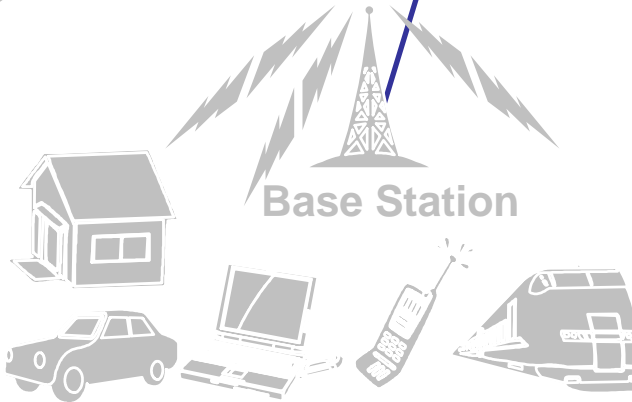
Router

ADSL/  
FTTH



Access

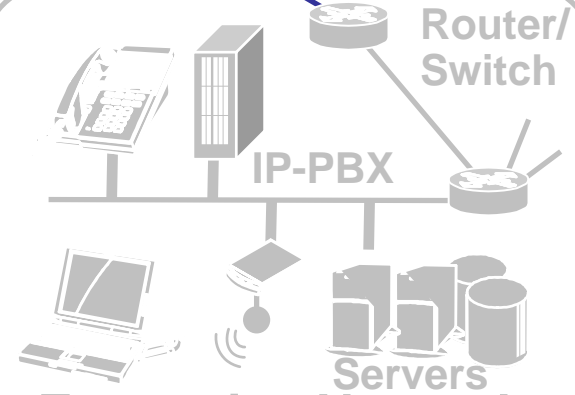
Base Station



Mobile Systems

Router/  
Switch

IP-PBX



Enterprise Networks  
& Services



# Current Status of IP Systems

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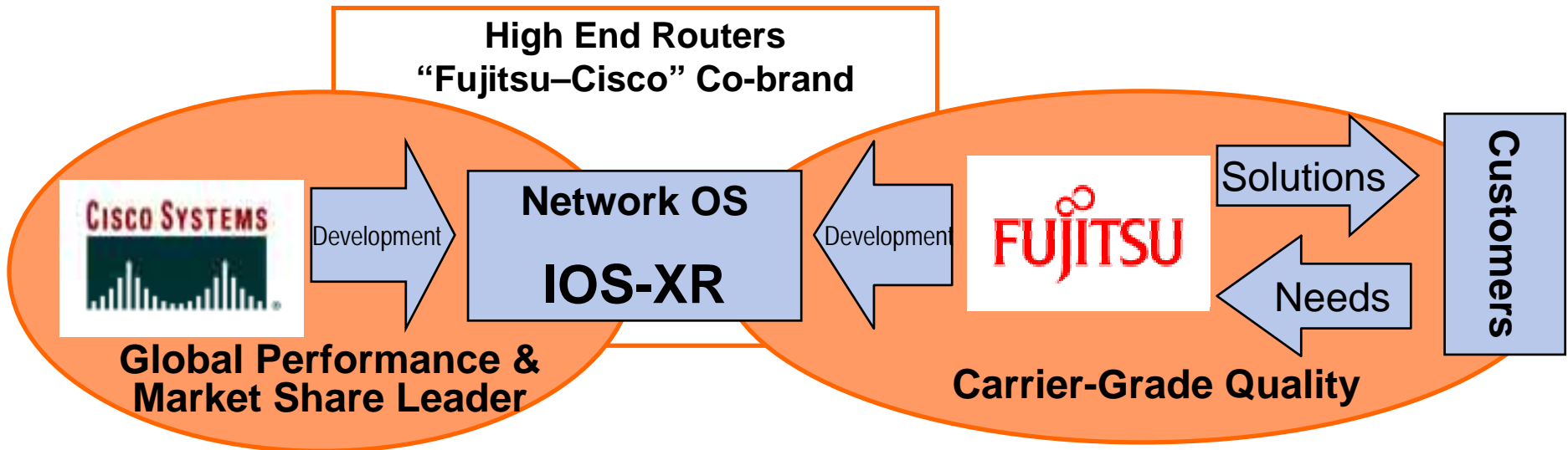
- **Carrier networks shifting to IP and broadband, creating increased demand for highly reliable carrier-grade routers**
- **Offering higher value-added subscriber services is essential for boosting competitiveness**
  - **Fixed and mobile convergence**
  - **Mobile Centrex and one-number service**

# Carrier-grade High-end Router Offerings

## ■ Joint development of high-end routers with Cisco

- Achieve carrier-grade quality through joint development of OS (IOS-XR)
- Offer Fujitsu-Cisco co-branded products

World's  
First



### World-leading Broadband Capability

(IP Quality Monitoring, IPv6 Multicast, Online Software Update)

## ■ Alliance helps complete our lineup of routers and switches

# IP Enables Sophisticated Services

## Advancing Software Development for Fixed and Mobile Convergence

FY2005

FY2006

FY2007 and beyond

Fixed and Mobile Convergence  
Seamless fixed/mobile services

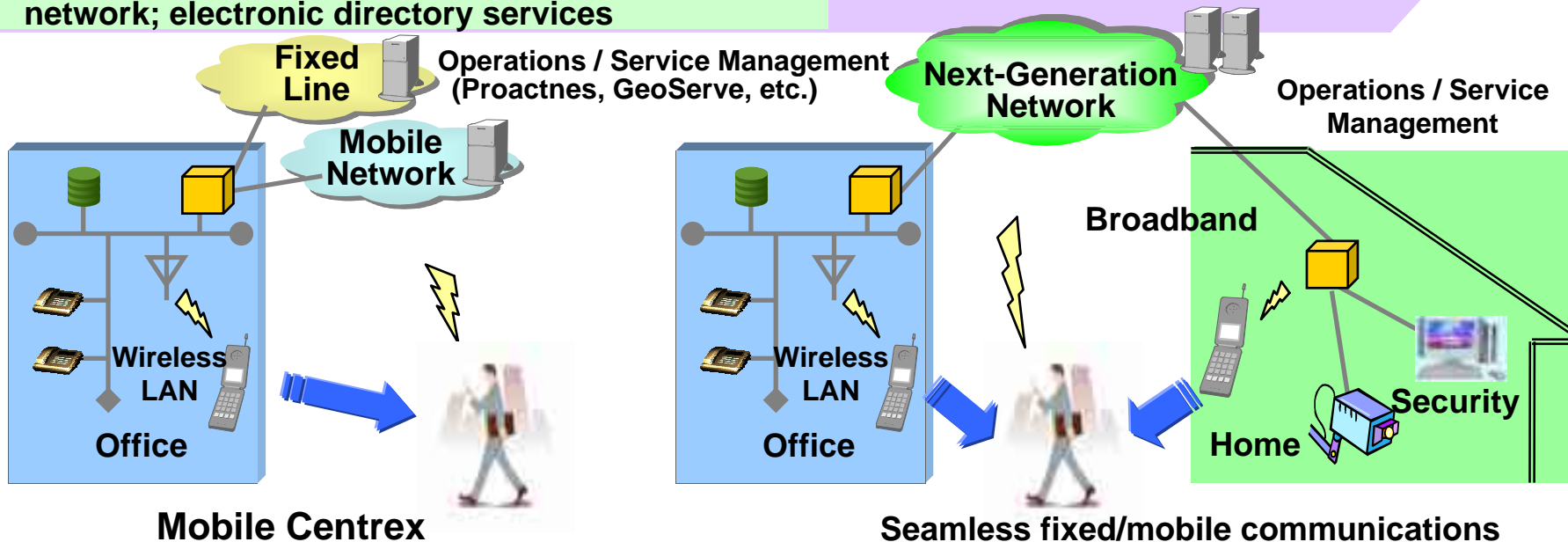
3G Packet Services (reduce infrastructure costs)

Systems for One-Number Service

Subscriber location management, video phone, media conversion

Mobile Centrex

Automatic selection of wireless LAN or mobile network; electronic directory services

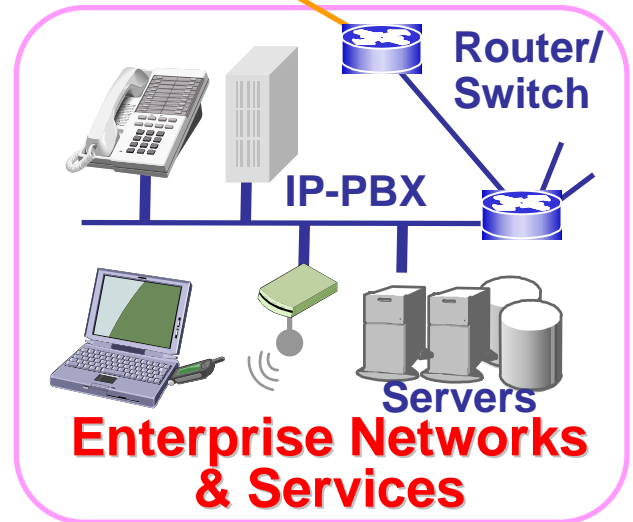
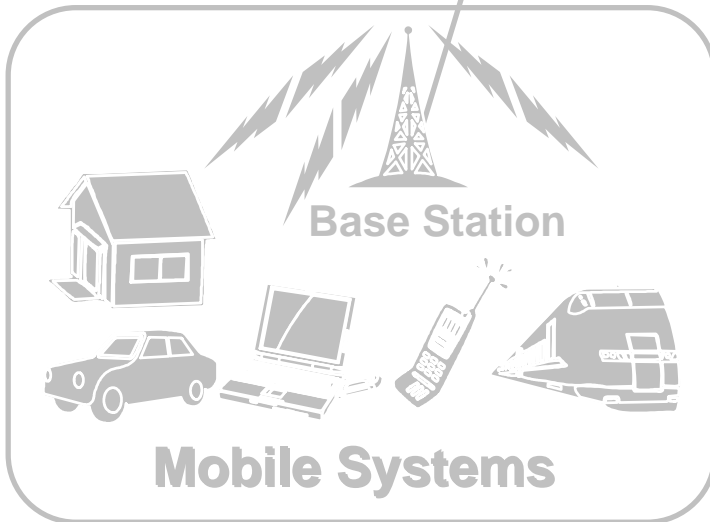
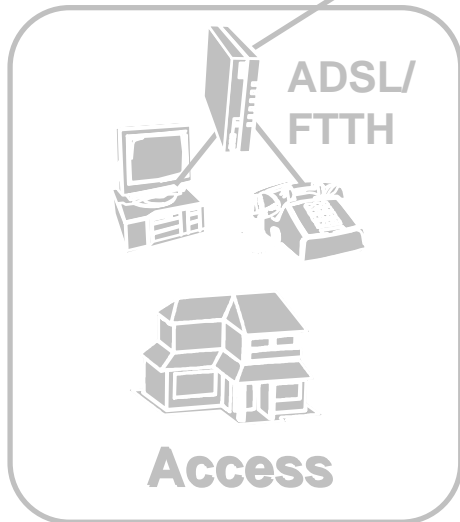
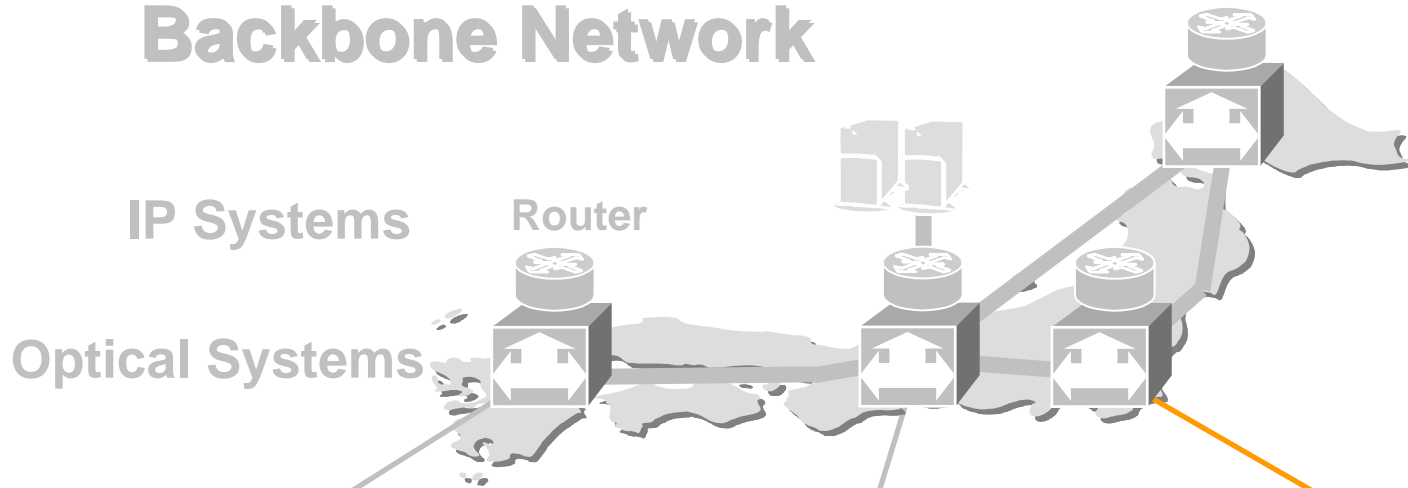


Mobile Centrex

Seamless fixed/mobile communications

# 2.5 Enterprise Networks & Services

## Backbone Network



# Enterprise Network Issues

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- **Need to continuously improve business infrastructure to strengthen competitiveness**
- **Increased system complexity with diverse IP/IT equipment and services**
- **Need to reduce TCO, speed improvements, and assure reliability**
- **Difficulty of designing, building and operating networks in-house**



**Customers want strategic partner with expertise in IP/IT convergence**

# Strengthening Our Offerings

**Enterprise Customers**

**Enhancing one-stop IP/IT and  
business offerings  
(600-person organization)**

## Products

- IP-PBX (IP Pathfinder)
- Routers, Switches (Si-R, SH, Cisco)
- Network Server (IPCOM)
- Servers, Storage, PCs, etc.

## Network Services

- Network Infrastructure Services (FENICS)
- Network Design, Build, Operation, Maintenance
- Outsourcing
- High Value-Added Services (LCM, etc.)

LCM: Life Cycle Management

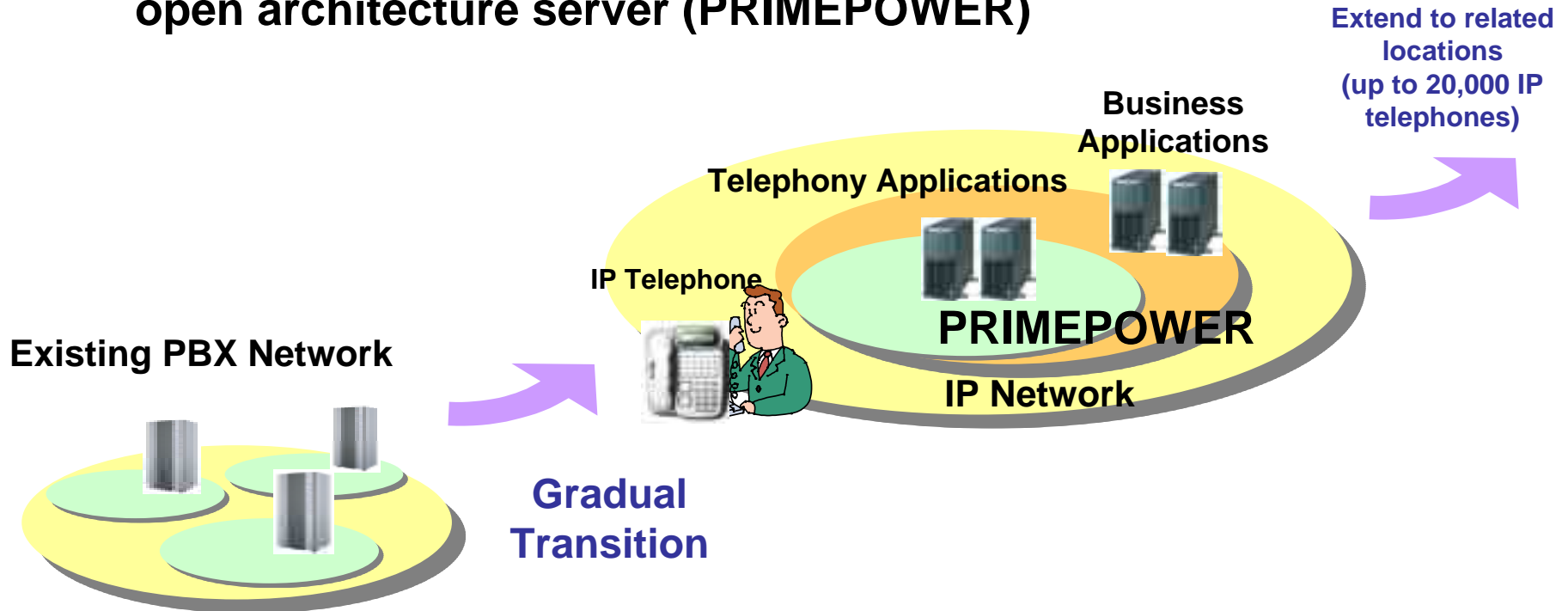
# Case Study 1: IP Telephony

## ■ Customer Benefit

- Lower equipment investment and operation costs
- Maintain PBX functions and operability

## ■ Fujitsu's Approach

- Deliver existing PBX service features (IP Pathfinder) on open architecture server (PRIMEPOWER)



# Case Study 2: SFA Infrastructure Outsourcing

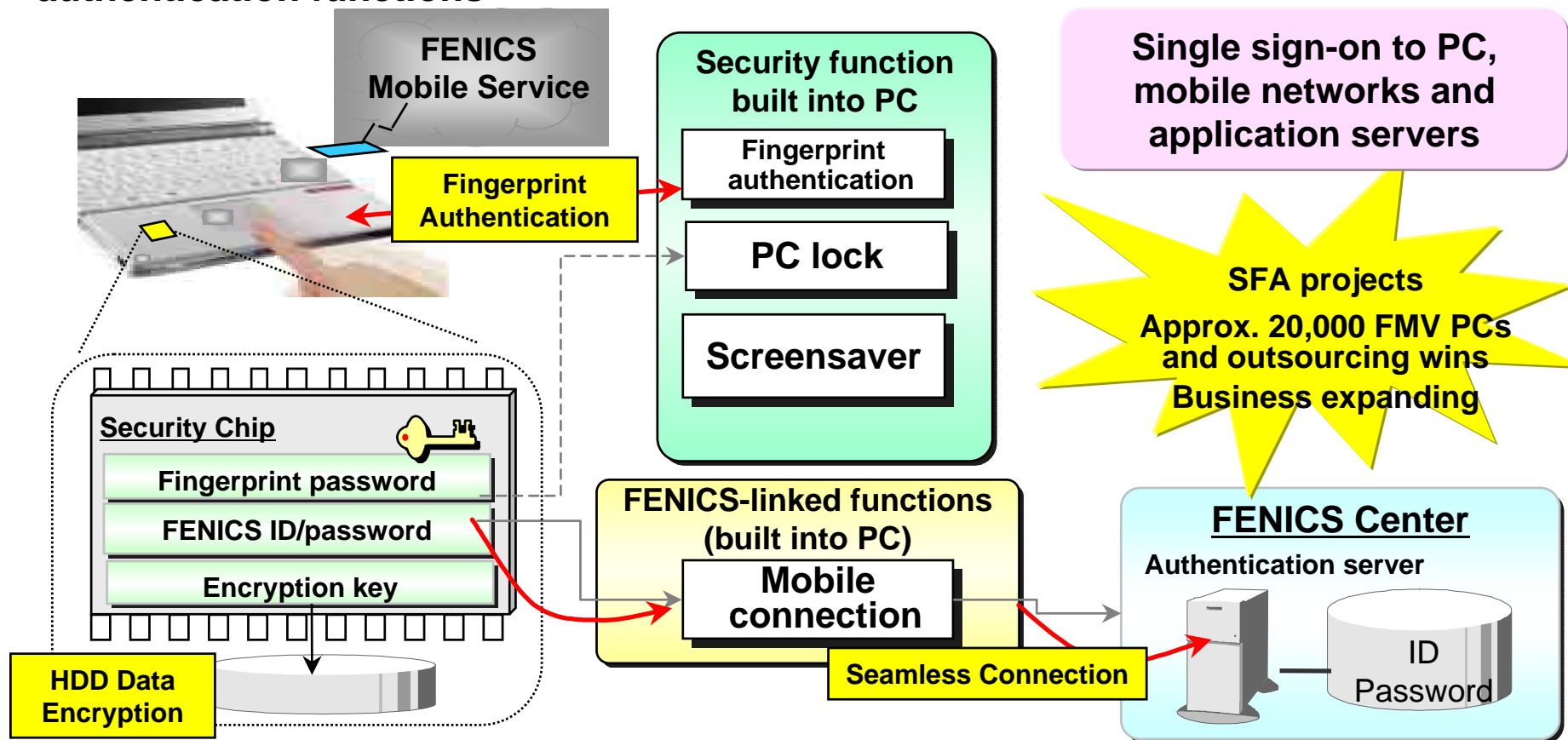
SFA: Sales Force Automation

## Customer Benefit

- Increased mobile PC security, ease of operation, efficient operations management

## Fujitsu's Approach

- Combine FMV PC's fingerprint authentication/security chip with FENICS' authentication functions





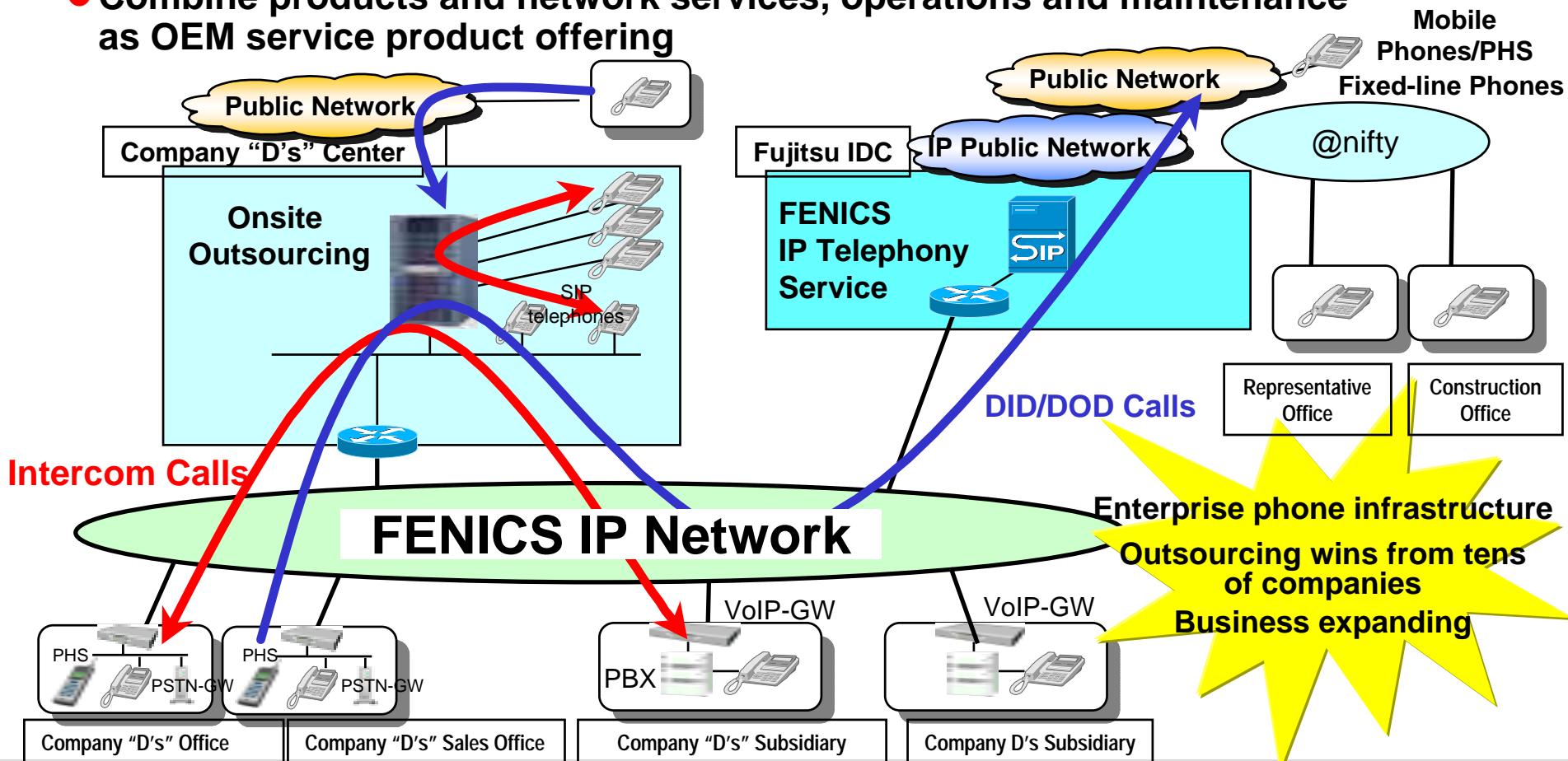
# Case Study 3: Total Outsourcing

## Customer Benefit

- Create new business with minimum investment and operating costs

## Fujitsu's Approach

- Take advantage of 20-year experience in FENICS operations
- Combine products and network services, operations and maintenance as OEM service product offering

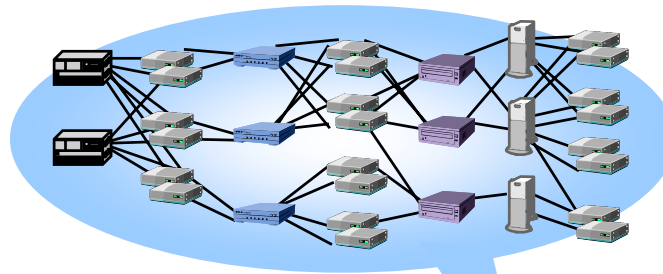
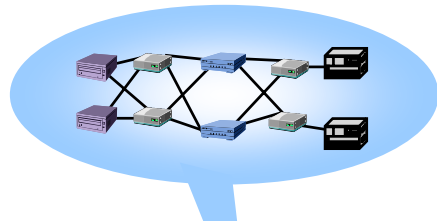


# Reducing Complexity: IPCOM S Series

## System Front-End

## System Front-End

Switches  
Bandwidth Control  
Firewall  
Routers  
Load Balancers



IP Network

IP Network

Servers

- Space 1/3
- Number of cables 1/3
- Design ~ deployment time 1/5
- Equipment cost 1/2

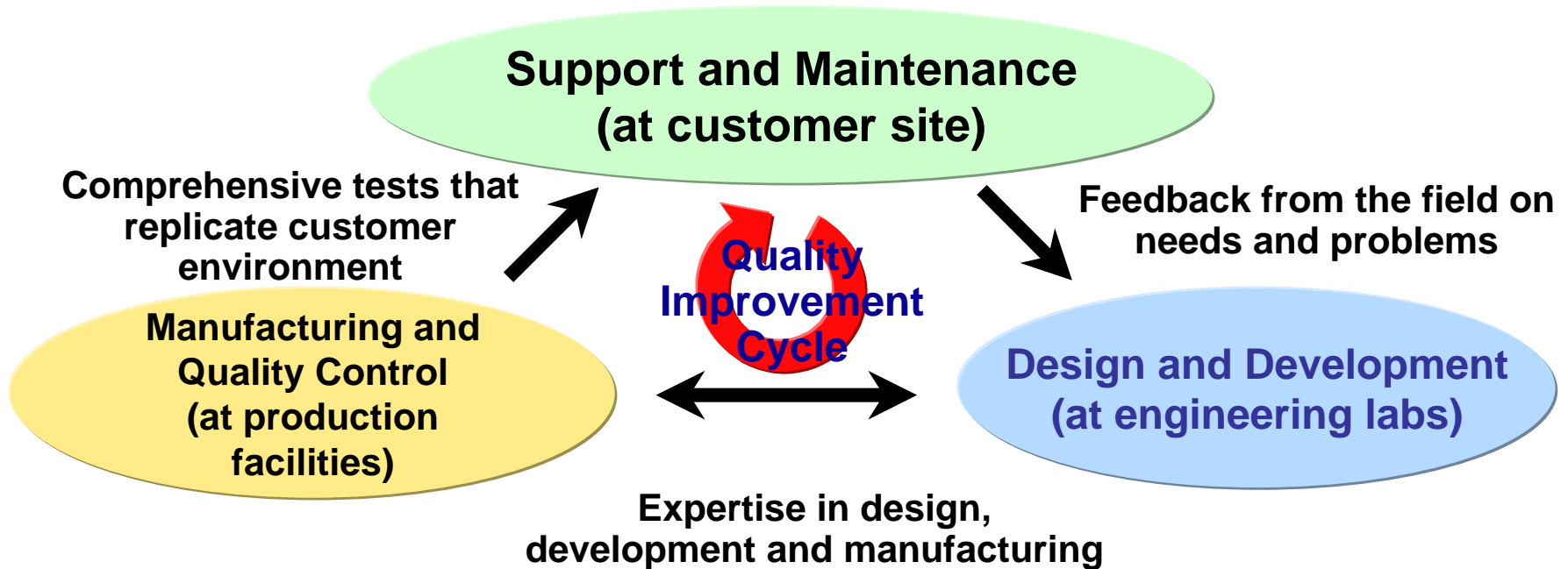
Integrate

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# **3. Quality, Manufacturing Innovation and Environmental Initiatives**

# Highly Reliable, High-Quality Products

**Focus on the Front-Line Realities at Every Step**



- Closer interaction between Fujitsu engineers and the customer
- Leverage in-house engineering strengths
- Respond quickly and thoroughly investigate problems

# Manufacturing Innovation

- Introduction of Toyota Production System (TPS) to strengthen competitiveness and reduce TOC

TOC: Total Operation Cost

**Target: Reduce lead time and process costs by half in two years (by end of FY2005)**

## Projections for end of FY2004: (comparison with FY2003)

	<u>Lead Time</u>	<u>Process Costs</u>
● Mobile Base Stations (Nasu):	- 37%	- 21%
● Transmission Systems (Oyama):	- 40%	- 23%



Nasu Facility



Oyama Facility, introduction of cell method

# Environmental Initiatives

## Dow Jones Sustainability Index

### Top Environmental Ranking for Six Consecutive Years



#### ■ Innovation to reduce environmental burden

- Offering “super green” products with industry-leading environmental profile
- Lower power consumption: Advanced semiconductors, high-efficiency amplifiers
- Titanium apatite photocatalyst for antibacterial applications

#### ■ Efforts to eliminate use of harmful substances

- Target to eliminate use of 6 harmful substances\* by end of FY2005

\*mercury, lead, hexavalent chromium, cadmium, PBB, PBDE

PBB: polybrominated biphenyl

PBDE: polybrominated diphenyl ether

“Super Green” Product:  
Network Server

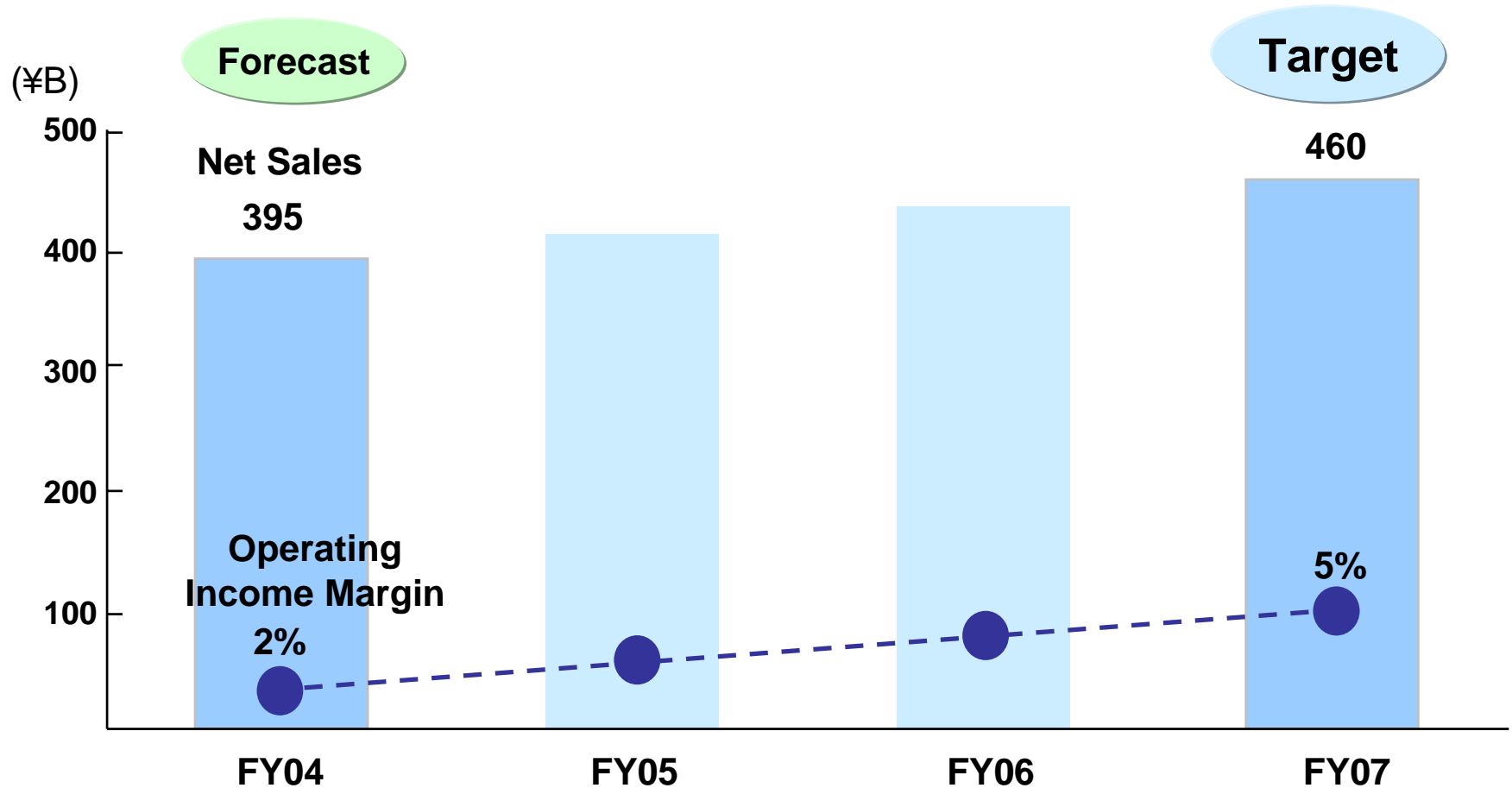


IPCOM S2000/S2200

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## **4. Conclusion**

# Earnings Projections for Product Businesses



## Initiatives:

- **Sales:** Use cutting-edge technology (optical, access, mobile systems) to increase market share
- **Costs:** Pursue cost reductions at every stage (development, design, procurement, production, testing)
- **R&D Expenses:** Reduce through collaboration with Cisco, strengthen resource allocation among group companies



# Our Convergence Leadership Position

## Network Services

NTT Group KDDI BT SBC Vodafone

Alcatel

Cisco

Huawei

Lucent

Nortel

EMC

SUN

Dell

NEC

Siemens

IBM

HP

Accenture

EDS

## IT Services

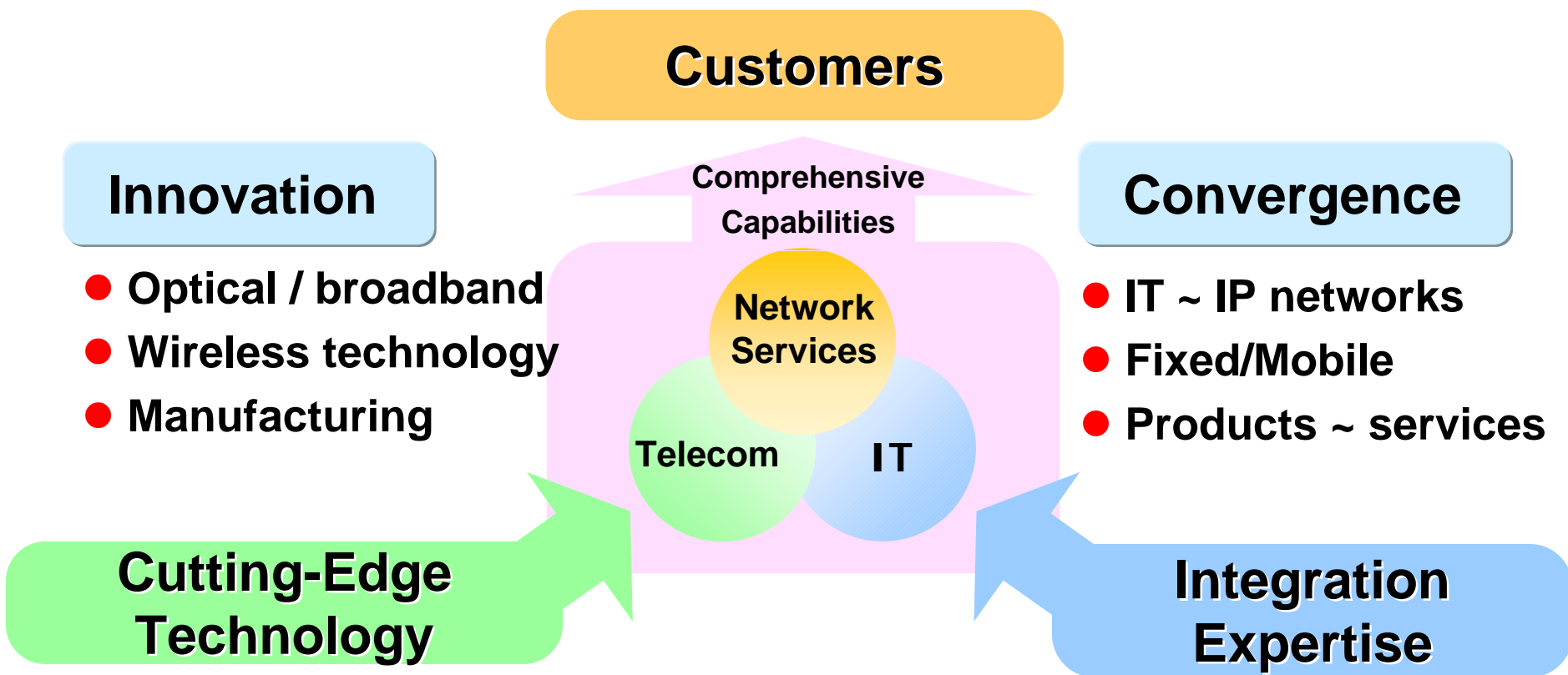
**IT  
Products**

**Network  
Products**



# Conclusion

**Pursuing Higher Growth and Profitability by Leveraging Our Strengths in Cutting-Edge Technology and Integration**





FUJITSU

THE POSSIBILITIES ARE INFINITE

# Cautionary Statement

These presentation materials and other information on our meeting may contain forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. Words such as "anticipates," "believes," "expects," "estimates," "intends," "plans," "projects," and similar expressions which indicate future events and trends identify forward-looking statements. Actual results may differ materially from those projected or implied in the forward-looking statements due to, without limitation, the following factors:

- general economic and market conditions in the major geographic markets for Fujitsu's services and products, which are the United States, EU, Japan and elsewhere in Asia, particularly as such conditions may effect customer spending;
- rapid technological change, fluctuations in customer demand and intensifying price competition in the IT, telecommunications, and microelectronics markets in which Fujitsu competes;
- Fujitsu's ability to dispose of non-core businesses and related assets through strategic alliances and sales on commercially reasonable terms, and the effect of realization of losses which may result from such transactions;
- uncertainty as to Fujitsu's access to, or protection for, certain intellectual property rights;
- uncertainty as to the performance of Fujitsu's strategic business partners;
- declines in the market prices of Japanese and foreign equity securities held by Fujitsu which could cause Fujitsu to recognize significant losses in the value of its holdings and require Fujitsu to make significant additional contributions to its pension funds in order to make up shortfalls in minimum reserve requirements resulting from such declines;
- poor operating results, inability to access financing on commercially reasonable terms, insolvency or bankruptcy of Fujitsu's customers, any of which factors could adversely affect or preclude these customers' ability to timely pay accounts receivables owed to Fujitsu; and
- fluctuations in rates of exchange for the yen and other currencies in which Fujitsu makes significant sales or in which Fujitsu's assets and liabilities are denominated, particularly between the yen and the British pound and U.S. dollar, respectively.