
(PACS)

Seung-Hyun Lee
(seunglee@cisco.com)

Cisco Systems
Enterprise Sales

1.

2.

3.

4. **PACS**

5.

6.

7.

1.



PC



IP

가

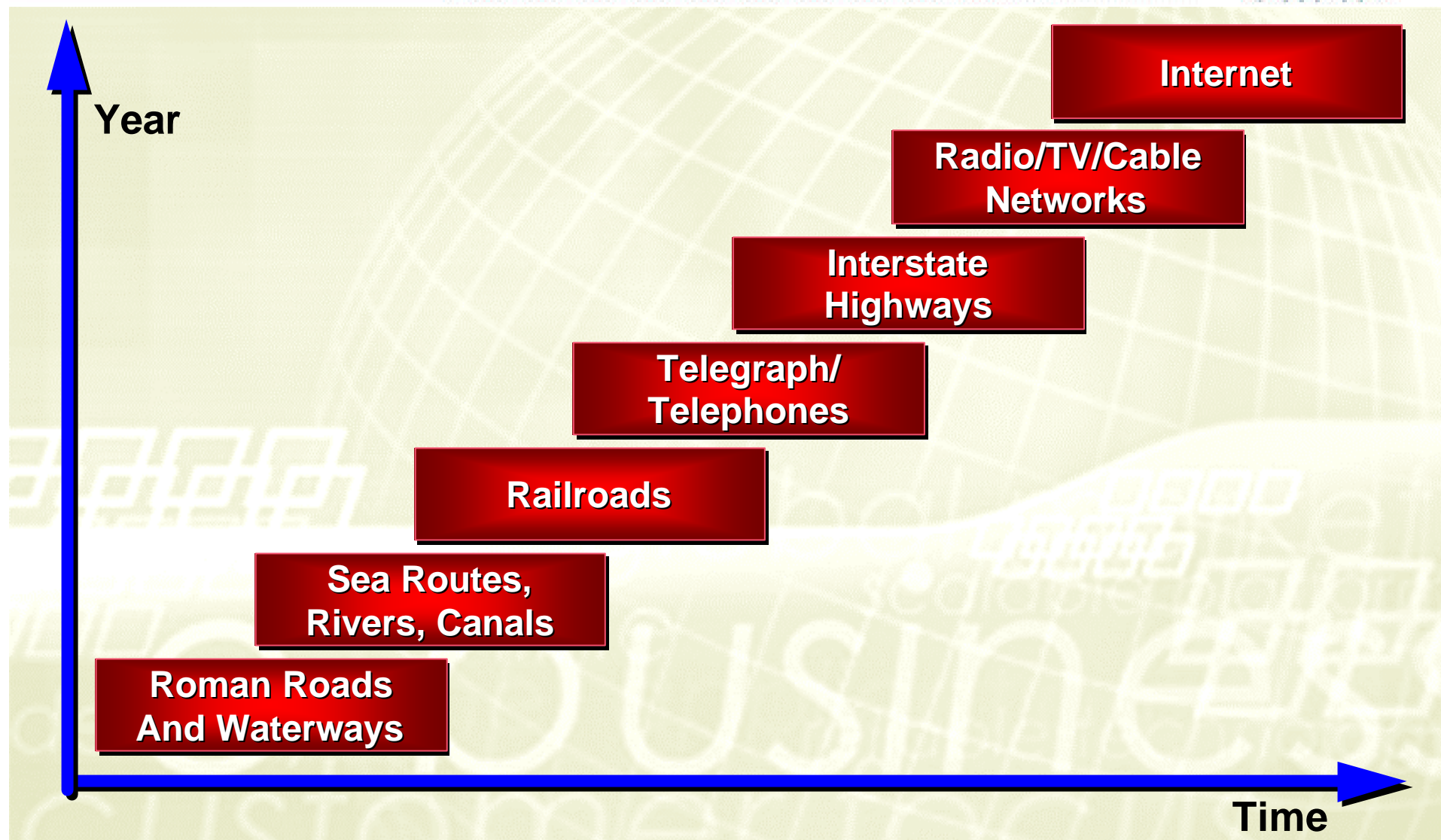


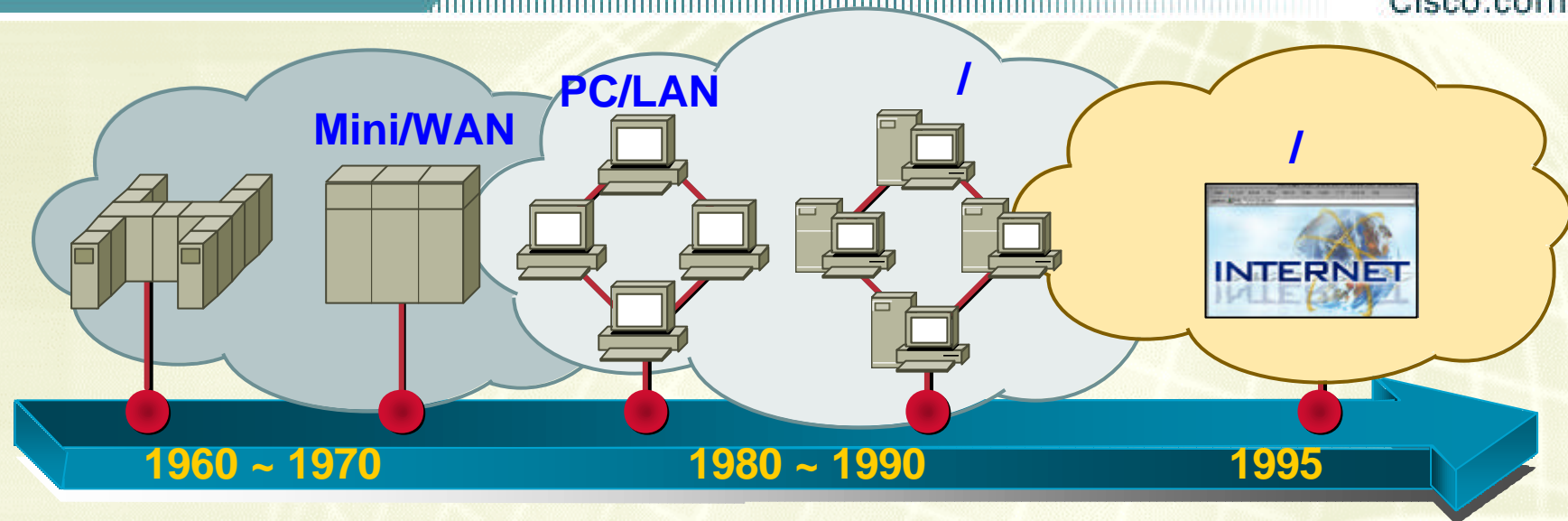
Chip

가

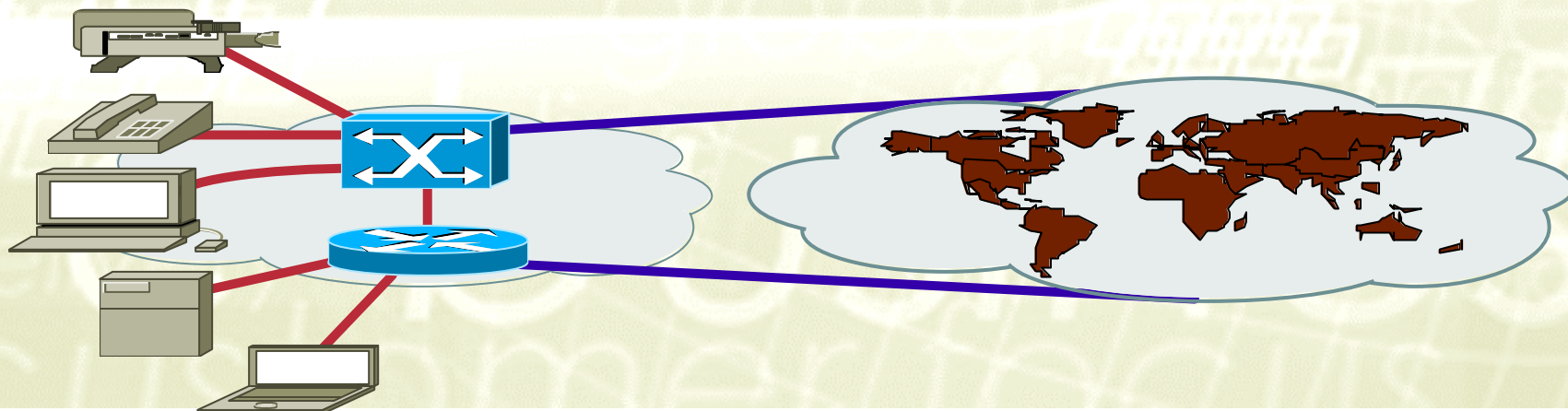
?

가





1990 ~ : (New World)



1950

2000

Computer Corp.

Mainframe

IBM
Burroughs
Control Data
Honeywell
NCR
Univac

Minis

DEC
Data General
Prime
IBM
Comp
Automation
HP

Personal

Apple
Microsoft
IBM
Compaq
Dell

Workstation

Sun
HP
Compaq
Dell

Mainframes

IBM
(Fujitsu /
Amdahl)

1980

1995

2000

Network Corp.

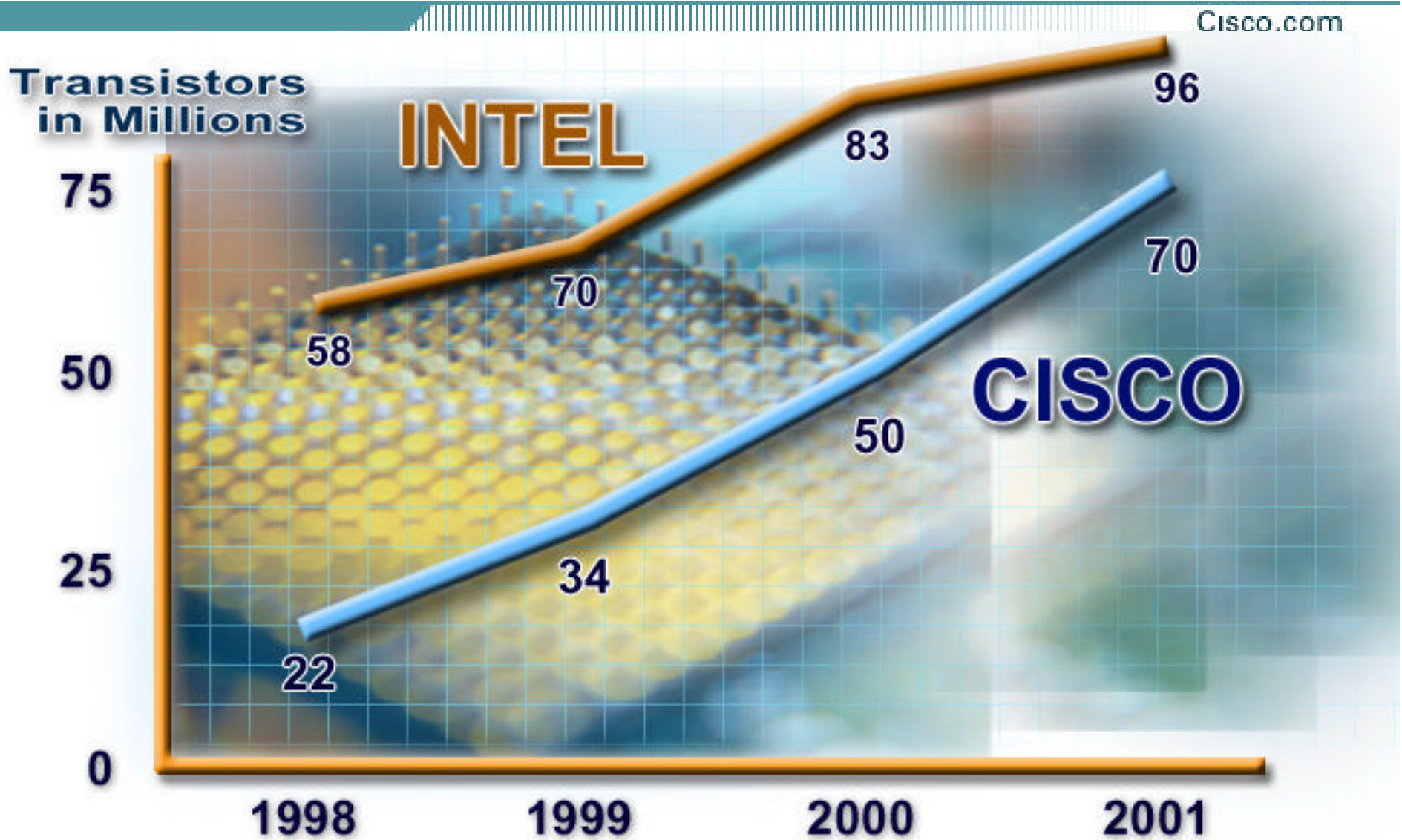
Data Networks

3Com
IBM
Synoptics
Wellfleet
Cisco

Data & Voice Networks

Nortel
Cisco
Alcatel
Siemens

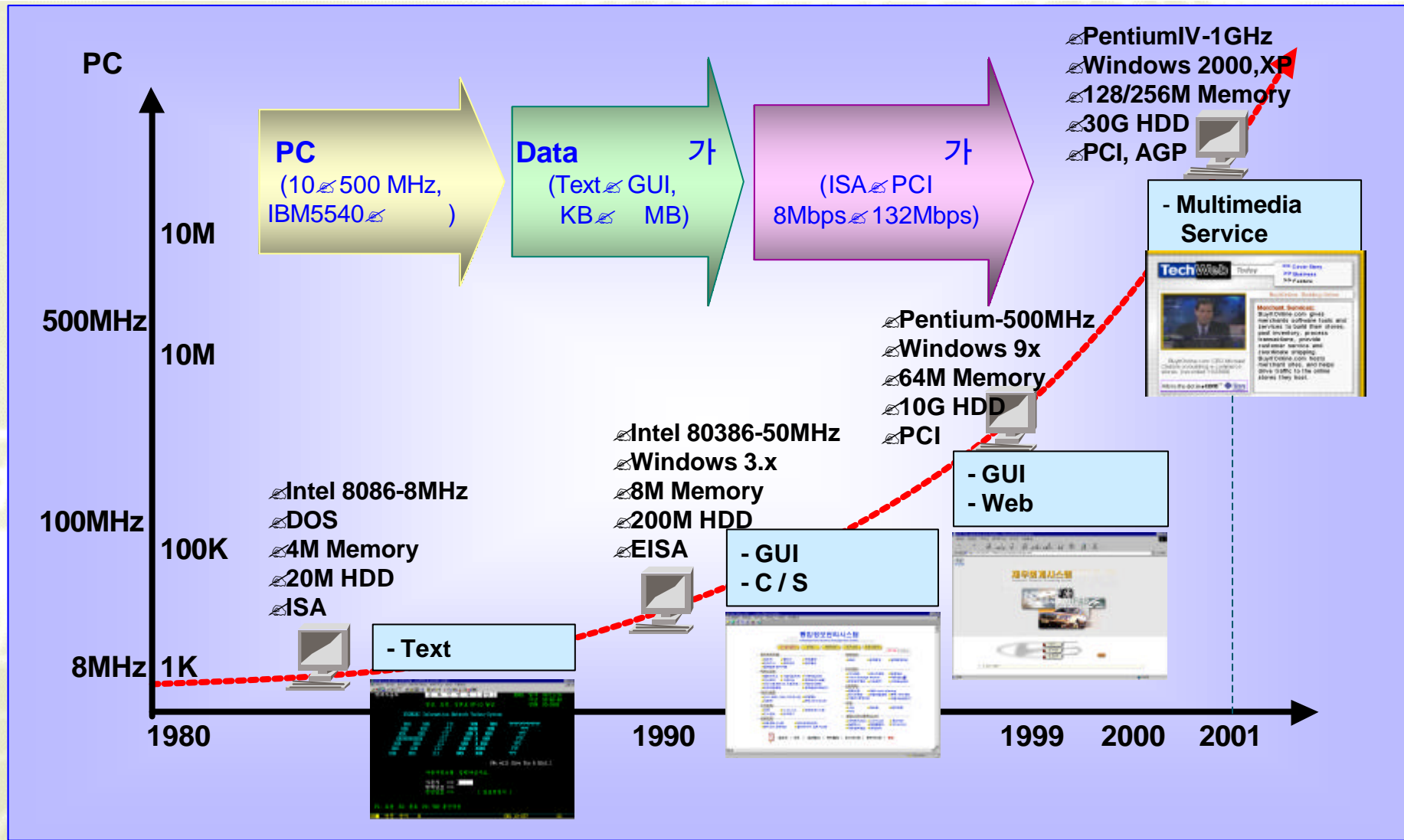
Chip

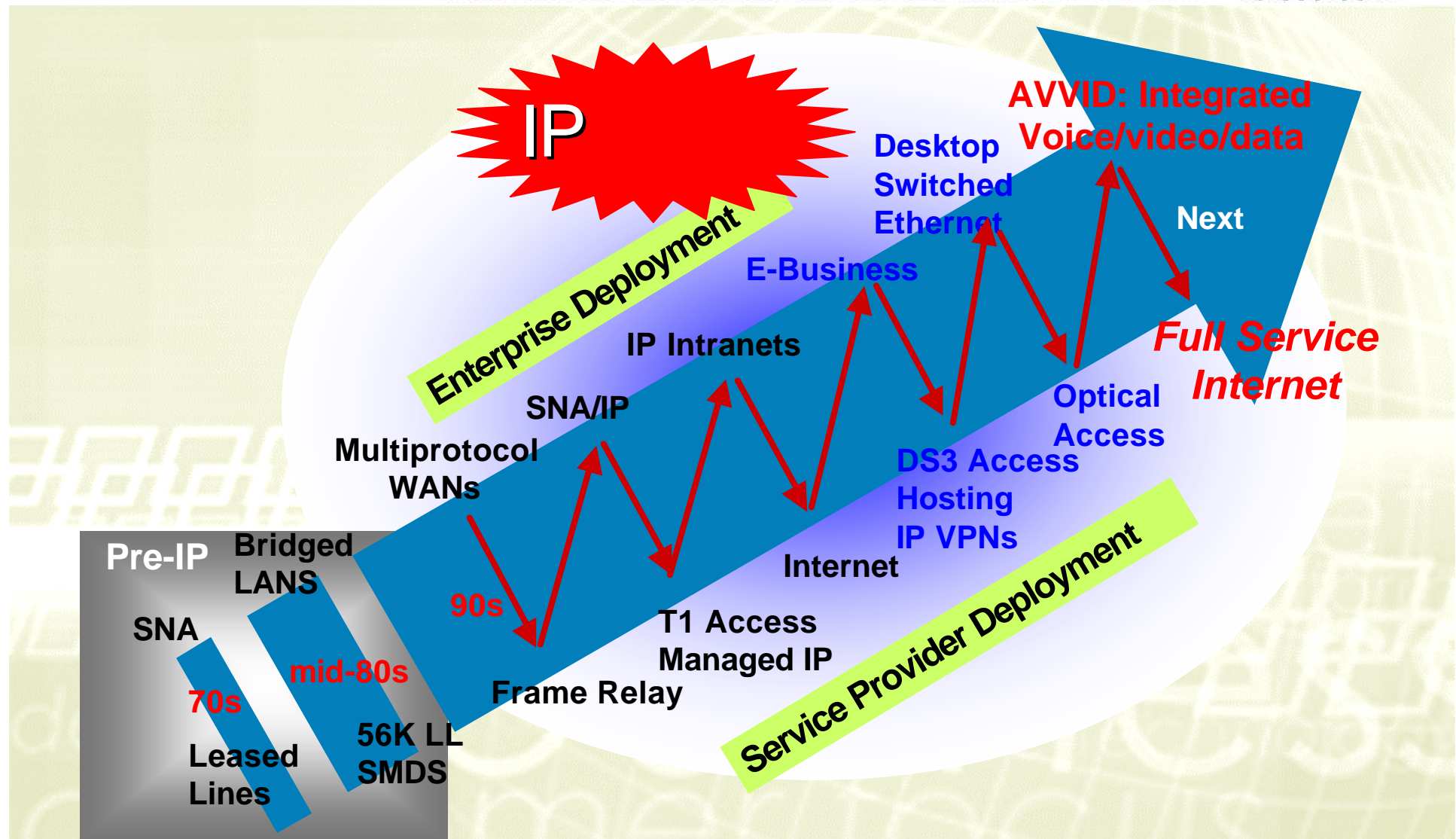


PC

가

Cisco.com





IP



가

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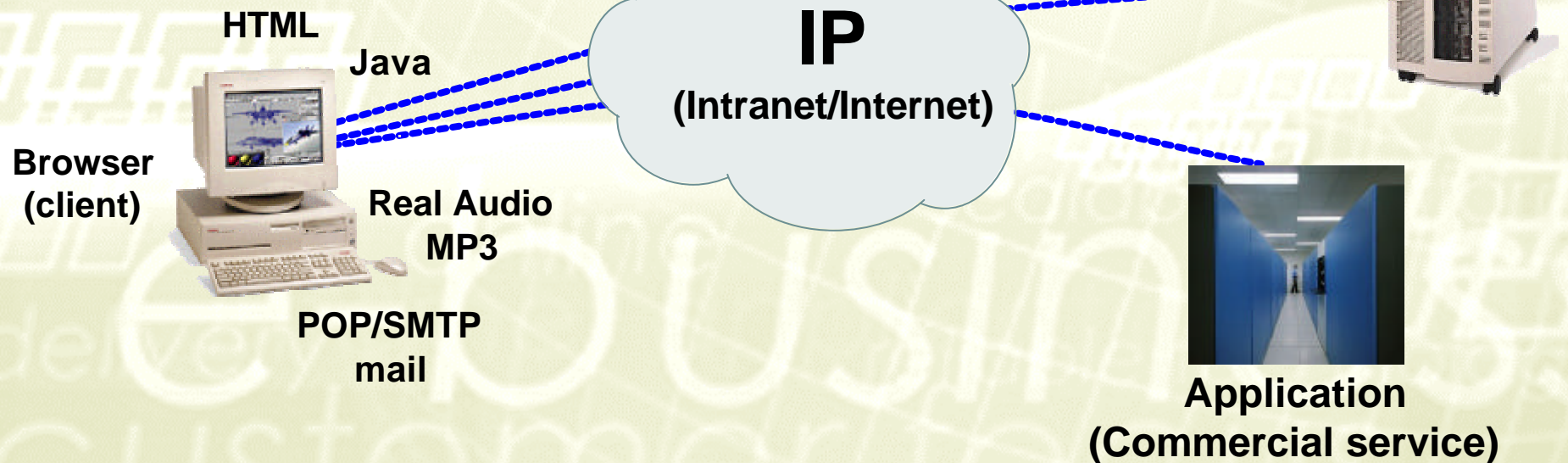
Cisco.com

Web 

User-interface



- _____가 _____
- _____ IP _____
- _____ PC가 _____



HTTP



가

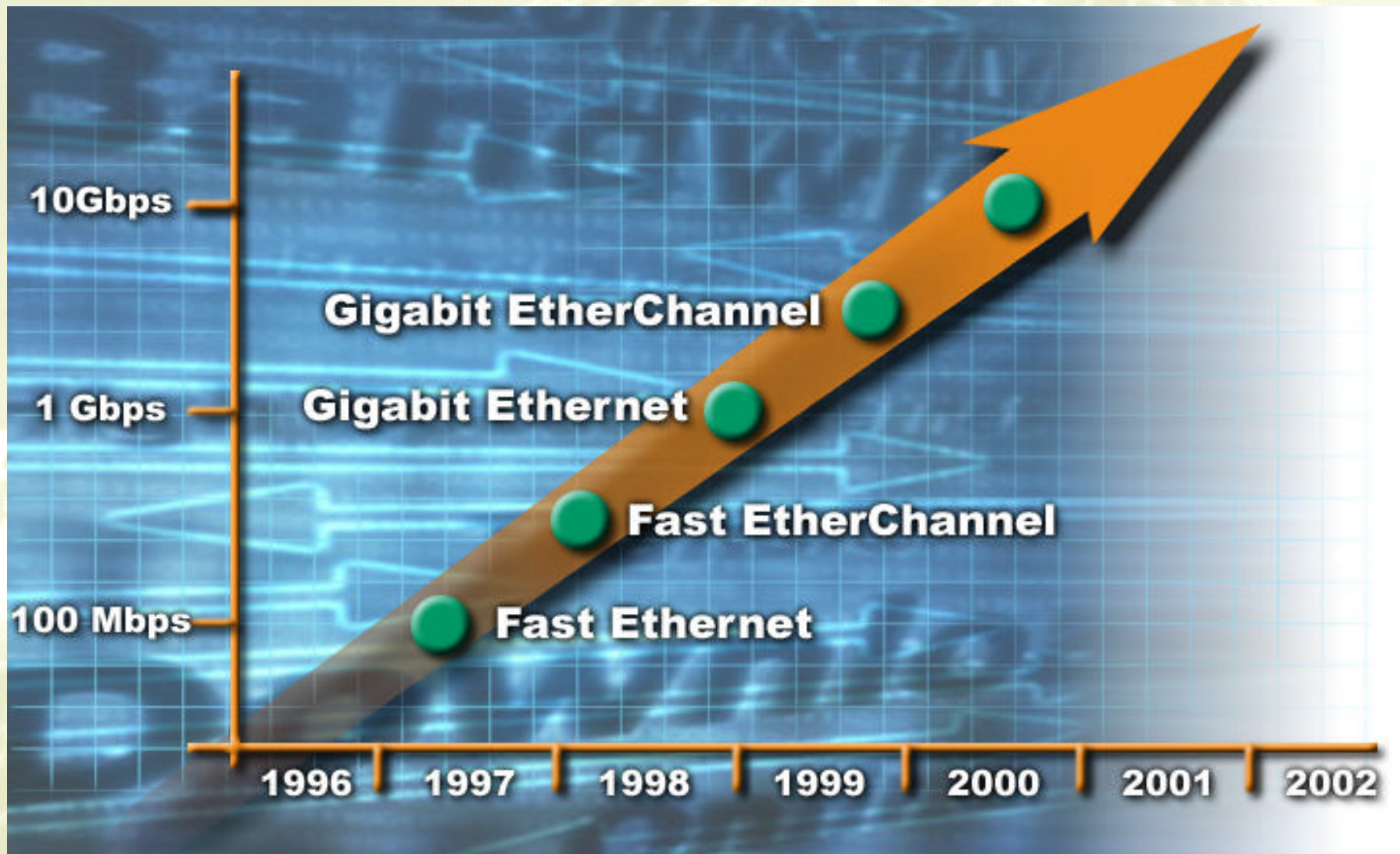
Cisco.com

Traffic at the Core of the Internet

400%
per year



'96 '97 '98 '99 '00 '01 '02



2.

- ✍ 2002 LAN
- ✍ 2002 WAN
- ✍ 2002 Access
- ✍ 2002

2002 LAN

Cisco.com

LAN

가

3

VOD(Video On Demand),

가 /

Fast/Gigabit EtherChannel,
HSRP

LAN ✎

PC

2002 WAN

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WAN

VPN(가)

IP Telephony IP Phone

VoIP/FR, AVVID

PDA

ADSL, Cable, MPLS, DWDM,
Packet over SONET

QoS WFQ,

Metro Ethernet

Cable LAN ()

2002 Access

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Access

RAS

56Kbps,

ISDN

ISDN(AO/DI), ADSL

ADSL(xDSL)

xDSL(ADSL, SDSL,)

CATV

LAN Card

PC

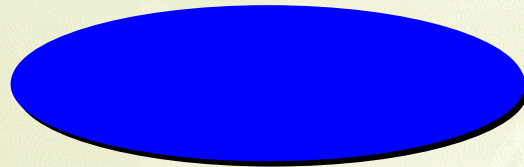
(Fiber to the Home)

• **LAN**

가

2002

Cisco.com



, O/S



가 , Home PNA,



SAN, NAS, Fiber Channel,
Fault Tolerant



TCO(Total Cost of Ownership)



SNA



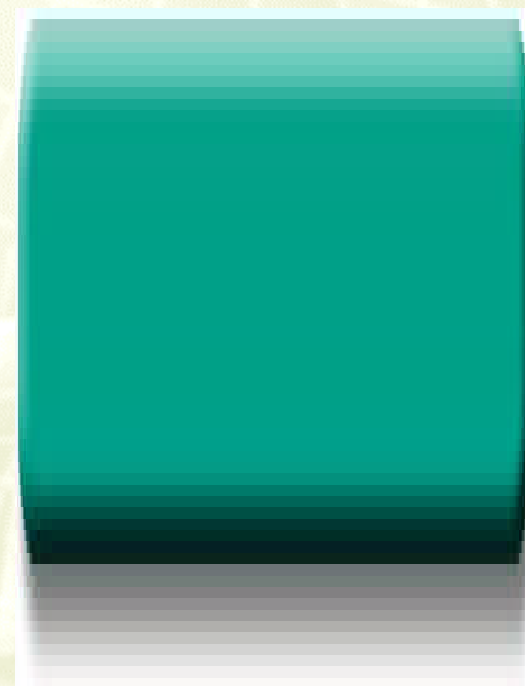
, Windows 2000, ,

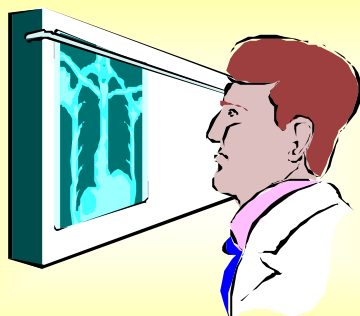
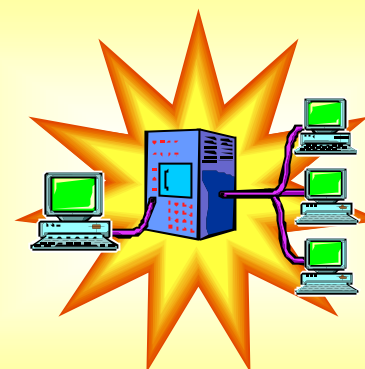
3.

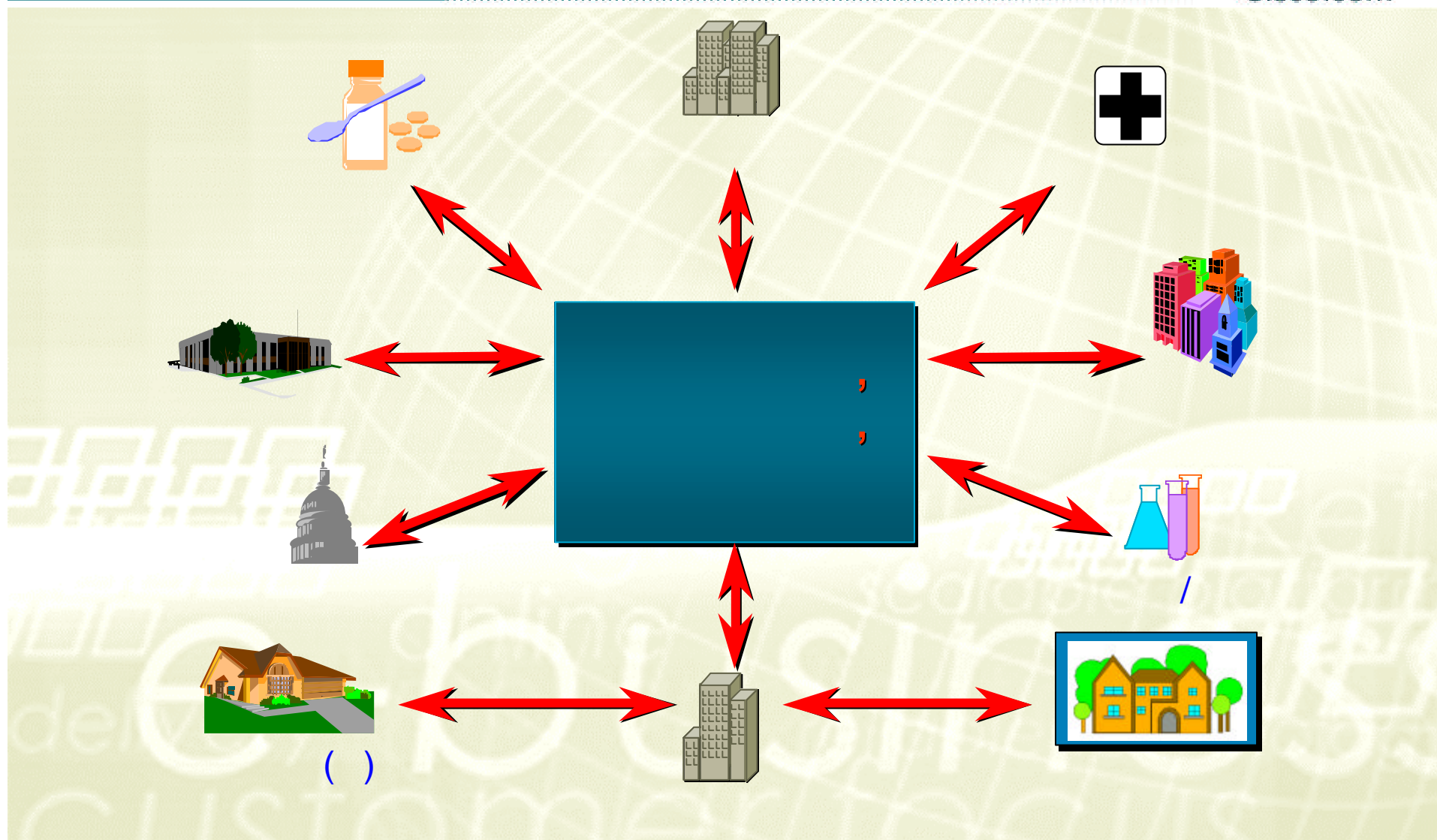


(LAN)

(WAN)

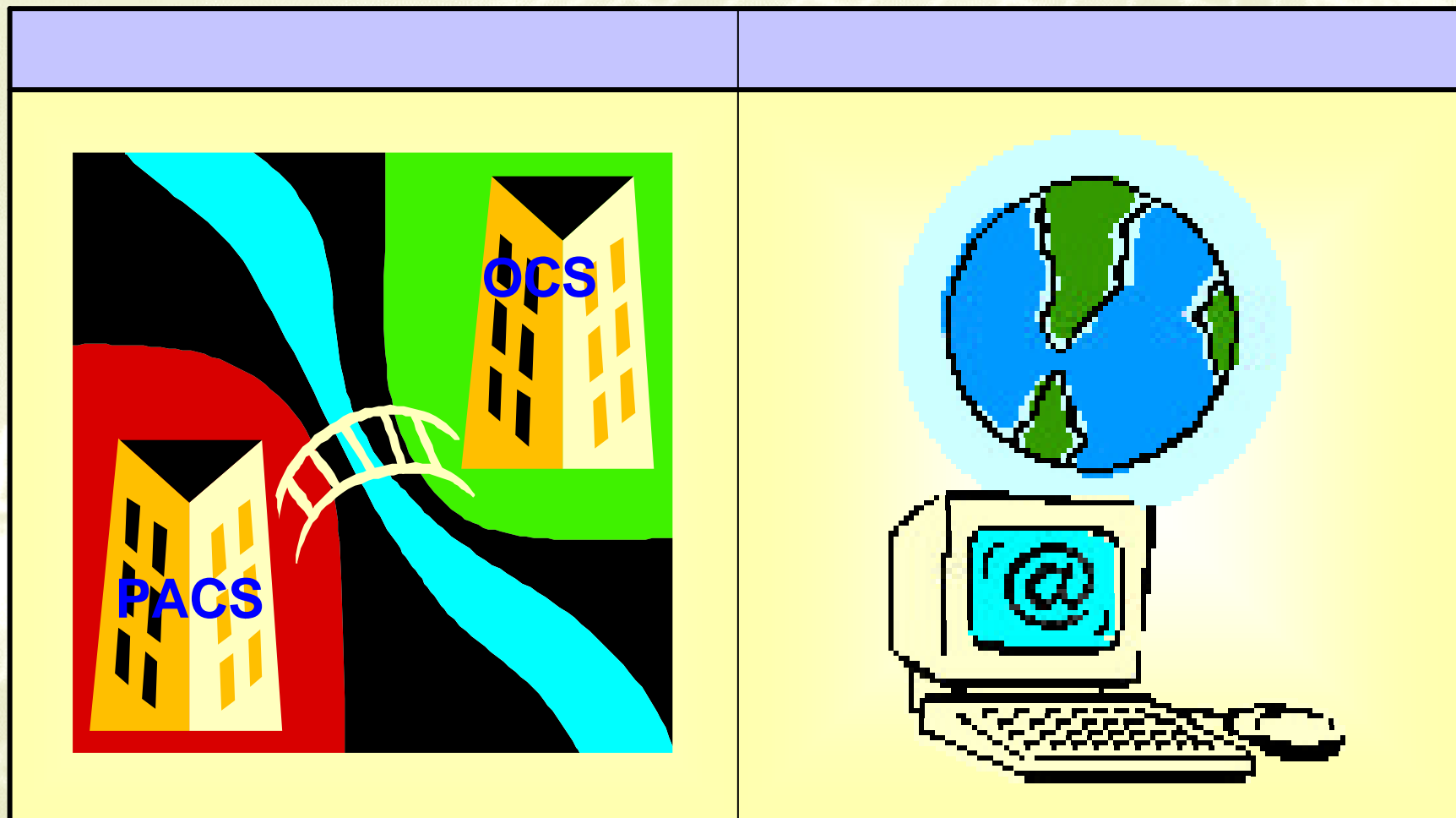






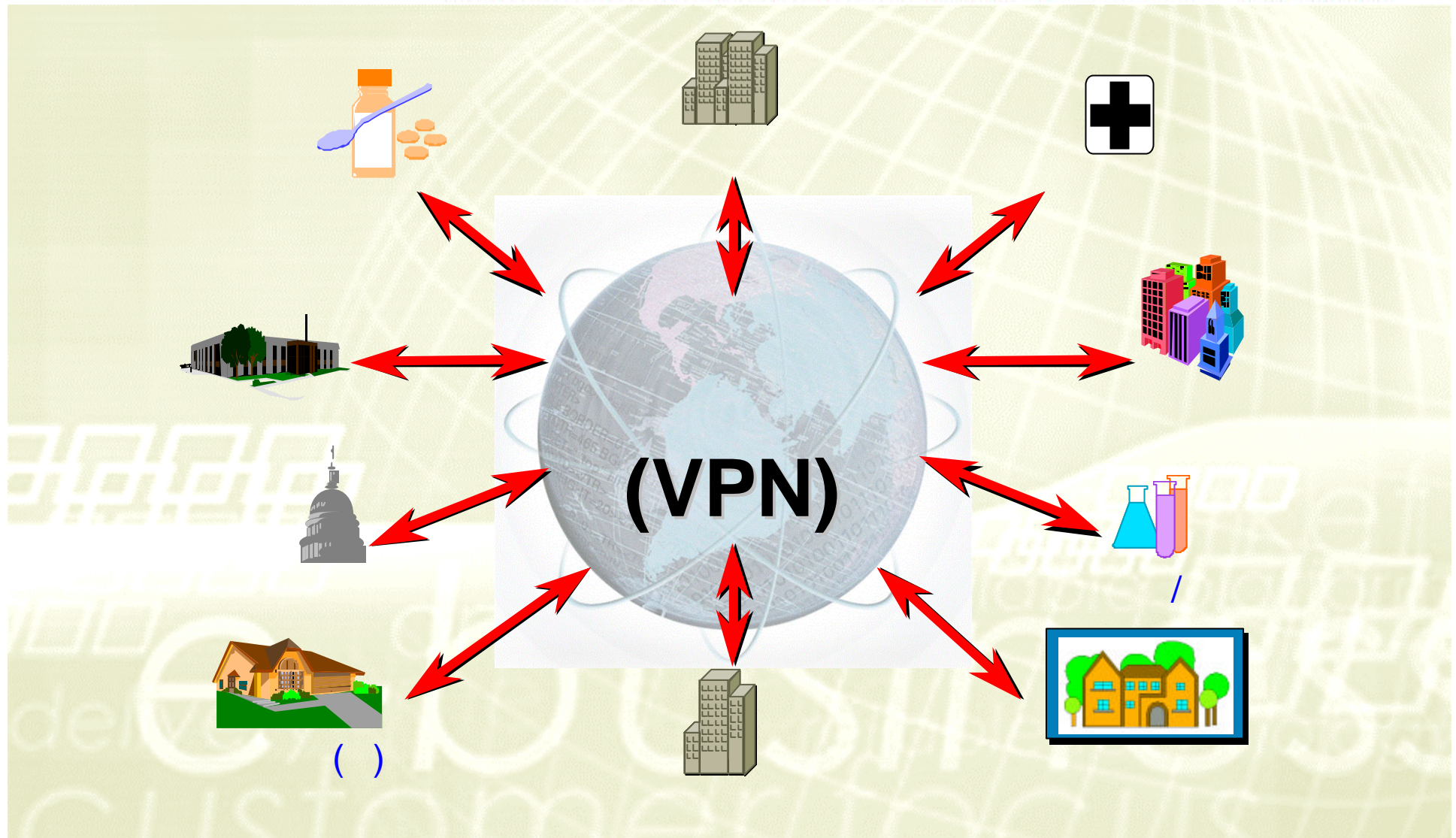
(LAN)

Cisco.com



(WAN)

Cisco.com



4. PACS

✍ PACS ?

✍ PACS

✍ PACS

PACS ?

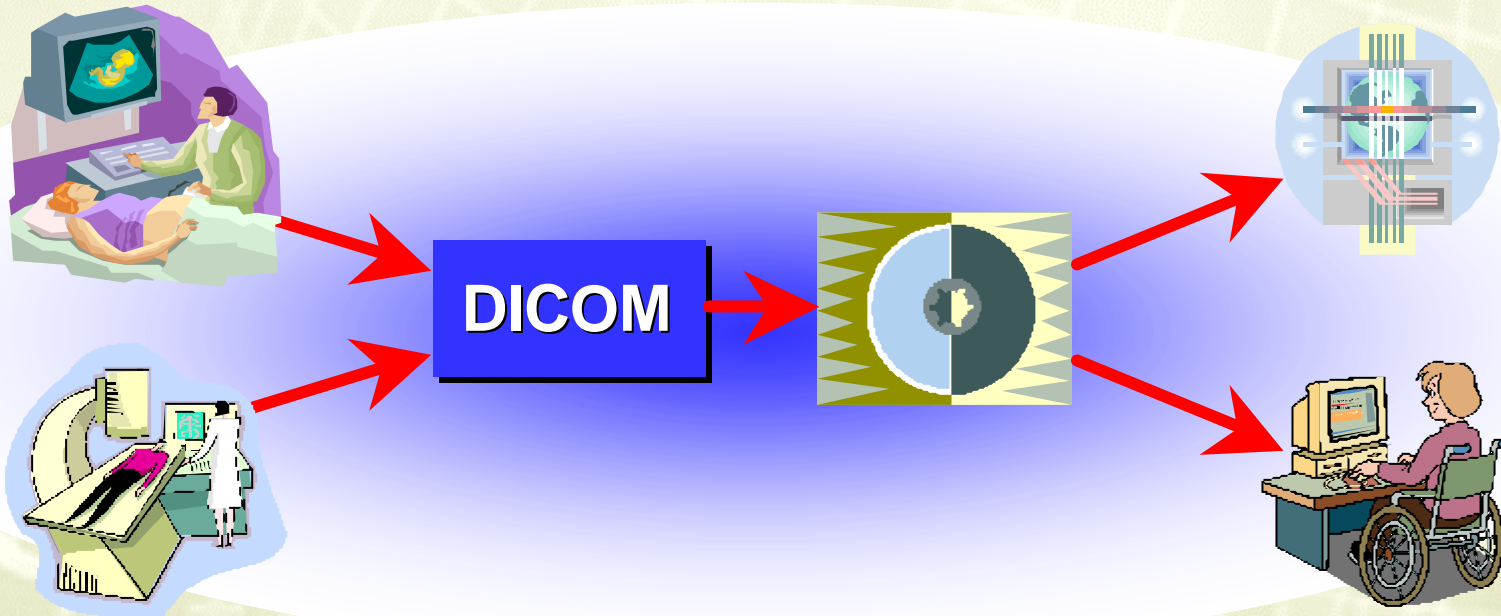
Cisco.com

PACS(Picture Archiving and Communication System)

CR(Computed Radiography)



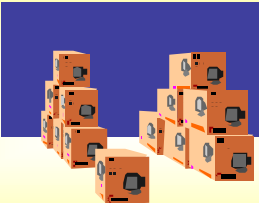


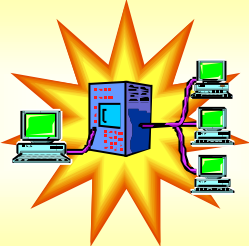
DICOM

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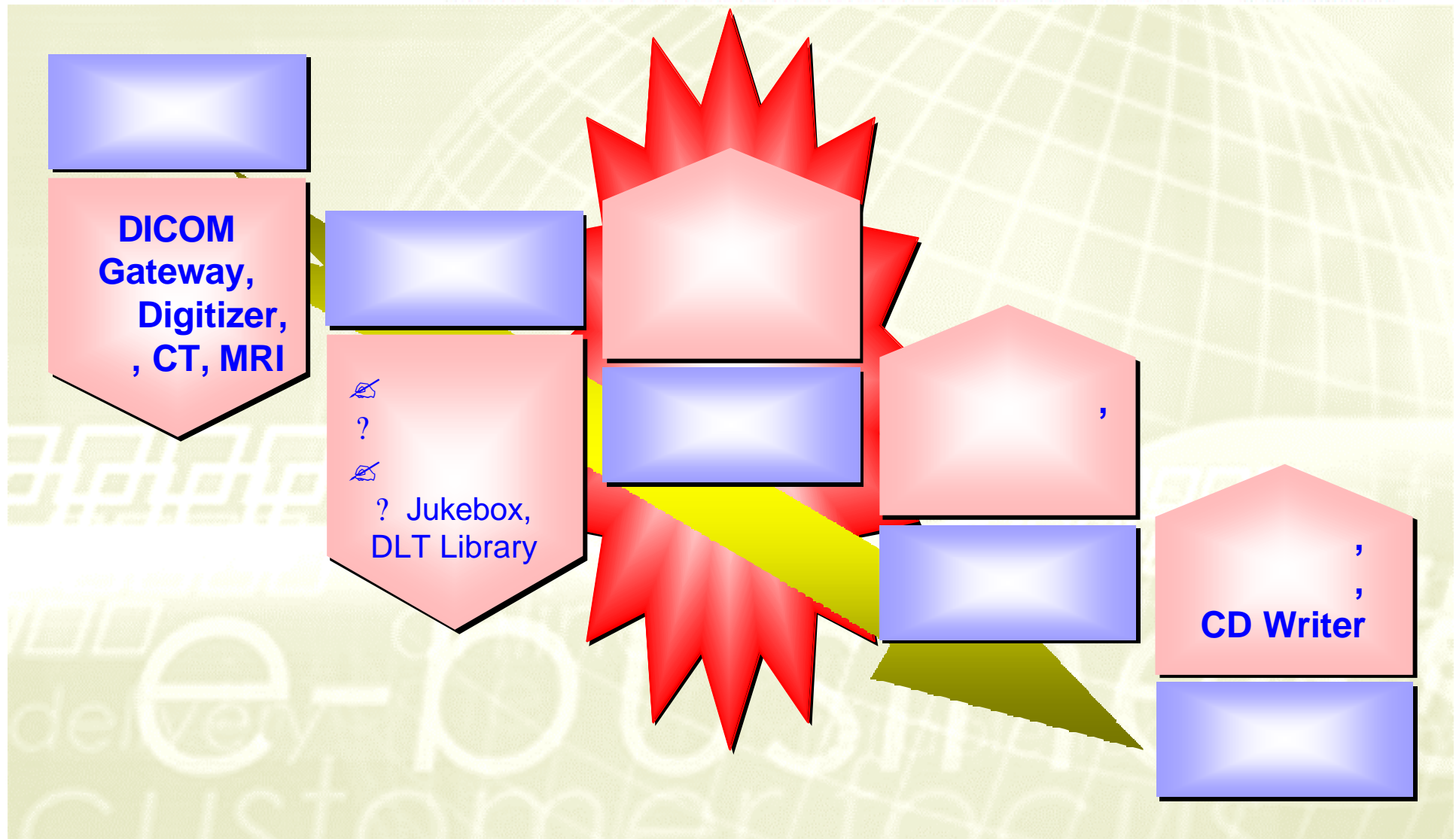
PACS

Cisco.com

| | PACS |
|---|---|
|  |  |
|  |  |
|  |  |

PACS

Cisco.com



5.



(Access) Layer

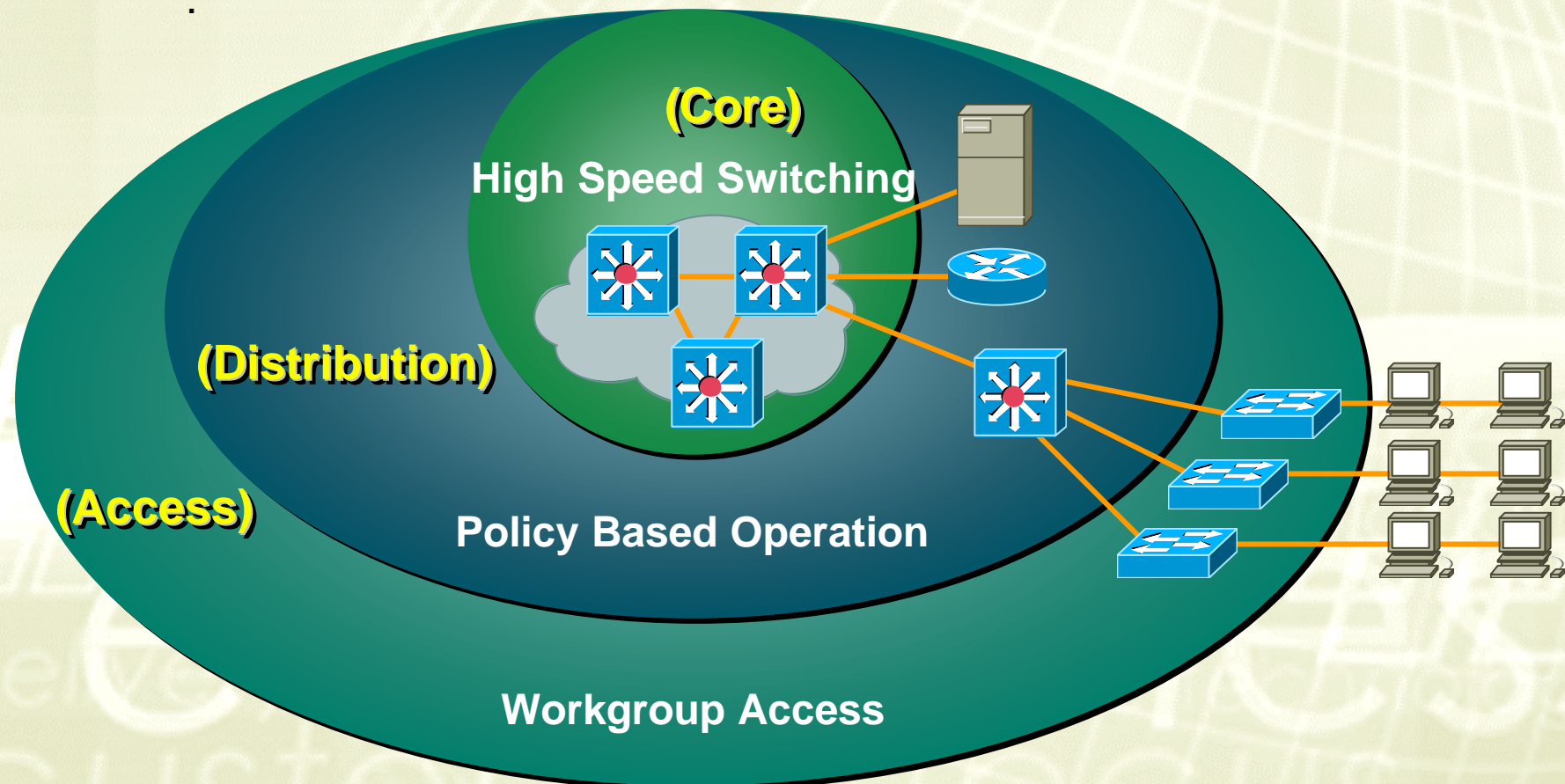


(Distribution) Layer

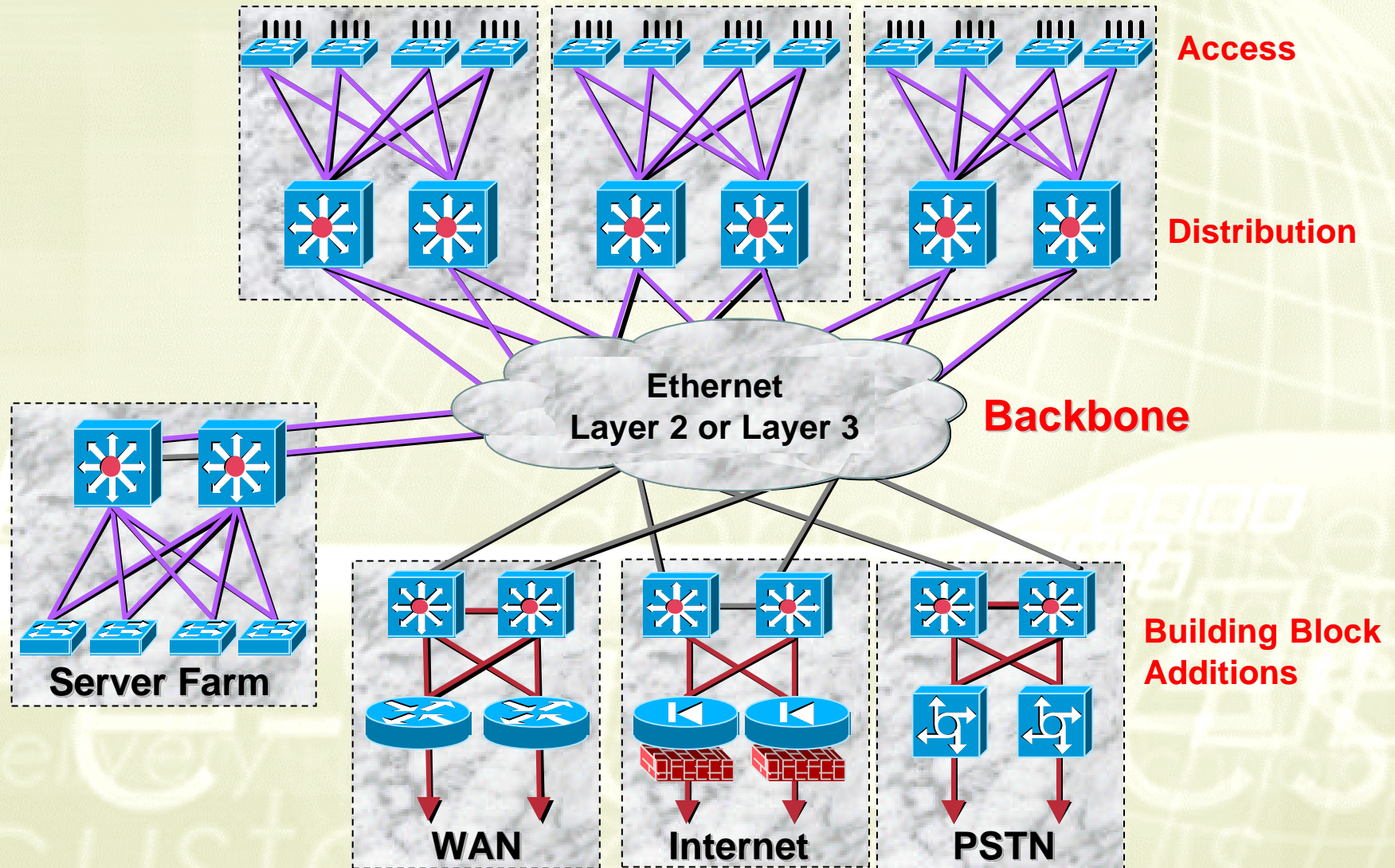


(Core) Layer



Layer가

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(Access) Layer

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- 가

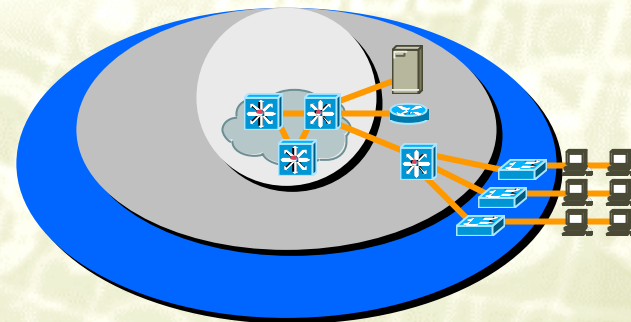
- 가 100Mbps Fast Ethernet



- _____

- _____ 가

- (Distribution) Layer



(Distribution) Layer

Cisco.com



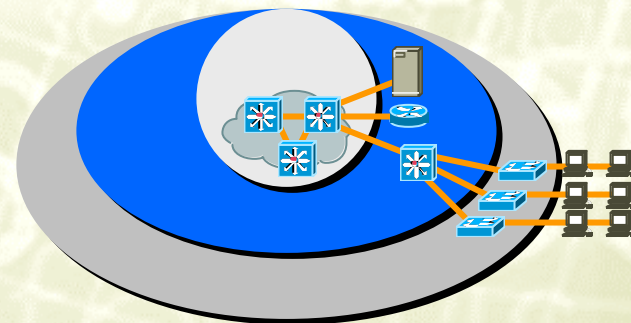
- (Access) Layer

Gigabit Ethernet



- (Access) Layer

- (Core) Layer



(Core) Layer

Cisco.com



- 가

-

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- 가

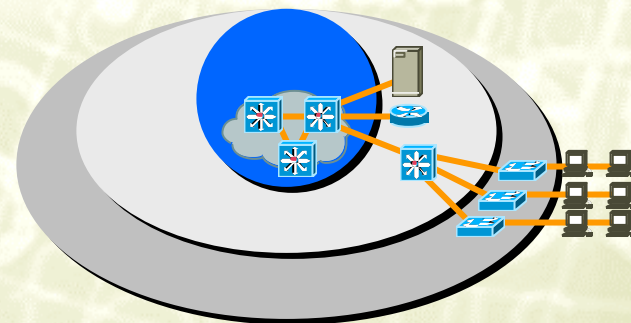
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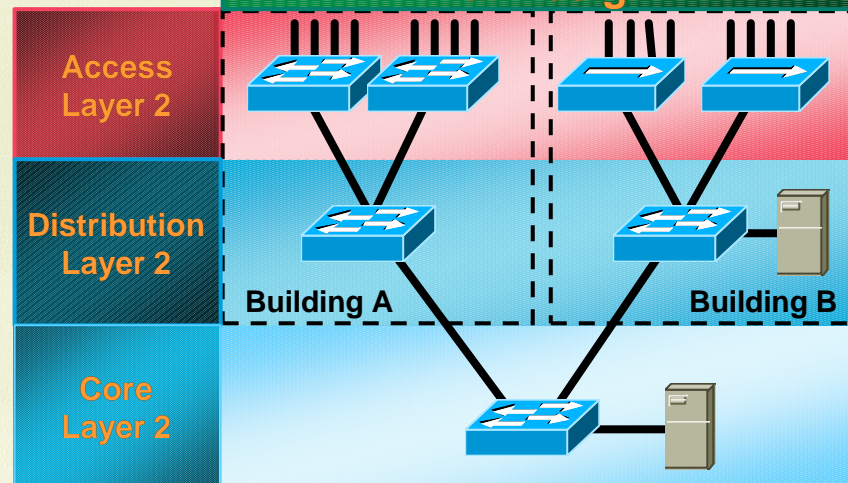
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가가



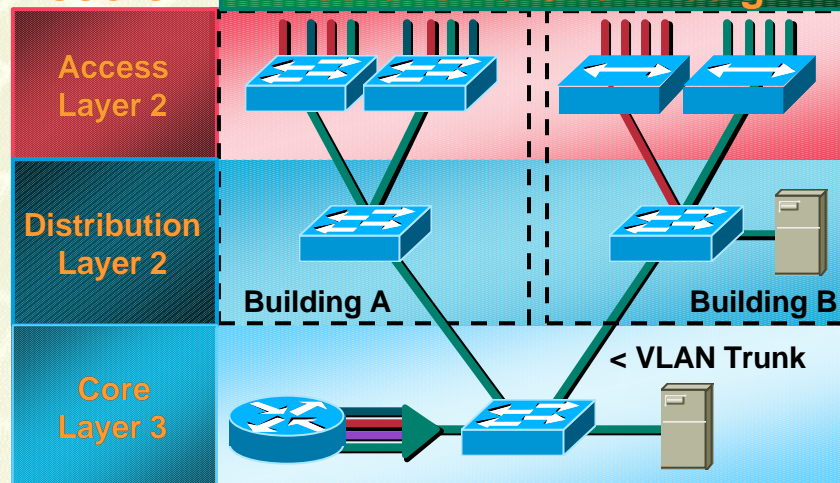
1995-96

Flat Design



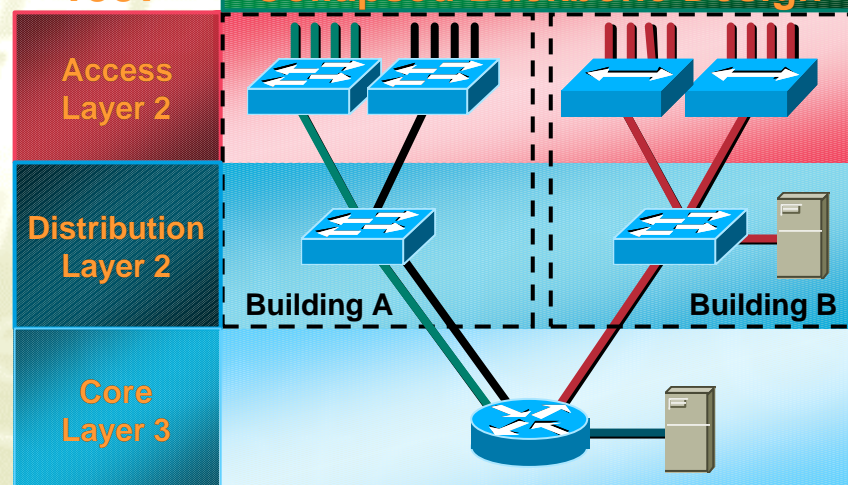
1996-97

Router-on-a-Stick Design



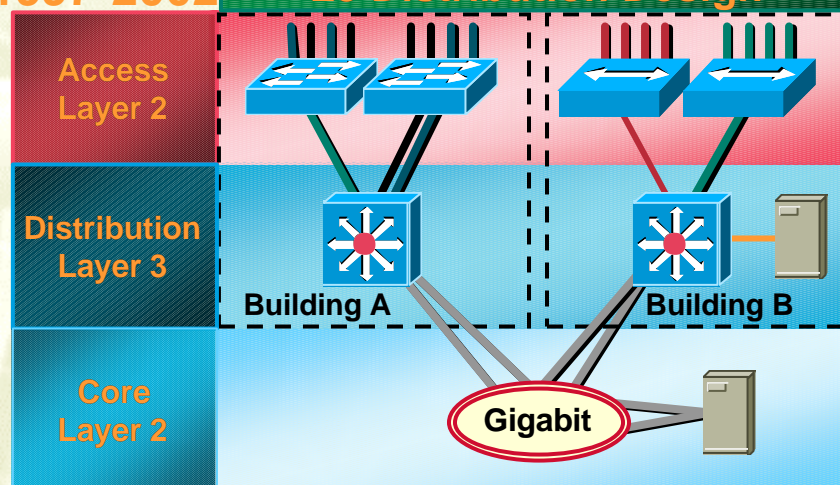
1997

Collapsed Backbone Design



1997-2002

L3 Distribution Design





-

Power Supply / Supervisor Module / Switching Fabric



3

-

EtherChannel



-

Cisco IOS



-

-

-

가

(HSRP, Port Fast, Backbonefast)



: 1 ~ 3



256Gbps Switching Fabric

가

10GE

10GE Etherchannel



Fabric

16G

10GE



150Mpps

가



Buffering

QoS



QoS/

(PFC)



-

-



가

10 GE

가

가

Server Load Balancing

가



-

가가 IOS(Internetworking Operating System)

- IOS Server Load Balancing

-



가



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(,)



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(RMON 1&2)

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(RSPAN)

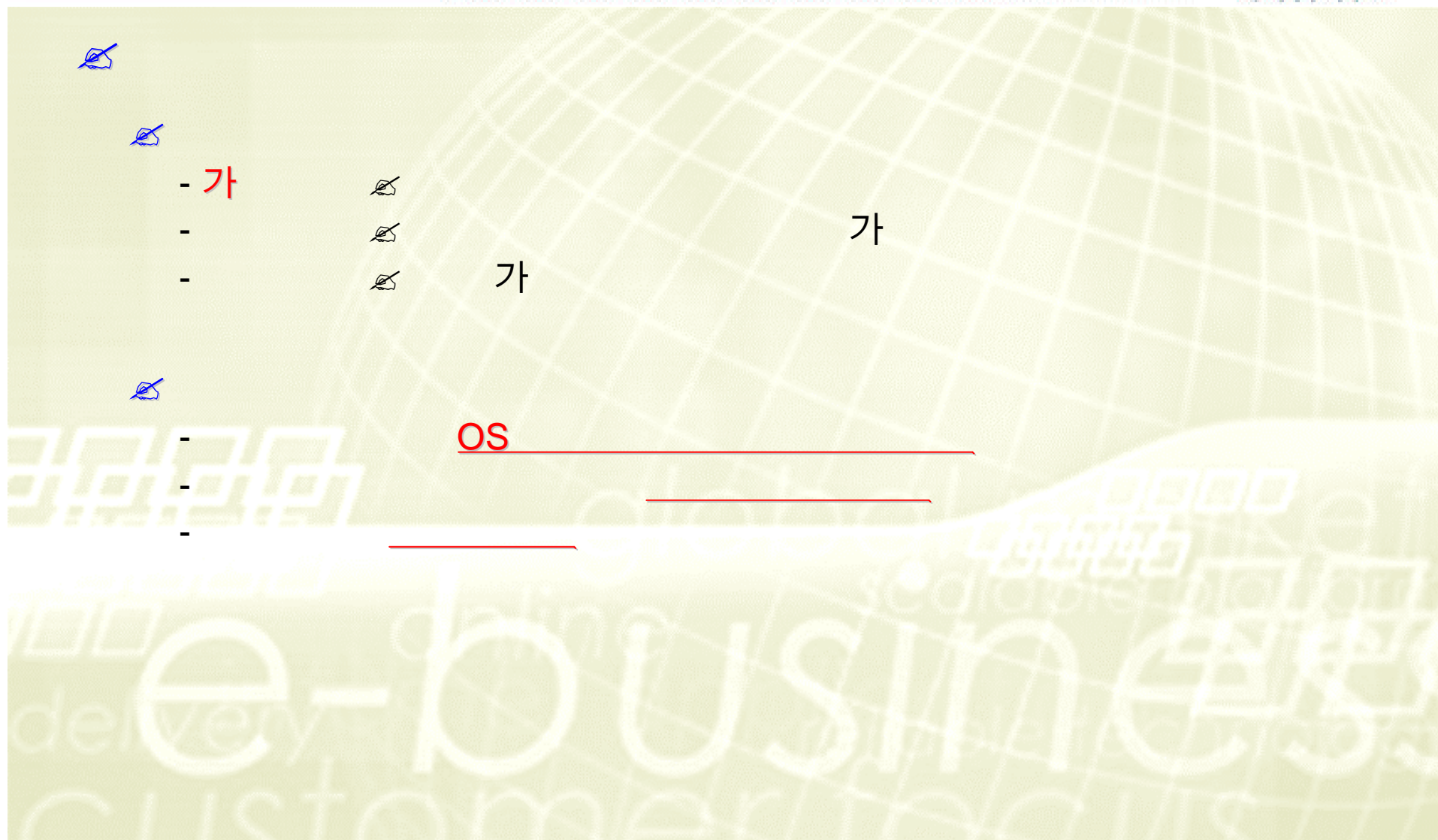
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- Active / Passive



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- Active / Active



가

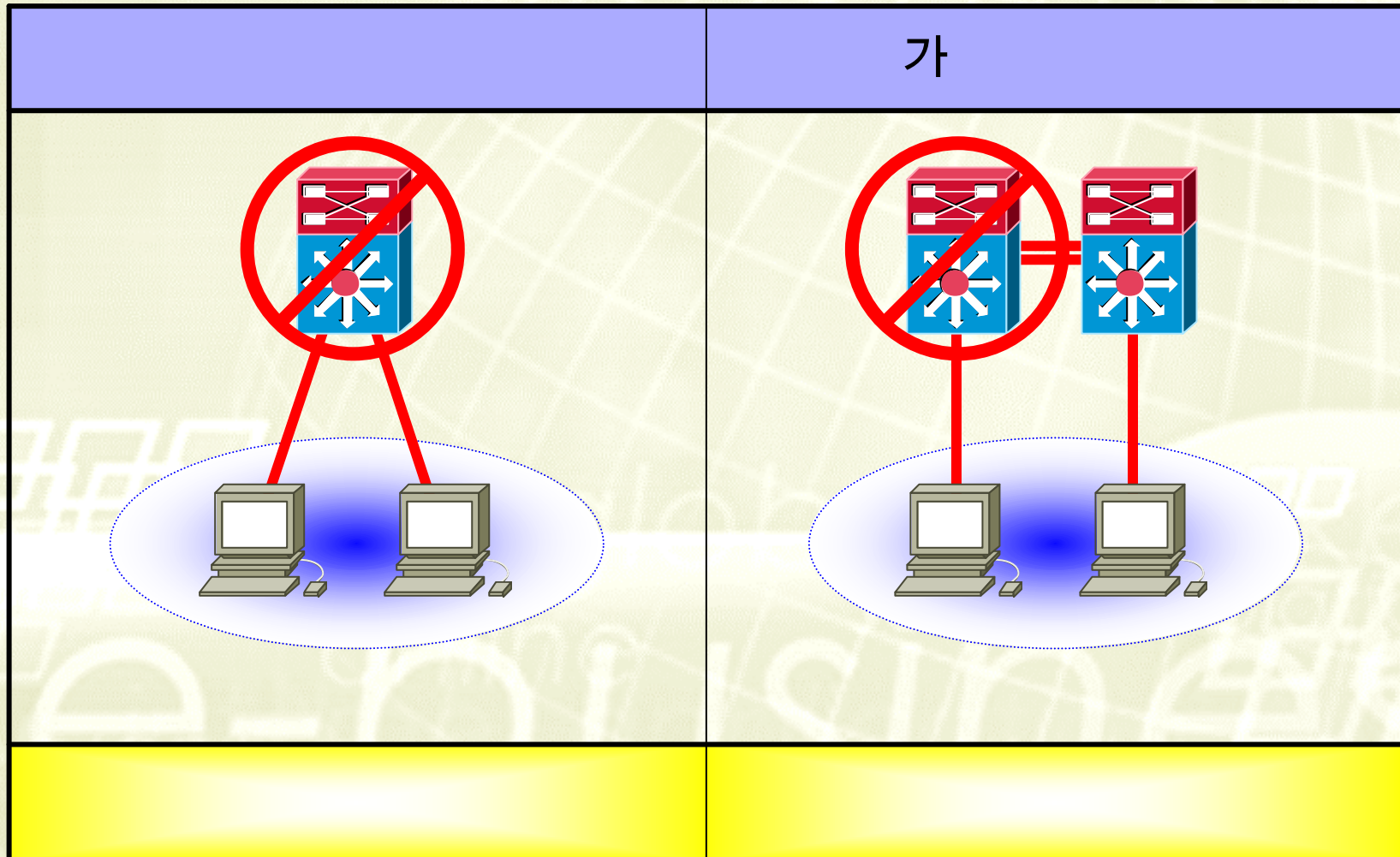
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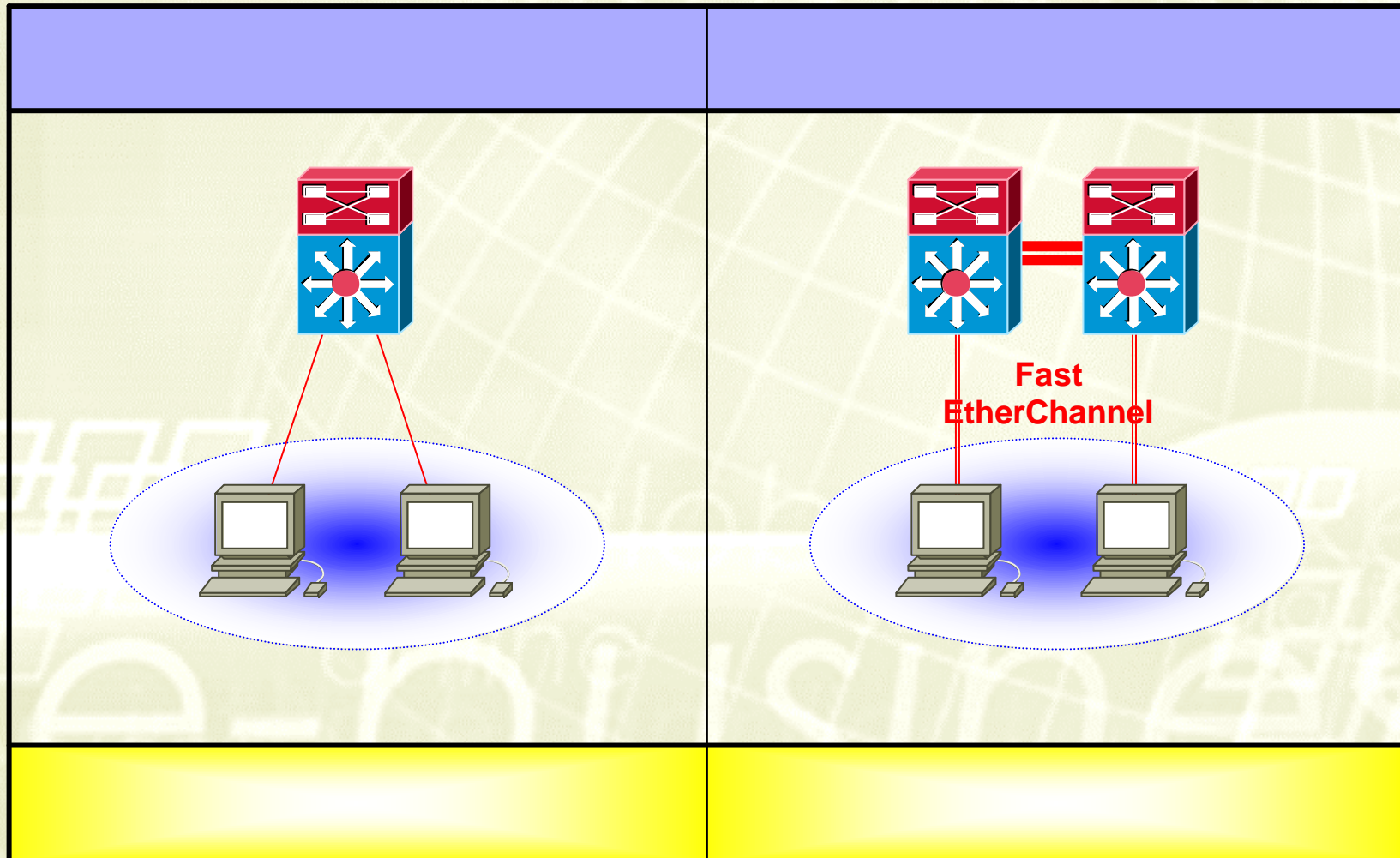
가

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()



6.





| Modality | Mbytes/Image | Mbps | () |
|------------------------|--------------|--------|---------|
| Conventional Radiology | 10 | 80Mbps | 40Mbps |
| Fluoro(Spot Films) | 10 | 80Mbps | 40Mbps |
| Computed Tomography | 0.5 | 4Mbps | 2Mbps |
| MRI | 0.5 | 4Mbps | 2Mbps |
| Ultrasound | 0.25 | 1Mbps | 500Kbps |
| Nuclear Medicine | 0.25 | 1Mbps | 500Kbps |
| Special Procedure | 0.5 | 4Mbps | 2Mbps |



: 100Mbps

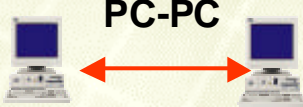
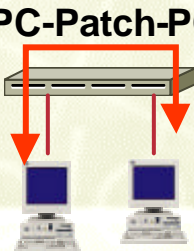
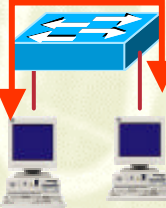


: 100Mbps

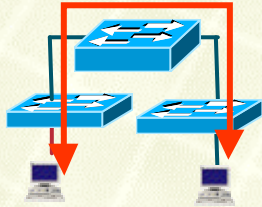
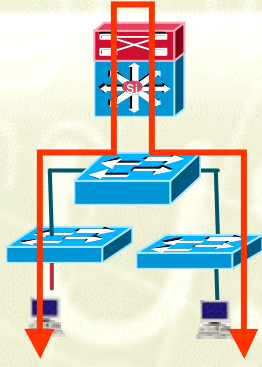
(Gigabit Ethernet

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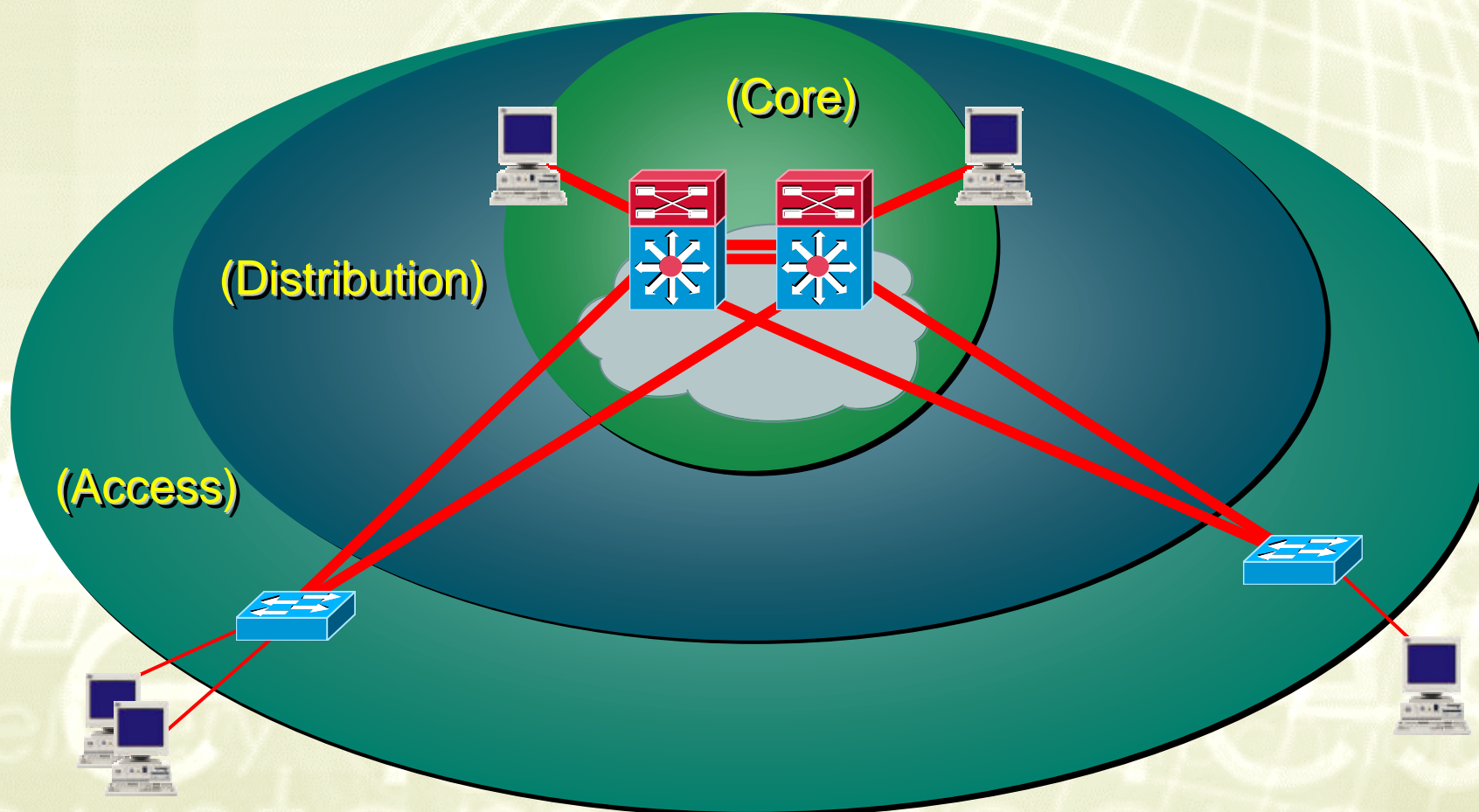
| | | | | Network Delay |
|--------------|---|--|--------|---------------|
| Access Layer | 1 |  | 30Mbps | |
| | 2 |  | 26Mbps | 0.52ms |
| | 3 |  | 29Mbps | 0.12ms |

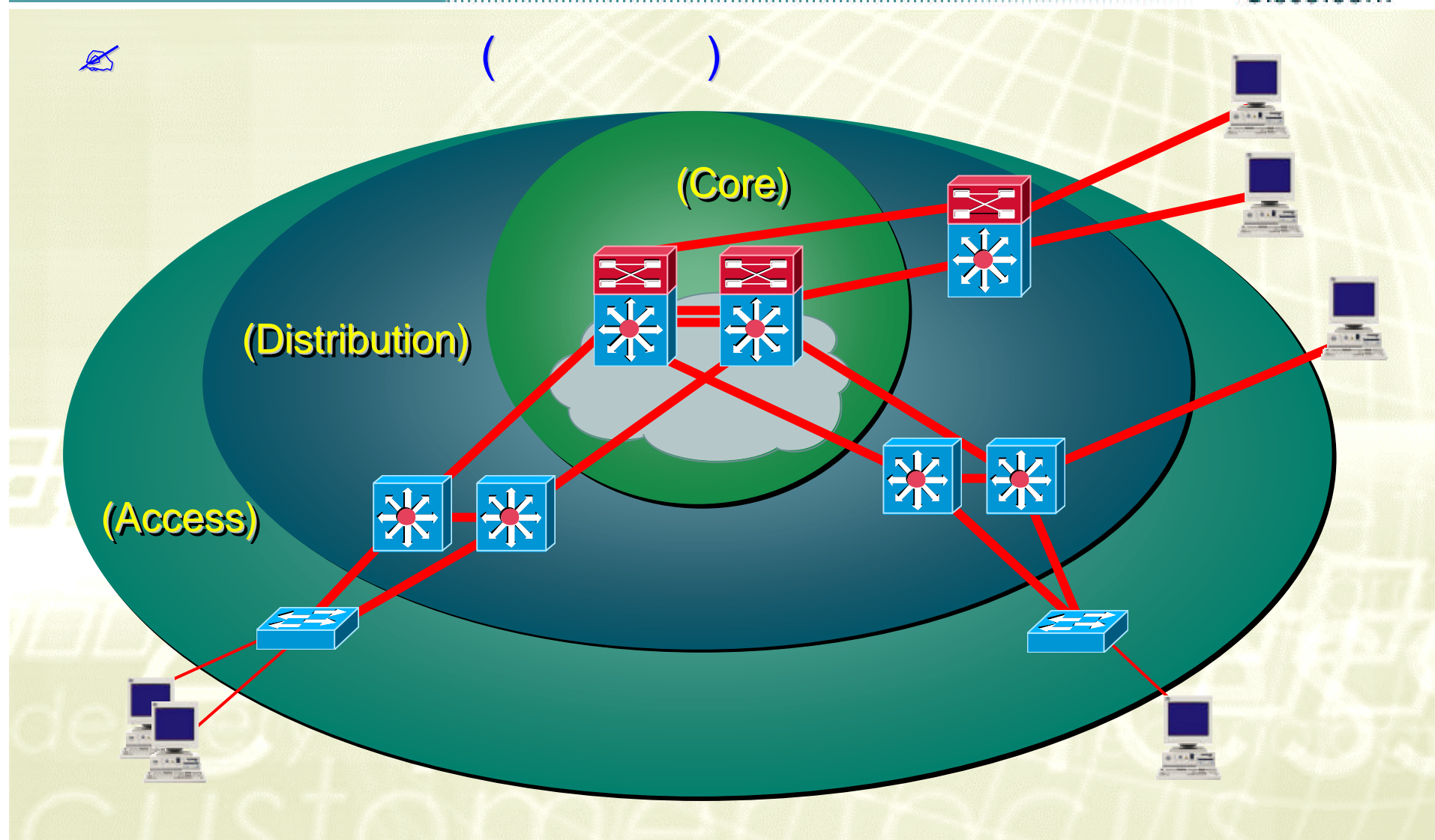


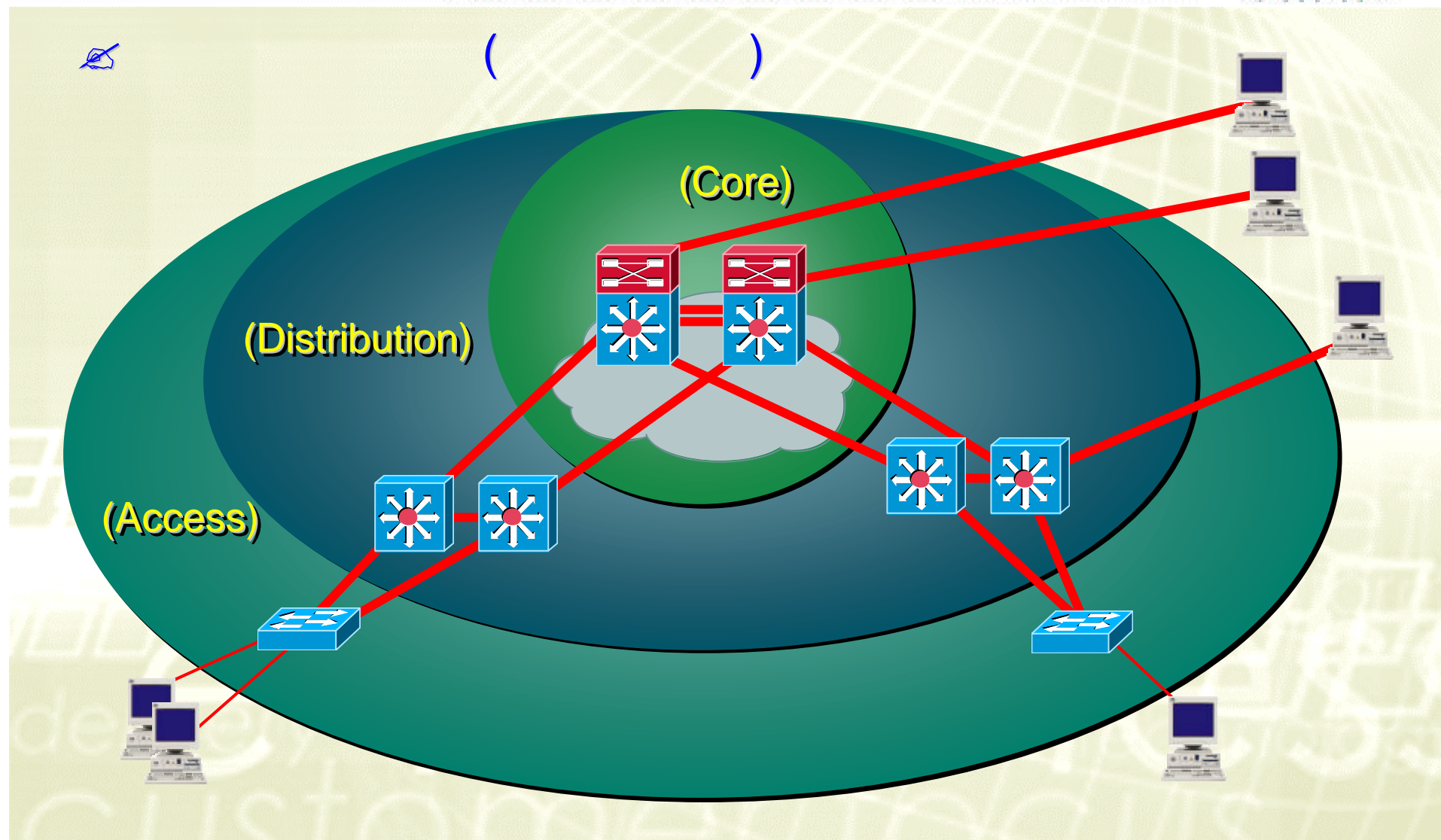
| | | | | Network Delay |
|--------------------|---|---|--------|---------------|
| Distribution Layer | 4 | PC-C2934-C3548-C2924-PC  | 28Mbps | 0.24ms |
| Backbone Layer | 5 | PC-C2924-C3548-C6509-C3548-C2924-PC  | 24Mbps | 1ms |

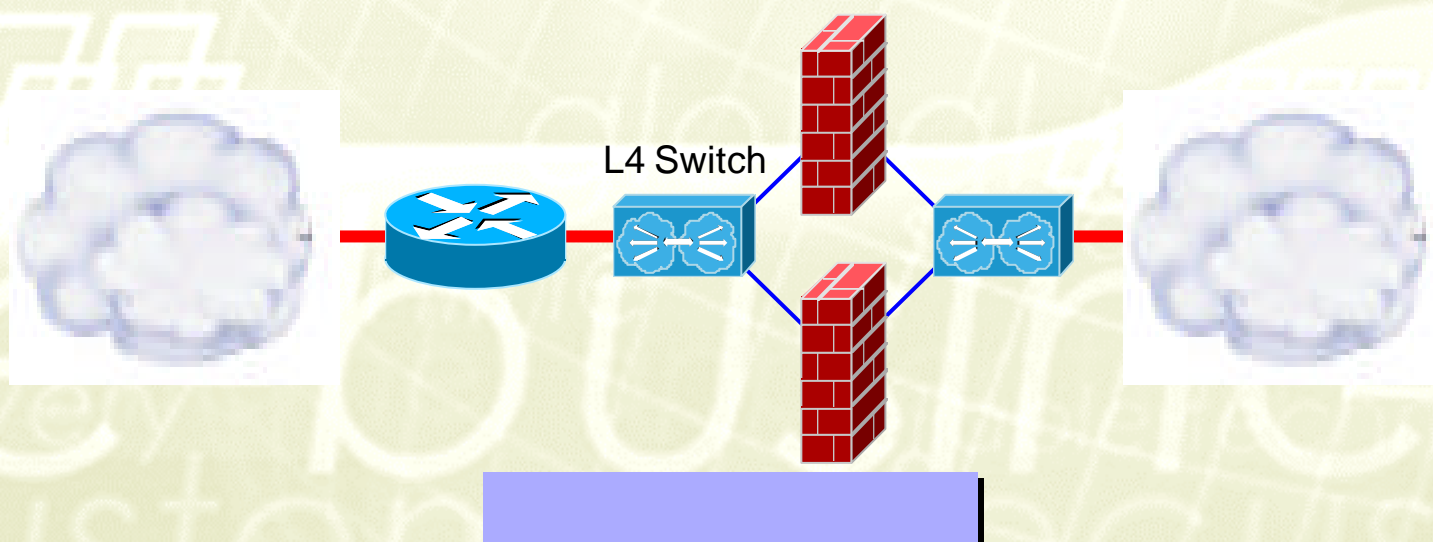
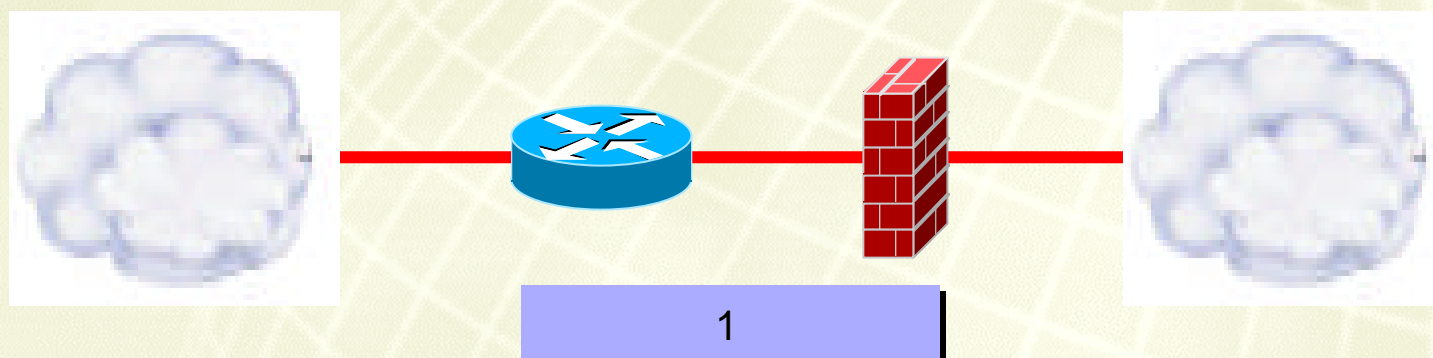


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7.

Cisco

가?

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가



300



A/S



Cisco is the best!

CISCO SYSTEMS



EMPOWERING THE INTERNET GENERATION