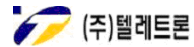




# Video Telephony for Campus

(CCIE R/S & Voice 6238)

(NGN Solution)



Network	Agenda
<ul style="list-style-type: none"><li>1. Rapid Transition to Convergence</li><li>2. CallManager 4.0 Enhancements</li><li>3. Security</li><li>4. Video Telephony</li><li>5. Summary</li></ul>	

Network

( )

1. VoIP( )

” , 19 – “2004 5 20 Digital Times”

2. (VoIP) 가 가 ,

IAD 가 200 300 ,

가 . – “6 2 ”

3. IP ,

. ; “6 10 Digital Times”




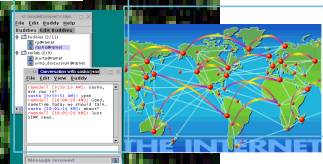
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인네트 (주)텔레트론

Network

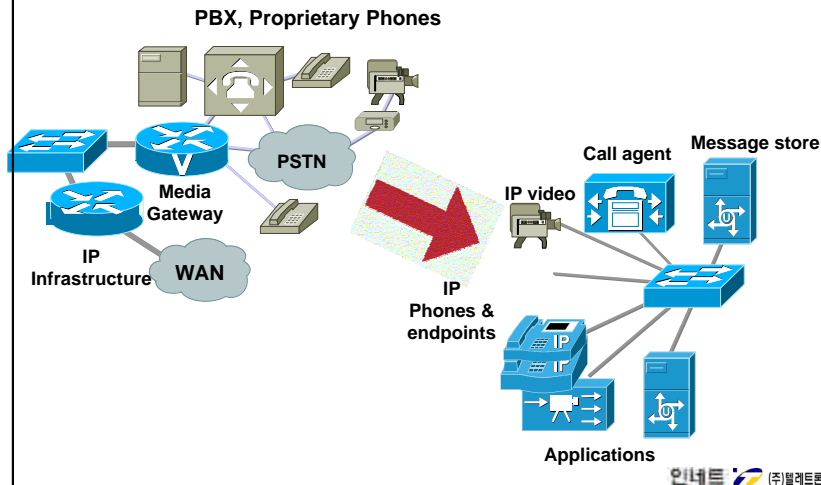
New forces are redefining business

- Global markets
- Networked Virtual Organization
- Internet
- Presence
- Security
- Enhanced Communication for Productivity

인네트 (주)텔레트론

## A Revolution is Happening....



## ...and it's Changing the Industry

### TDM

### IP

PSTN	➡	Internet
Incumbent Vendors	➡	New Vendors
Proprietary	➡	Open
Hardware	➡	Software (application)
Voice or Data	➡	Voice, Video and Data
Price	➡	ROI

## Benefits of Convergence

- Design efficiency
  - ✓ One infrastructure to know, buy and maintain
  - ✓ Cost savings - Capital, personnel, training
  - ✓ Leveraged investment for expansions and upgrades
- Greater business agility for new technologies and applications
- Extension of data security technology to voice and video (encryption, authentication)
- Scalability, beyond the PBX cabinet

***Cisco CallManager delivers greater economic and operational advantages***

## Cisco Is the Most Experienced in IP Telephony

Cisco Enters the IP Telephony Market

Traditional Voice Vendors  
Enter the IP Telephony Market

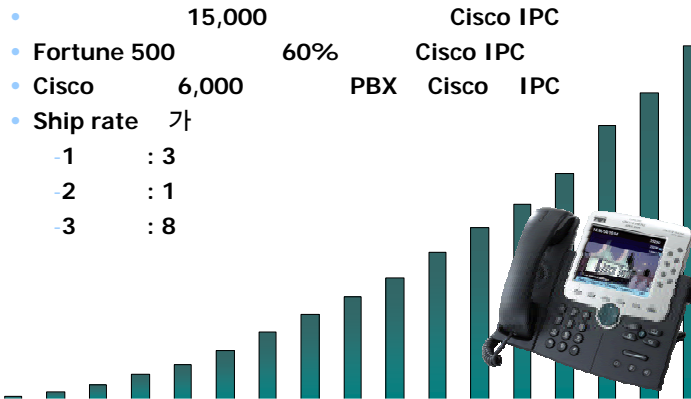
1996 1997 1998 1999 2000 2001 2002 2003 2004

- Cisco has the largest and most IP telephony installs of any vendor
  - 3M+ IP phones shipped
  - 2.3M+ Unity seats shipped
  - 730K Contact center agent seats shipped
  - 83K+ MeetingPlace Licenses
  - 15,000+ IP Communications customers
  - 13.9M+ VoIP ports shipped
  - 21M+ Power over Ethernet ports shipped
  - 60% of Fortune 500® using Cisco IP Communications
- Cisco has 20 years experience in IP networking

**Means high success rate and low risk of implementation issues**



## Cisco: IP Phone 3 (2004 4 )



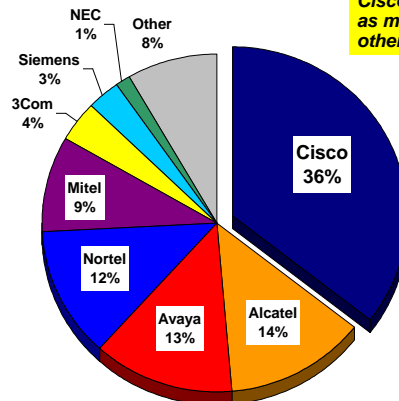
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인네트 (주)텔레콤

## Cisco is the Leader in IP Phone Shipments Q4 CY2003

WW IP Phone Shipments: Units (Market Share)  
Q4 CY2003

Total: 759 K - Source: Synergy Research



Cisco is shipping 2-3 times as many IP phones as any other vendor

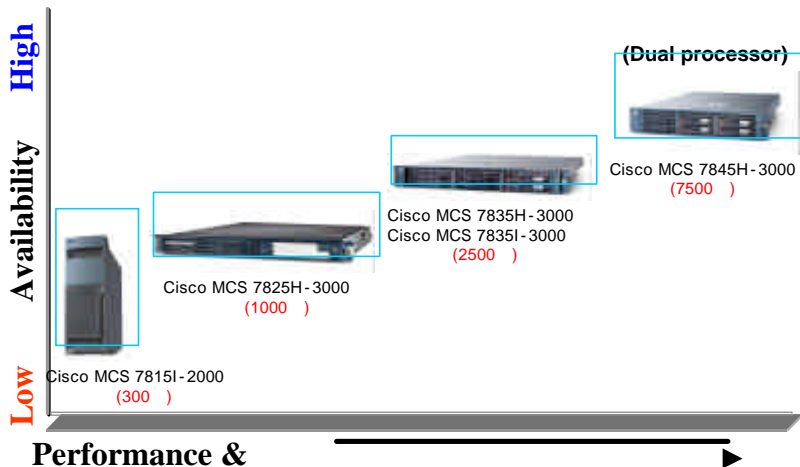
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인네트 (주)텔레콤

## CallManager 4.0

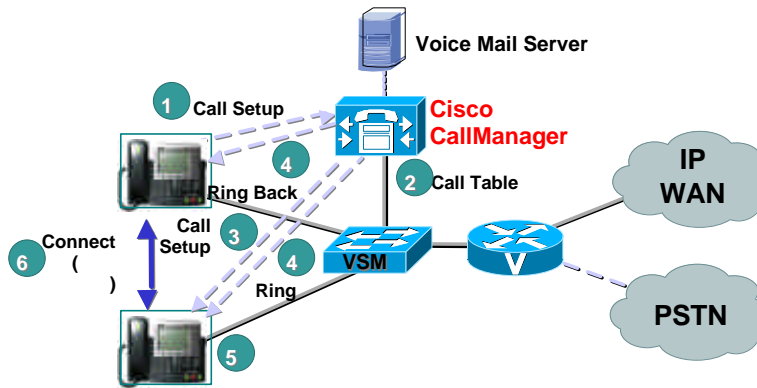


## Cisco IP Communication Platforms



## All IP Cisco IP PBX

### Single Site



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인사이드 (주) 텔레트론

## Cisco CallManager 4.0

### MLPP with Annunciator

Q.SIG (CT, CF(ALL,B,NA), MWI) – ISO

CallManager Video (SCCP, H.323)

### User features

- Multiple calls per line appearance
- Enhanced call barge
- Enhanced privacy
- Call join multiple selected calls
- Direct transfer two selected calls
- Immediate Divert-VM
- Assign URL to any line button
- Drop any party from conference
- Configurable call fwd info display
- IPMA enhancements

SIP Signaling interface (Network side – no phone support)

### Hunt group enhancements

Malicious Call Trace

### Security

- Media encryption – new IP phones
- Device authentication (new phones to/from CallManager)
- Signaling authentication (TLS new phones to/from CallManager)

CTI enhancements (Route point media termination, shared lines)

BAT Enhancements

Real Time Monitor Tool Enhancements

Trace Enhancements

## Security Enhancements



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Enhanced  
in 4.0

### Security: Cisco CallManager 4.0

- Provide baseline in CallManager to support the following for endpoints and gateways:
  - Authentication
  - Integrity
  - Privacy
- **Phone Hardening**: Cisco-signed Phone Firmware and phone configuration.
- **Phone Identity**: Cisco CA-signed X.509v3 certs installed in newly manufactured phones and new phone loads.
- SCCPS - "Skinny Signaling Security": **Authenticated and encrypted signaling.**
- **Media Integrity and Privacy**: **AES-128-CBC Encryptor for RTP payload.**
- **Server OS Hardening**: Improvements and recommendations to improve OS Security.

## Cisco Earns Top Rating in Challenging VoIP Security Test

- ? IPT Top 5 IPT (Cisco, Avaya, Siemens, Nortel, Mitel) 가  
test , Cisco Avaya 가  
? Network World Lab Alliance member  
"Miercom and consultant  
"Rodney Thayer" 가 test  
? 3 IP Telephony Layer2/3  
Infra Hacking Security

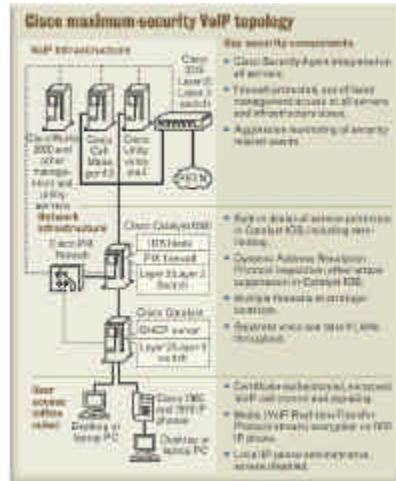
? Result

?Cisco Top Secure Rate

?Avaya test ,  
Secure rate

"Cisco hacker  
Secure IPT  
!"

Ed Mier, president of Miercom, and product test center



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인넷 (주)네트웍

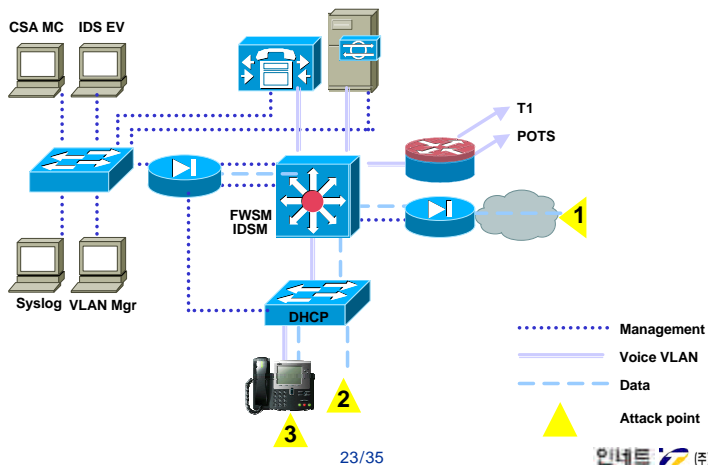
## The Ground Rules

- **Vendors**
  - Provided a "maximum security" voice system
  - **1000 users**, single site deployment, no remote branch, no telecommuter (VPN) solution, and no softphones – Same rules for all vendors
  - Must use equipment available today
  - No changes to configuration during test
- **Hackers**
  - **Could use any tools available on Internet**
  - **3 attack points simulated real world system**
  - Attempted to break or affect voice system
  - Test lasted **3 days**

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## Cisco Test Topology at Miercom Labs

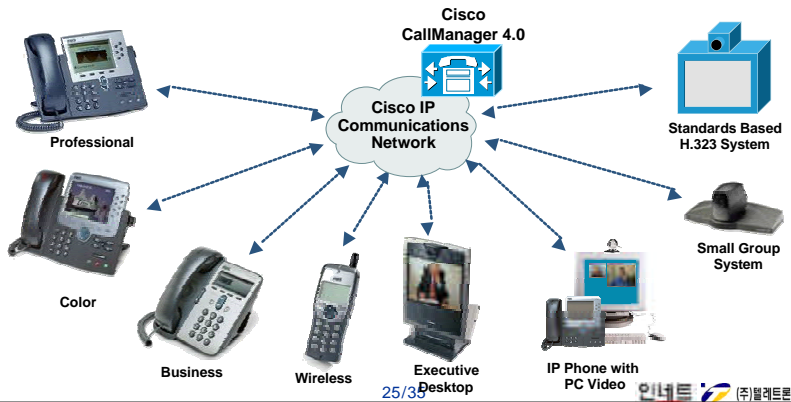


## Video Telephony



## Introducing IP Video Telephony

Enterprise-class IP telephony and video is delivered over a single Cisco IP Communications infrastructure



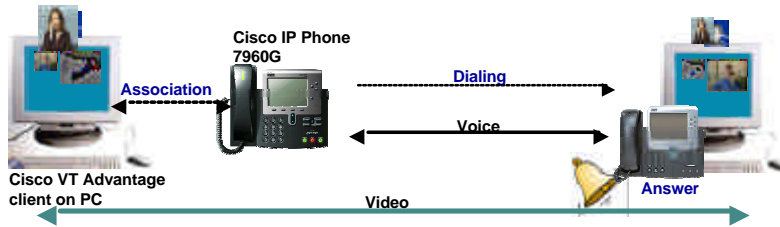
## Cisco's IP Video Endpoints



Peripheral & Video Association March 2004

- Extends the capabilities of Cisco's IP phones
- IP phone call with video on PC (USB Web Cam)
- Unified dial plans
- Converged billing & management
- Interoperates with H.323 video endpoints, MCU's, & GW's

## Cisco VT Advantage



- PC associates with IP phone
- Phone registers as a video capable phone
- Initiate Voice/Video Call from IP phone
  - Audio on the Phone
  - Video on the PC (Cisco VT Camera)

Convergence in Action!

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## Cisco Video



- 1.
- 2.
- 3.
- 4.
5. Cisco Call Manager
6. Cisco IP Phone Video
7. H323 가



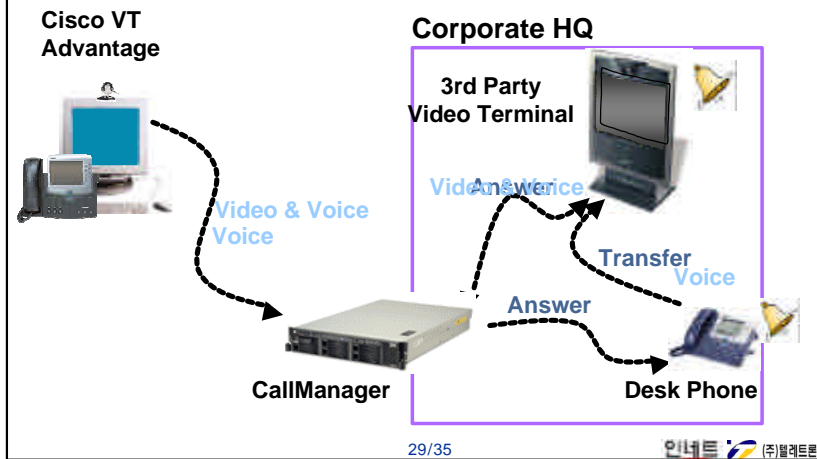
Cisco VT Advantage

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## User Experience Example - Transfer



## Cisco IP Videoconferencing ( )

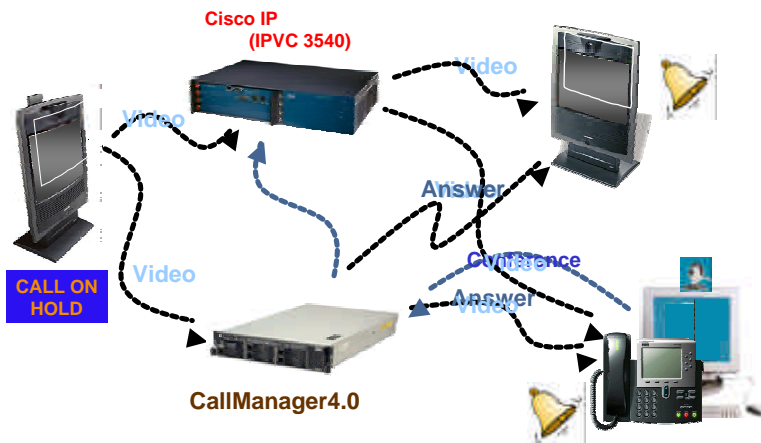
- **Cisco Multimedia Conference Manager**
  - H.323 Gatekeeper/Proxy
- **Cisco IP/VC 3540**
  - Multipoint control unit
  - H.320 to H.323 gateway
  - T.120 data conferencing server
  - Rate Matching
- **Cisco IP/VC 3511**
  - Multipoint control unit
- **Cisco IP/VC 3521, 3526**
  - H.320 to H.323 gateways



**Choice of Packages**  
**Multi-Function Modular**  
**Single-Function Compact**

- New IP/VC software provides MCU resource for IP Video Telephony
- **Conferencing resources provides IP Telephony-like functionality for videoconferencing**
- Allows customers to create point-point calls then seamlessly expand into videoconference format
- Same Telephony Button Setup Experience:
  - “Confr” – push, dial tone, add participants
  - “MeetMe” – push, enter number, create or join conference

## Video Phone &



- IP PBX가
- Desk 가 ( )  
- Call Transfer, Call Pickup ( ), Call Forward, Video Mute
- Desk가 가
- ( = )
- 가 , "Conference" Button

## Video Telephony Components Summary

### Cisco VT Advantage



- Cisco IP Phone carries voice, PC displays video
- Cisco VT Advantage software & Cisco VT Camera
- Supports SCCP Cisco IP Phones 7940G, 7960G, and 7970G



### SCCP Video Endpoints



- Emulates 7960 Phone (incl. softkeys, directory, XML services)
- Available from Tandberg



### H.323 Video Endpoints



- Available from AVVID partners -
  - Tandberg, Polycom, Motion Media, Sony, Sanyo (verification on CCM 4.0 required)



### CallManager 4.0



- Providing Single Dial Plan and Call Control
- Audio and video resource management



### IP/VC 3.2 plus 3540



- Integration with CCM via SCCP
- Enables Ad-Hoc Conferencing for SCCP Video Devices
- H.323 and SCCP support
- Gateway for PSTN access (H.320)



## Cisco IP Video Telephony Direction

- **IP end-to-end Cisco Voice Solution**
- **H.323**
- **Video Telephony**

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## Summary

- **Cisco is Market leader in IP Communications**
- **Cisco has most comprehensive breadth of products**
- IP Communications can provide your business with substantial ROI and improved productivity
- **Video Telephony is a paradigm change**
- Only IP Communications will provide your business with platform for future



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