


IP Telephony and Converged Applications

February 2006

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Product Marketing
IP Telephony and Converged Applications



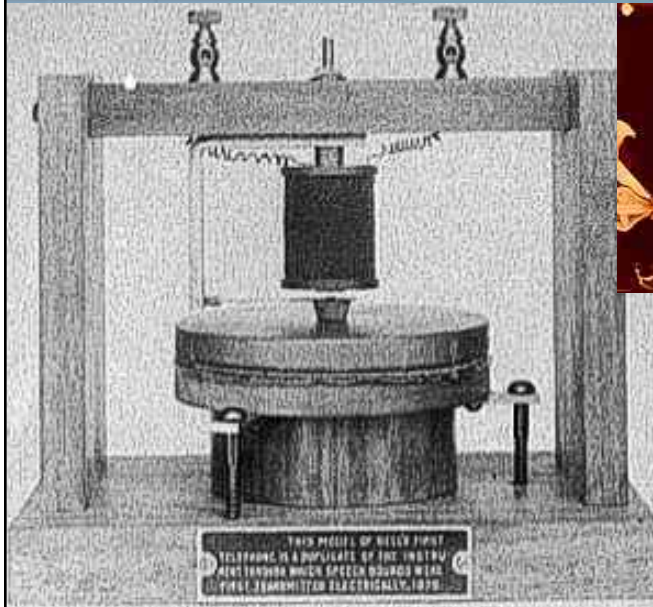
Agenda

- › Trends in the world of Telephony
 - From PBX to Unified Communications
 - Relevance and importance of SIP
- › Components of the IP Telephony on System i offer
 - Overview features and benefits of each application
 - › Telephony
 - System architecture and resilience overview
 - › Messaging
 - › Conferencing
 - › Presence
- › Additional applications / Application Integration
 - › Mobility
 - › Contact Center
- › System i requirements
- › Demo

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Q.0.

WHAT HAS THIS GOT TO DO WITH IP TELEPHONY?



First telephone
invented by
Alexander Graham
Bell
in 1876

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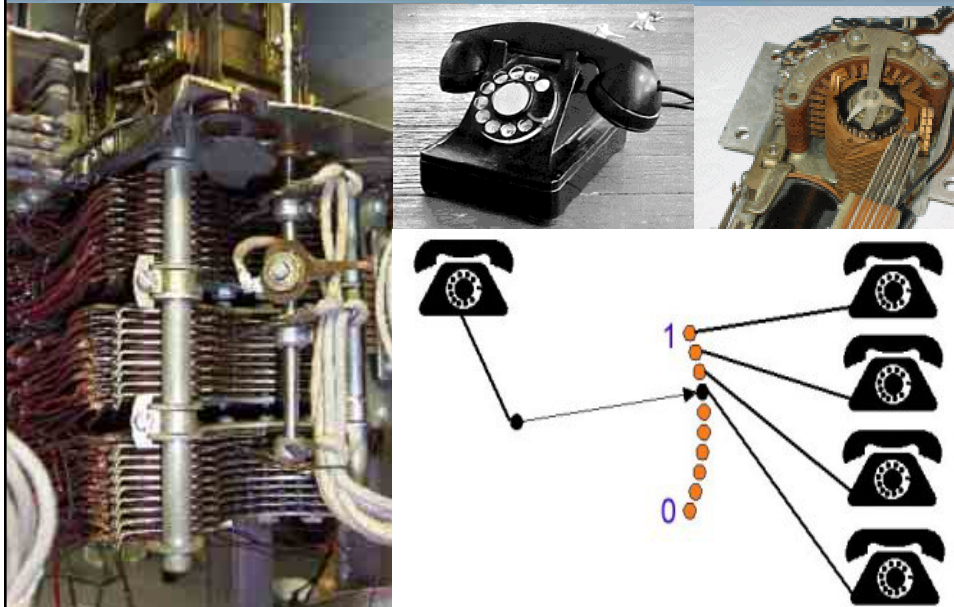
Q.0.

MANUAL TELEPHONE EXCHANGE

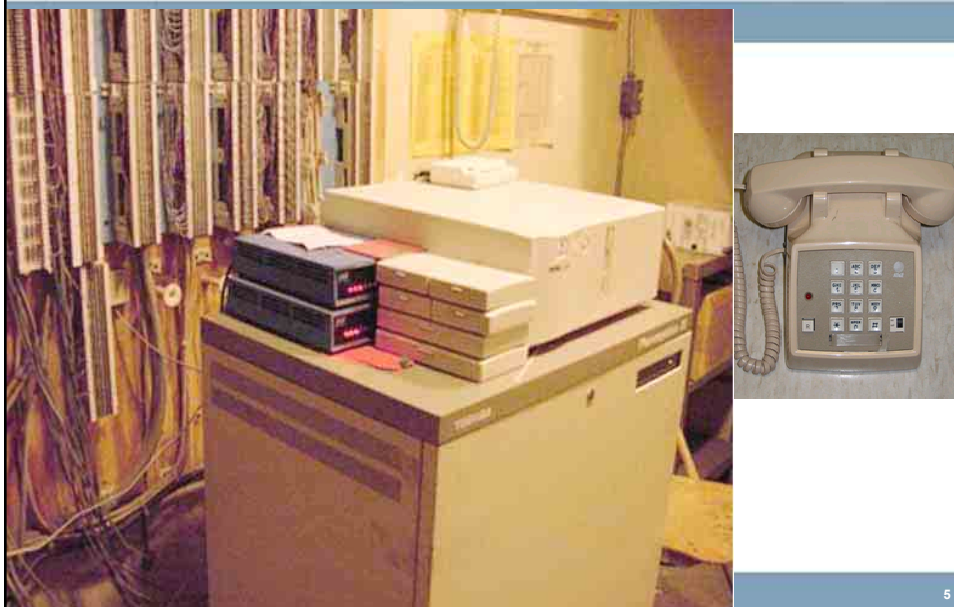


(c) 1975 Joseph A. Carr JoeTourist.ca

MECHANICAL TELEPHONE EXCHANGE



ELECTRONIC TELEPHONE EXCHANGE - PBX





TRADITIONAL PBX SOLUTIONS

- › Basic PBX Services
 - Dial-tone/PBX features
 - › Music in Hold, Hunt Groups, Paging, etc
 - Receptionist/Operator Services
 - Voice mail
 - Single site
- › Advanced PBX Services
 - Auto attendant
 - Unified Messaging
 - Conferencing
 - Contact centre
 - Multisite
- › Mainly voice (ISDN data)
- › Tie lines between offices
- › Highly Reliable



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WHAT IS IP TELEPHONY?

WHAT IS IP TELEPHONY?



- › Known by many names:
 - IP Telephony
 - Voice/Data Convergence
 - IP PBX
 - VoIP – Voice Over Internet Protocol
- › In plain English, it is the delivery of voice services over a LAN and/or WAN using Internet Protocol (IP)
- › Internet Protocol (IP) is the method by which data is sent from one computer to another on a data network
 - Local Area Networks (LAN)
 - Wide-Area Networks (WAN)
 - The Internet
- › Not the same as **Voice over the Internet**

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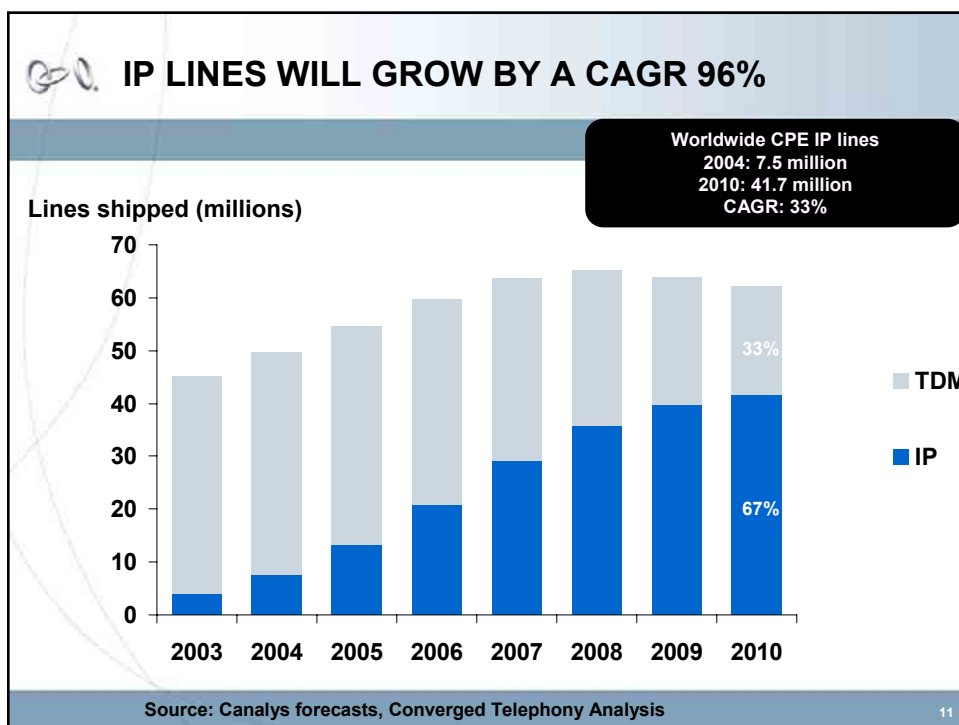
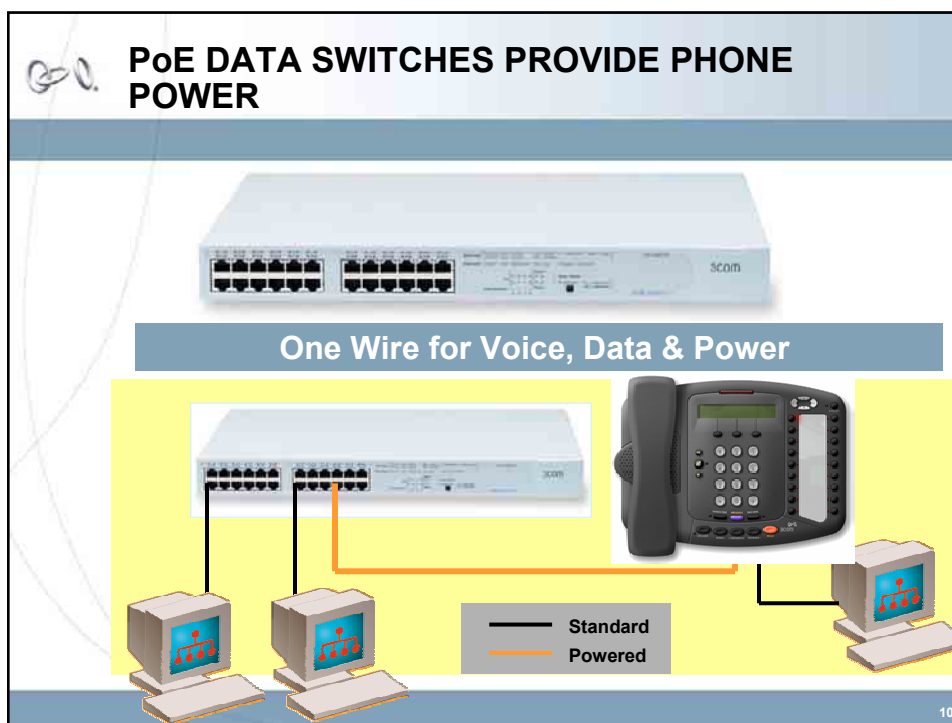
1998: NETWORKED TELEPHONE EXCHANGE - NBX



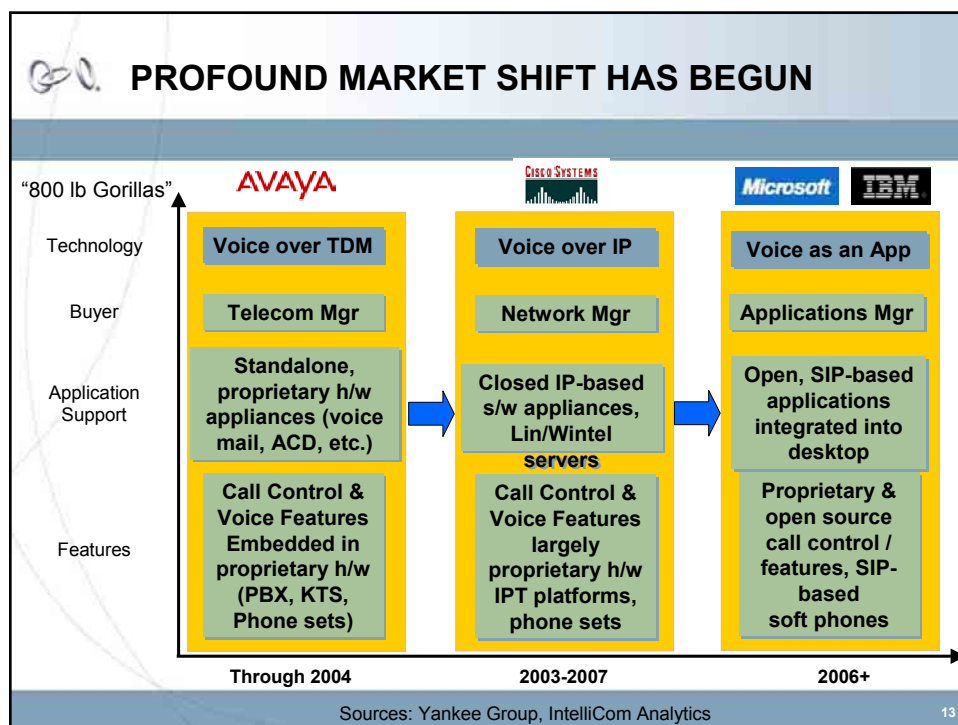
- › 3Com's NBX was the world's first Network Branch Exchange
- › Launched in 1998
- › Use existing Ethernet cabling
- › Share the network with data applications



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Communication Trends





WHAT ARE THE MAJOR TRENDS IN IP COMMUNICATIONS?

- › Mobility
- › SIP Trunking
- › Open Source
- › Business Applications
 - Microsoft
 - IBM



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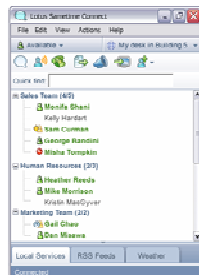


Unified Communications

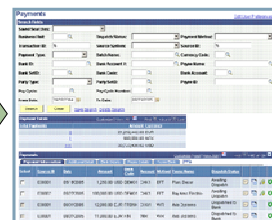
- › Integration of telephony, collaboration tools and business applications to drive revenue, improve business processes and increase customer satisfaction



**IP
Telephony**

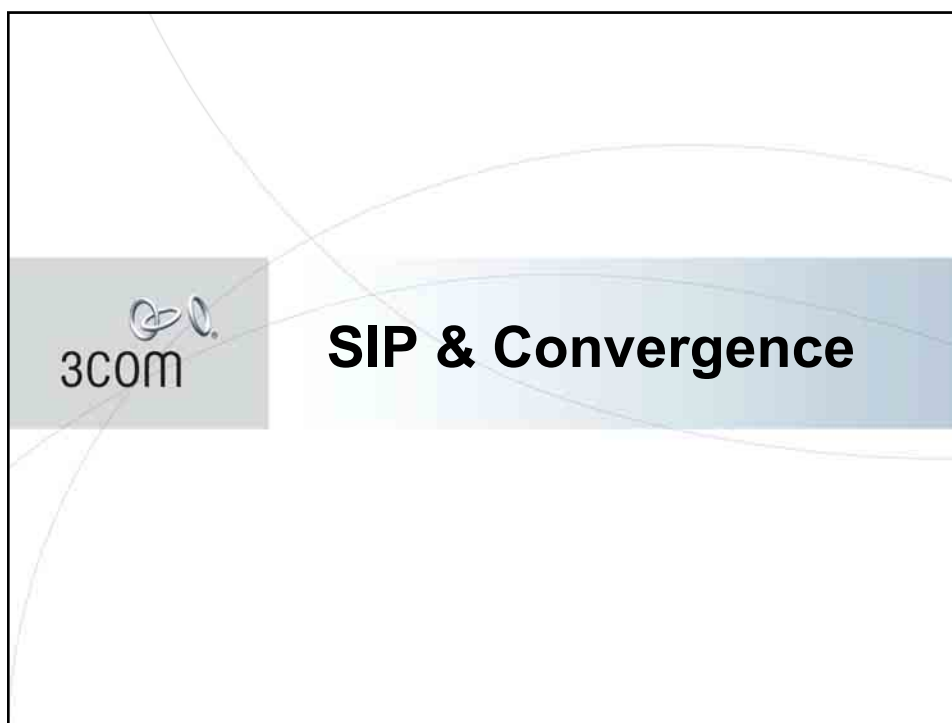


**Collaboration
Telephony Presence
Click-to-Dial Notes/Sametime**



**Business
Applications**

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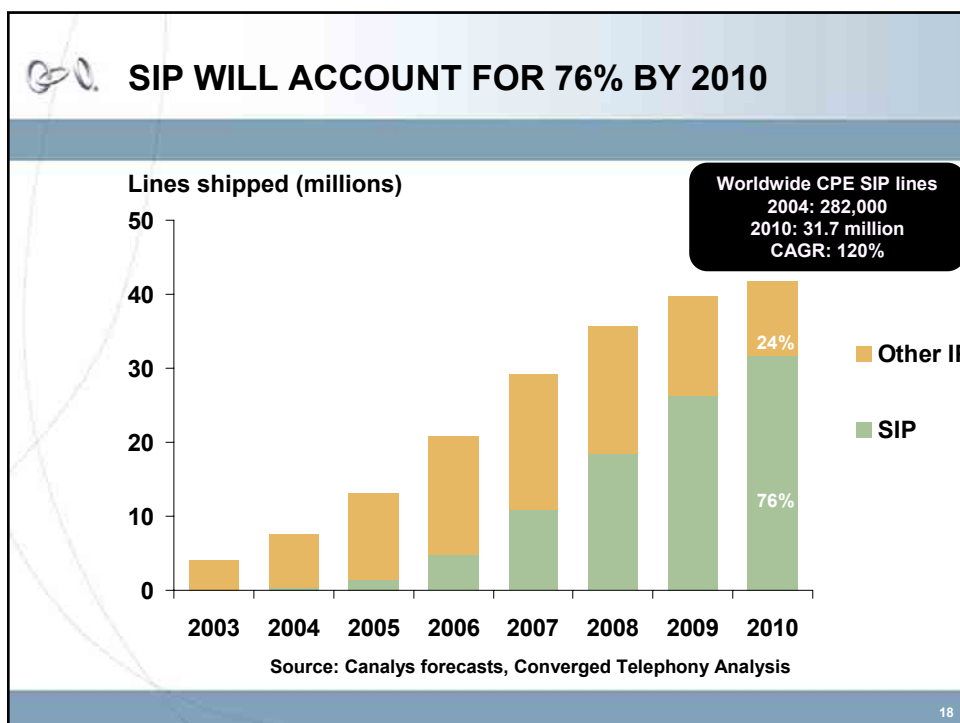
What is SIP?

A standard for initiating interactive sessions:

Session Initiation Protocol

- › Enables multi-vendor deployment of IP Telephony
- › Supports communications using multiple media such as video and instant messaging – not just voice
- › Can be easily integrated with Web technologies
- › Calling based on email-like addressing
- › Extremely flexible

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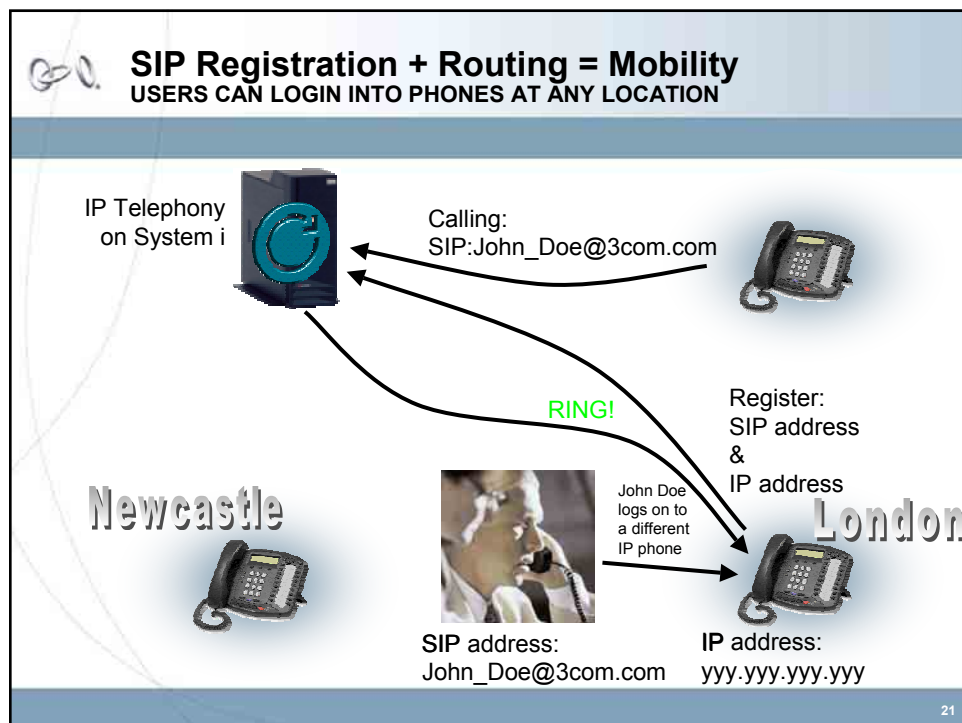
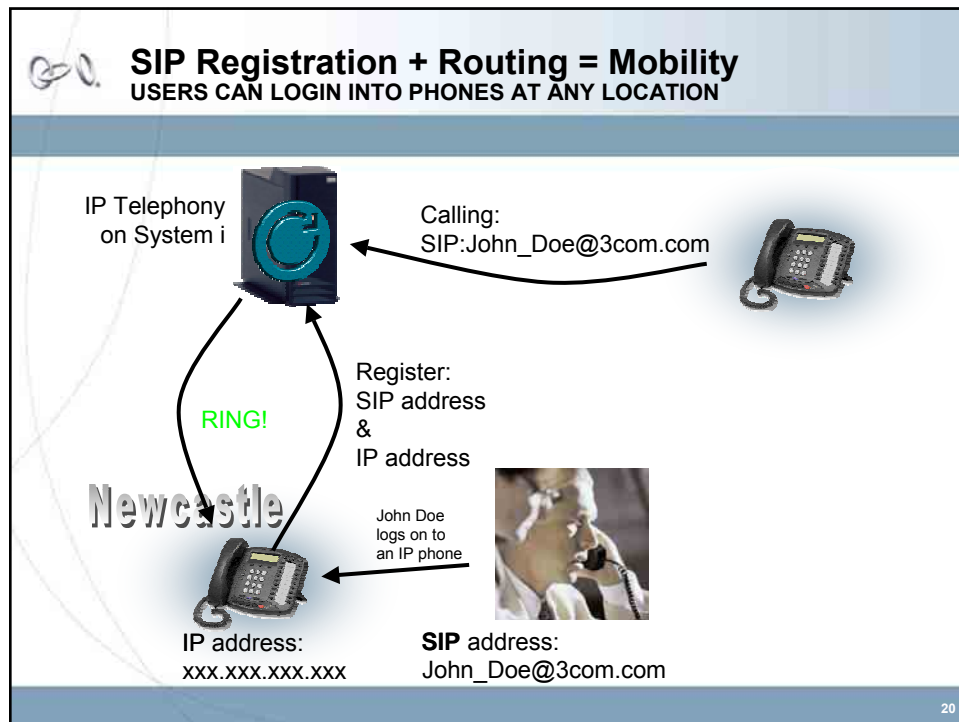


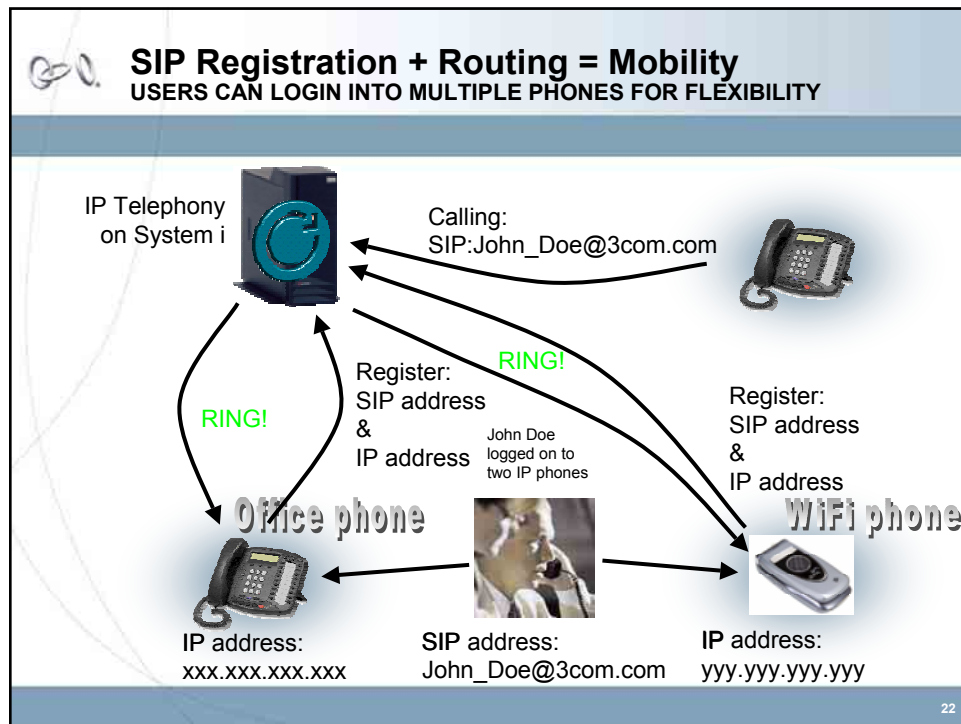
SIP Basics:
Delivering device and location independence

SIP is mostly about 3 things:

1. Registration
2. Routing
3. Status

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SIP Addressing

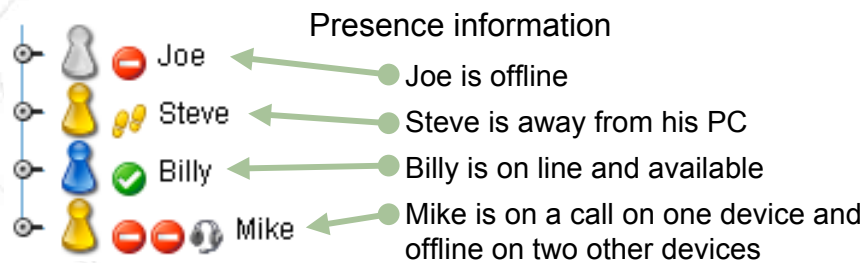
- › SIP addresses look like email addresses + "SIP:"
 E.g. SIP: joe_smith@xyz.com
- › For most IP Telephony applications users will simply retain their extension numbers:
 E.g. SIP: 23476@xyz.com
- › The users call each other using normal extension numbers and SIP devices take care of adding the rest

By using a SIP address, users can register on multiple devices and roam around without worrying about their current IP address

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SIP Status delivers information e.g. Presence

- › SIP providing user status is “presence”
 - Enables users to see the availability of colleagues
 - When they are on the phone, when they are away
- › Avoids “blind” calling & enables more efficient communications



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A single SIP infrastructure can support many different services!



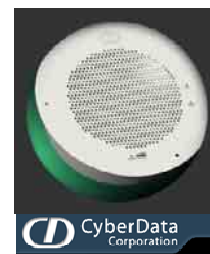
SIP
webcam

VoiSmart®
IP Telephony & VoIP Solutions



SIP Surveillance

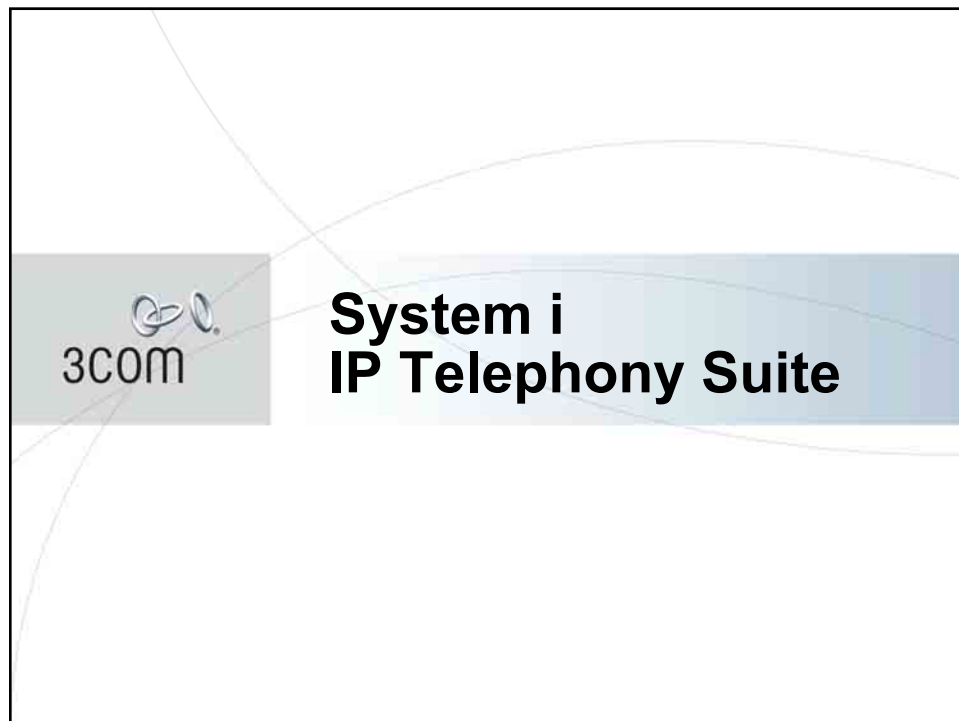
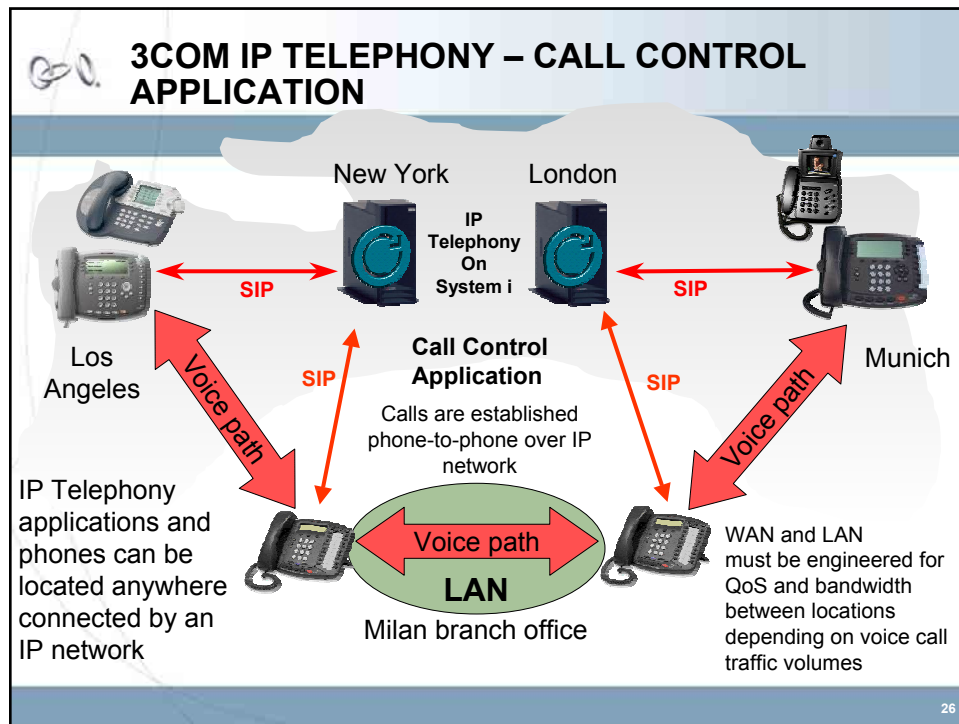
NetCODEC



SIP Paging

CyberData Corporation

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3COM IP TELEPHONY WITH SIMPLICITY & INTEGRATION OF IBM SYSTEM i

- 3Com SIP-based Telephony and Application Modules on a single platform with:
 - IBM Collaboration Applications
 - IBM Software Partner (ISV) Solutions
- Telephony on IBM System i
 - Single, Secure, Reliable Platform for IP Telephony and other Business Applications
 - Reduces Total Cost of Ownership
 - Enhances Business Process Integration and Application Integration
 - Provides Operational Efficiency and Productivity
 - Strengthens Customer Interaction

CRM
ERP
Other

IBM Collaboration Applications

IP Telephony


IP Messaging

IP Conferencing

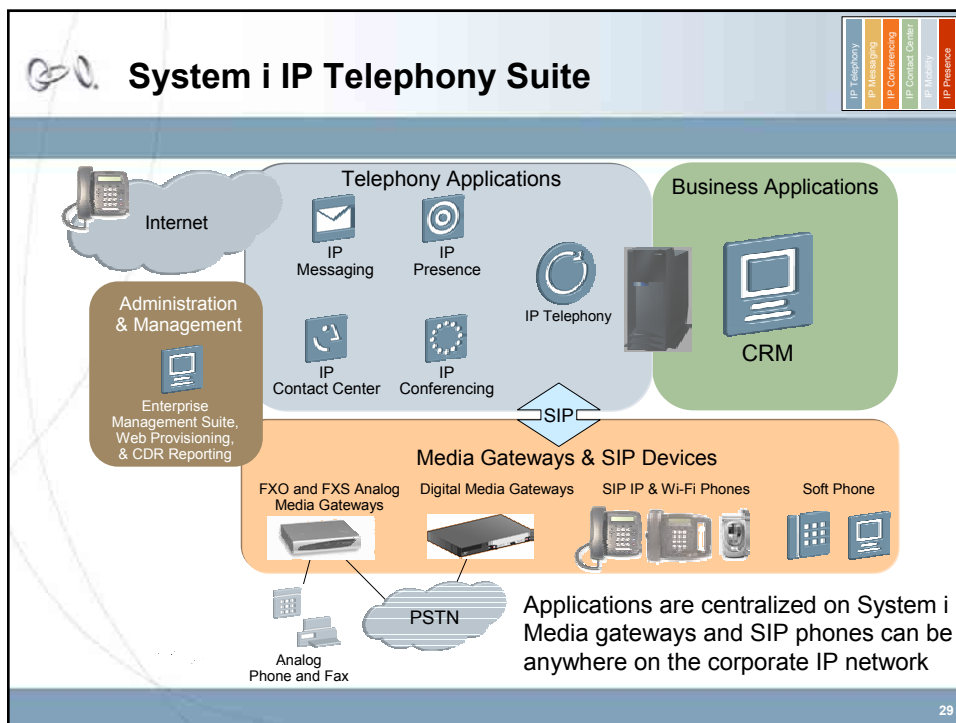
IP Contact Center

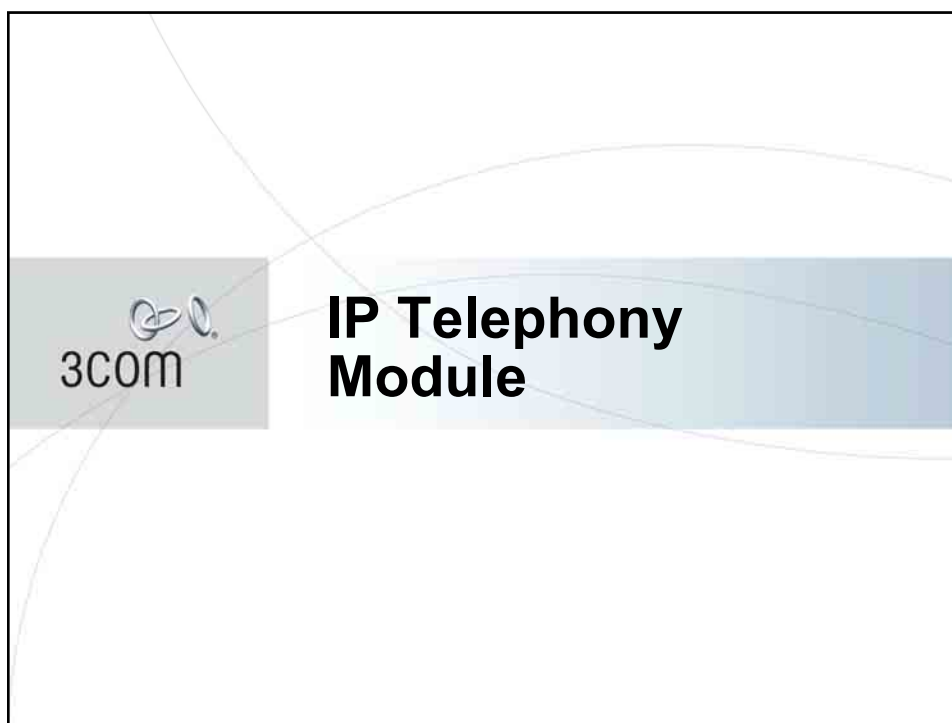
IP Mobility

IP Presence



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IP Telephony

IP Telephony Module

| |
|-------------------|
| IPT Telephony |
| IP Messaging |
| IP Conferencing |
| IP Contact Center |
| IP Mobility |
| IP Presence |

- › Provides phone services over IP to IP phones
 - Desk phones
 - WiFi phones
 - Soft phones
 - and legacy phones via gateways
- › Traditional PBX features:
 - Transfer, conference, hold, paging, hunt groups, pickup, etc
- › Multimedia and advanced features
 - Video
 - Instant messaging
 - Desktop phone control
 - Mobility

**3Com
IP Phone**

**3Com 3108
Wifi Phone**

**3Com
Convergence
Center
Client**

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IP Telephony Module

IP Telephony

- › Supports legacy devices via gateways
 - Analog phones
 - Modems
 - Fax machines
 - Other PBX's
- › Routes calls to/from to the PSTN (Public Switched Telephone Network)
 - Gateways for digital and analog services
- › Connects calls to other applications
 - Direct connect over IP using SIP to
 - › IP Conferencing
 - › IP Messaging
 - › IP Contact Center

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IP Phone Choices

IP Telephony

3Com Phones

3101 Basic

3101-Speaker Basic

3102 Business

3103 Manager

3105 Attendant Console

3Com 3108 Wifi Phone

3Com Convergence Client (Soft phone)

Example compatible third party SIP phones

Conference

WiFi

Desktop

Video

7270 Wifi Blackberry

Nokia GSM/Wifi E61 (also E60/E70)

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IP Telephony

Advantages of 3Com IP phones

- › 3rd party compatible SIP phones are available
 - Many basic features are supported on standard SIP phones
- › 3Com phones offer advanced features, e.g.
 - Full user mobility - phone receives profile when user logs on
 - › Automatic speed dial configuration and feature button mappings
 - › Automatic dial plan configuration and preferred date/time format
 - Centralized configuration of phone button mappings, ring tones, delayed / no ring options, hunt groups
 - Automatic software upgrades at time chosen by administrator
 - “Hands Off” Installation via DHCP option
 - Remote control from desktop by 3Com Convergence Client
 - Message waiting indicator for bridged phones and hunt groups
 - Silent monitor and barge-in

| |
|-------------------|
| IP Telephony |
| IP Messaging |
| IP Conferencing |
| IP Contact Center |
| IP Mobility |
| IP Presence |

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IP Telephony

3101 BASIC TELEPHONE

- › 3101 Basic Phone
 - **No Microphone for Speaker Button**
 - **Speaker For Paging Only**
- › 3101SPKR Basic Phone With Speaker
 - **Microphone (Half-duplex)**
 - **Speaker For Paging And Audio**
- › Common Attributes
 - **Dual Switched 10/100 Mbps Uplink Ports**
 - **Supports Power Over Ethernet (802.3af)**
 - **2-line Pixel Display**
 - **4-way Display Control**
 - **Four Programmable Buttons With Lights**
 - **Wideband Audio Capable (Handset only)**
 - **Large Message Waiting Lamp**

| |
|-------------------|
| IP Telephony |
| IP Messaging |
| IP Conferencing |
| IP Contact Center |
| IP Mobility |
| IP Presence |



3C10401B



3C10401SPKRB

Ideal for Day-to-Day Office Use

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IP Telephony



3102 BUSINESS TELEPHONE

| |
|-------------------|
| IP Telephony |
| IP Messaging |
| IP Conferencing |
| IP Contact Center |
| IP Mobility |
| IP Presence |

- › Dual Switched 10/100 Mbps Uplink Ports
- › Supports Power Over Ethernet (802.3af)
- › 18 Programmable Buttons With Lights
- › Five Fixed Feature Buttons
- › 2-line Pixel Display
- › 4-way Display Control
- › Full-duplex Speakerphone
- › Wideband Audio Capable
- › Uni-directional MIC
- › Headset Jack
- › Large Message Waiting Light



3C10402B

Ideal for Heavy Multi-line Phone Users

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IP Telephony



3103 MANAGER TELEPHONE

| |
|-------------------|
| IP Telephony |
| IP Messaging |
| IP Conferencing |
| IP Contact Center |
| IP Mobility |
| IP Presence |

- › Dual Switched 10/100/1000 Mbps Uplink Ports
 - Gigabit To The Desktop
- › Supports Power Over Ethernet (802.3af)
- › Large Screen Display
- › Eight Programmable Buttons With Lights
- › Five Fixed Feature Buttons
- › 4-way Display Control
- › Full-duplex Speakerphone
- › Wideband Audio Capable
- › Uni-directional MIC
- › Headset Jack
- › Large Message Waiting Light




3C10403B

Ideal for Managers and Executives

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3103 MANAGER PHONE



Left Keys: These keys handle phone calls or list selections. Pressing one will start a new call if it does not already correspond with one. It would also answer an incoming call, as well as hold or unhold current calls. When there is a list selection, these keys activate the corresponding option.

Soft Keys: These keys activate the corresponding onscreen commands.

Volume/Mute: If there is a live call, this adjusts the volume level of the current audio output. Mute toggles the microphone audio input. If there is no live call, the buttons adjust the volume level of the ringer.

Dial Pad: Dials numbers and letters (where applicable).

Fixed Features: Activates speakerphone, conference, transfer, redial, and hold.

Call/Message Light: Flashes when there is an incoming call. Stays on when there is a new message.

Right Keys: These keys toggle a call actions list when there is a corresponding phone call. When there is a list selection, these keys activate the corresponding option.

Programmable Keys will function as:
 1) DSS/BLF
 2) Personal and system speed dials
 3) Other specific phone features or call options

Directional Keys/Select: Up and down keys will be used to scroll phone calls or lists. The select button will select highlighted list items.

Release Key: Releases the current active call.


New Call Key: Initiates a new phone call.

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3105 ATTENDANT CONSOLE

IP Telephony

- › Direct Station Select/Busy Lamp Flashing Display
- › 50 Programmable LED — 100 W/Shift
- › Four Fixed Feature Buttons
- › Associate Up To Three Attendant Consoles With Any One Telephone
- › Supports Power Over Ethernet (802.3af)



3C10405B

For Receptionist and Call Coverage Areas

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IP Telephony

TRADITIONAL PBX FEATURE HIGHLIGHTS

Common Features

Multiple call appearance
Hold
Music on hold
Redial
Personal speed dials
System speed dials
Transfer attended
Transfer unattended
Conference
Send to voicemail
Connect to voicemail
Volume control
Mute

Do not disturb
Call forward all
Call forward busy
Call forward on no answer
Call park/retrieve
Call pickup
Camp on/Auto Callback

Information features

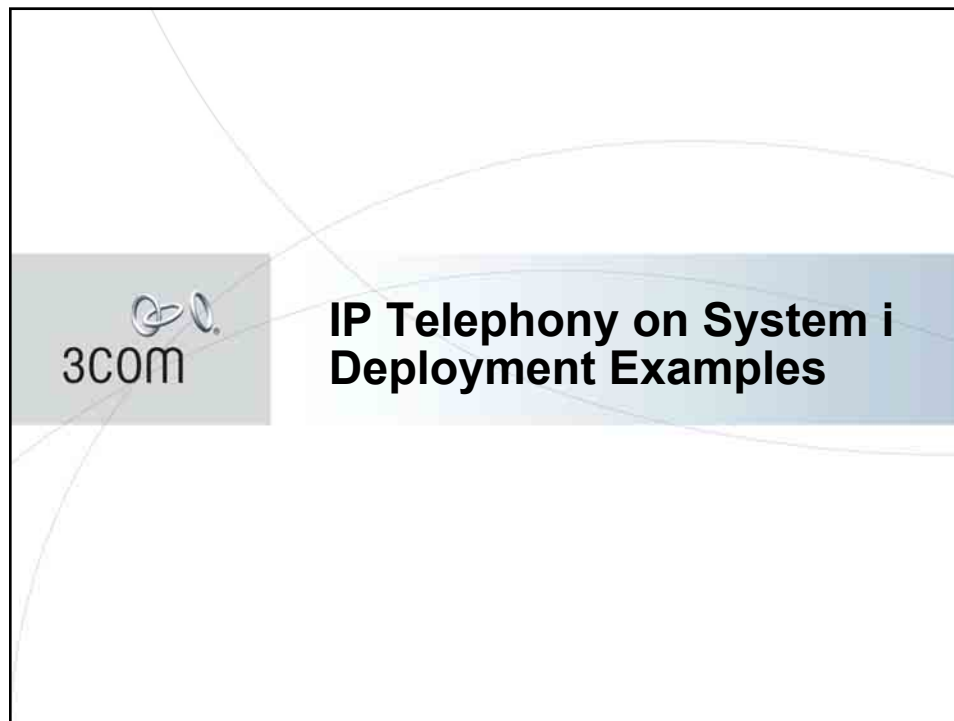
Caller ID
Messaging waiting light
Time & date on display
Call duration display
User Directory
Missed call indicator
Calling History - answered calls
Calling History - missed calls
Calling History - placed calls
Distinctive ringing

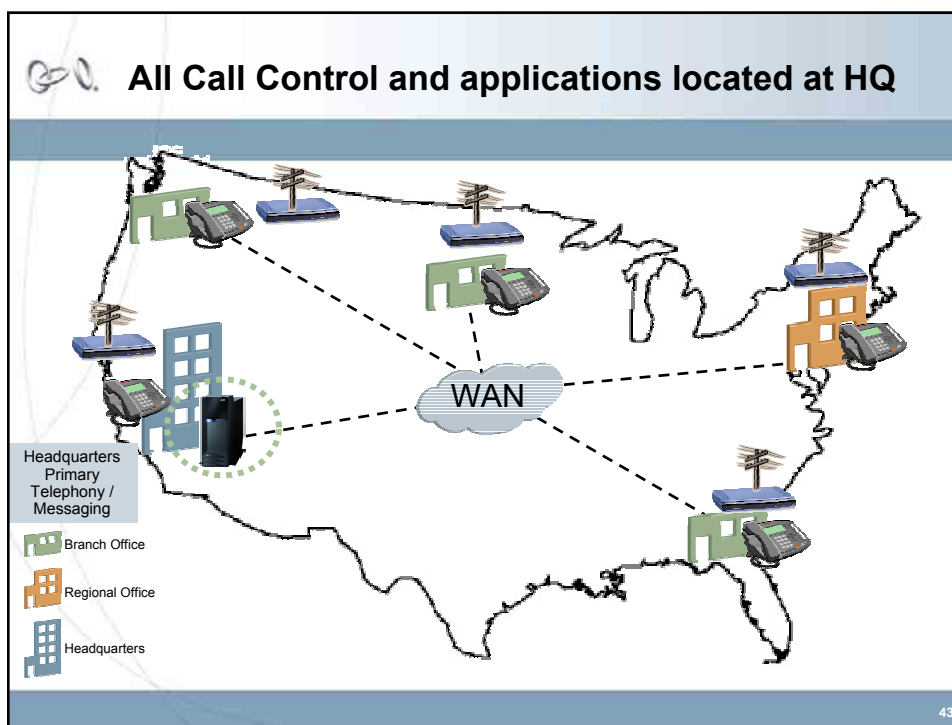
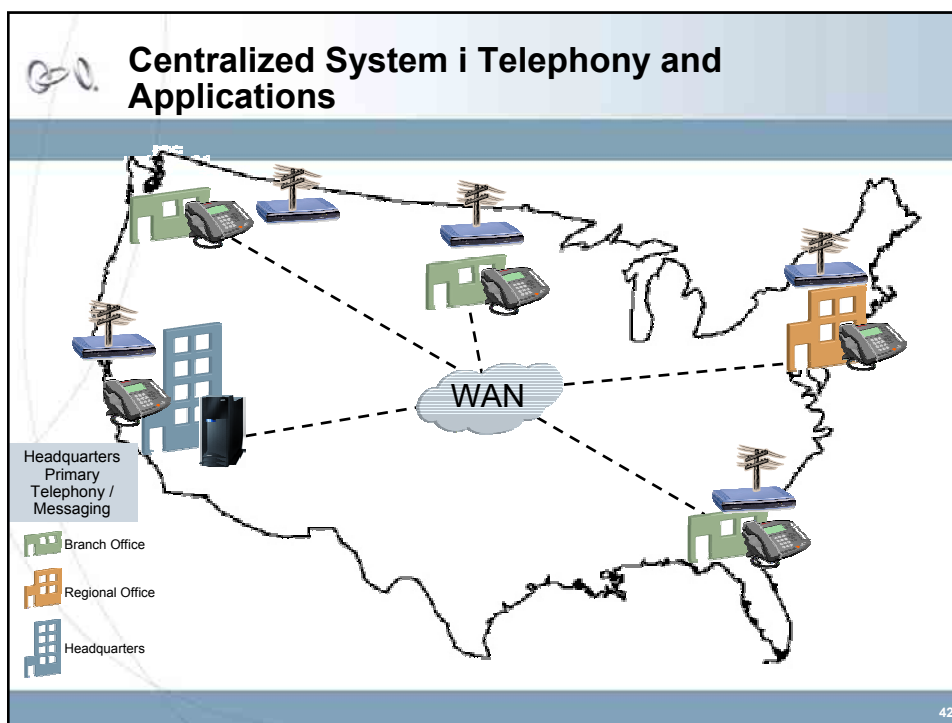
Calling Group Features

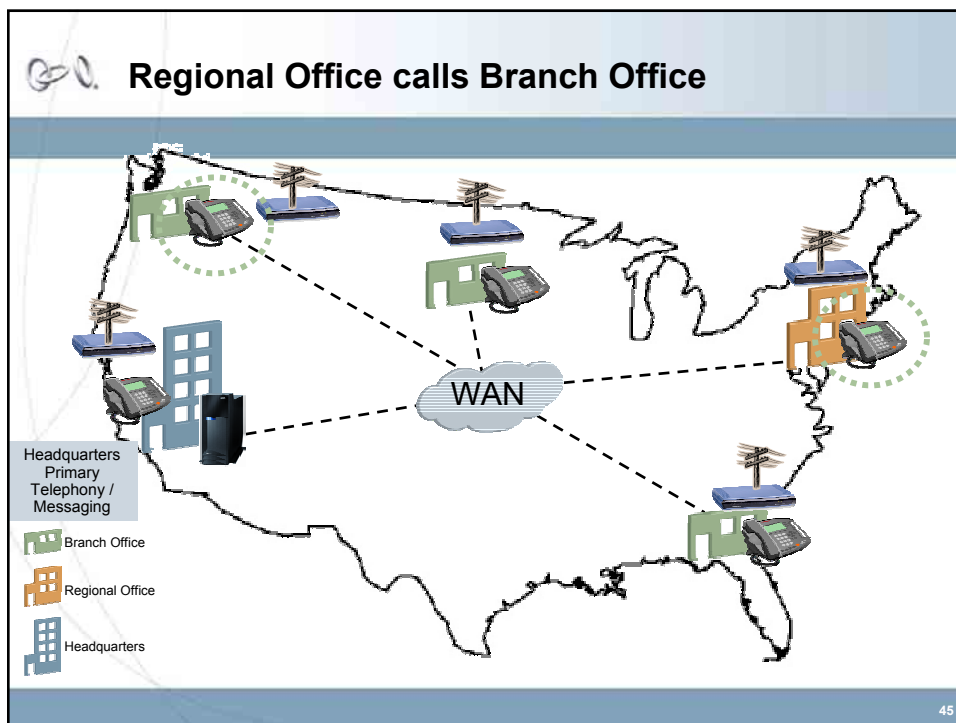
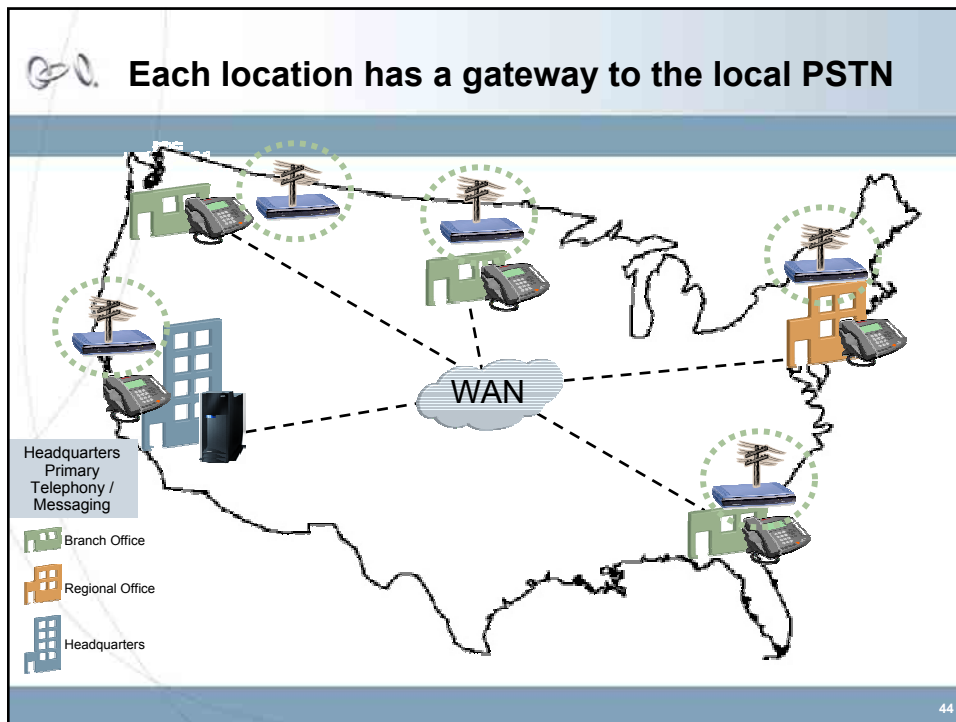
Hunt Group - Calling Group
Hunt Group - Circular
Hunt Group - Linear
Group pickup
Silent Monitor
Barge-in/barge out

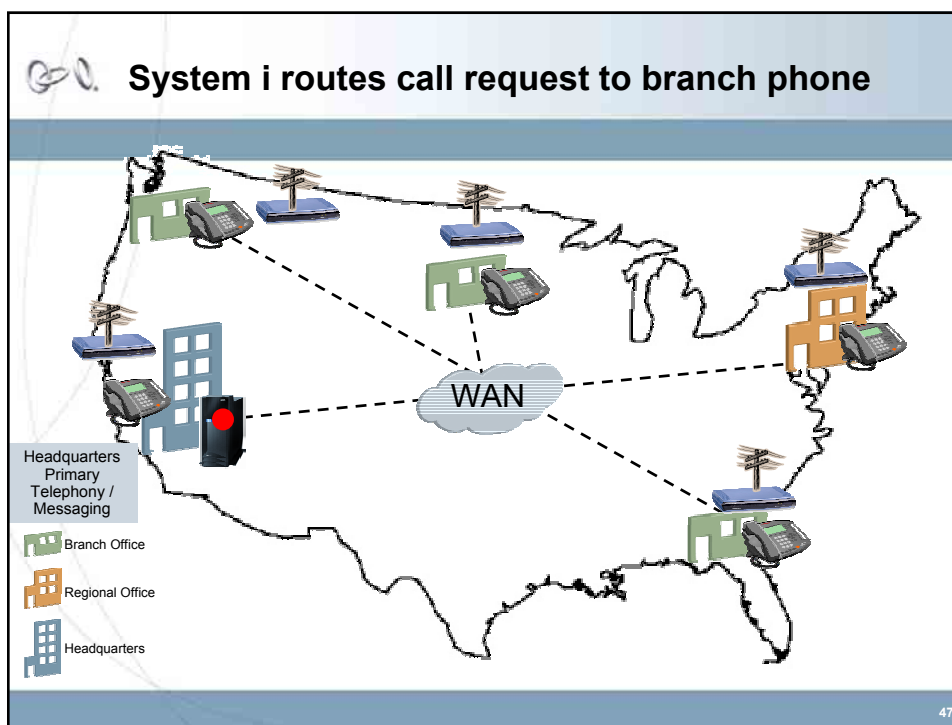
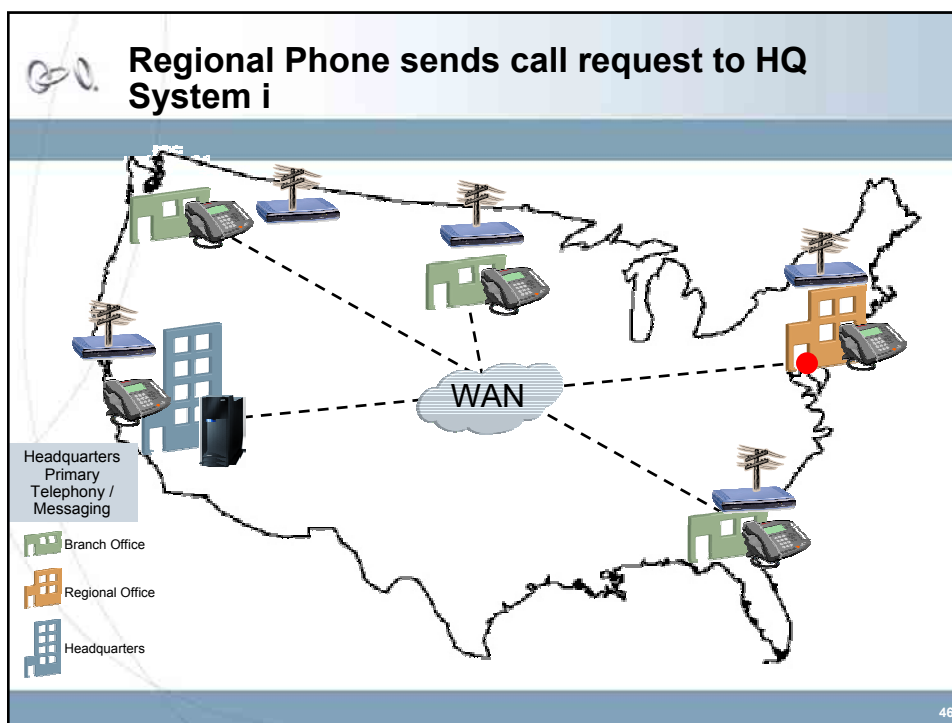
Advanced features

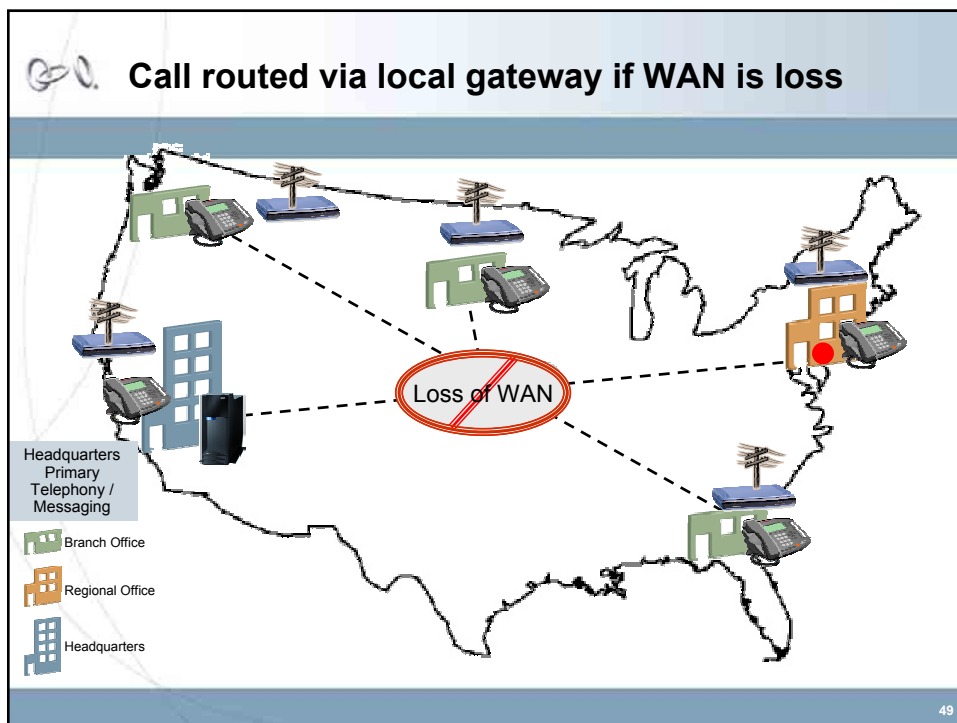
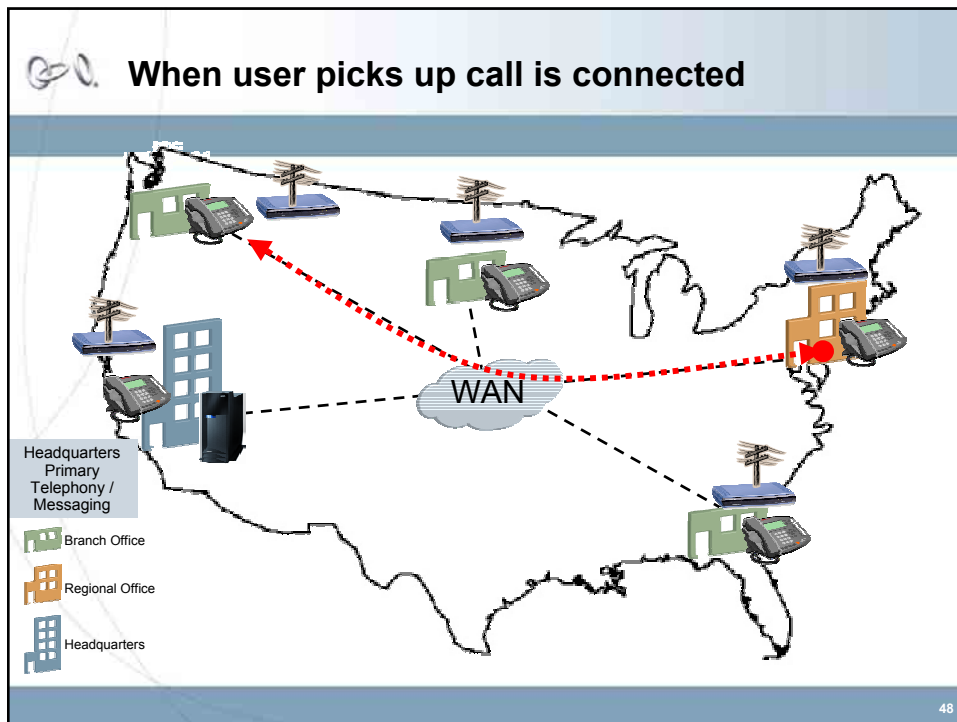
Hot Ring Down Circuits (Hotline)
Mobility/Hotelling
Malicious Call Trace
Multiple ring patterns
Multiple ring styles
Music on hold per customer group
One-button send all calls
Paging
Button Mapping
Priority ringing
Remote Call Pickup
Ringer Cadence Tone
Send Beep
Serial Calling
Speed Dial BLF
Third Party Call Forward
Toll Screening
Warm Ring Down Circuits (Warmline)
White List

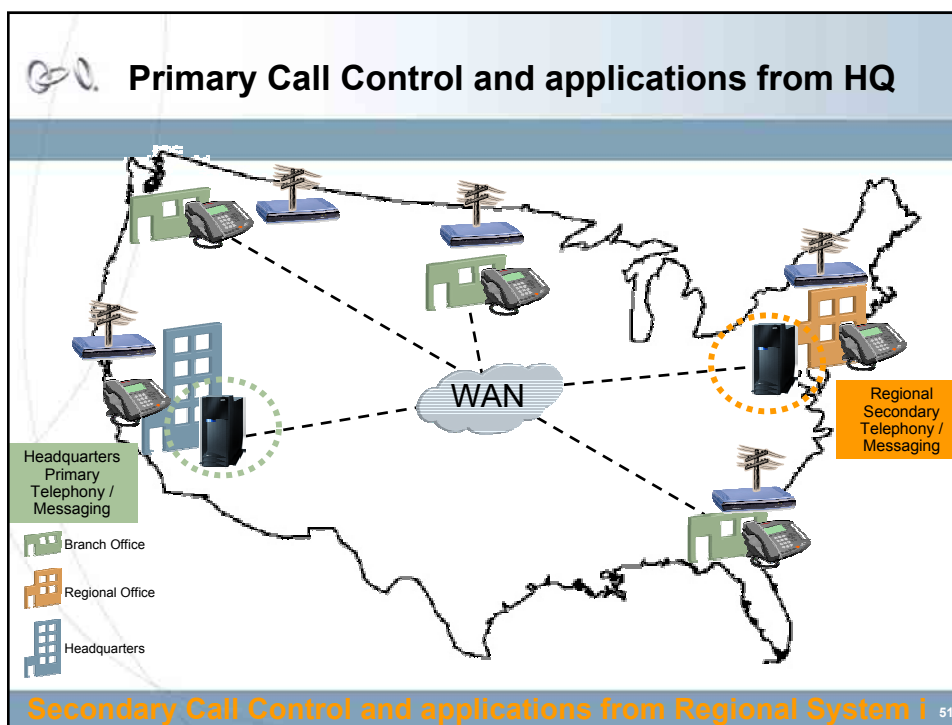
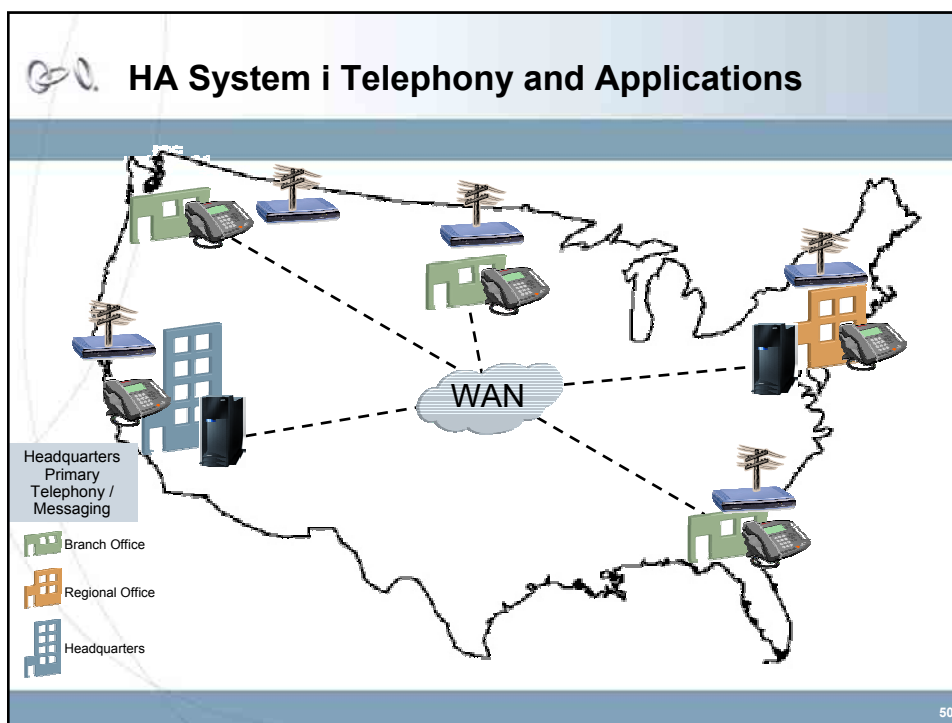


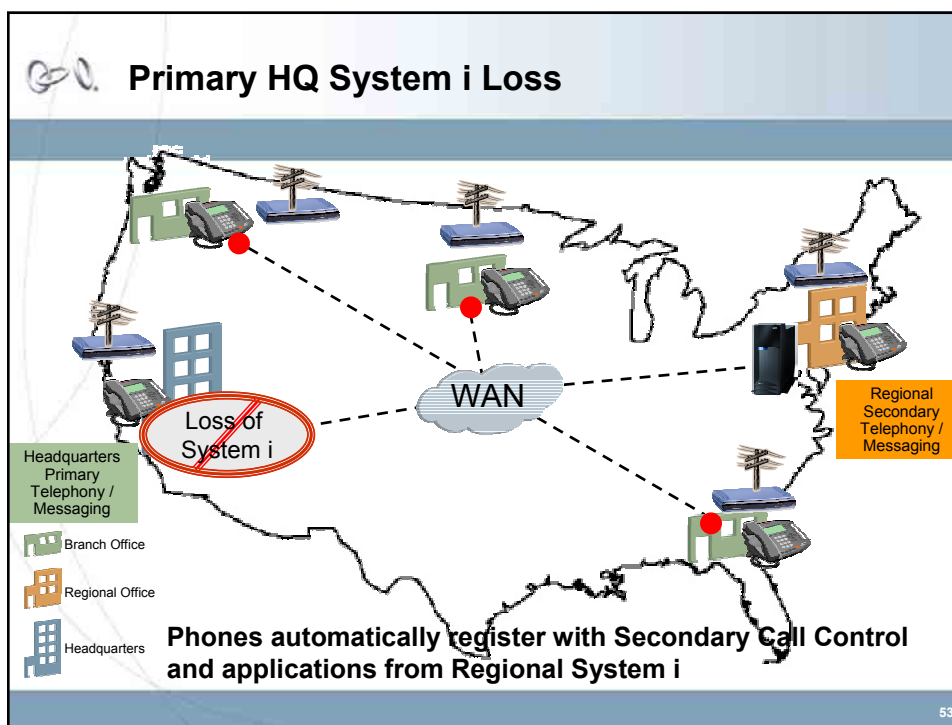
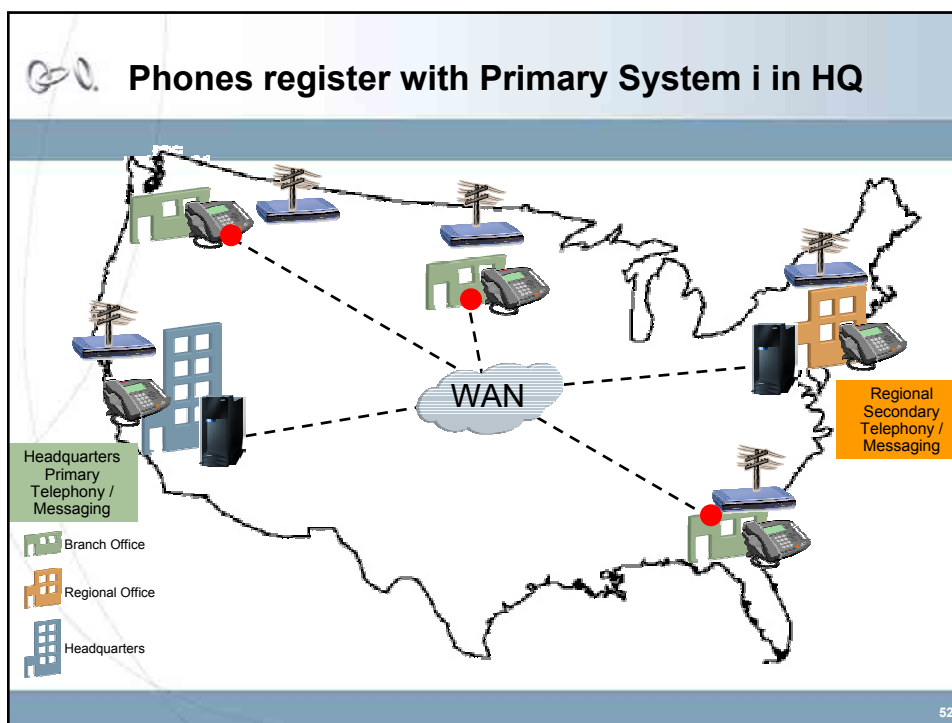


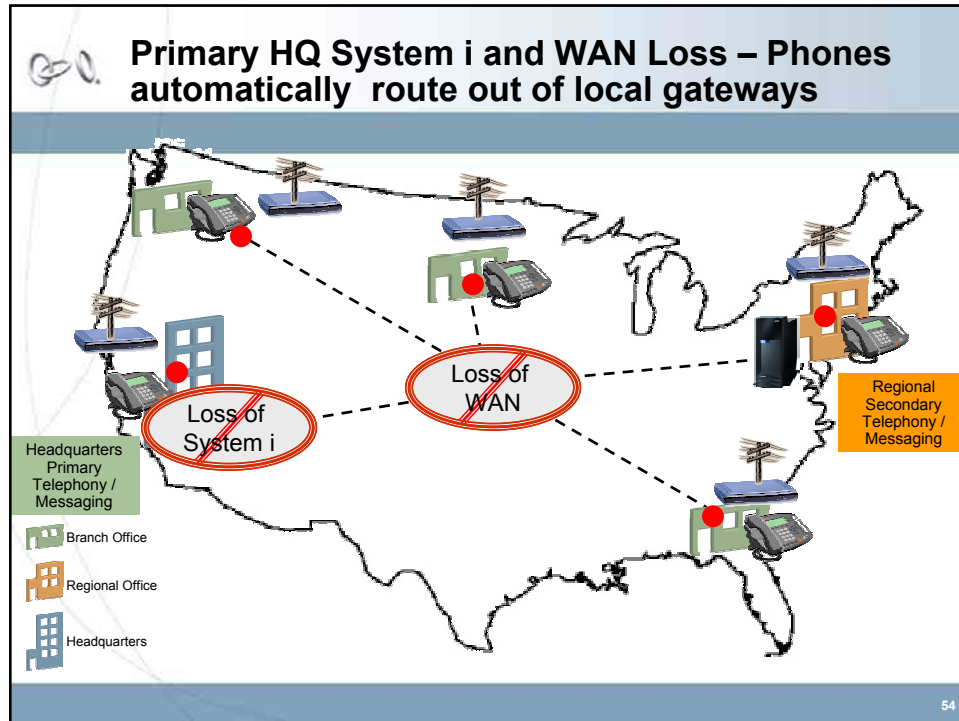












Miercom IP-PBX Test Highlights – January 2006

3Com Awarded “Best Distributed Survivability High-End IP-PBX”

“In testing fail-over of the VCX, we were frankly astonished that we could keep disconnecting back-up controllers, and phone service continued without skipping a beat.”

Miercom is a privately held network consultancy, specializing in networking and communications-related product testing and analysis.

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