

IT Expo East

January 24, 2007
Chris Sibley



Introduction to Cbeyond

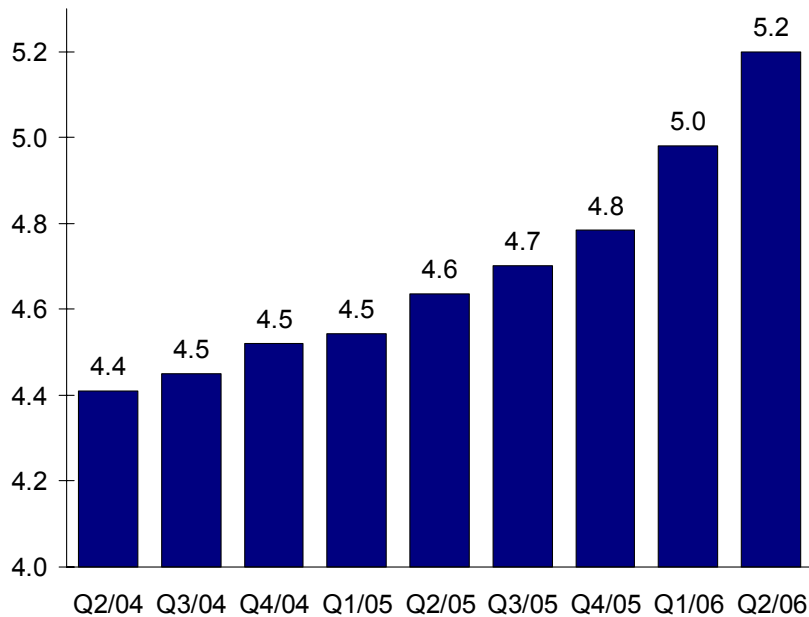
- Ⓢ **Cbeyond (NASDAQ: CBEY) is a Managed Service Provider (MSP)**
- Ⓢ **VoIP platform delivers hosted communications and data applications to small and medium enterprises (SMEs) on a monthly recurring basis**
- Ⓢ **Markets:**
 - Atlanta
 - Dallas-Fort Worth
 - Denver
 - Houston
 - Chicago
 - Los Angeles
 - San Diego
- Ⓢ **Mission:**
 - *To give “big business” communications services to small businesses at prices they can afford – and that we can deliver profitably.*

Introduction to Cbeyond

- **Cbeyond's goal is provide an integrated suite of services that enable SMEs to effectively compete with larger enterprises**
- **Voice is just one of the applications that we can “bundle in” the communications package**
 - But we do offer the complete range of voice services, including:
 - Local / LD termination
 - Voicemail
 - A dedicated toll-free number for every customer
 - Network-based conference calling
 - Calling cards

Introduction to Cbeyond

Applications Used per Customer



Application Portfolio

Core Services

- Local, Long Distance and Broadband Internet
- CbeyondOnline™ a Web portal for customer self-care
- Voice interfaces: Analog, Digital (CAS/PRI) and SIPconnect

Mobile

- Voice & Data
 - LG™ flip-phone
 - BlackBerry™
- Email
- SMS

Remote Access

- VPN Site-to-Site
- VPN Remote User
- BeyondOffice
- Calling Card

Messaging

- Voicemail
- Email
- SPAMblocker
- Whalemail
- Fax-to-email

Collaboration

- Filesharing
- Conference Calling

Commerce

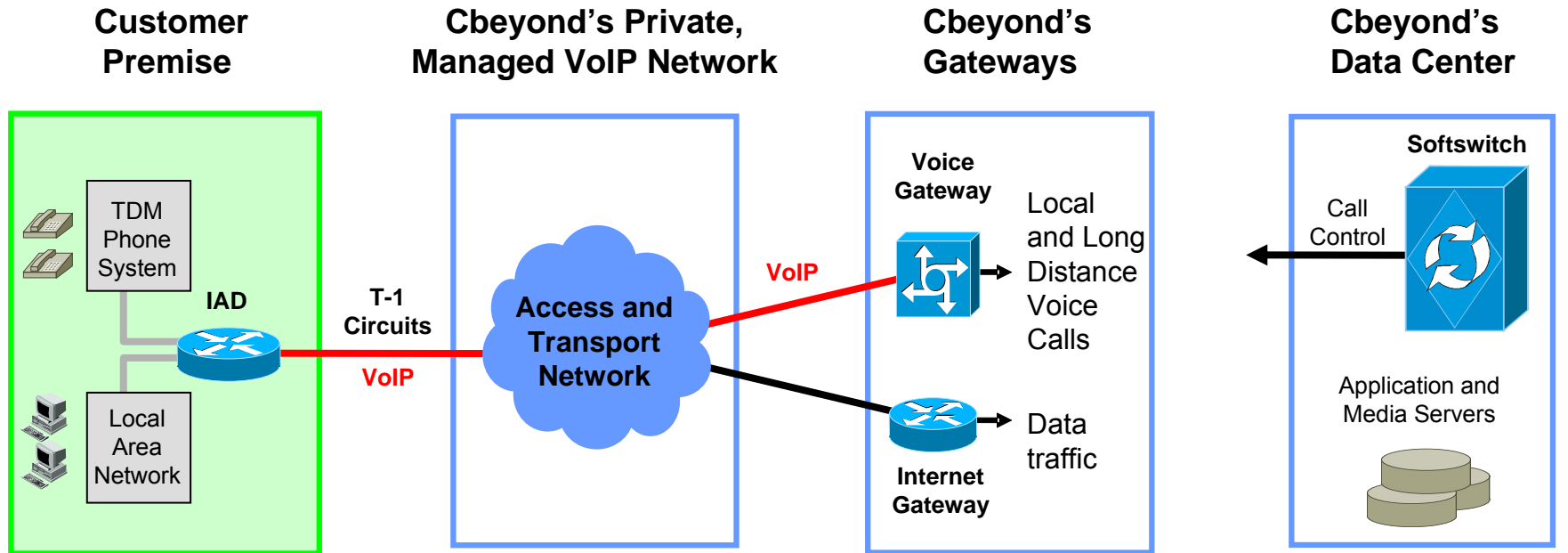
- Web Hosting
- Web Kiosk
- Toll Free

Security

- Managed Firewall
- Virus filtering
- Computer Backup

Cbeyond enables small businesses to become more efficient and project a larger image.

VoIP Integrated Access – “The Cbeyond Model”



- The Integrated Access Device (IAD) connects to customer's existing phone system and LAN
- IAD converts traditional voice calls into packets using VoIP

- To ensure quality of service, voice packets receive priority over data packets and are routed over reliable T-1 circuits

- Local calls are delivered to the ILEC and long distance calls are delivered to IXC partners
- Data traffic is routed to the Public Internet

- The IAD is controlled by Cbeyond's softswitch, which routes calls to the correct Voice Gateways

Benefits of VoIP Integrated Access

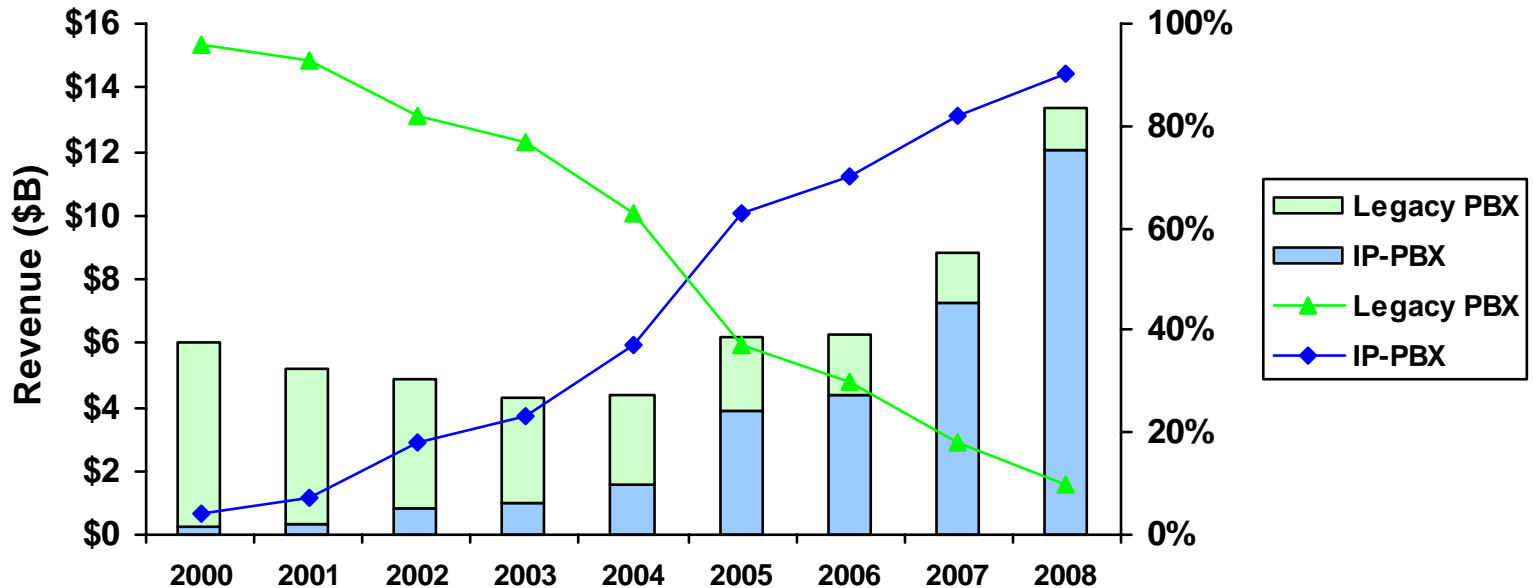
- **SMEs can benefit today from integrated bundles such as those offered by Cbeyond, without making any new capital investments on PBX systems / equipment**
- **An integrated bundle based on VoIP technology includes features not available with traditional TDM solutions**
 - Can utilize the entire access circuit for Internet access when no phone calls are active
 - Access to a web-based customer portal that gives you complete control over your phone features
 - Can use more than one T1 for access, and if one fails, both voice and data services will survive



IP-PBX Revenue Forecast

... IP PBXs make up 80% of PBX lines shipped
...by 2008, 55% of all deployed PBXs are expected be VoIP enabled

U.S. PBX Revenue Forecast

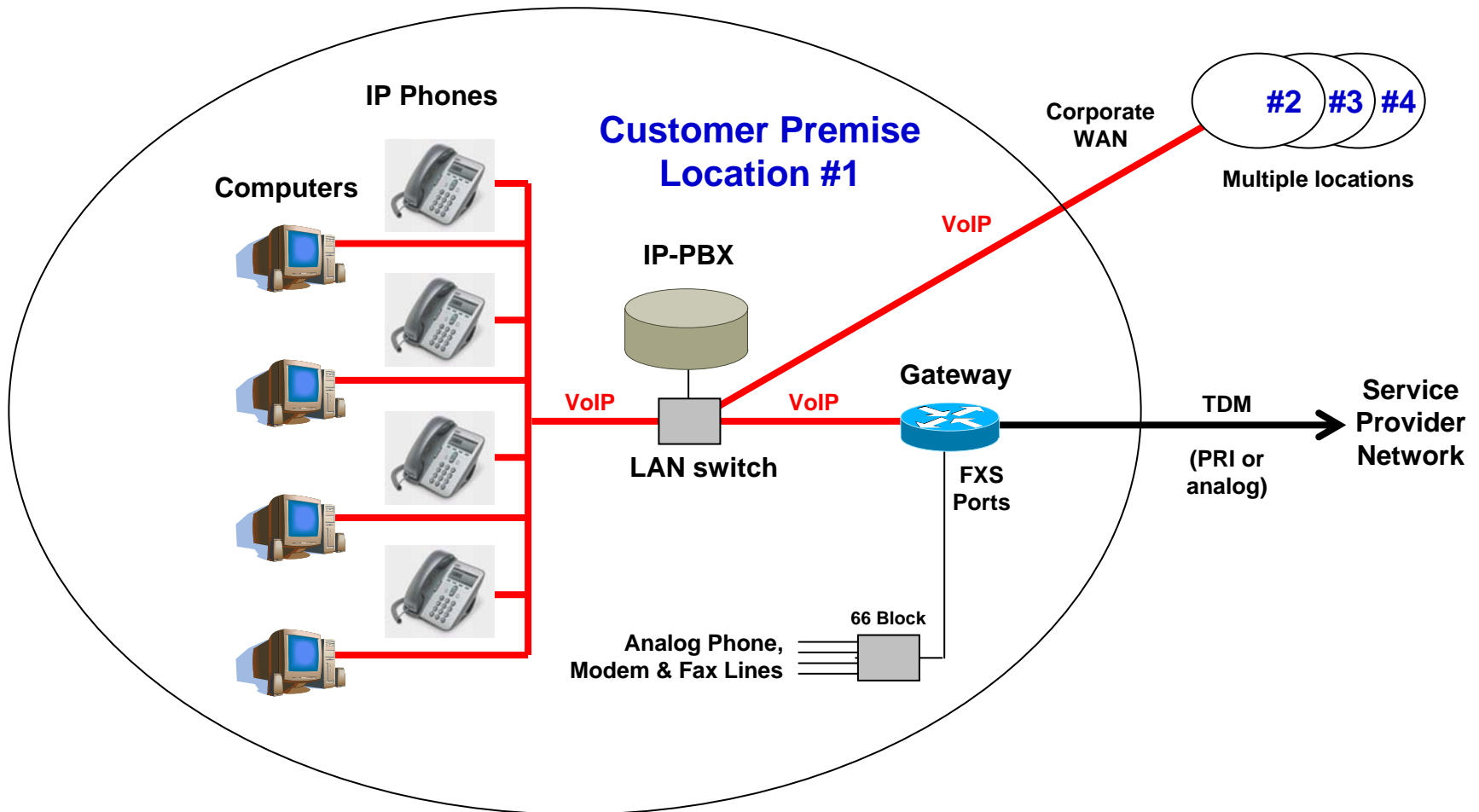


Sources: Synergy Research, Frost & Sullivan, CompTIA

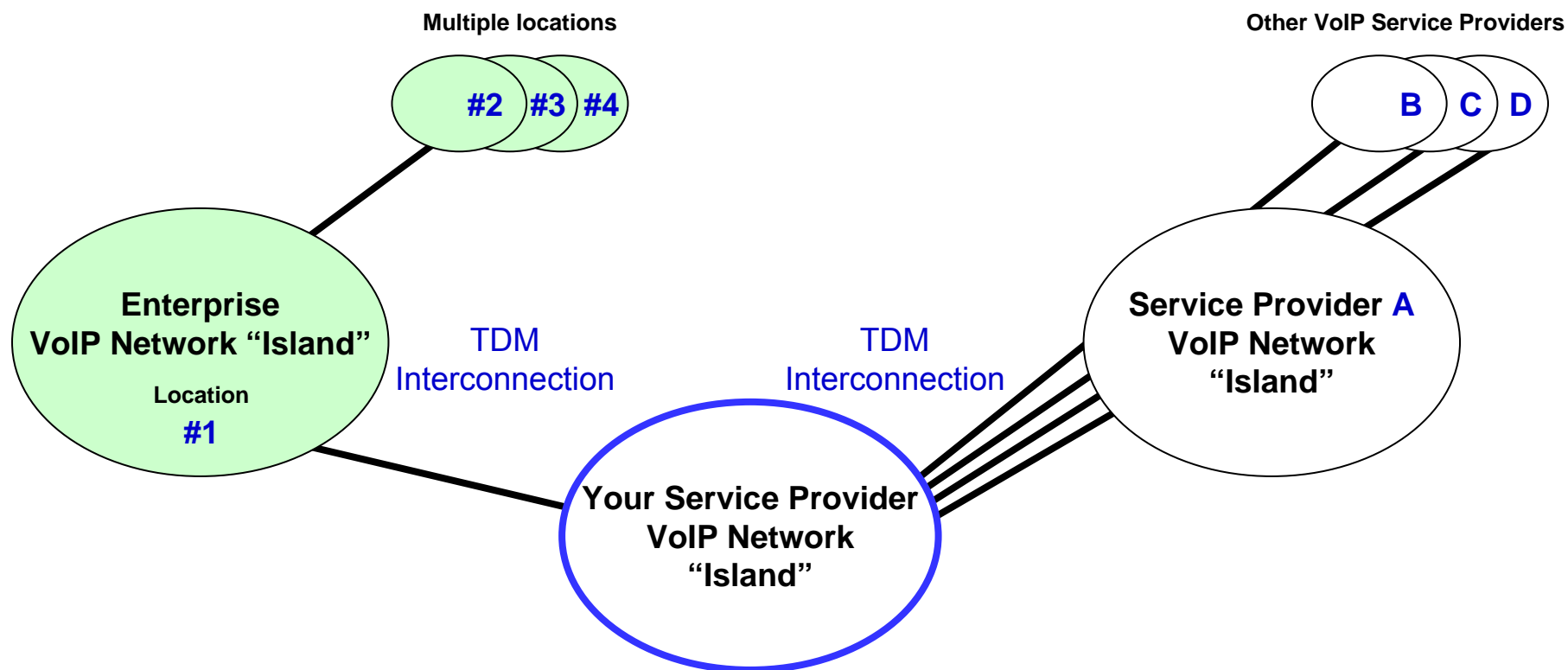
IP-PBX: Market Trends

- Ⓢ **Rapidly evolving IP-PBX market allows small and medium enterprises to take advantage of features typically available only to large enterprises**
- Ⓢ **Key Market Trends:**
 - Direct Inward Dial (i.e., individual phone numbers for all employees) serves as a primary driver for small business users
 - Desktop and application integration (unified messaging, corporate directories, instant messaging, presence management, collaboration, contact centers, CRM integration)
 - Simplified Moves, Adds and Changes (MACs) and system management
 - Multi-location business solutions (i.e. single PBX servicing multiple locations)
 - Geographic independence (telecommuters and road warriors)
 - Soft-phone support
 - Single physical wiring infrastructure
 - “PBX” is becoming a software application
 - Multiple packages with 10 phones now less than \$4000

“Traditional” IP-PBX Connectivity Overview

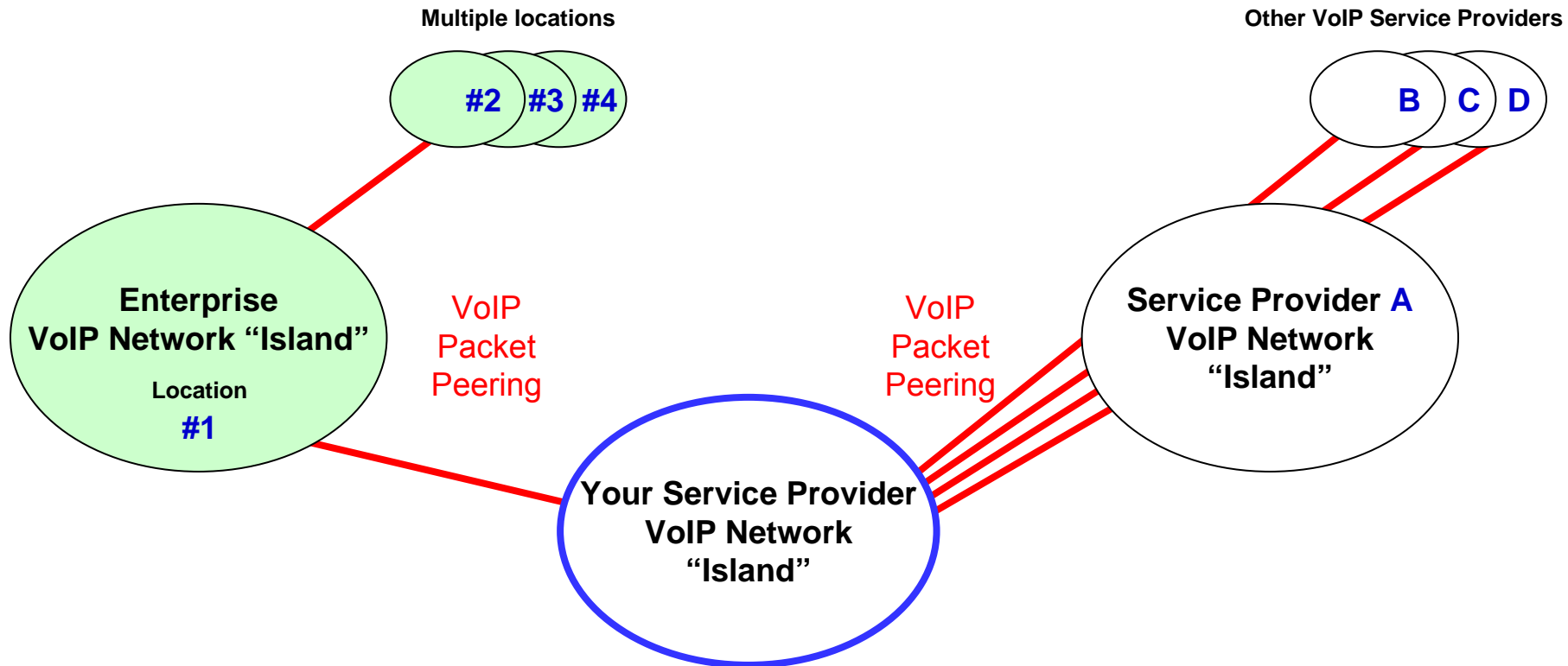


TDM Connections Produce Isolated VoIP Islands



Today, most VoIP networks connect to other VoIP networks by converting from VoIP ("new world") back to TDM ("old world") and then back to VoIP ("new world").

The Next Generation – Direct IP Peering



- Ⓢ As more unique VoIP Networks are created, the demand for VoIP packet peering increases
- Ⓢ Eliminating gateways reduces the investment required and increases quality by reducing latency
- Ⓢ Inter-domain support for "IP Only" features
- Ⓢ Session Initiation Protocol (SIP) helps to unify the various VoIP protocols (H.323, SCCP, MGCP, SS7)

SIPconnect – The Next Generation, Today

- **A Standards-based Approach for Direct IP Interoperability between IP PBXs and VoIP Service Provider Networks**
- **SIPconnect meets a logical requirement for interfacing IP PBXs with service provider networks.**
- **SIPconnect was developed with broad input from leading companies and SIP luminaries from the IETF.**
 - The SIPconnect Interface Specification was launched by Cbeyond Communications in 2005 with support from Avaya, BroadSoft, Centrepoint Technologies, Cisco Systems, and Mitel. Subsequent to an initial draft released by this group, the SIPconnect group and the SIP Forum worked to transfer this activity into the SIP Forum's Technical Working Group for further development and formalization into the current SIP Forum Recommendation.
 - To download a copy of the specification, navigate to www.sipforum.org/sipconnect

SIPconnect – Key Benefits

• A Ubiquitous Approach

- SIPconnect provides a common method for IP peering between SIP-enabled IP PBXs and VoIP service providers

• Standards Based

- SIPconnect leverages existing SIP and related VoIP standards published by the Internet Engineering Task Force (IETF)

• Customer Cost Savings

- Peering will lower service provider infrastructure cost and reduce the need for customer premises gateways

• Richer Feature Support

- SIPconnect improves the “communications experience” by allowing service providers to deliver enhanced, personalized services to IP-PBXs (and its end-users) and extends rich-media services enabled by IP-PBXs across service provider networks

• Quality of Service

- Methods for handling QoS configuration, echo cancellation, DTMF relay, packetization rates, codec support and fax and data traffic are defined

SIPconnect – Why is SIPconnect Needed?

- **Prior to SIPconnect, the state of standards for connecting an IP PBX with a VoIP service provider were largely undefined and predictable interoperability did not exist.**
- **“SIP” alone does not mean compatibility. “SIP” is comprised of 45+ RFCs, 25+ related RFCs (e.g. SDP), and numerous Internet Drafts. Prior to SIPconnect, the specific support required by an IP PBX and service provider was loosely defined as it concerns IP PBX to service provider peering.**
- **This lack of clear definition creates an environment where you can not take for granted that an IP PBX will work correctly when connected with a service provider network just because they “support SIP.”**
- **Service providers and PBX manufacturers were confined to endorsing only tested and certified combinations of equipment and service offerings.**

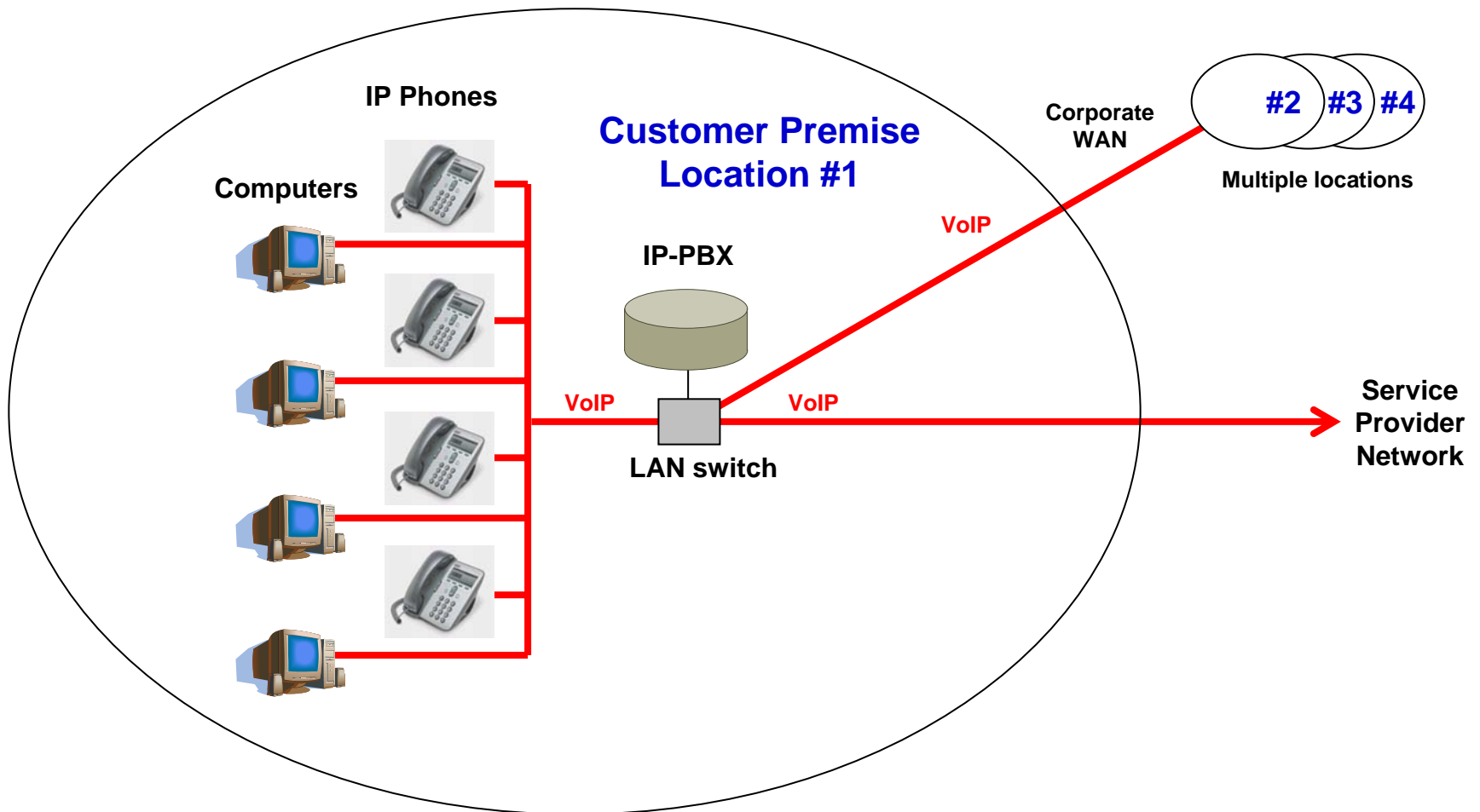
SIPconnect – What Does it Really Define?

- **SIPconnect is a standards-based method of interconnection between IP PBXs and VoIP service provider networks. It specifies a reference architecture, required protocols and features, and implementation rules necessary for seamless peering between IP PBXs and VoIP service providers.**
 - Specifies the minimum set of SIP RFCs that must be supported by an IP PBX and service provider for the purpose of SIP trunking.
 - Provides precise methods for conveying user identity, including scenarios that involve the use of E.164 phone numbers
 - Ensures proper service security by clarifying the use of TLS for service authentication.
 - Clarifies minimum media requirements for issues such as codec selection, echo cancellation, fax and modem support, etc.

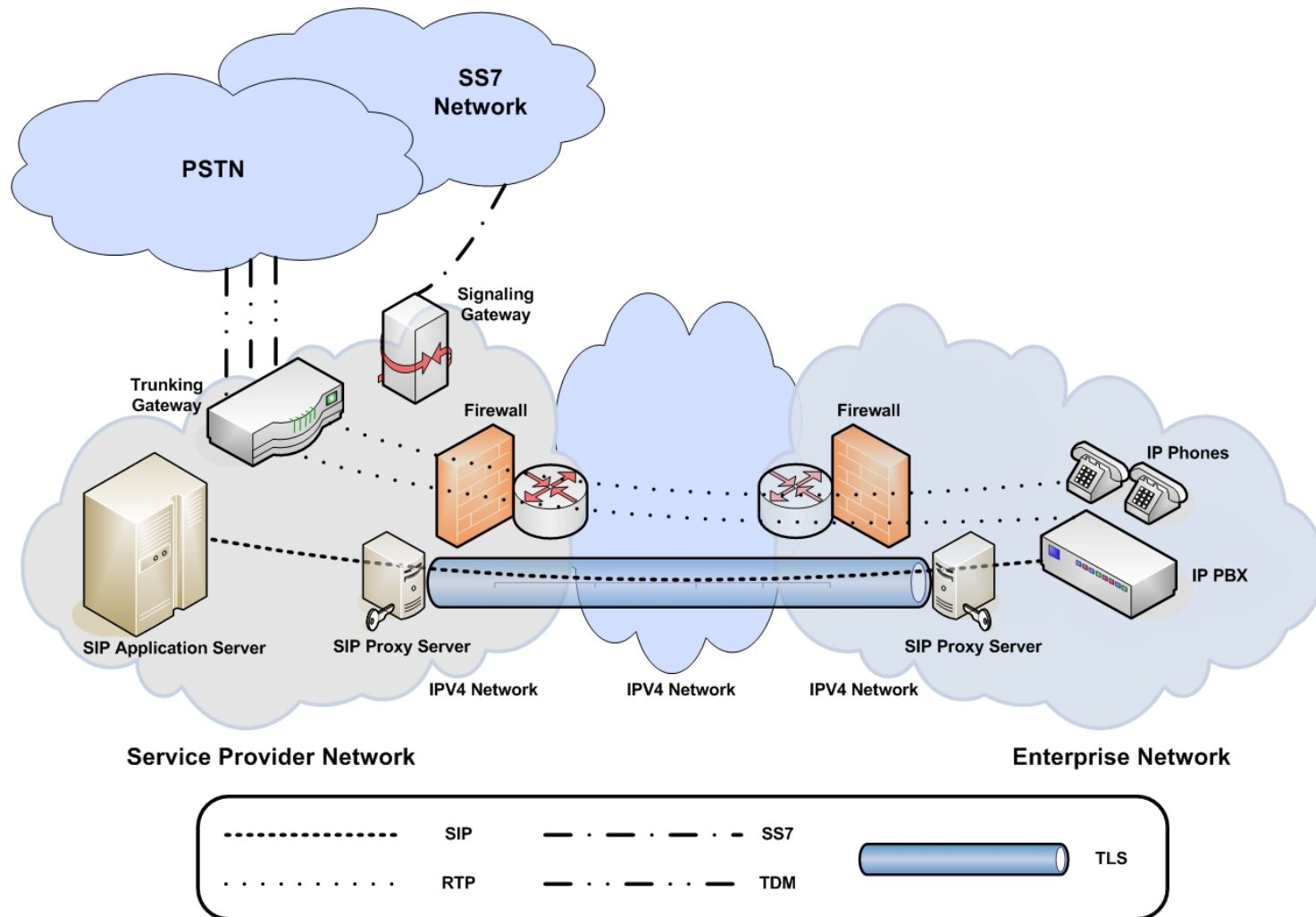
SIPconnect – Who Supports It?

- Allworx
- Asterisk Open Source PBX
- Avaya
- Cbeyond
- Cisco Systems
- Epygi
- Fonality
- FrameWRx
- Linksys
- NEC
- Siemens
- Sphere
- Switchvox
- TalkSwitch
- Telechoice
- Vertical Televantage

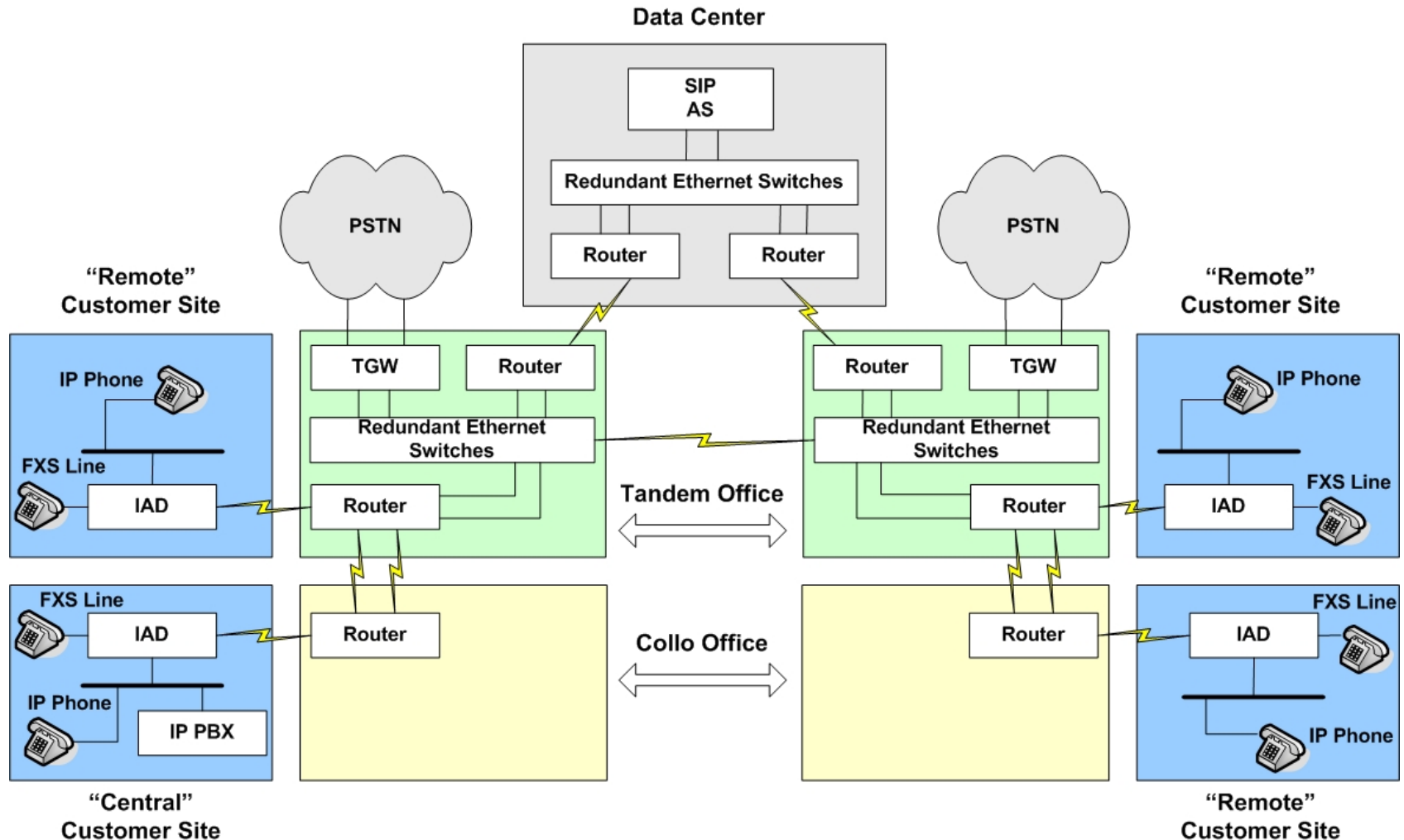
IP-PBX Connectivity Overview with SIPconnect



The SIPconnect Reference Architecture



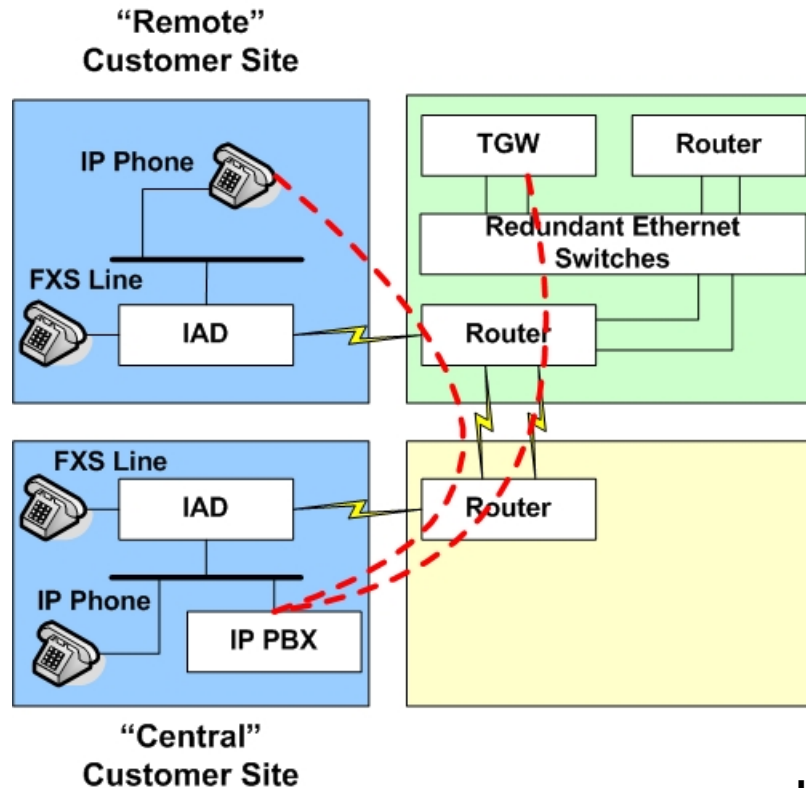
Cbeyond's Multi-Site IP PBX Architecture



Cbeyond's Multi-Site IP PBX Architecture

- **Assumes Central and Remote sites are on-net**
 - Guaranteed QOS if all devices mark packets as defined in the SIPconnect specification
 - Could easily support off-net sites, but there are some practical issues (e.g. 911 call routing, can't guarantee QOS over the open Internet)
- **Phones at the Remote Sites register up to the PBX at the Central Site**
 - The IAD and/or firewall/SBC at the Remote Sites are responsible for any necessary NAT "fix-up" functions
- **All calls to the Central and Remote Sites are sent to the PBX at the Central Site**
 - The IAD and/or firewall/SBC at the Central Site is responsible for any necessary NAT "fix-up" functions
 - Media path is initially "hairpinned" through the PBX
 - PBX can "release" the media to flow directly between the endpoints using the SIP RE-INVITE method

“Hairpinning” Media Through the IP PBX

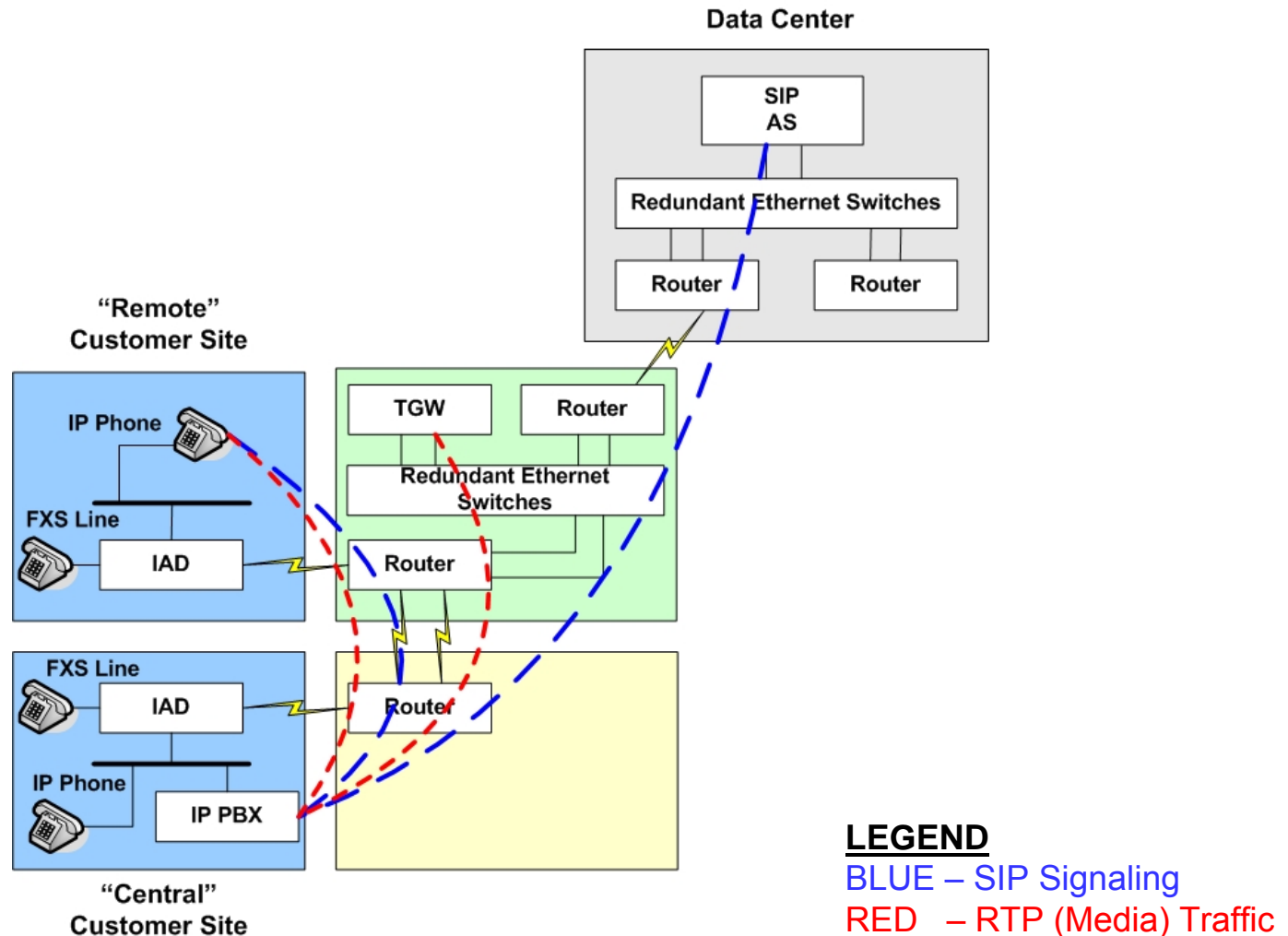


LEGEND

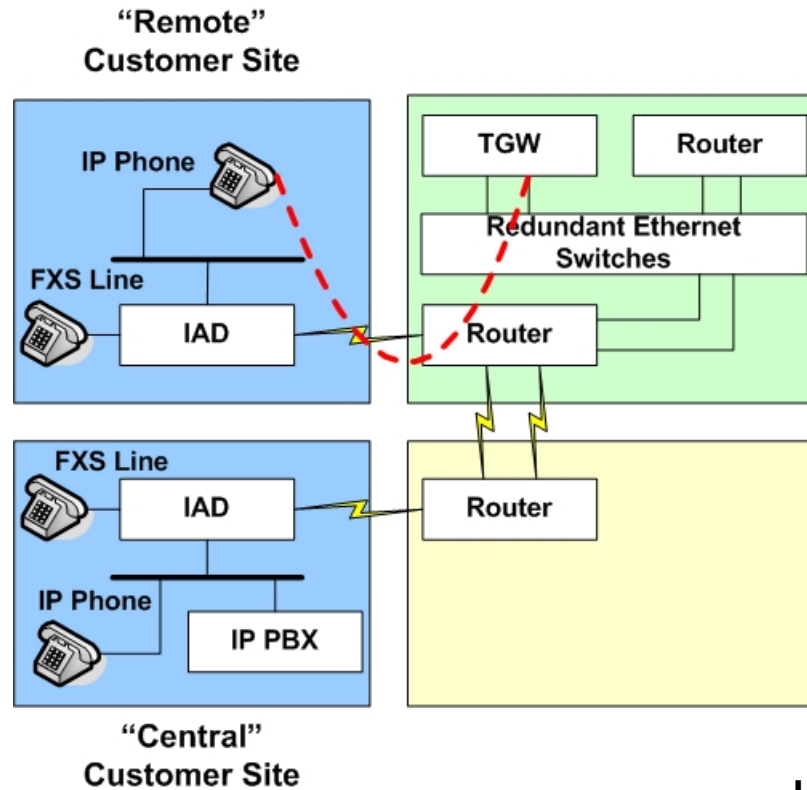
BLUE – SIP Signaling

RED – RTP (Media) Traffic

Using RE-INVITE to “Release” the Media



Media Path Post-RE-INVITE



LEGEND

BLUE – SIP Signaling

RED – RTP (Media) Traffic

Summary

- **VoIP is transforming communications, and is enabling new business concepts like Cbeyond**
- **Short term opportunity for the SME includes higher value services from Managed Service Providers and BYOB Telephony Providers**
- **VoIP technology allows SMEs to more effectively compete with their larger peers**
- **It's time to throw out the old key system and buy a new IP PBX or hosted alternative**
- **Direct IP peering will enable a world of personalized communications as well as drive further cost savings**



CBEYOND[®]

***The Last Communications Company
A Small Business Will Ever Need.SM***

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