



**Understanding Voice Services 101
for IT & Financial Managers**

Introductions

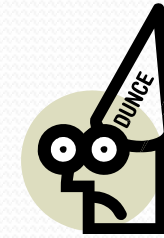
- LightBound
 - Sales
 - Account Managers: Jack Carr (President), Ron Pirau (Sales Manager), Kate Rance, Brandon Ring
 - Pre-Sales Engineering: Jay Cutler (Voice) and Drew Emsweller (Managed Services)
 - Inside Sales Support: Jennifer Shinkle and Elena Barba
 - Operations
 - Mike Booher, General Manager
 - Richard Coonfield, Voice Switch Manager
 - Jathan Haggard, Voice Services Technician
 - Paul Followell, Network Operations Manager

Agenda

- Voice 101, Learning voice basics and cost saving strategies for IT & Financial Managers
 - Voice Lines : Analog, PRI, SIP
 - Transport Circuits: Getting service the service to you
 - Phone Systems: Key Systems, PBX, VoIP
 - Quality vs. Price
 - Financial Scenarios
 - LightBound Voice Service & Coverage Areas
- Fonality Demo & Data Center Tour

Before we start - Survey of Expertise

- Novice
- Intermediate
- Expert - I should be presenting



- Disclaimer – TLA will be used
- PLEASE ASK IF YOU DON'T KNOW

Evolution of Technology

Music Media

- LP Album, 45s & 78s



- CD

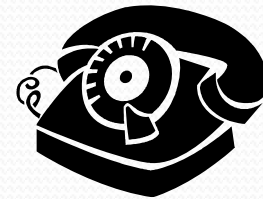


- MP3 & iPod



Voice Lines

- Analog



- Digital



- VoIP (Voice over Internet Protocol)



Phone Companies and Phone Systems

Phone Company



- Service Provider of voice lines to end customers, PSTN (Public Switched Telephone Network)
- Large Phone Switch in CO (Central Offices)
- Pre mid 1980's provide all phone service and lines for residential & business – then came breakup and deregulation
- ILEC – Incumbent Local Exchange Carrier – at&t
- CLEC – Competitive Local Exchange Carrier: LightBound

Phone Systems

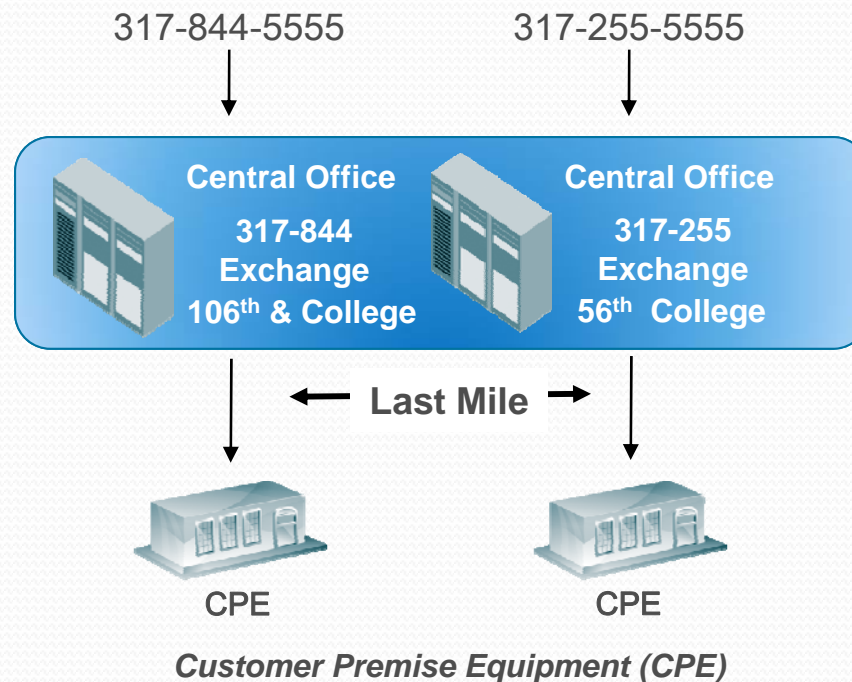


- PBX (Private Branch Exchange) – Phone switch specifically dedicated to a single company – 24 lines to Hundreds & FEATURES
- KSU (Key System Unit) – 2 to 23 lines
- VoIP PBX – A specialized computer that provides phone service internal to a company using Internet Protocol to transport voice
- Internal Phones/External lines ratio from 2/1 to 10/1 depending on business

Voice 101 Basics

Traditional - In the Past

Numbers Belong to a Physical Central Office, a Physical Copper Line, & often a Physical Phone System



Voice 101 Basics



📞 Getting Services to you

📞 Copper Telephone Lines from CO (Central Office) to customer premise (Office building)

📞 Analog Lines – Powered from CO

📞 T1 Circuits – requires electronic appliance (router or IAD) powered at customer premise – 1.54 MB

📞 Ethernet up to 10 MB (7 times T1 circuit capacity)

📞 Fiber

📞 Ethernet – 10, 100 MB, 1 and 10 GB

Voice 101 Basics – The Beginning

☎ Analog Line

- ☎ Traditional residential
Copper phone line

- ☎ Used with key systems 📢

- ☎ Still best for alarms, fax and credit card machines

- ☎ Connected via a 66 Block or 110 Block

- ☎ Connected via IAD(Integrated Access Device)

☎ Business Centrex

- ☎ Minimum of 11 lines

- ☎ Original Hosted PBX

- ☎ Are you dialing “9”



Voice 101 Basics

☎ PRI (Primary Rate Interface) - Digital

- ☎ Traditional T1 Circuit – 1.54 MB divided in 24 64KB Channels.

- ☎ Set up as a PRI with 23 B channels (information) and 1 D channel (signaling) - ISDN & BRI??

- ☎ Used primarily with PBX(Private Branch Exchange)

- ☎ DID(Direct Inward Dial) - Everyone has their own distinct number BUT don't need to have a dedicated phone line

- ☎ Don't have to have a physical phone line for every person

 - ☎ Usually rule of thumb is a 1:3 or 1:4 ratio

Voice 101 Basics

☎ (Primary Rate Interface) Connections

☎ Two ways to deliver

☎ PRI over a T1 circuit

☎ T1 circuit with IAD (Integrated Access Device) to deliver as PRI. Provides ability to provide voice lines and Internet service on the same line

☎ In either scenario PRI interface is connected directly to phone system



Voice 101 Basics

☎ SIP (Session Initiated Protocol) aka Voice over IP

☎ SIP is the accepted standard protocol for transmitting voice over Internet Protocol and used with VoIP PBX systems

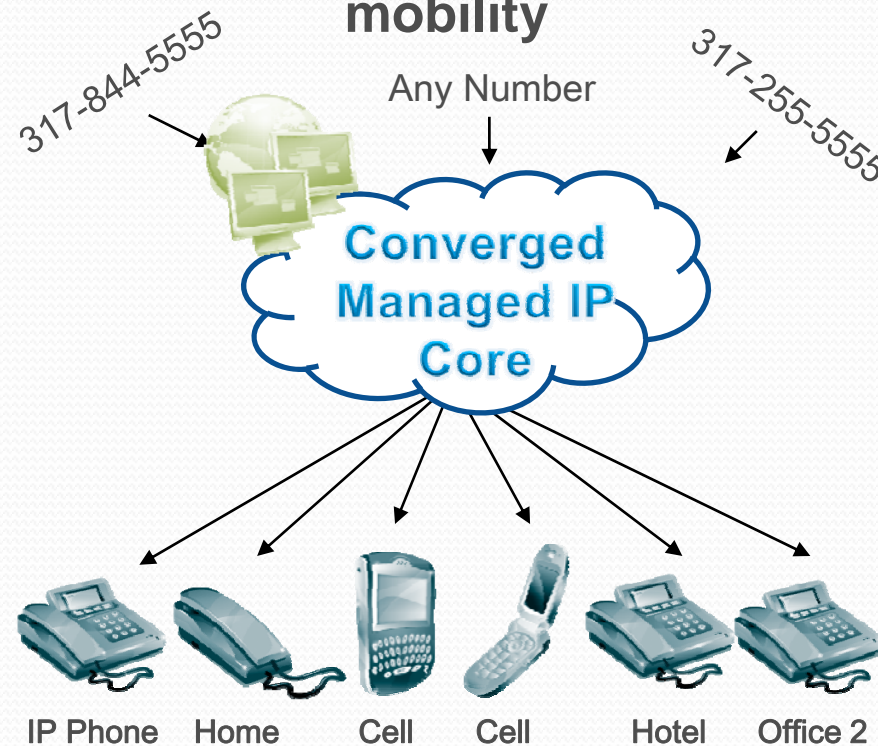
☎ SIP Can be delivered over open Internet BUT there is NO WAY to control latency

☎ Recommended delivery is over direct T1 circuit or Ethernet (Routers or Switch) with QOS (Quality of Service) controls

☎ Great for large companies not constrained to 23 Channels per T1. No need to spend more on additional PRI's or expensive PRI cards

Voice 101 Basics

Next Generation still uses traditional copper lines, plus fiber and wireless but uses digital and Internet Protocol to provide mobility



Any Phone – Any Time – Your Control

Voice 101 Basics

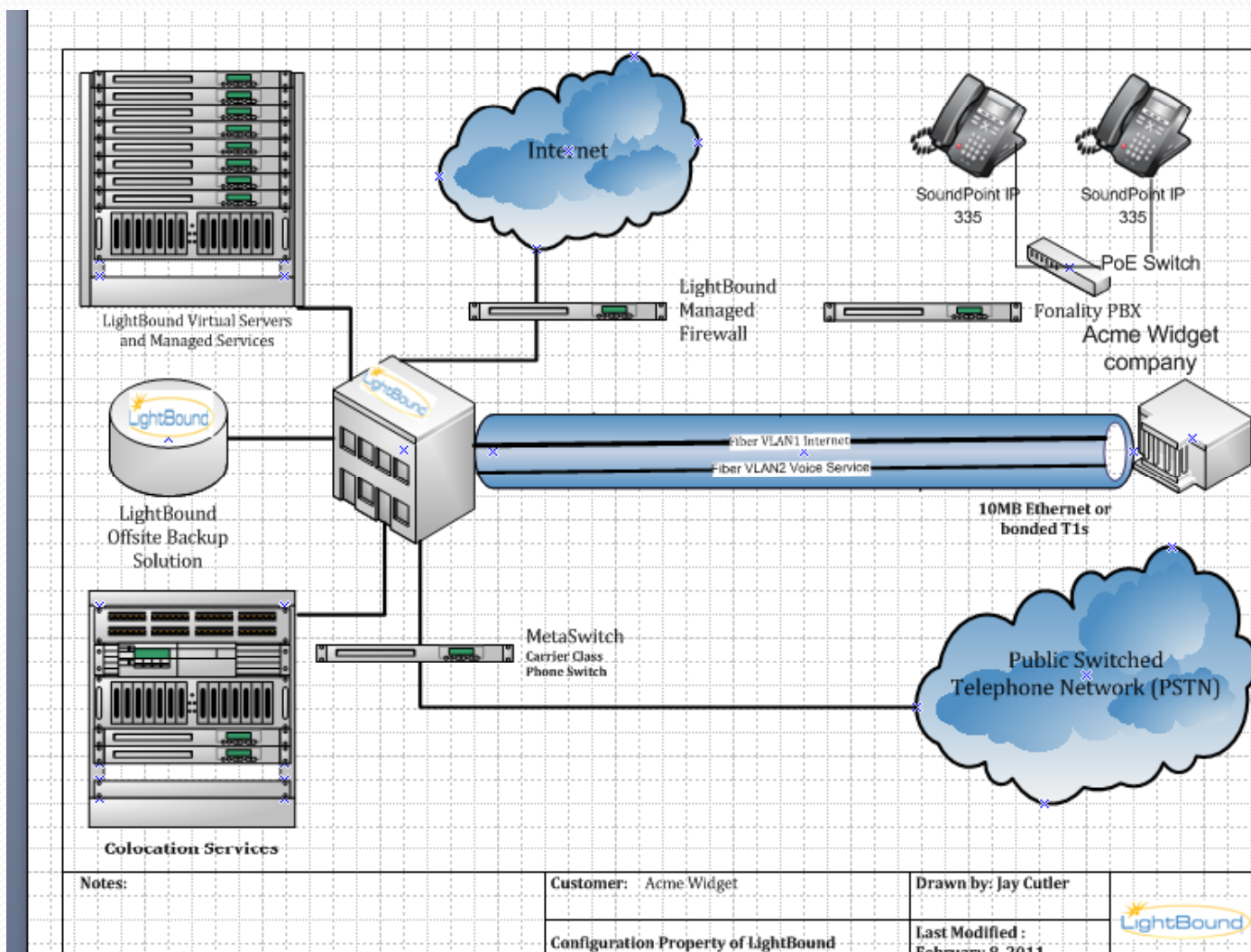
Voice over IP vs. LightBound Hosted PBX

VoIP (Voice over Internet Protocol) is a generic term used for transporting data the public Internet. VoIP has promised consumers savings by bypassing traditional phone companies. This technology can be used on Private Managed Networks as well.

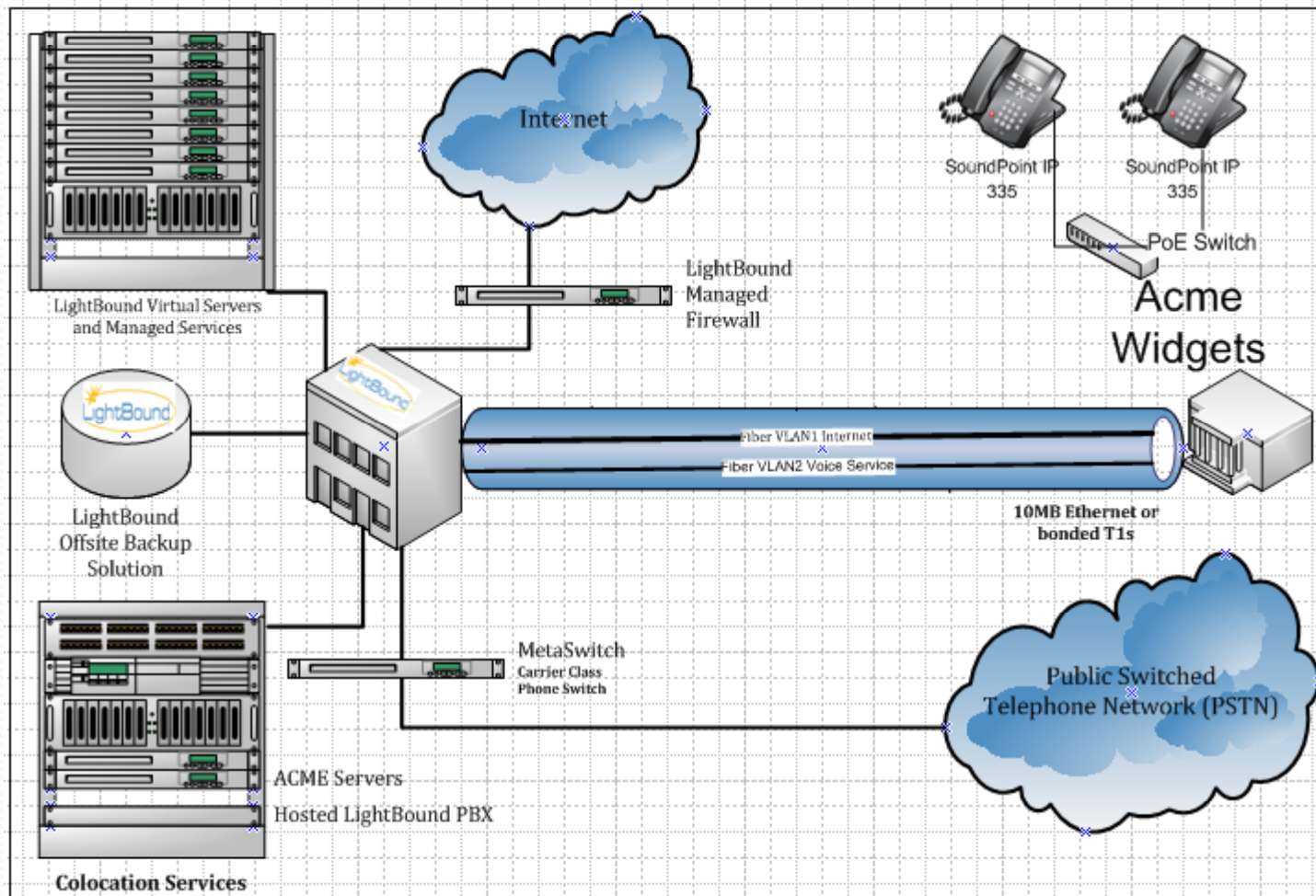
LightBound Voice Services and VoIP PBX uses a “Private” IP network to deliver voice calls, NOT the “Public Internet”. The reason for this is to make sure that Quality of Service (QoS) can be managed. LightBound enables your organization the ability to leverage a private managed IP data network to transport prioritized voice traffic.



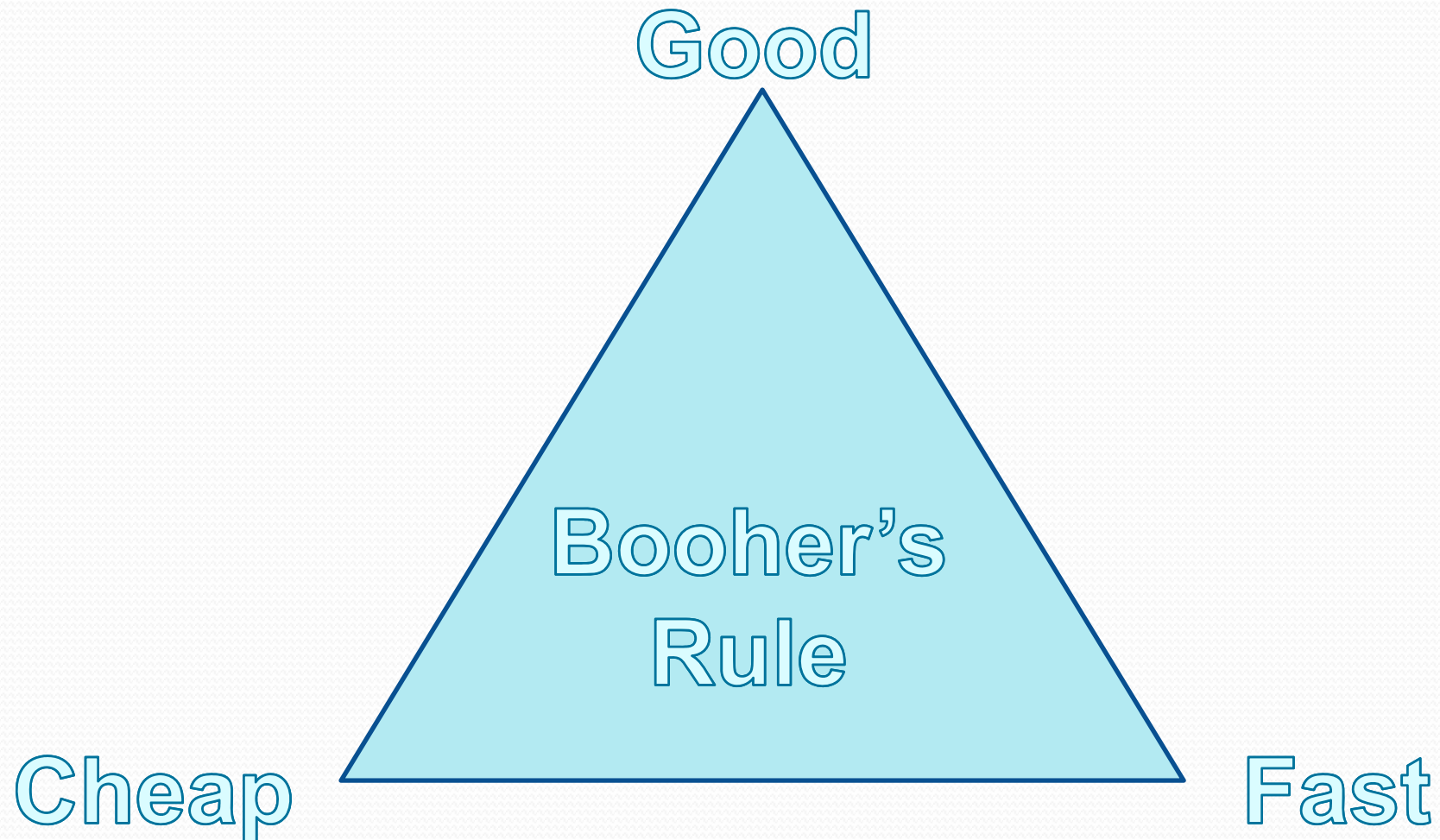
Voice 101 Basics- Network Overview with on Premise VoIP PBX



Voice 101 Basics- Network Overview with hosted VoIP PBX



Quality vs. Price relating to Voice Services: Pick any two – but not three



Voice 101 Basics

Financial Scenario 1

- Customer has one T1 for Internet and one T1 for voice services with a PRI and 23 channels and 20 people with phones
- Current Costs: \$399 for T1, \$699 for PRI
- Proposed: Combine Internet and voice on T1. Estimate 3 to 1 ratio of 7 lines at \$31.00/line.
 - \$31 per voice line* 7= \$217 to add voice to T1 circuit
 - Total of \$616.00 for voice over T1 circuit resulting in a savings of \$482.00 per month vs. PRI and T1 line

Voice 101 Basics

Financial Scenario 2

- Customer has PRI and a 10MB Ethernet or Fiber with LightBound.
- Existing PRI runs out of capacity.
- Customer needs two more phone lines
- Instead of adding another PRI at \$699/per month just add two SIP trunks for \$31 each and deliver it over PRI interface.
- Cost saving: \$699 for another PRI – \$62 for two SIP lines = \$637 saved per month by using two SIP lines

Voice 101 Basics

Financial Scenario 3

- Customer has 11 Centrex lines and their contract is up.
- Only seven lines are needed.
- Currently paying \$440/month (11 lines at \$40) and \$150 per month business broadband Internet (no QoS) = \$600 per month total spend
- Paying for what your need would be \$217 or 7 x\$31
- Net savings: \$440 for Centrex Lines - \$217 for 7 lines = \$223 savings per month
- Use additional savings of \$223 for Integrated T1 line (with QoS) to provide Internet and Voice service and drop the broadband Internet.
- Drop Non QoS broadband of \$150 per month

Voice 101 Basics

Financial Scenario Four

- Mortgage company with Corporate Office and three branch offices
- Many interoffice calls due to approvals in many different locations
- Currently calling long distance between offices
- Currently have T1 circuits but using only for data
- Central Voice rather than a PRI per location
- Migrate to VoIP Phone System or VoIP Gateways with PBX
 - Interoffice calls using SIP will go over T1 circuits resulting in free calling between the offices.
- Reduced labor costs by moving to a centralized phone receptionist versus one per office to for entire company

Voice 101 Basics

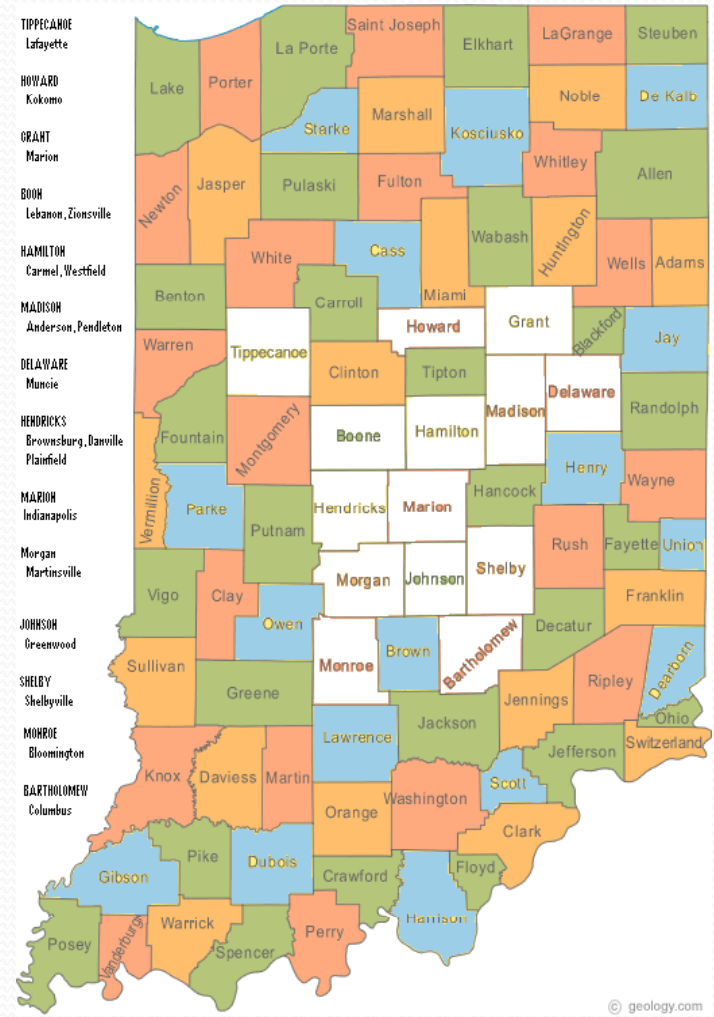
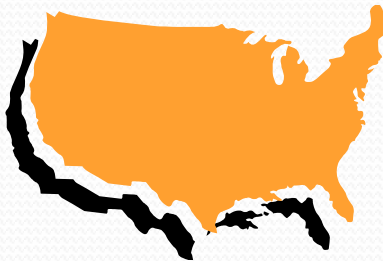
Financial Scenario Five

- Ice Storm with 2-4 inches of ice
- Phone system and Email Located at Data Center
- Broadband or DSL access at home with VPN access
- No loss in sales productivity
- How much lost business due to employees not being able to work?



LightBound Voice Service Area

- LightBound offers local voice services in the following areas:
 - Indianapolis, Anderson, Brownsburg, Carmel, Danville, Greenwood, Kokomo, Lafayette, Lebanon, Marion, Martinsville, Muncie, Plainfield, Shelbyville, Yorktown, Westfield, Zionsville
 - Long distance available domestic and international
- Expanded coverage area (85% of the USA)



Summary

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 - Financial Scenarios



Thank you for attending

- Follow up questions
- Fonality Hands On Demo
- Data Center Tours Available