

LouMUG

Cloud Telephony (Hosted VoIP) Solutions
January 26, 2018

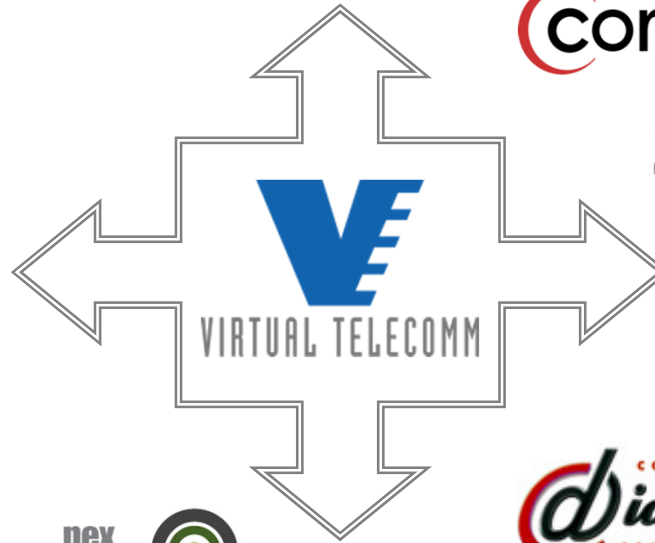


Virtual Telecomm
Jason Hulsewede

Agenda

The background of the slide features several rotary telephones hanging from their cords against a blue sky with white clouds. There are three black telephones and two red telephones, arranged in a staggered pattern across the frame.

- Carrier ISP landscape
 - Acquisitions in the market
 - Fiber based Internet/WAN providers
- Hosted VoIP (Cloud Telephony)
 - Applications
 - Advantages
 - Best practices for deployment
- Virtual Telecomm Team





VIRTUAL TELECOMM

Acquisitions in the Telecom Market

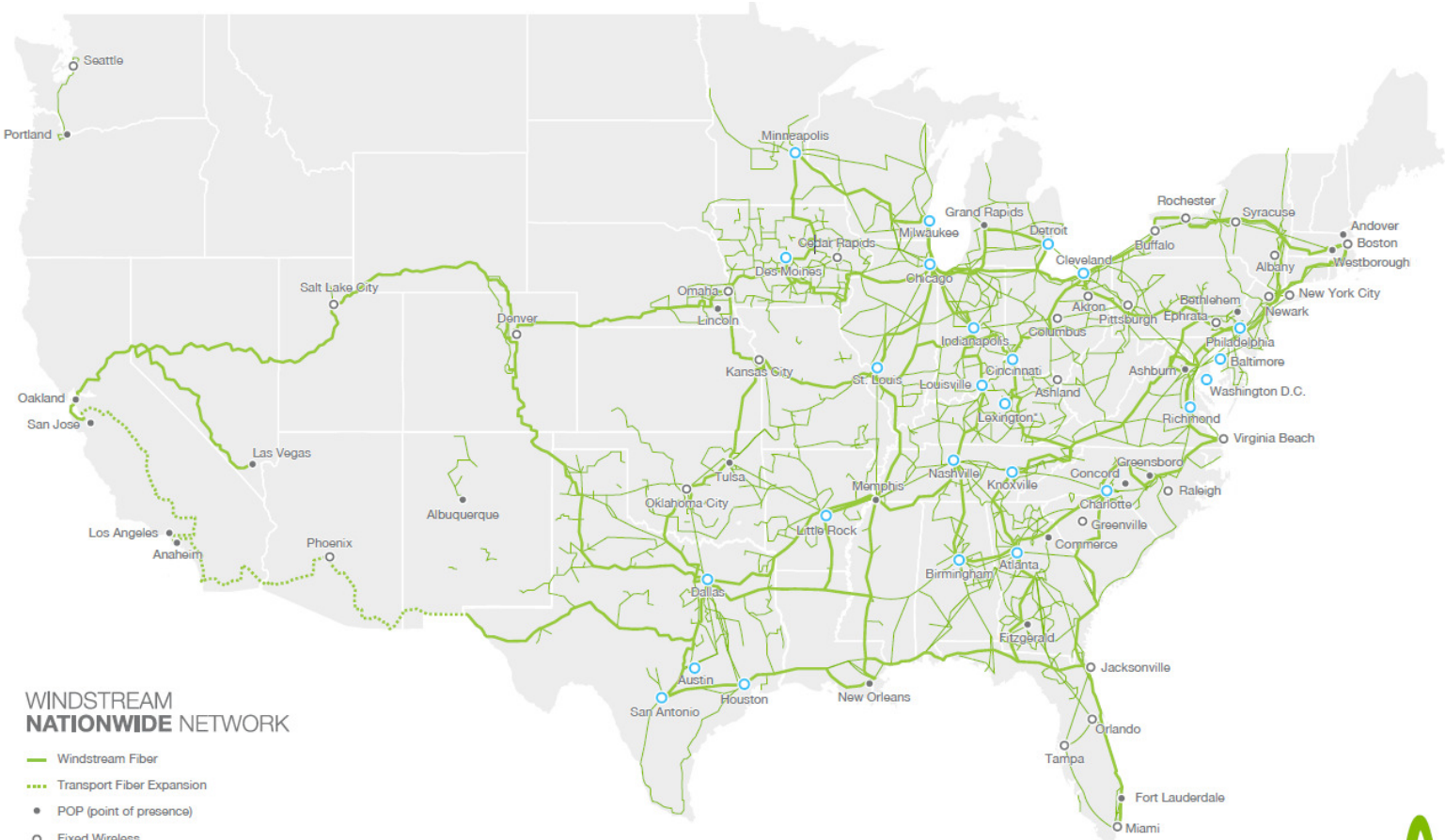
Windstream Acquisitions:



Windstream Acquisitions:



Windstream Network Map:



WINDSTREAM NATIONWIDE NETWORK

- Windstream Fiber
- ... Transport Fiber Expansion
- POP (point of presence)
- Fixed Wireless
- Fixed Wireless with Metro Fiber Expansion



CenturyLink / Level3 Acquisitions:

Level (3)SM
C O M M U N I C A T I O N S

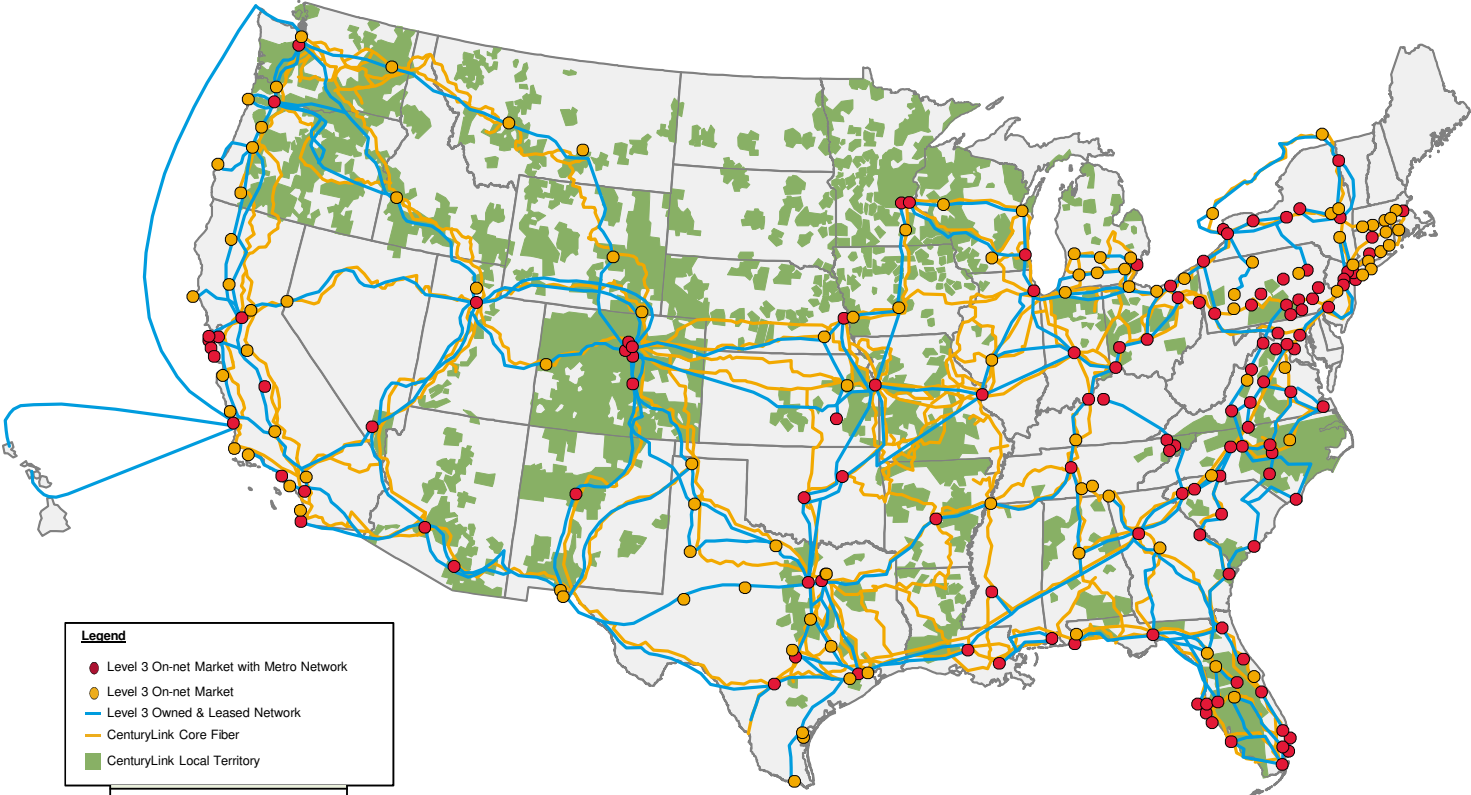


CenturyLink / Level3 Acquisitions:



Century**Link**

CenturyLink / Level3 Domestic Network Map:



Legend

- Level 3 On-net Market with Metro Network
- Level 3 On-net Market
- Level 3 Owned & Leased Network
- CenturyLink Core Fiber
- CenturyLink Local Territory

Metropolitan Areas with Metro Fiber	350
On-Net Buildings	75,000

CenturyLink / Level3 International Network Map:



CenturyLink Global Network



© 2017 CenturyLink. All Rights Reserved. Map information above is current as of October 2017. Information is subject to change. Contact CenturyLink for updates or details. CenturyLink's global network is made up of owned, leased access and IRU segments, which are not distinguished on this map. CenturyLink engages in-region carriers to provide services in some markets.

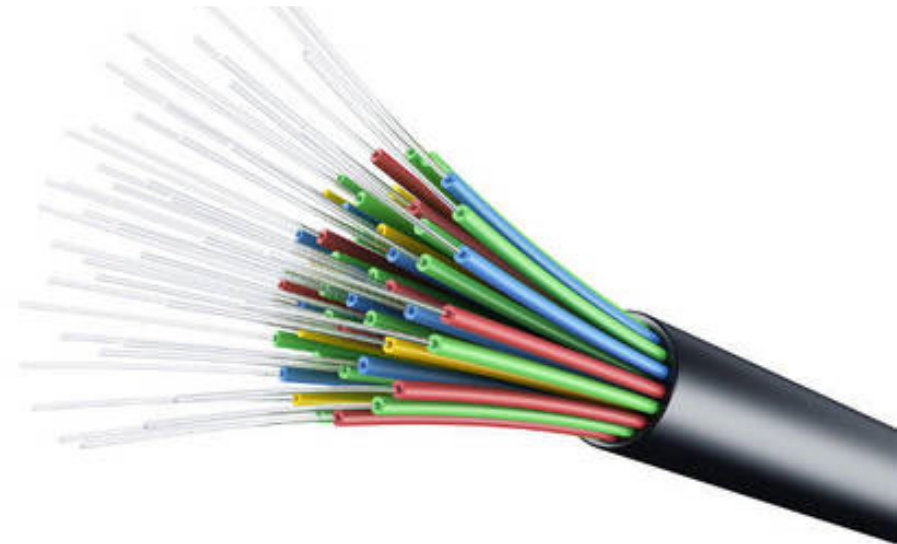


Broadband (Coax- DOCSIS)

- PRI / SIP
- Analog Phone Line
- Best Effort Internet Services
- Point to Point

Fiber

- PRI / SIP
- Dedicated Internet Access
- Point to Point Services
- ELAN (MPLS)





Internet Service	Q1 2018 Rates	Q4 2016 Rates	<i>Cost reduced</i>
	Monthly Price	Monthly Price	
100M x 10M Internet Plus (Coax)	\$60	\$199	-\$139
200M x 15M Internet Pro (Coax)	\$100	NA	-
300M x 20M Internet Max (Coax)	\$160	\$299	-\$139
25M x 25M Dedicated Internet (Fiber)	\$399	\$1,000	-\$601
50M x 50M Dedicated Internet (Fiber)	\$599	\$1,450	-\$851
100M x 100M Dedicated Internet (Fiber)	\$899	\$1,750	-\$851
200M x 200M Dedicated Internet (Fiber)	\$1,299	\$2,250	-\$951
500M x 500M Dedicated Internet (Fiber)	\$1,999	\$3,400	-\$1,401

Note – Assumes site is serviceable for Spectrum coax/fiber. Rates are valid for new customers only. One time install charge and IP address fees are not reflected.

- Residential Plans:

- Fiber 100 (\$50/month)
- Fiber 1000 (\$70/month)

- Business Plans **N/A** in Louisville

- Business Plans:

- Fiber 100 (\$70/month)
- Fiber 250 (\$100/month)
- Fiber 1000 (\$250/month)

- Best Effort Service

“UP TO” XXXM upload and download speeds

- Voice Services (SIP/PRI/Analog) **N/A**

- WAN Services (MPLS, ELAN, ELIN) **N/A**

- Neighborhoods (as of Oct 2018)

Newburg, Portland, Highlands, Strathmoor Village



<https://support.google.com/fiber/answer/6126559?hl=en>



Cloud Telephony (Hosted VoIP) Solutions

Premise Based Phone System (PBX)

- A Premise Based Phone System (or PBX - private branch exchange) is a telephone system within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines.
- Premise Based Phone System Manufactures
 - Cisco
 - Hosted VoIP Platform – Spark / BroadSoft (Announced Oct 2017, \$1.9 Billion purchase)
 - Avaya/Nortel
 - Hosted VoIP Platform - IP Office in the Cloud
 - Mitel/ShoreTel/Intertel
 - Mitel Hosted VoIP Platform - MiCloud
 - ShoreTel Hosted VoIP Platform – Connect (formerly ShoreTel Sky / M5)
 - NEC
 - Hosted VoIP Platform – NEC Cloud System
 - Samsung
 - Hosted VoIP Platform – Cloud UC
 - Microsoft 3CX
 - Hosted VoIP Platform - Skype
 - Toshiba (*announced closing PBX division in 2017, picked up by Mitel*)

Premise Based Phone System (PBX) Hardware



Avaya PBX



NEC Phone



Nortel T7316



InterTel Phone



Nortel Phone



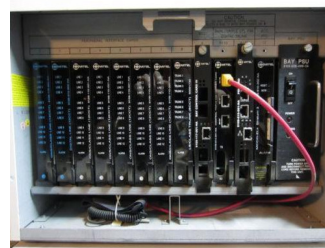
NEC PBX



Nortel BCM Hybrid PBX



ShoreTel



Mitel SX-50

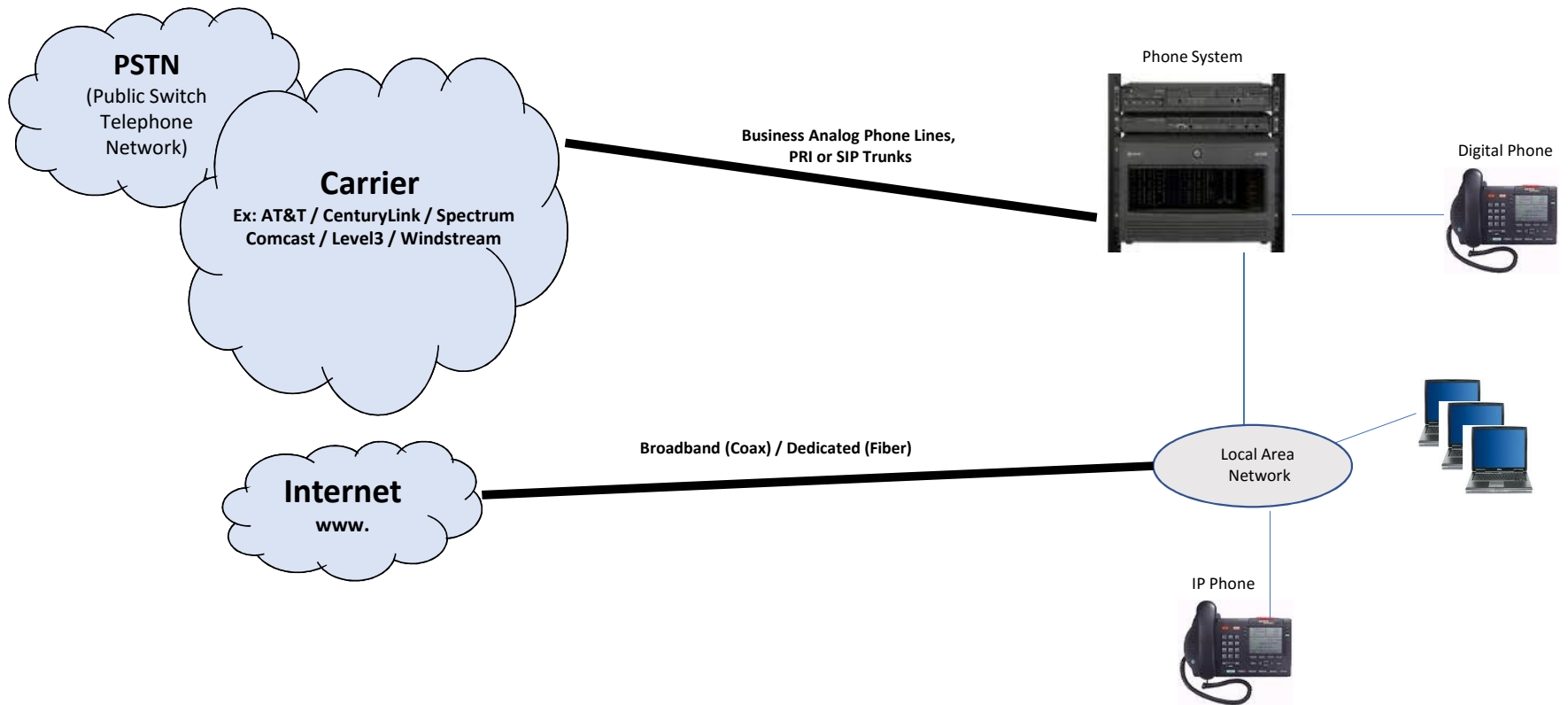


ShoreTel 480 IP Phone



Cisco 7960 IP Phone

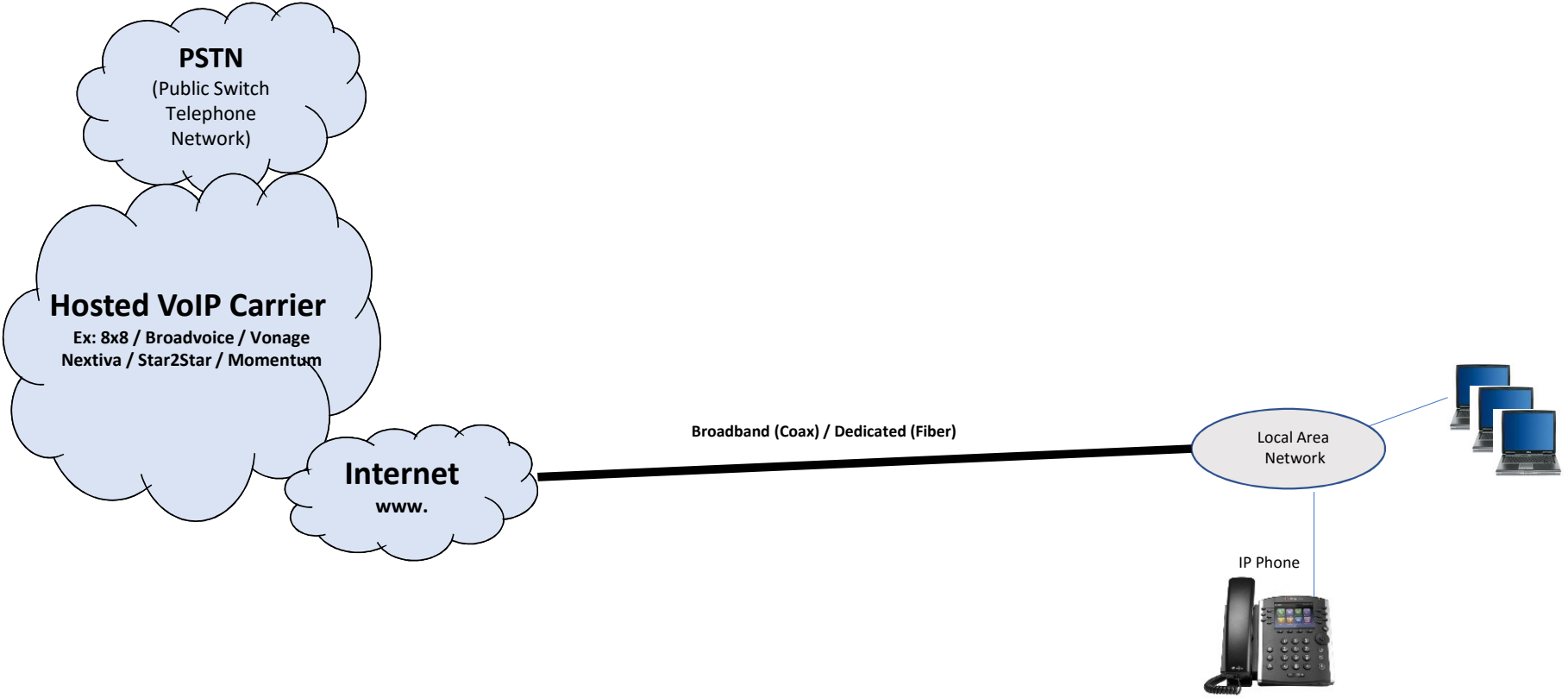
Premise Based Phone System (PBX) Diagram



Hosted (Cloud based) VoIP Phone Solutions

- A Cloud Based Phone System (aka Hosted VoIP) is the technology in delivering voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the Internet. The term hosted VoIP telephony refers to the provisioning of communications services (voice, fax, SMS, voice-messaging, unified communications) over the public Internet
- Hosted VoIP Carriers
 - Vonage
 - 8x8
 - Star2Star
 - Broadvoice
 - Momentum
 - Masergy
 - Jive
 - Ring Central
 - MetTel
 - Fusion
 - Nextiva
 - Skype
 - WestIP
 - Broadview (*acquired by Windstream in 2017*)
 - **Cisco Spark**
 - **Avaya IP Office in the Cloud**
 - **Mitel MiCloud**
 - **ShoreTel Hosted Platform – Connect (formerly ShoreTel Sky / M5)**
 - And the list goes on...

Cloud Based Phone System (Hosted VoIP) Diagram



Gartner's 2016 UCaaS Magic Quadrant



<https://getvoip.com/blog/2016/08/30/rundown-gartner-2016-ucaaS/>

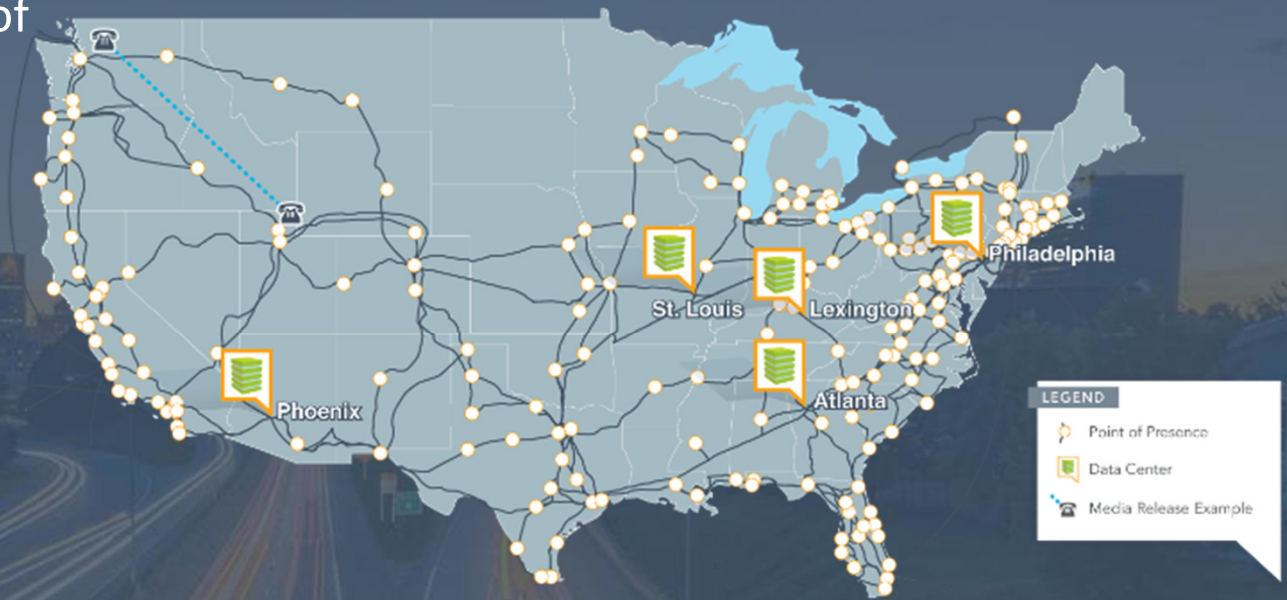
Cloud Based Platforms- Phone Set Manufactures

- Polycom
- Yealink
- Cisco
- Panasonic
- Vtech
- Obihai
- Mitel



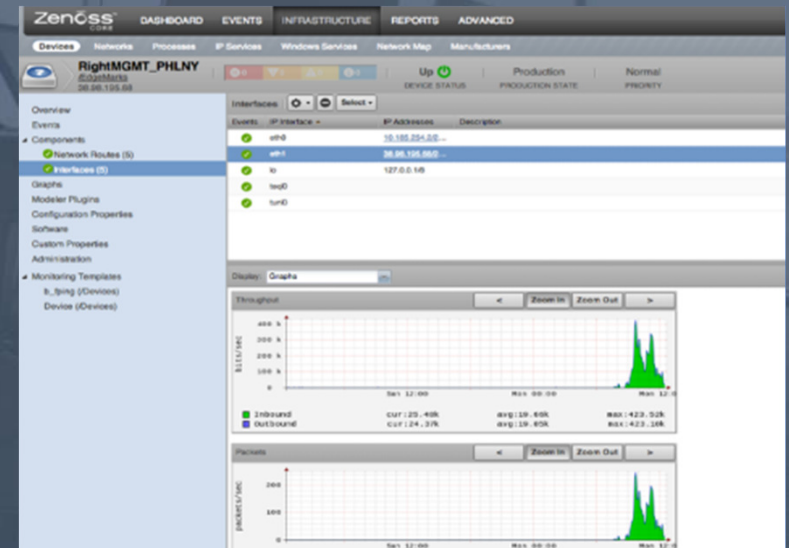
Hosted (Cloud based) VoIP Phone Solutions

- Hosted Platforms are geo-redundant with many points of presence in Data Centers
- Carrier-grade data centers provide 99.999% uptime
- Data centers are SSAE 16 certified, SOC II audited and offer PCI-DSS certification
- 24/7 staffed NOC
- Infrastructure provides business continuity.



Session Border Controllers

Session Border Controller (SBC) is a device regularly deployed in (VoIP) networks to exert control over the signaling and the media streams involved in setting up, conducting, and tearing down telephone calls or other interactive media communications.



Hosted (Cloud based) VoIP Phone Application

Unified Communications (UC) is the integration of enterprise communication services such as Instant Messaging (chat), presence information, mobility features (including single number reach and mobile App), audio, web & video conferencing, desktop sharing, call control, Unified Messaging (integrating voicemail, email and fax)

UC provides a consistent unified user interface and user experience across multiple devices and media types

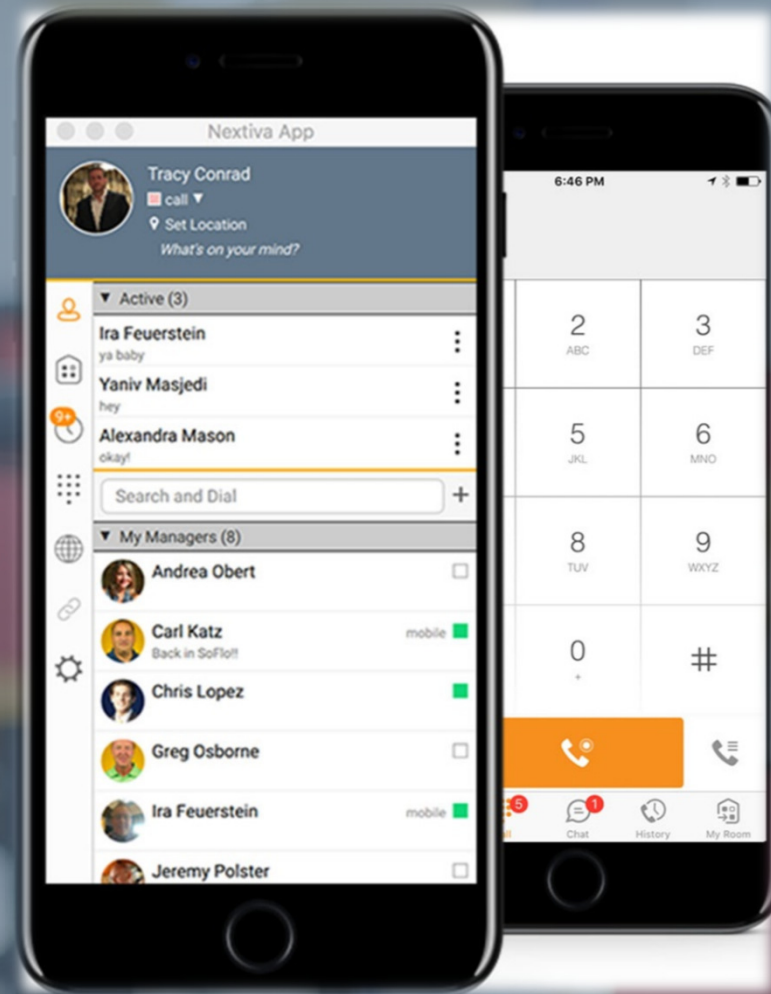


Mobility Solution Options

- Softphone for PC, Mac, iPhone, Android
- Video and Presence on Desk Phone or soft phone
- Use Minutes, Wi-Fi or Data for calling from Cell

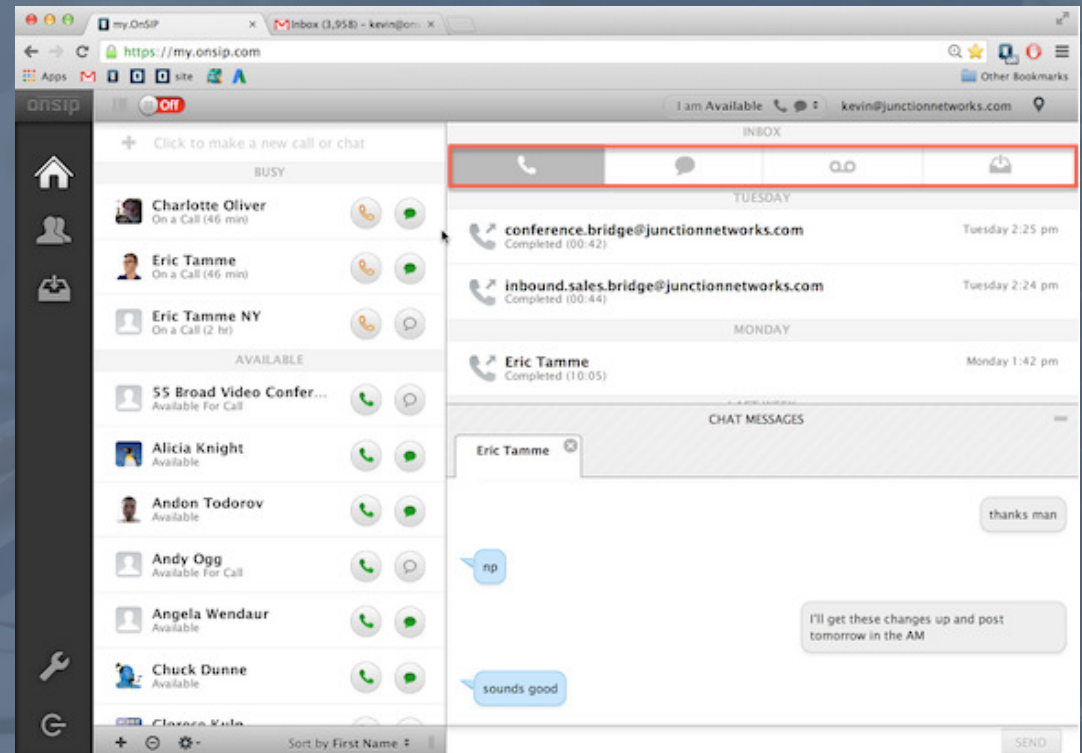
Workforce Flexibility

- ▶ *Benefits of working from home translate into **13% performance increase** and a **drop in job attrition of 50%** (Cranfield University School of Management)*
- ▶ ***37% employees** would take a **pay cut of 10%** if they could work from home. (Global Workplace Analytics)*
- ▶ *Mobile Working*
- ▶ *Businesses gain an extra **240 hours of work per year** from employees due to mobile working (iPass)*



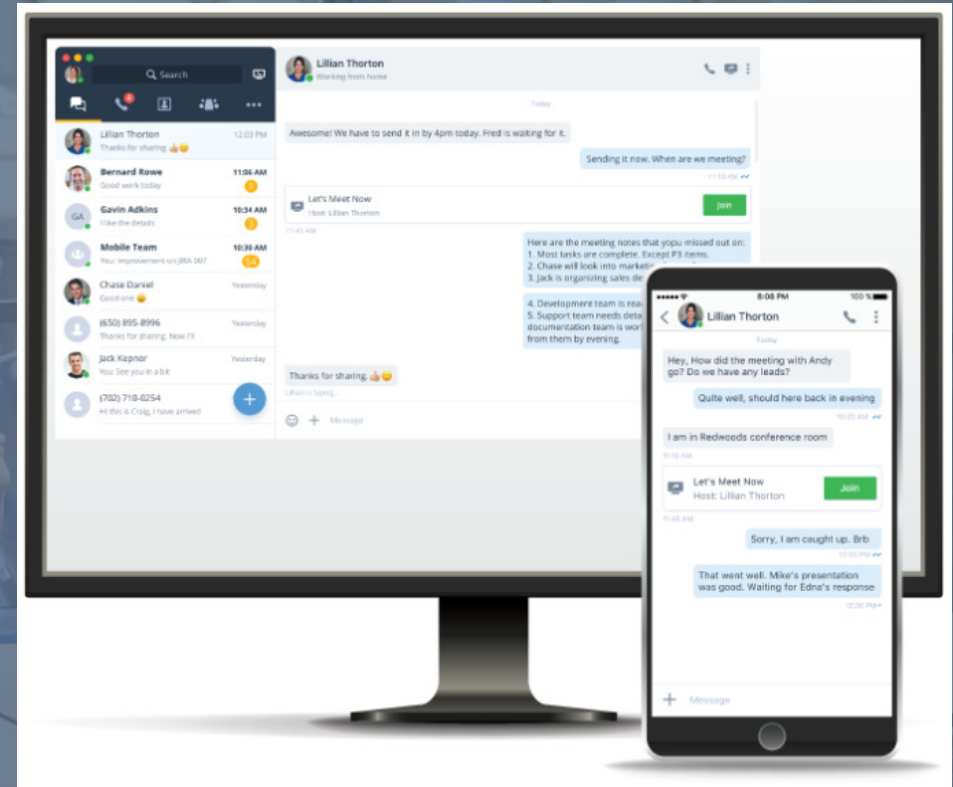
Presence - Desktop Application

- Utilize a unified communications online dashboard to instantly monitor the pulse of your business throughout the workday
- Video, Presence, Phone Control and Instant Messaging from your Desktop
- Manage all of your incoming and outgoing calls with one simple click



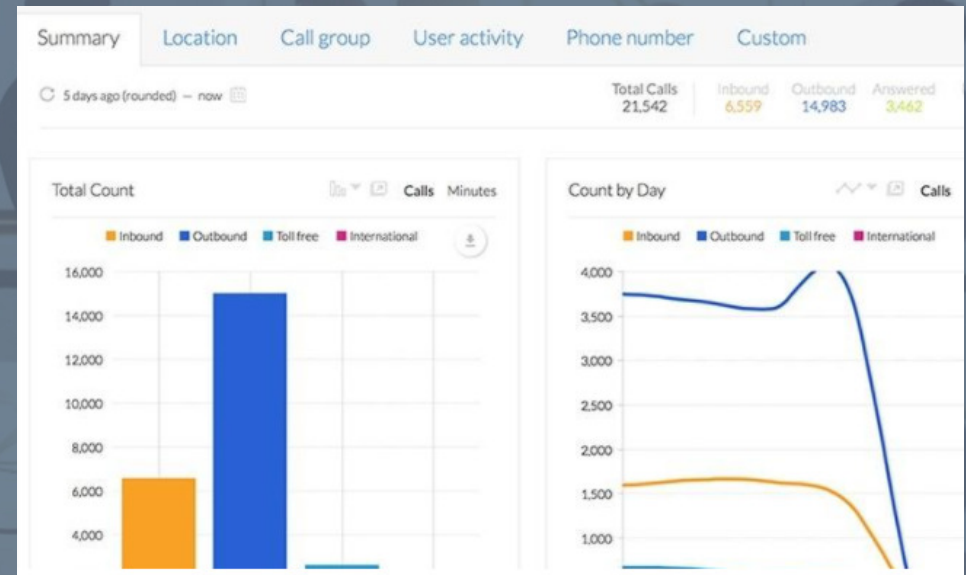
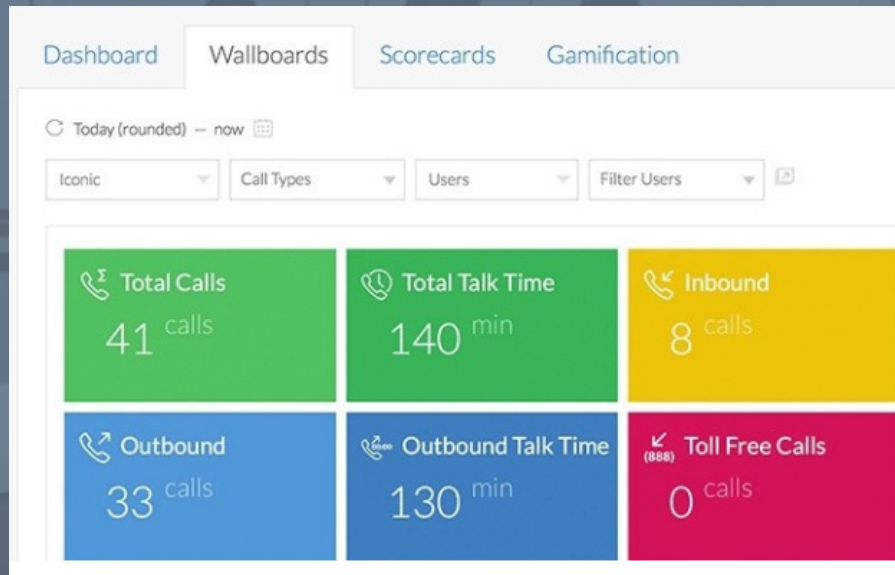
SMS Text Messaging

- Send, receive and track text messages to your business contacts from your Virtual Office desktop and mobile applications.
- Outbound text messages come from your office phone number
- Business Benefits
 - Provides another channel to interact with customers
 - Remind customer of upcoming appointments
 - Update customer on business hours change
 - Provide post sale “Thank you” message
 - Notify customers and prospects of new product and feature releases

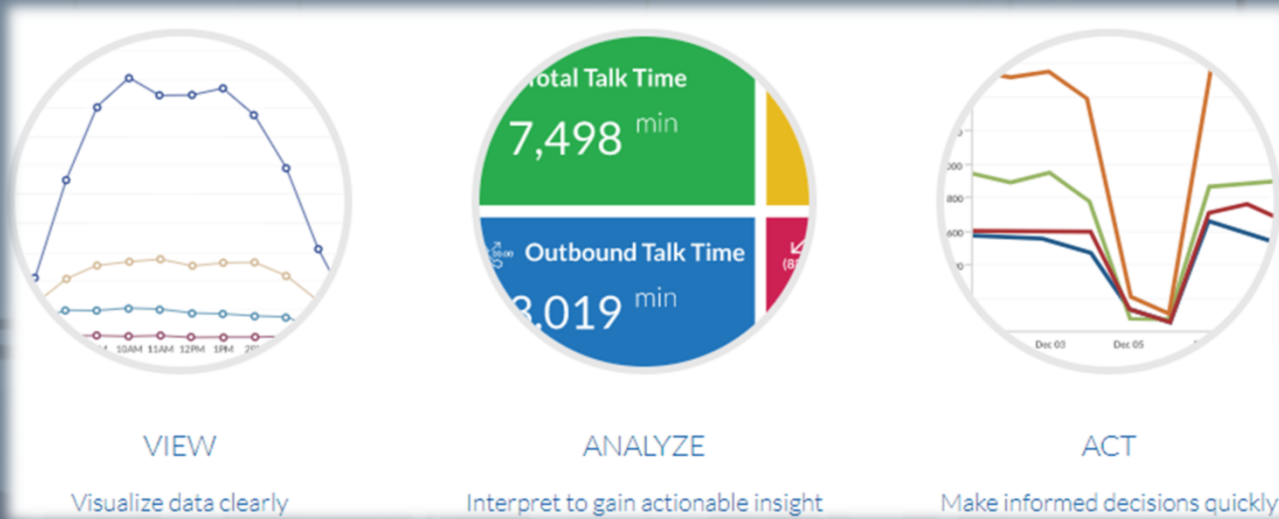


Analytics

- View call activity for your entire organization, or filter down to a specific location, call group, user, or even phone number
- Create custom reports tailored to your business needs, on the fly or scheduled to distribute regularly
- Build custom dashboards to keep the reports you care about most on one screen
- Display your business critical information with customized Wallboards
- Broadcast real-time information to empower agile decision-making across the office
- Decrease reaction time to identify and resolve issues



Analytics



- Instantly access historical data to make informed business decisions
- Predict business outcomes based on prior performance
- Get a snapshot of your business at any time

Cloud Phone Solution Advantages

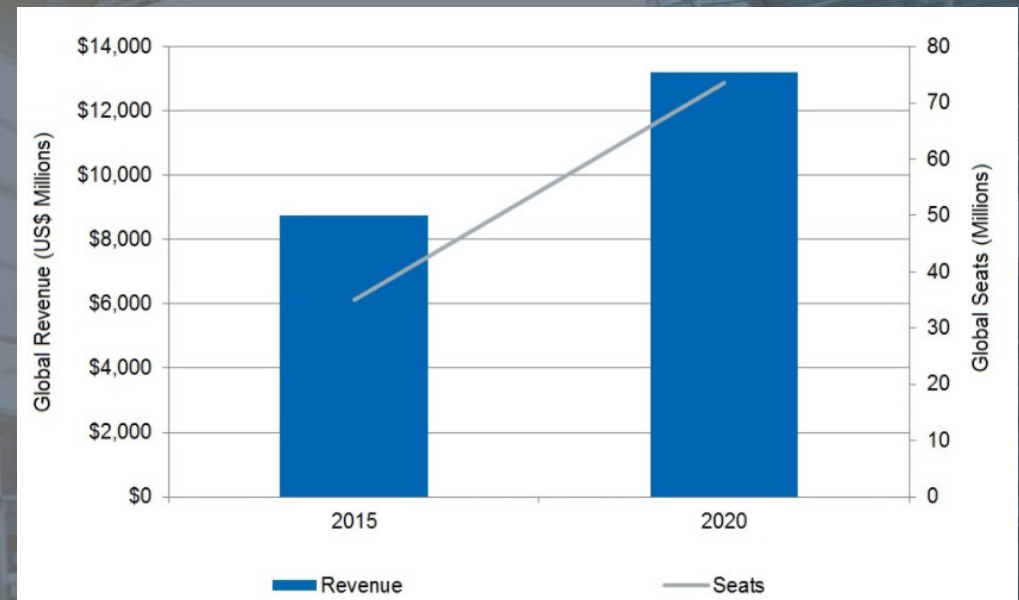
- Traditional Phone service (Analog Lines/PRI/SIP) expenses are eliminated
- Unlimited Local and Long Distance Calling Included
- 24/7/365 free support with no additional support contracts
- No surprise or hidden costs for software or hardware upgrades
- PBX Features plus the latest Unified Communications Applications
 - As technology introduces new applications and features, they are made available
- Disaster recovery is inherent with a Cloud phone solution for no additional cost (automatic call re-routing)
- Scalability
- Easy management via online portal, add phone numbers in other markets on the fly
- No obligation or investment risk
- No cost if moving or relocating in the future

Cloud Phone Solutions Best Practices

- Avoid best effort, high latency Internet services (Broadband/DSL) in large seat deployments
- Dedicated Internet Access (via Fiber) is recommended for large seat deployments
- Consider a hosted VoIP Carrier that can drop private access into your office
- Consider a secondary Internet connection or 4G Cellular back for failover
- Estimate 100k per call path over your Internet connection
- Cat5E network cable drop to all workstations to support an IP phone
- Managed data switch to prioritize voice traffic (QoS/PoE)
- Understanding deployment (on-site or remote)
- Understanding End User and Admin training

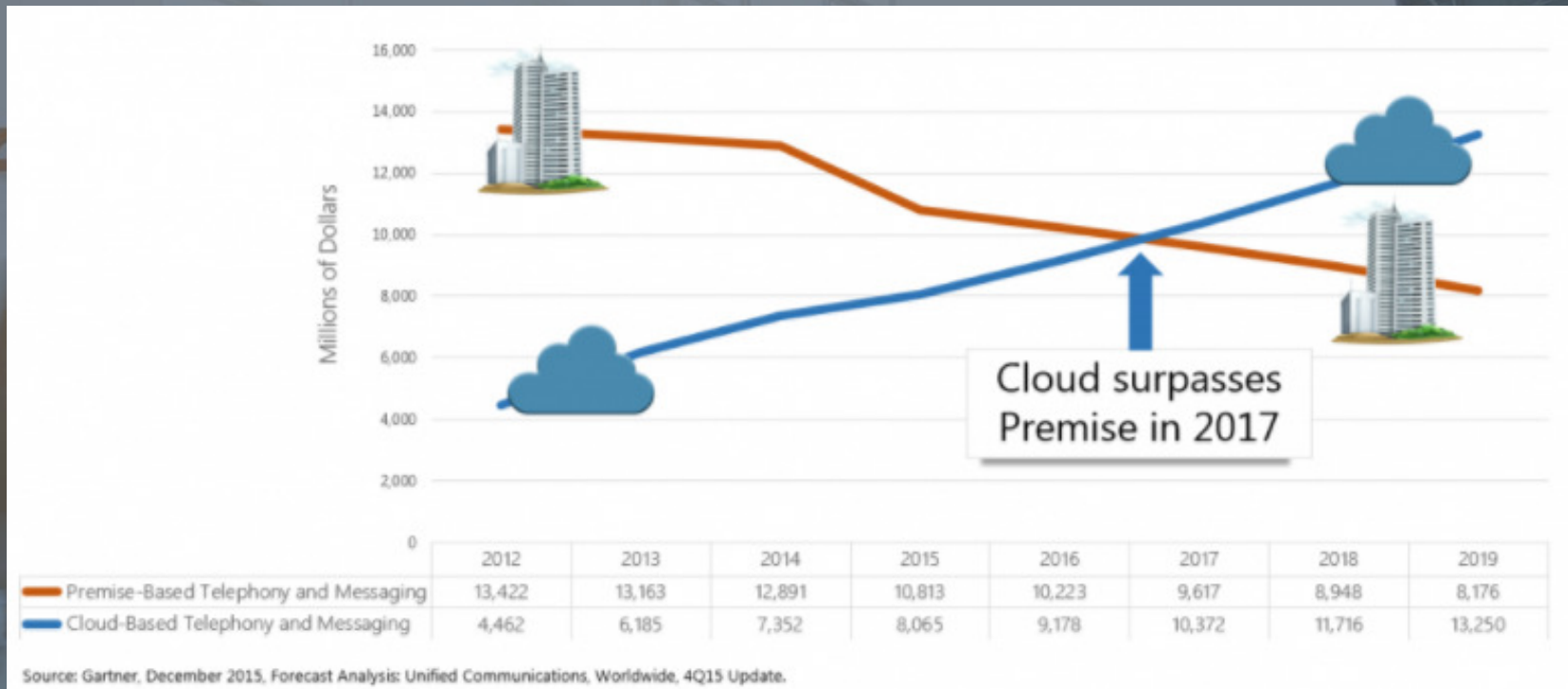
Hosted VoIP Cloud Solutions Are On the Rise

- Worldwide Cloud Hosted Voice Over IP (VoIP) and Unified Communications (UC) revenue totaled \$4.7 billion in the first half of 2016 (H1 2016), growing 12% from a year ago (H1 2015)
- Cloud Hosted VoIP and UC seats increased 22% year-over-year in H1 2016, to 38 million seats
- By 2020, hosted VoIP and UC seats are forecast to reach 74 million
- All regions are growing, but North America comprises 43 percent of seats



Gartner Predicts Cloud Telephony Spending to Surpass Premise in 2017

- 2017 will be a big year, where Cloud telephony sales are forecasted to surpass premise-based revenue for the first time. Cloud-based telephony represents the most significant opportunity, with end-user investments projected to rise to \$13.25 billion in 2019





Virtual Telecomm

Who is Virtual Telecomm?

- Virtual Telecomm is an Independent Agent representing all Carriers providing local, long distance, data and Internet service in the area and across the country.
- Virtual Telecomm provides customers with pricing and a non-bias recommendation on voice and data communication services at the best rate each Carrier has to offer.
- No cost to the customer for Virtual Telecomm to evaluate, sell and service a Carrier solution

WOWbusiness

 **Cincinnati Bell**
connecting what matters

 Comcast

 zayo

 TelePacific
COMMUNICATIONS

 Sprint

 AireSpring

 fusion

 Charter
Spectrum
TV | INTERNET | VOICE

 NetWolves

 windstream
communications

 XC communications
BUSINESS PARTNER

 TELSTRA

 MegaPath

 MASERGY
Global Networking Redefined

 CenturyLink

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COMMUNICATIONS

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Vortex
SIP Trunking for Businesses

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 verizon business

 at&t

 Plug into the power of AT&T
ACC
BUSINESS
Authorized Agent

 Better Communications Now
BCN
Telecom
The Best. Service. Support. Product.

 conferences
Dialogue
conferencing

 InterCall

Virtual Telecomm Team



Mark White
Managing Partner



Michael White
Partner



Jason Hulsewede
Partner



Paul Schulten
Director of Operations



Pat Younger
Account Manager



Brandon Conner
Business Analyst



Jerry Marshall
Sales



Carter Polsgrove
Sales



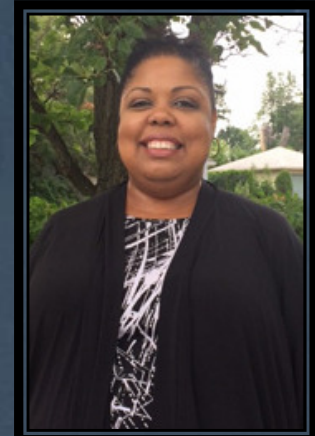
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