

# LMR and LTE Interoperability – the Future of Public Safety Communications

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March 7, 2017

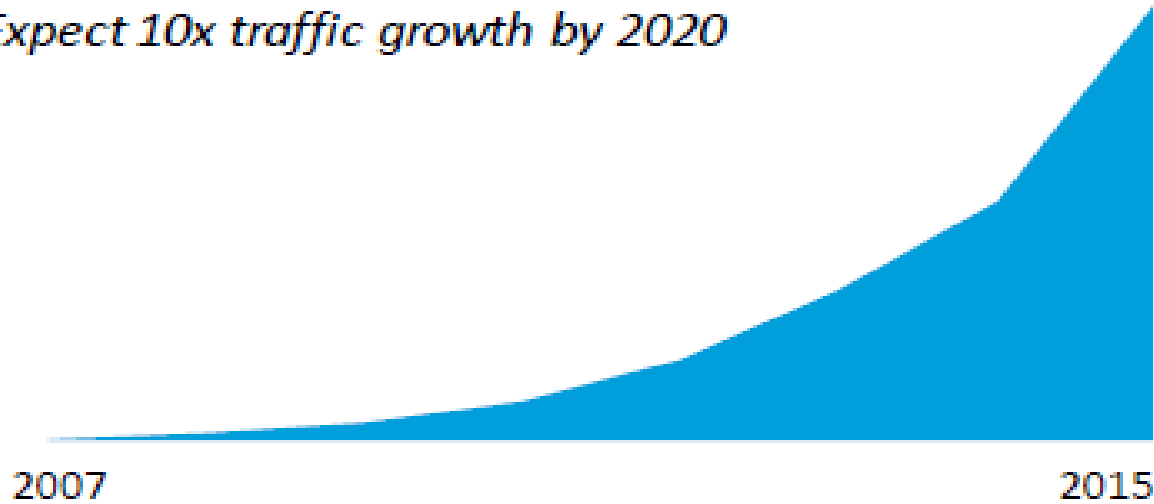


# The Cellular Data Explosion & Network Evolution

## AT&T Mobile Data Traffic Growth

150,000% (2007 – 2015)

Expect 10x traffic growth by 2020



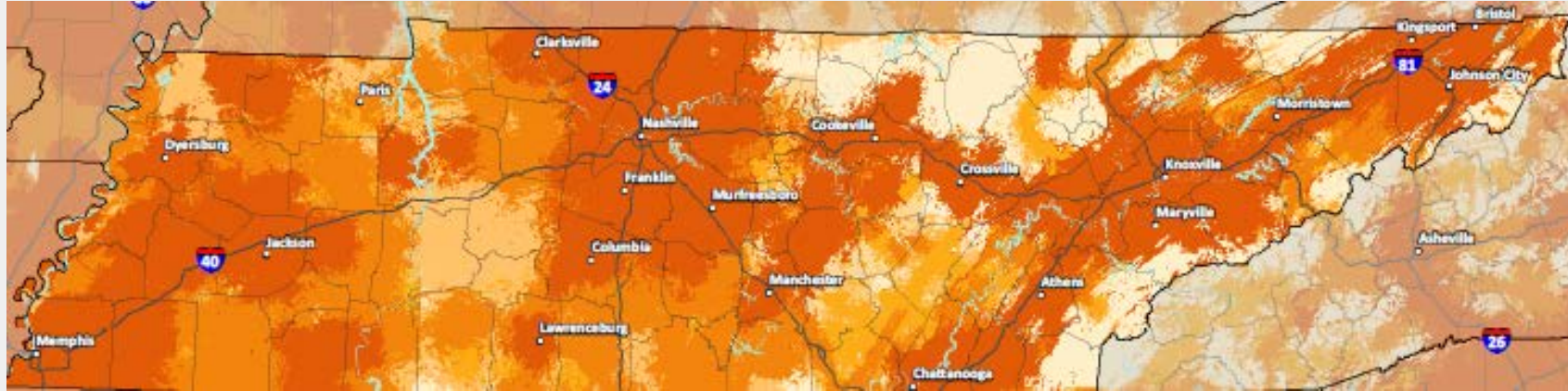
### Densification and coverage expansion

- Small cells deployed in 50 states and Washington D.C.
- Distributed Antenna Systems
- Wi-Fi Connectivity and Investment
- The future with 5G



# How the Investment Has Flowed to the State of TN

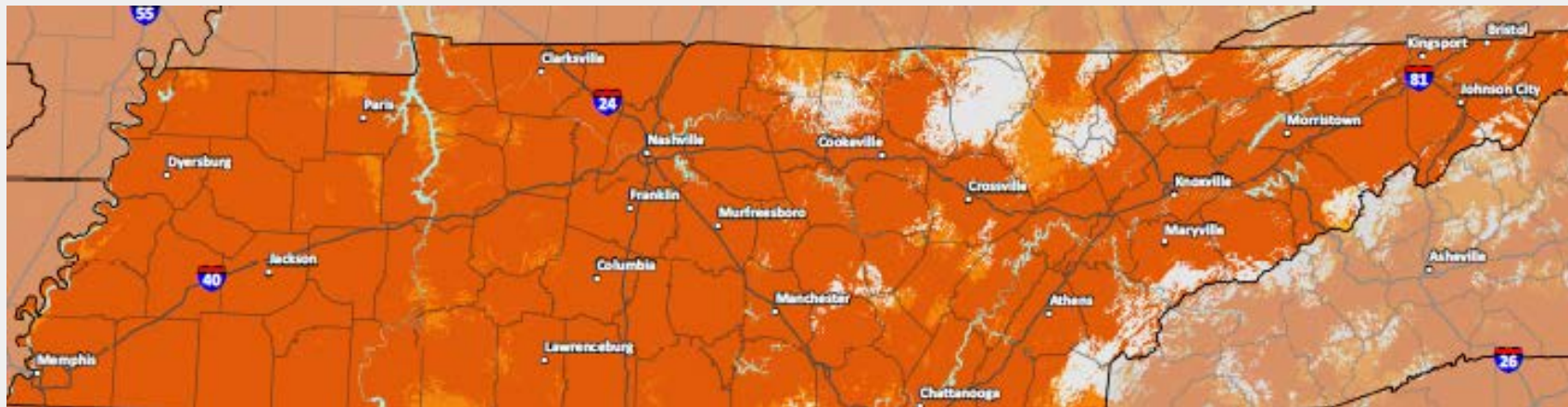
2013



\$1.1 Billion Dollars Invested in AT&T's Network

98.0 % of the population covered

2017



Depicts Outdoor Portable Coverage

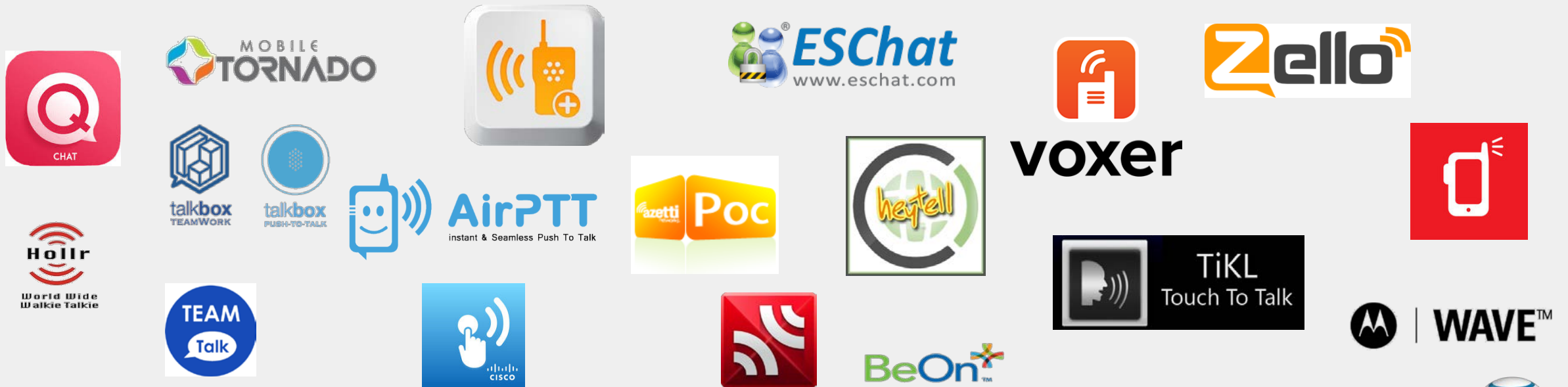
4G LTE Partner 4G LTE 4G Partner 4G 3G Partner 3G Partner 2G



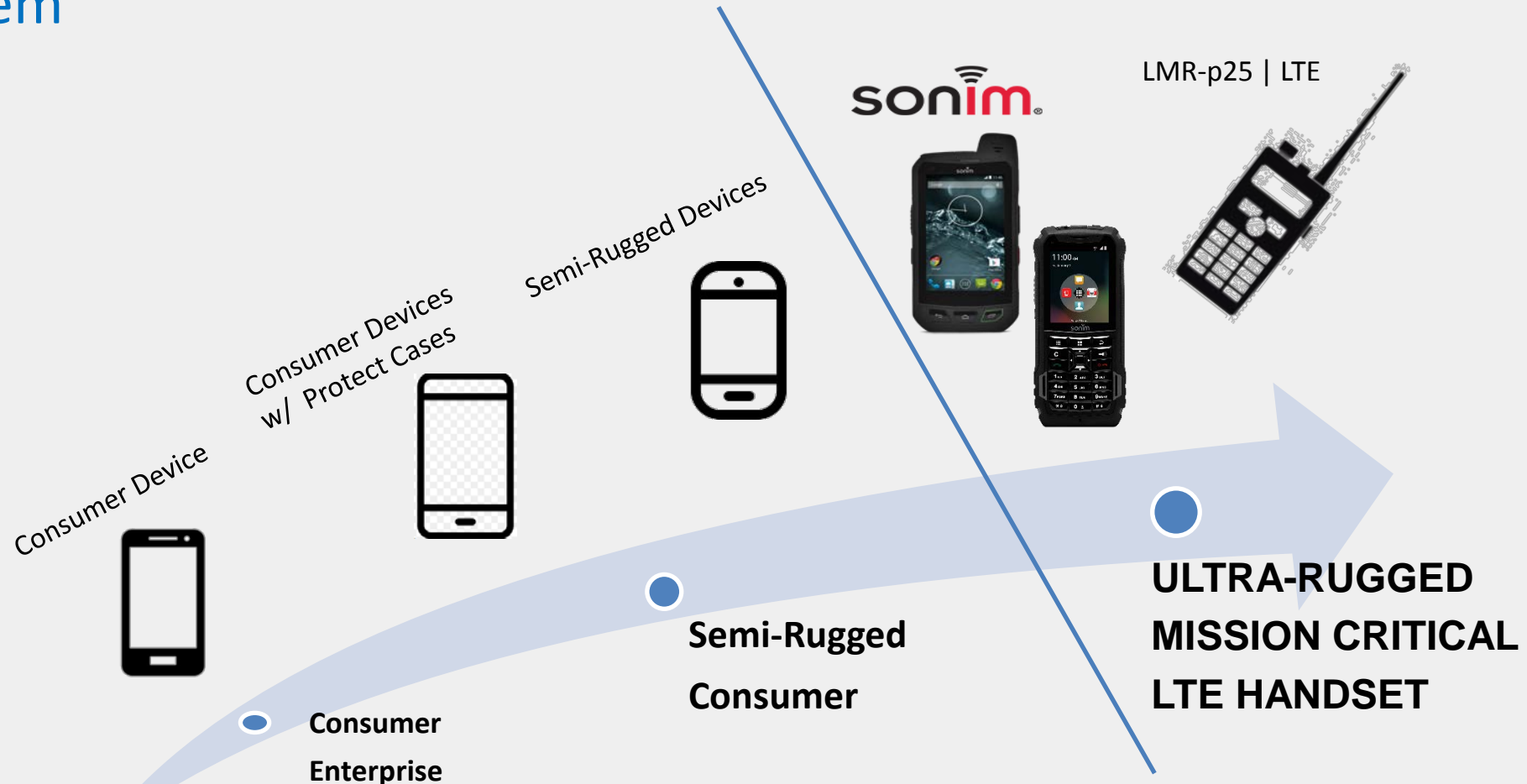
# The Broadband Push To Talk Revival

Push-to-talk Over Cellular / Broadband PTT (POC) is Simply:

1. Push to talk (PTT) voice service for mobile communications.
2. Provides direct one-to-one and one-to-many voice communication service in the cellular network.
3. It is based on half-duplex VoIP technology over mobile networks which allows PTT service to use cellular access resources.



# Advancements in Devices with Public Safety-1<sup>st</sup> Responder Device Ecosystem



**ULTRA-RUGGED  
MISSION CRITICAL  
LTE HANDSET**

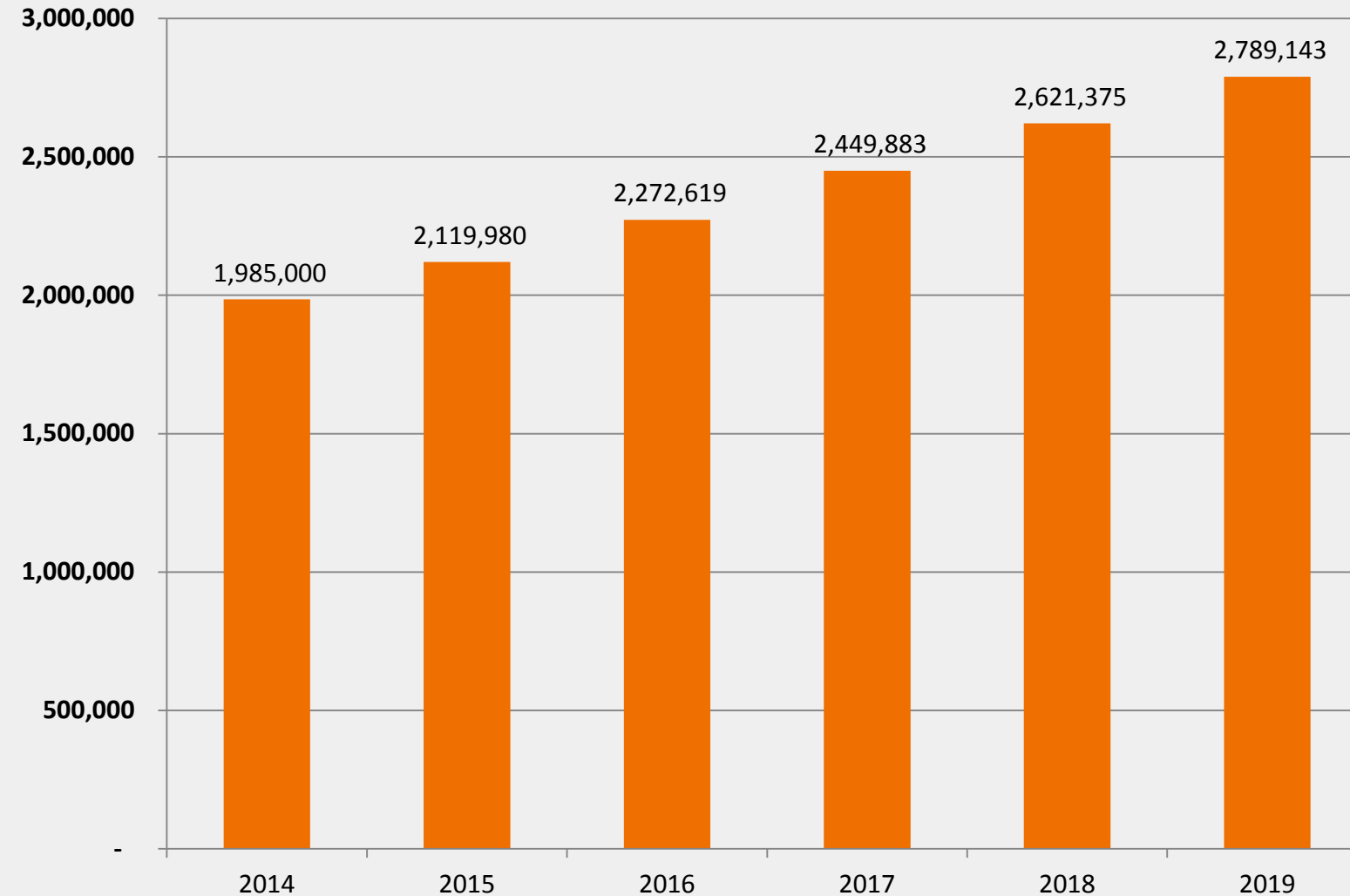
\*Meets/Exceeds the Public Safety Standards definition of Mission Critical Device/Equipment

**IP68/69 / MIL810G Certified / 6.5' Drop Test**



# US Broadband PTT Smartphone / Rugged Device Forecast Through 2019

**Broadband PTT Smartphones & Rugged Devices**



- Installed base of ~3-4M devices in US today (Nextel peak of over 15M users)
- Installed base of 10M LMR radios in US today (25% in public safety)
- Large share of LMR is low cost analog radios (<\$200).



# All Broadband PTT Is Not Created Equal – Carrier Integrated



- Integrated into the mobile carrier's infrastructure
- Hardened deployment to maximize uptime & reliability with PTT network monitoring



- Advanced capabilities as part of the network such as priority access with advanced OEM device features
- Access to network based API's to extend connectivity and capabilities



- Radio-like features that are tested to perform consistently on the carrier network
- ISSI / CSSI capabilities integrated across the network to deliver P25 integration



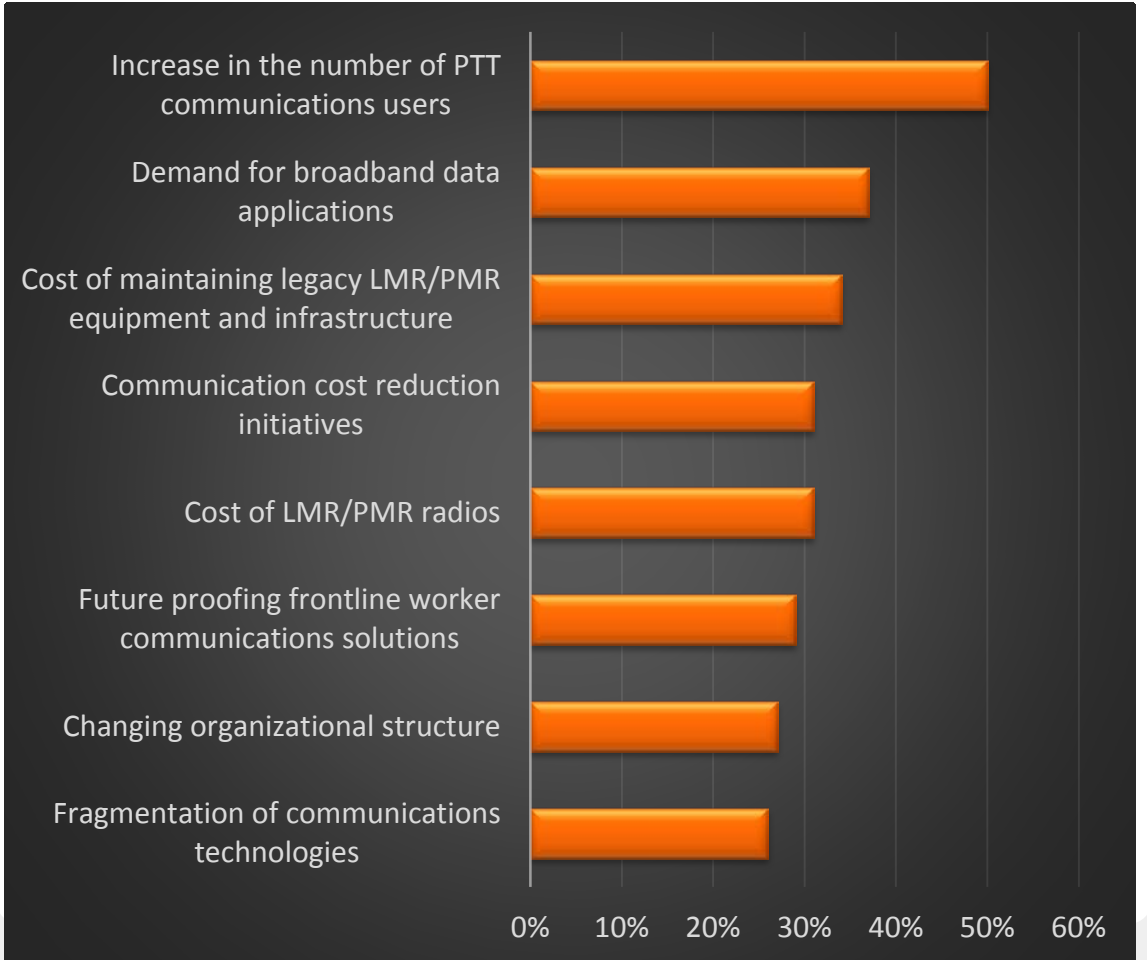
- 24x7 end to end support thru the carrier
- Quality assurance process leveraging OEM's best practices to provide consistent user experience



# What are the Key Factors Driving LMR/PMR Migration Within Your Organization?

50%

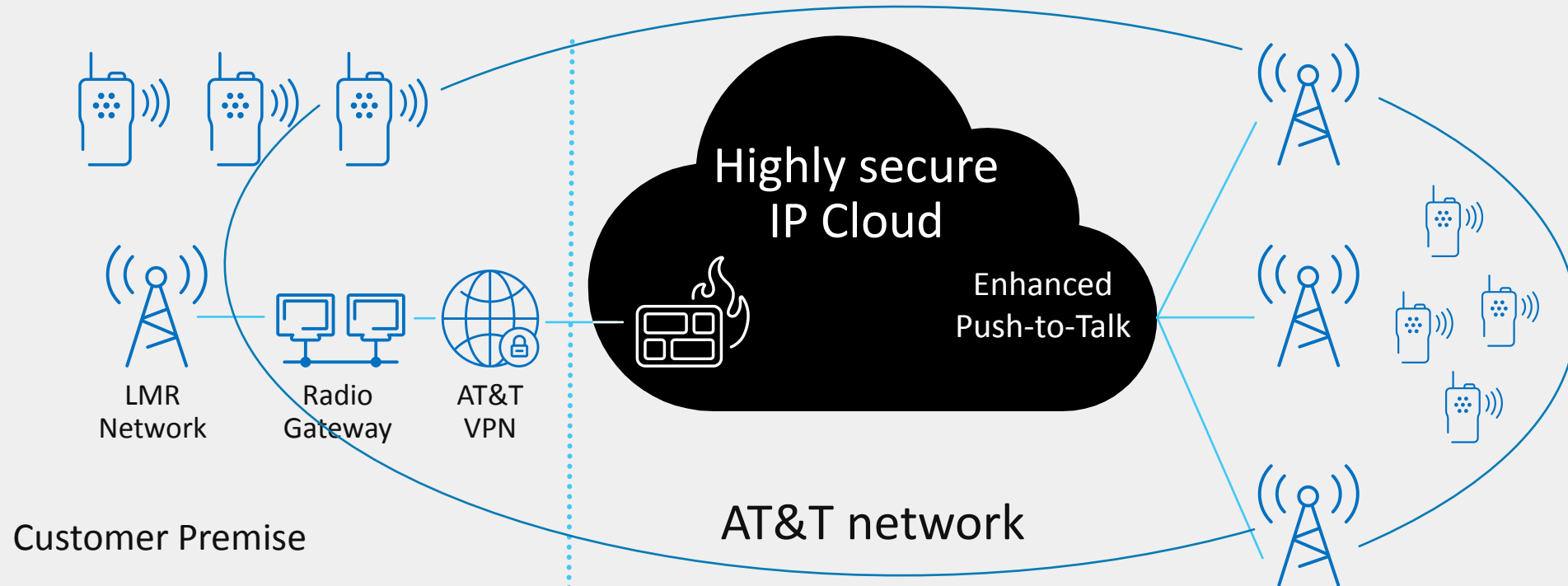
**Would increase the number of PTT communications across their users.**





# How it works?

## Managed LTE LMR Interoperability



- **P25 ISSI:** System to System connectivity. Connect to the system for talkgroup, user ID, unit calling, console access and logging continuity.
- **P25 CSSI:** System to Console Connectivity. Connect a mission critical console for Broadband PTT control or adapt into your existing Avtec or Zetron Dispatch Center.
- **ROIP Connectivity:** Connect to the system for talkgroup, console access and logging continuity,



# Examples of Public Safety Use Cases



- Enable command staff to listen into radio talkgroups anywhere in the world
- Extend the coverage; increase the value of the two way radio network at a lower cost



- Enable discrete conversations via private calling
- Dispatch or field resources can connect directly with each other for instant communication



- Secondary network when Land Mobile Radio coverage isn't available
- Keep in contact with prisoner transport, undercover units, special unit detail wherever there is carrier coverage



- Broadband platform for command & control applications
- Deliver information access with real time voice for collaboration'
- Mobile hotspot for sensors, laptops, body cameras & other smartphone based applications



