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# EMPOWERING ENTERPRISE MOBILITY WITH THE RUGGED DEVICE AND PUSH TO TALK

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For nearly a century, Push-to-Talk (PTT) technology has been utilized in the private and public sectors to facilitate mission-critical, two-way communications. Traditionally conducted over Land Mobile Radio (LMR) networks, PTT facilitates instant walkie-talkie-style communications between organizational users across a specified geographic footprint. Local, state and federal agencies rely on PTT to connect with first responders for public safety and emergency services, whereas energy, transportation, hospitality and construction industries leverage PTT to maintain connectivity with field force workers for applications such as dispatching, facilities management, service maintenance, and shipping and logistics.

While police, military, and aviation are still heavily reliant on LMR for time-urgent correspondence, PTT over Cellular (PoC) is rapidly gaining momentum as a cost-effective and feature-rich alternative to augment or replace existing LMR installations. This is particularly true within the enterprise environment where instant one-to-one and one-to-many communication across various lines of business are essential to ensuring employee productivity and delivering superior customer service. As LTE coverage in North America becomes ubiquitous, PTT over LTE is increasingly prevalent, which means much faster data speeds and much lower network latency. As such, PTT over LTE has closed the performance and coverage gaps between PoC and LMR.

Utilizing PTT over LTE networks, businesses can benefit from expansive commercial coverage that is much larger than that provided by private or shared LMR networks. In addition, PTT over Cellular extends communications beyond the single function of voice to include data, video and connectivity with back-end business systems. Lastly, PoC offers a greater selection of ruggedized and affordable end-user device options, including feature phones, smartphones, and phablets – providing the right total mobile solution for virtually any type of worker and work environment, and at a fraction of the cost when compared to LMR and rugged two-way radios. Through the use of PTT and rugged mobile devices, organizations can enable enterprise mobility from the C-level to the front-line worker.

### THE EVOLUTION OF PTT

Since the 1930s, dedicated LMR networks have been the primary delivery method for PTT services. Two-way radios, available in mobile or base-station configurations, have been the standard end-user devices to transmit and receive PTT messages.

With the touch of a dedicated button, users can instantly initiate communications to one or more contacts or groups. In order for PTT to be effective, there must be near zero latency both at the point of 'call set-up,' and 'volley' between the time users initiate and receive voice messages. Both of these actions must be near instantaneous to guarantee that short and quick bursts of communications are immediately delivered in their entirety, thus ensuring messages are received and interpreted accurately. The speed and reliability of PTT communications are what have made it a mainstay for emergency responders.

PTT service made its entrance into the mainstream market in the mid 1990s via Nextel's iDEN service, which provided organizations the benefits of PTT without the upfront network investments required with LMR. Nextel was the first commercial service to bridge the gap between traditional PTT and cellular, offering business and government users nationwide coverage and support for PTT, voice and text. At its peak, Nextel (which was acquired by Sprint in 2005) served more than 20 million subscribers.

The decommission of Sprint's Nextel iDEN network in 2013 coincided with the proliferation of 4G LTE and advancements in ruggedized mobile devices. Collectively, these developments paved the competitive landscape for operators seeking to deliver PTT solutions that rivaled the speed, reliability and durability of those offered by traditional LMR networks and hardened equipment.

Today, carrier-offered and over-the-top PTT solutions that meet enterprise' requirements are available, marrying one-touch, person-to-group communications services with the myriad features business users expect from their mobile devices, including broadband voice, messaging, data, GPS and secure

connectivity with business-critical systems and applications. Making these PTT offerings even more appealing is the wide range of rugged devices now available to organizations looking to provide highly customized mobile solutions for their diverse workers, applications and jobsite environments.

### THE RUGGED MOBILE DEVICE IS NOW ENTERPRISE READY

According to a recent report by [Zion Research](#), the global enterprise mobility market is expected to reach a valuation of \$500 billion by the year 2020. In addition to the need for improved communication and collaboration, Zion credits smartphone demand as a major factor driving enterprise mobility growth, so much so that the smartphone segment is expected to lead in the enterprise mobility market by the end of 2020. There is no doubt about it: smartphones have become the de facto standard for voice communications and Internet access, for consumers and businesses alike.

Consumerization has been a catalyst for mobile device innovation. Now, carrier-subsidized rugged devices are generally available, and they meet the demands of even the dirtiest, wettest, loudest and potentially dangerous worksites. Organizations with remote and disparate workers – from construction sites, oil rigs, manufacturing factory floors to aviation hangars – are no longer reliant on expensive hardened equipment tied to a single communication network. Companies can now arm their workers with one mobile device that is not only built to withstand occupational hazards but also provide a dedicated button for one-touch access to PTT services, be

they carrier or LMR delivered. In addition, this new generation of rugged mobile devices can be highly customized to expose only the business applications that are critical to each worker's job function, with support for the industry's leading Enterprise Mobility Management (EMM) solutions.

According to [Kodiak](#), a provider of one of the leading PTT platforms that operates across LMR, LTE and Wi-Fi networks, the average cost per carrier-integrated PTT user (when considering everything from rugged handsets to network equipment) is less than \$500 each, compared to the \$1,050 cost per user for a privately-owned trucked LMR system. Simply put: the annual cost per carrier-integrated PTT user is 55 percent less than the expense of supporting an LMR user. For organizations that must provision thousands of PTT users, the annual costs savings can be in the millions.

Considering the legacy investments in LMR technologies and the security LMR can offer organizations that require dedicated systems in the event of a disaster, the overarching goal of any new communication service should be interoperability. Leveraging purpose-built gateway technologies, such as those offered by Kodiak Networks, organizations can bridge the disconnect that exists between legacy LMR investments and new PoC services and rugged mobile devices. This solution allows organizations to continue using existing systems but unify disparate devices and supplemental networks (that connect to neighboring agencies or support organizations), thus simplifying EMM and the end-user experience.





## RUGGED AND PTT: THE BENEFITS TO ORGANIZATIONS

eMarketer projects that the number of smartphone users in the United States will surpass 200 million by 2017 and that the number of worldwide users will exceed 2 billion by that same time. While two-thirds of Americans now own a smartphone, the business requirements for these devices differ vastly from those of consumers, particularly when procuring them for field-force workers who operate in hazardous environments or unpredictable conditions.

For companies and government agencies, the importance of ensuring communications between various departments and workers in the field cannot be overstated. Vehicle-mounted devices, barcode scanners and two-way radios have long helped field and factory-floor workers effectively complete their jobs. But what if the rugged mobile device could consolidate the functionality of these business-critical devices and provide business users with a single-point solution for everything from dispatching and inventory management to account and project management, as well as business-critical communications?

Just as business end-users have different roles and responsibilities within an organization, rugged devices are now available in different flavors to enable enterprise users – from C-level executives to facilities and factory-floor crews – achieve their workplace objectives. Ruggedized Android™ tablets and smartphones provide project and line-of-business managers with impact-resistant displays that are optimal for on-the-go access of documents, forms, schedules and other business-critical information. These hardened, top-of-the-line devices offer the size and clarity needed for easy field use and data entry, as well as integration with back-end systems to ensure projects are executed on time and on budget.

For construction, utility, service and maintenance workers, smartphones aren't always necessary. Size, portability and hardened durability are the key requirements for connectivity devices, as well as a large dedicated button to enable PTT

communications. Feature phones are now available to meet these rugged user requirements as they are built to withstand rain, wind, dust and potential falls or drops from heights. Rugged feature-phones deliver everything these users require while out in the field, and nothing that they do not. These devices not only meet Military Standard 801G, but some are also OSHA certified Nonincendive, Class I, Division 2, Group A-D, T4 for use in classified hazardous work environments where flammable vapors, mists and gases can potentially exist, making them the ideal solution for oil and gas refineries, healthcare and manufacturing environments.

PTT via rugged devices can streamline communication processes for virtually any industry responsible for directing and tracking mobile personnel or resources. And the benefits of rugged and PTT can be felt from the front lines to the bottom line, delivering organizational benefits that both improve efficiencies and reduce costs, including:

- **Unify Networks and Devices:** PTT over Cellular enables workers who had to carry two devices (for example: one cell phone and one LMR handheld) to now carry one device and still communicate via PTT with anyone on their existing LMR network. This unification not only reduces businesses' hardware costs but it also increases productivity of workers on the front line.
- **Nationwide Footprint:** LMR networks are limited to a specific area, but PTT over Cellular is available nationwide. Organizations that embrace PTT over Cellular gain the advantage of being able to communicate with geographically dispersed agencies and personnel outside of LMR territories. Leveraging rugged handhelds and Kodiak Network's gateway, organizations can seamlessly integrate carrier-integrated PTT with their existing LMR environments.
- **Feature-Rich PTT Handhelds:** Commercially available rugged mobile devices provide organizations with feature-rich solutions that not only support one-touch PTT communications, but also offer cellular voice, text,

messaging, data and GPS capabilities. With integrated cameras, mobile devices can easily serve as on-the-go barcode scanners for delivery drivers, as well as healthcare workers responsible for dispensing and tracking medications, and documenting patient care in compliance with the Health Insurance Portability and Accountability Act (HIPAA).

- **Enterprise Mobility Management (EMM):** In the organizational IT environment, the ability to provision mobile devices for secure data and system access is of paramount importance. With industry-leading support for EMM, organizations can enable the features and applications available via rugged devices based on end-user credentials, thus ensuring the integrity of the organizations' data environments and simplifying the user experience.
- **Rugged by Design:** For enterprise mobility initiatives, particularly in industries where operations and services are highly reliant on the productivity and uptime of field technicians, a handheld device must be ruggedized to ensure business continuity and minimize the risk of failure or loss. Rugged devices not only enable PTT services, but are also built with durability, ease-of-use and total cost of ownership in mind. Ruggedized handhelds can deliver diverse features to enterprise users and deliver peace of mind that they are safe for use in virtually any environment:
  - High-quality speaker and microphone for loud and crisp audio in noisy, outdoor environments;
  - Large, dedicated buttons for instant access to PTT services;
  - Superior battery life to ensure day-long remote operation;
  - Integrated camera to document incidents for SOP change management procedures, capture evidence for estimate claims, and barcode scanning applications;
  - Dust-proof and impact-resistant to maintain optimal performance and operational integrity;
  - Waterproof with the ability to survive immersion in up to 6 feet of water for up to 30 minutes;
  - Highly-durable, scratch-resistant display that protects against incidents and the elements;
  - Continuous productivity with Glove and Wet Touchscreen operation;
  - OSHA certified non-incendive (Class I, Division 2, Group A-D, T4) for use in classified hazardous work environments; and
  - Certified to IP68 and Military Standard 810G for dust, shock, vibration, temperature extremes, high altitude, solar radiation, humidity and water immersion.



## THE KYOCERA COMMITMENT TO RUGGED AND PTT

As of 2014, SNS Research estimated that there were approximately 7.1 million LMR business users in North America and an additional 5 million public safety users (3 million of which were considered non-mission-critical). Advances in PoC and rugged devices have set the stage for Business LMR users to seamlessly migrate to carrier-offered PTT, significantly reducing their PTT costs while creating a more interoperable communication environment. This total solution also unifies the primary productivity and tools upon which businesses, particularly those with remote workforces, have grown to rely. According to [Aberdeen Group](#), 53 percent of organizations currently use mobile apps for field service, enabling employees to conduct a wide range of project management tasks remotely, such as filling out forms, inventory procurement, updating support tickets and submitting invoices. For workers operating in outdoor or on-the-go jobsites, mobile applications and PTT services delivered via rugged mobile devices can marry must-have productivity and communication tools, helping improve efficiencies and ensure business continuity. Even public safety, which has been historically loyal to LMR, shows signs of pivoting towards PoC. In a recent report, [ABI Research](#) estimated that the total number of public-safety LTE user subscriptions will reach 11 million worldwide by 2020, with a market size of \$5.1 billion.

Kyocera has deep history in delivering rugged devices that are PTT- and enterprise-ready. In 2004, Kyocera introduced the first PTT-enabled handset to leverage Qualcomm's BREWChat solution (which later evolved into [QChat](#)). The KX440 device, available in eight circles in India via Tata Teleservices, enabled person-to-person and person-to-group

communications between subscribers at the push of a button. In 2010, Kyocera launched its first ruggedized phone in the U.S. market and in 2013, Kyocera began launching ultra-rugged (Mil-Spec 801G rated) 4G LTE Android smartphones with out-of-the-box support for Sprint Direct Connect, AT&T's Enhanced Push to Talk (EPTT), and Verizon's Push to Talk Plus. Having delivered more than 75 waterproof mobile phones in Japan and North America, Kyocera has earned its reputation as the leading manufacturer of rugged devices that are PTT-ready and enterprise-strength.

Advancements in 4G LTE and carrier commitment to delivering and supporting PTT services with enterprise users in mind have primed conditions for new and exciting developments in the world of PTT. Concurrently, the Open Mobile Alliance (OMA), composed of mobile industry leaders, is working to define new sets of standards that will serve to further promote the ease-of-use and adoption of PTT services.

Kyocera has established a promising ecosystem of leading developer partners that are creating highly customized applications to meet vertical market demands. Through the use of PoC and Kyocera's rugged devices, organizations can consolidate voice, data and business productivity apps onto a single device, and utilize PTT services across a vast array of interoperable communication networks. Kyocera's portfolio of ruggedized mobile devices provide a unique blend of durability, performance and affordability, helping organizations enable mobility for every enterprise worker while providing a more seamless user-experience and a more cost-effective approach.

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**For more information about Kyocera devices for business, please visit [www.kyoceramobile.com/business](http://www.kyoceramobile.com/business)**

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