



FIVE TRENDS DRIVING DIGITAL MOBILE RADIO (DMR) INNOVATION

LISTENING TO CUSTOMER NEEDS

and feedback is the best way to determine how technology solutions can help customers increase safety, efficiency and productivity in any industry, and digital mobile radio (DMR) is no different.

As a result, customer demand is driving much of the innovation in today's DMR technology.

In the current market, there are five key trends behind these demands as businesses strive to adapt to an environment that is changing rapidly and subject to numerous pressures.



1. DOING MORE WITH LESS

"Doing more with less" is no longer a request for all business departments, it's a prerequisite. Despite shrinking budgets, lowering headcounts and greater expenses, expectations of profitability and efficiency remain – or even increase.

IN TWO MAJOR WAYS, NEW DMR TECHNOLOGY IS MEETING CUSTOMER DEMAND FOR RADIOS TO HELP THEM REACH THIS GOAL.

REMOTE SOFTWARE UPDATES

The radio market has evolved from the domain of small businesses to large organisations rolling out company-wide deployments. The scale of systems has increased from several hundred to tens of thousands of devices, and managing such systems presents a major challenge.

Wi-Fi technology contained within new DMR radios is a real game-changer for many customers as it enables remote software updates. Previously, in order to update software on a group of radios, a system administrator would recall hundreds of radios to a central location and physically plug in every radio to download new software.

Even more inconveniently, trucks have to return to the factory for mobile radio updates. In either case the task is extremely time-consuming and unproductive, meaning many customers report major delays in implementing the latest software, missing out on significant benefits.

With Wi-Fi radio management, the administrator can define and schedule changes – all bug fixes, new features and software updates – to radio code plugs, which are implemented over-the-air.

Updates are downloaded to the radio in the background, and are implemented simply and practically according to the schedule defined by the administrator. Radios are no longer removed from service or returned to a central location. This reduces the disruption within a customer's business, with users able to continue communicating throughout the process.

With Wi-Fi programming, a system administrator can simultaneously reprogram an entire fleet in 10 minutes, delivering huge productivity savings.

LONGER BATTERY LIFE FOR LONGER SHIFTS

Shift workers work long hours. The Australian Bureau of Statistics found that male shift workers worked longer shifts than women on average, with 41 per cent of men working 9 to 12 hours in their most recent shift.¹

Anecdotal evidence shows workers doing shifts of up to 18 hours.²

Longer shifts put extra demands on equipment as well as people. With extended life batteries, businesses can experience greater productivity as staff can continue working without the need to return to base station to change over or recharge their radios. Radios can last two shifts instead of one.

Typically, radio power is nominally 7.4V, and a fully-charged battery delivers 7.4V. However, as the battery discharges, its output voltage drops. When the voltage drops to 6V, a standard radio and battery shut off, leaving a significant amount of energy remaining in the battery.

An enhanced radio with a low-voltage battery will continue to operate until the voltage drops to 5V, making more of the battery's capacity available for use. The new "low voltage" batteries are still nominally 7.4V, but provide power down to 5V.

In this way, real world battery life can be increased to up to 27 hours, greatly increasing the talk-time of portable radios without increasing battery size or weight.



2. APPLICATIONS (APPS) DELIVERING MORE

We use apps every day in ways never imagined before: measuring our sleep³, remotely moderating the temperature of our houses⁴ and even measuring our personal anxiety levels.⁵

Similarly, the days of two-way radio as a purely voice solution are well and truly over. Sophisticated apps offer advanced capabilities such as worker/asset monitoring, complex reporting datasets, job ticketing and hundreds of other functions.

Newly released DMR radios build on the existing set of standard apps, with apps such as enhanced Bluetooth-enabled indoor positioning. Where a facility is equipped with Bluetooth beacons, radios sense their proximity to the beacons and display those locations on a map or floor plan.

The latest development is Bluetooth low energy mode, which uses considerably less power but offers similar range. Indoor location tracking can be switched on constantly without diminishing battery performance. This means better monitoring of workers, improved safety and even increased productivity when the closest worker can be located and dispatched to a task.

3. HIGHER EXPECTATIONS OF UNINTERRUPTED CONNECTIVITY

As consumers, we expect to be connected, every minute of the day. We expect our mobile phones to stay connected no matter where we go. On smart phones, we can access work emails at any time of the day and from virtually all locations, which raises expectations of responsiveness. People no longer wait hours, let alone days, for a response from a company or supplier. They might even expect live chat functionality, so they can communicate with someone and resolve their query instantly.

Similarly, two-way radio customers expect to remain connected over larger areas, coupled with superior audio performance over that extended area. Advanced sensitivity in new DMR radios increases coverage areas by 10-16 per cent and range has risen by five to eight per cent. Significantly, audio quality remains clear right to the periphery of this range.

BUSINESS NEEDS

IN HIGHLY
COMPETITIVE
ENVIRONMENTS
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4. CONVERGENCE FOR STREAMLINING

According to a US survey of business owners, 36 per cent of respondents use three or more mobile devices to run their business.⁶ It's not difficult to imagine an employee using a laptop, smart phone, desk phone, tablet and two-way radio in the course of a working day.

Businesses demand streamlined devices to maximise efficiency and manage costs. Customers want an increase in device convergence so they can use a single device to do everything they need, rather than a different device for each task.

The demand from users for convergence has led to the development of applications such as WAVE Work Group Communications, which provides broadband push-to-talk (PTT) interoperability between differing devices and networks. This means that two-way radios, smart phones, laptops, landlines, tablets and rugged handheld devices can all connect seamlessly.

New DMR radios include further convergence technologies such as Wi-Fi capability, a feature that could conceivably become standard in the future. The growing emergence of long-term evolution (LTE) means that this too may eventually converge in the one device.

5. "EVERYTHING" AS STANDARD

In the consumer world of technology, more and more features have become standard due to consumer expectations. Cars come with electric windows as standard instead of optional extras. We used to be satisfied with mobile phones that delivered clear voice calls, fast texting and monthly bills, whereas now we expect 50+ megapixel cameras, preloaded apps and lightning speed.

Two-way radios are no different. Even the most basic form factor has become more sophisticated as customers demand greater functionality to, for example, protect their workers.

For example, features such as the accelerometer which senses the orientation of the radio as well as movement, are being built onto the main circuit board instead of the options board as per previous models. The more that applications like these are built in, the more radios will integrate with day-to-day business practice as they play a fundamental role enabling productivity and safety gains.

New "standards" are starting to include double the memory and storage capacity, giving customers immediate benefits: storing more voice announcement files, more canned text messages, as well as the capacity for more capabilities in the future.



CURRENT TRENDS IN THE MARKETPLACE ARE THE DRIVING FACTOR FOR CUSTOMERS' DEMAND OF INNOVATION IN TECHNOLOGY. DMR IS SUBJECT TO THESE SAME DEMANDS: BUSINESSES NEED TO DO MORE WITH LESS IN A HIGHLY COMPETITIVE ENVIRONMENT.

Apps are integral to taking solutions such as two-way radio beyond traditional functionality. Customers want to be connected all the time, with converged devices on which to enjoy this connectivity. Finally, customers expect extra features as standard.

Meeting these demands with innovation in DMR technology enables businesses to do so much more. Businesses can improve the safety of their workers, increase efficiency and enhance productivity, which aids their competitiveness in an ever-changing market.

BUSINESS DRIVING DMR INNOVATION SOURCES

1. 6105.0 Australian Labour Market Statistics, Australian Bureau of Statistics, Oct 2010
2. '18 hour shift?', Whirlpool discussion forum, Last updated 13 May 2014
3. Henry A, 'Five best sleep tracking apps', Lifehacker, 31 Mar 2013
4. Learn more about the Nest app, Nest website
5. Think Pacifica, Pacifica website
6. 'What's your device vice? SMB owners speak up about mobile trends', eVoice, 10 April 2013

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