WHITE PAPER
2014 MANUFACTURING STUDY

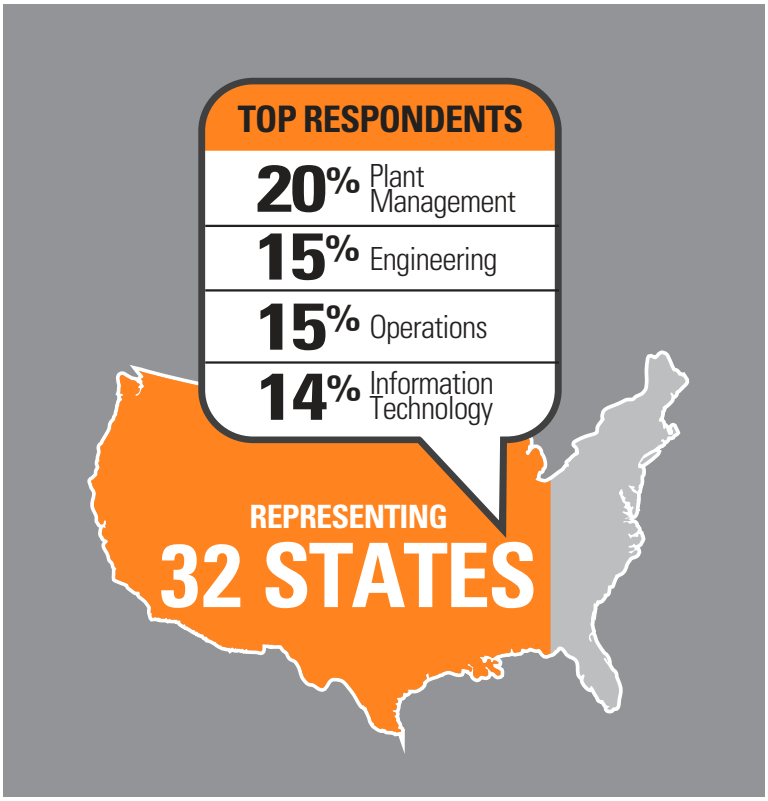
2014 STUDY: TOP TRENDS IN PLANT COMMUNICATIONS

NATIONWIDE SURVEY OF U.S. MANUFACTURERS

SURVEY PARTICIPANTS

Motorola's 2014 study offers a compelling look at the current state of plant communications around the country. Conducted in February and March, responses were gathered from a balanced mix of small, medium and large manufacturing operations in 32 U.S. states.

Survey respondents represented virtually every area of manufacturing. Over 20 percent were in plant management, 15 percent in engineering, 15 percent in operations and 14 percent in information technology. Rounding out the survey were those from maintenance, production/assembly, warehousing and distribution, security, quality/safety/compliance, purchasing and materials handling.



SURVEY HIGHLIGHTS

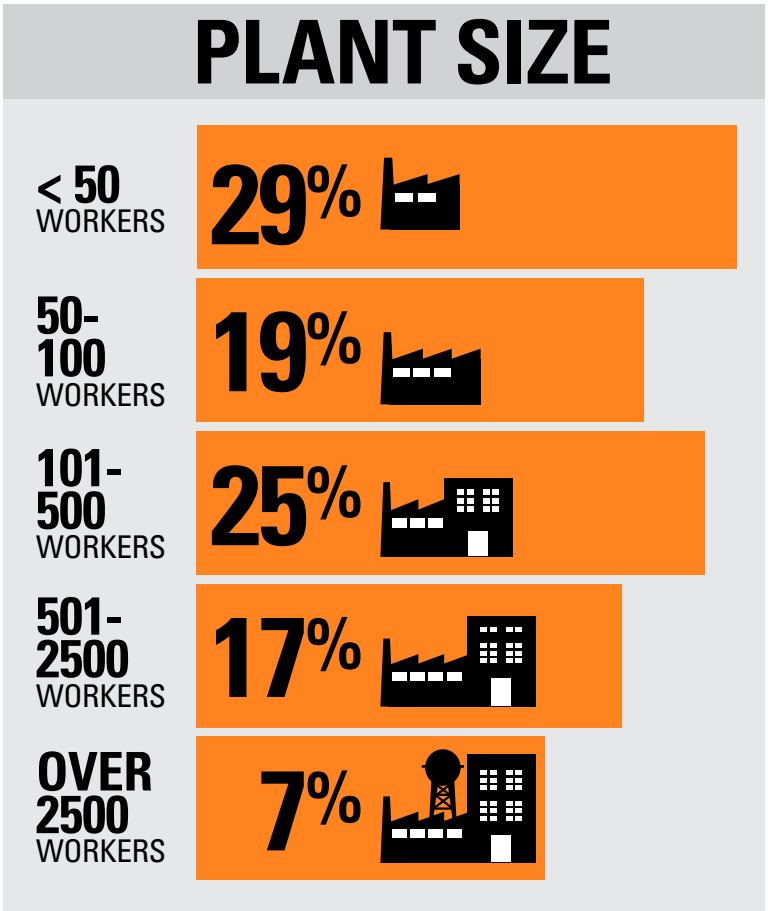
The 2014 survey shows two-way radios and cell phones are the two primary means of communication in plants nationwide. Thirty-one percent rely on two-way radios and 33 percent use cell phones to reach others in their operations. The remaining third of manufacturers are split between email and overhead paging systems, with landline phones used least.

Cell phones fall short, according to respondents, due to problems with background noise, coverage, productivity and lack of robustness. Ninety-four percent say it is difficult to hear clearly in the noisy manufacturing environment using a cell phone. Eighty-five percent are concerned about coverage during emergencies or outages; 84 percent indicate problems with reception; 76 percent say productivity is limited because cell phones are not one-to-many communication; and 72 percent believe cell phones are simply not rugged enough for plants.

Respondents believe two-way radios are of greatest benefit for resolving problems quickly and efficiently (60 percent); helping workers collaborate and coordinate more effectively (50 percent); increasing workforce productivity (49 percent); improving worker safety and emergency preparedness (44 percent); and decreasing unplanned downtime (32 percent).

The research reveals that using a reliable device with long battery life is the most important consideration for plant communications. Ninety-six percent said this is their top priority. This was followed closely by accelerating resolution time; working effectively even during outages and emergencies; using a device that is ruggedly built with no monthly fees; and hearing clearly in noisy environments.

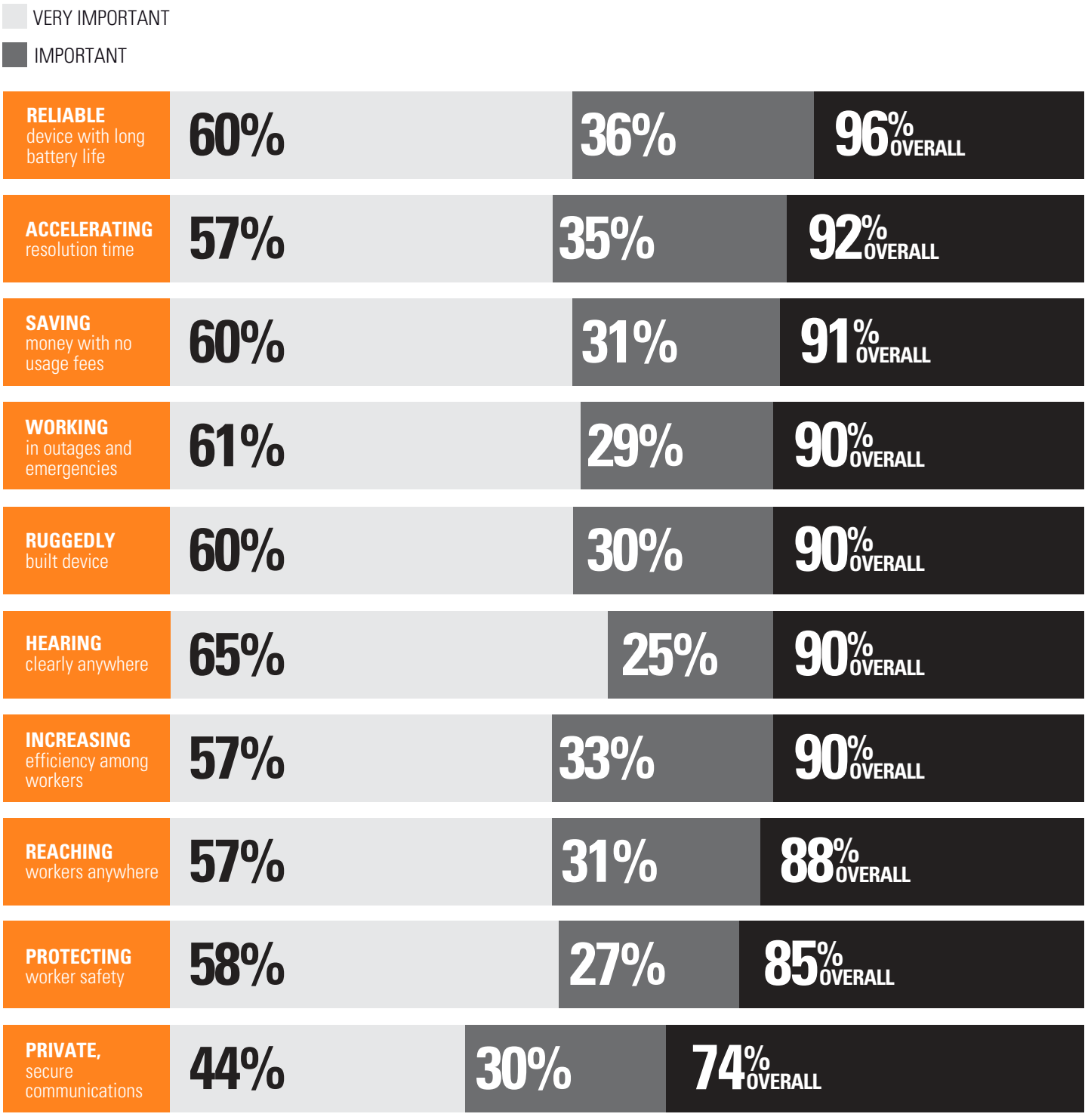
When it comes to their current communications, 45 percent believe an updated system would improve their efficiency and nearly 40 percent indicate it would help improve clarity, coverage and worker safety. A third of respondents prioritize rugged devices that stand up to the rigors of the workplace.



TOP TEN "MUST HAVES" FOR MANUFACTURERS

In ranking the priorities they expect from their communications system, respondents place the greatest emphasis on using a reliable device with long battery life. Sixty percent say it is "very important", and 96 percent overall believe it is "important."

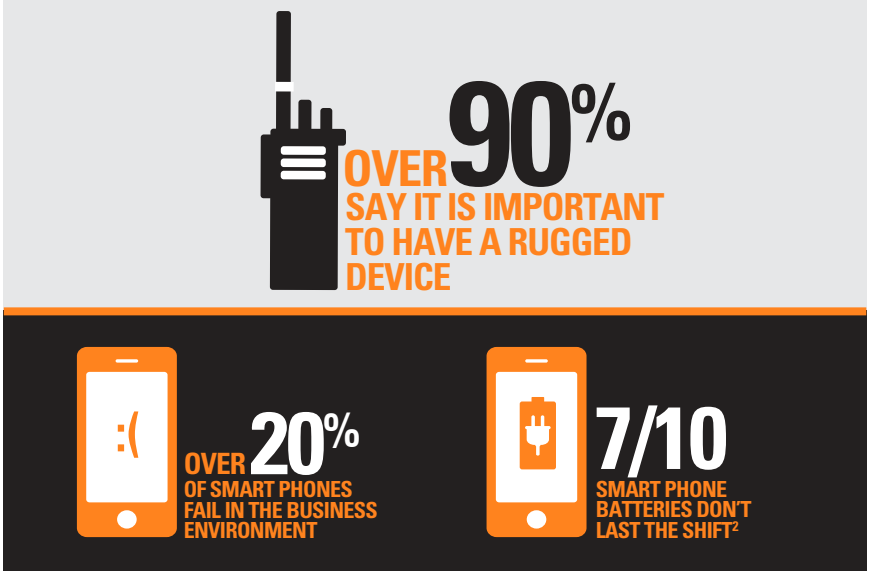
MOST IMPORTANT CONSIDERATIONS FOR PLANT COMMUNICATIONS



FULL SPEED, ALL SHIFT LONG

The desire to have a rugged, enterprise-grade device for manufacturing – which over 90 percent of survey respondents say is "important" and 60 percent insist is "very important" – is consistent with results from other leading market research.

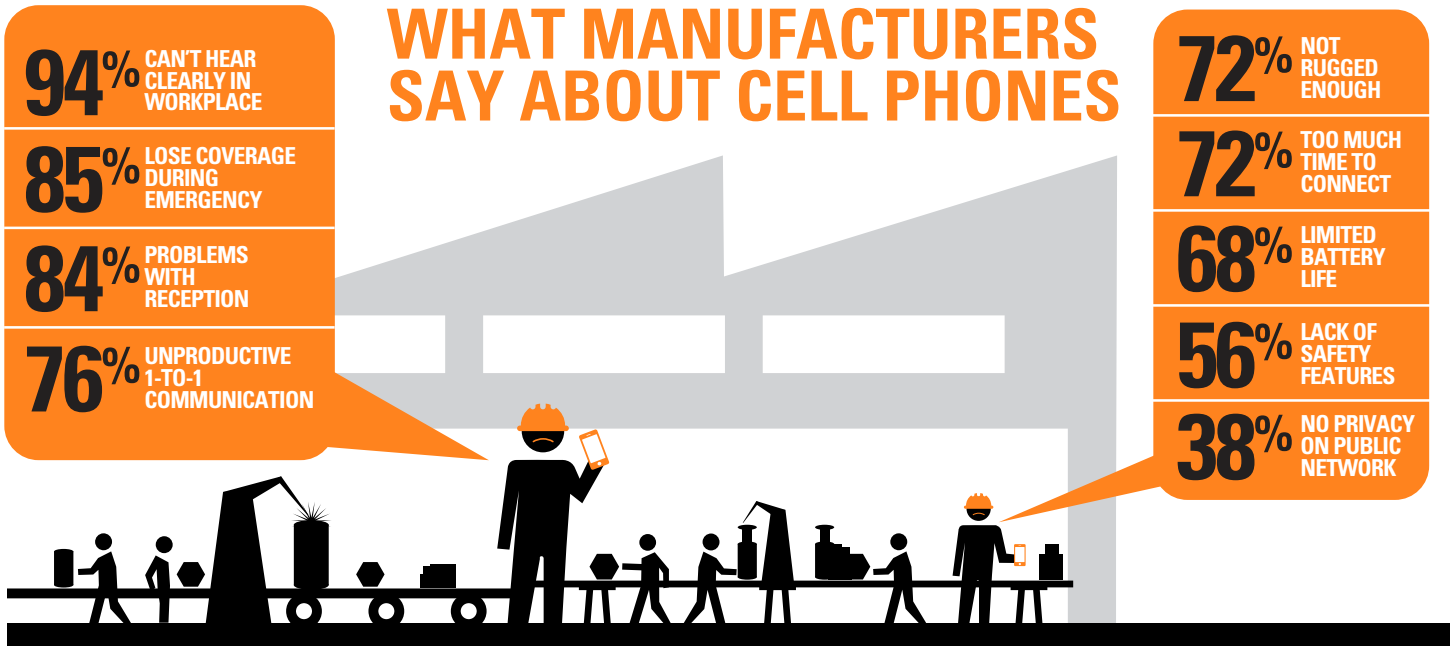
As failure rates for smart phones exceed 20 percent, failure rates for rugged devices, such as two-way radios, continue to plummet.[1] In the challenging plant environment, Motorola digital radios withstand shocks, slips, splashes, debris and drops, and operate for up to 17 hours on a single charge.



CELL PHONES FALL SHORT FOR DAY-TO-DAY OPERATIONS

Despite the widespread use of consumer devices in the workplace, in large part due to the BYOD trend, manufacturers were clear that cell phones are not the best or most effective communication device for their environment. Almost 95 percent said it is difficult to hear clearly in their noisy workplace, using a cell phone.

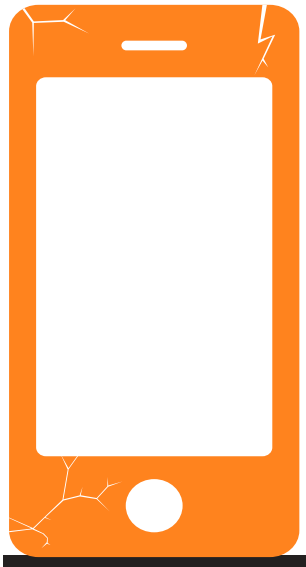
The unreliability and coverage limitations of cell phones are a big issue. Eighty-five percent of respondents were concerned about losing their cell phone connection during a power outage or emergency. Eighty-four percent believe that dead spots or problems with cell phone reception are a continuing challenge. These responses are consistent with recent industry research, which reveals over 75 percent of enterprise leaders feel it is important for their mobile workers to use a communication device that "works effectively during power outages and emergencies." Over 80 percent value "having a reliable device with long battery life."[3]



DOWNTIME COSTS MORE THAN MINUTES

According to leading industry researchers, unplanned downtime slashes profits by as much as 40 percent, while it undermines customer confidence and competitiveness.[4] Downtime not only impedes workflow, it creates a cascading effect that impacts worker productivity. Consumer devices contribute to the problem – they are three times more likely to sabotage uptime than digital radios.[5]

Eighty-five percent of enterprise leaders confirm that drops are the main reason for smart phone failures.[6] Digital radios have been designed by Motorola Solutions to survive repeated drops from four feet onto concrete. Many manufacturers who use them know they withstand daily abuse that would destroy a consumer device.



CONSUMER DEVICES ARE 3X MORE LIKELY TO FAIL THAN DIGITAL RADIOS[7]

SMART PHONES NOT SMART FOR BUSINESS

85% SAY LEADING CAUSE OF SMART PHONE FAILURE IS **DROPS**

EACH FAILURE COSTS:

- 80 minutes of productivity
- Over 2½ hours of support time[8]

APP OPPORTUNITY: REDUCING EQUIPMENT DOWNTIME RAPIDLY

A machine malfunctions suddenly. The plant engineer is automatically alerted by his digital radio about the problem and heads to the correct location.

PLANT MANAGEMENT IS CLEAR: DIGITAL RADIOS KEEP THEM GOING

When asked how digital radios could be of greatest benefit in their operations, respondents hit all the hot buttons transforming manufacturing today. When it comes to their work, they say nothing works like a digital radio to improve resolution time, increase collaboration and productivity, protect workers and reduce downtime.

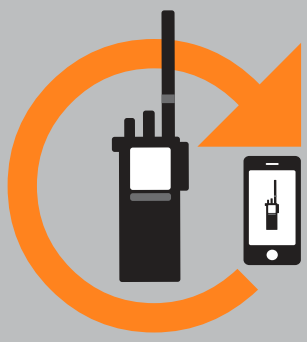
DIGITAL RADIOS DO THE HEAVY LIFTING

- **60%** Resolve problems quickly and efficiently
- **50%** Increase collaboration and coordination
- **50%** Increase workforce productivity
- **44%** Improve worker safety
- **32%** Decrease unplanned downtime

COMMUNICATIONS CHECKLIST: WHAT MANUFACTURERS WANT MOST

When asked which capabilities are most important for a plant communications system, over 60 percent wanted text messaging and over 60 percent wanted to be able to use a smart phone to connect directly to radio users. Forty-five percent asked for bar code scanning, 41 percent said GPS location tracking and 40 percent wanted automatic alerting for equipment. Whether managing inventory, fixing equipment or tracking trucks, plant personnel expect their devices to help them work more efficiently and safely.

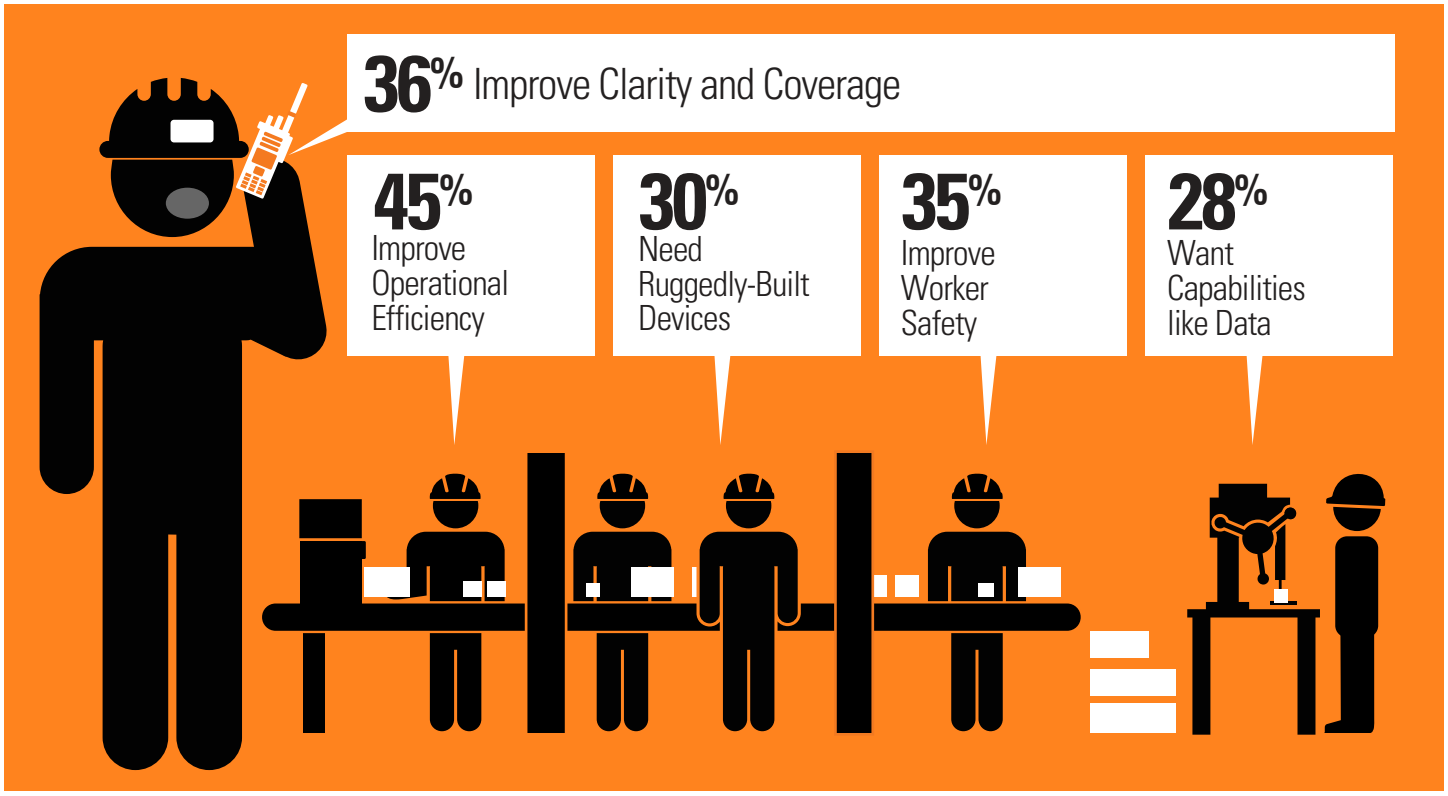
- ☑ **61%** Text messaging
- ☑ **61%** Connect radios with smart phones
- ☑ **45%** Bar code scanning
- ☑ **41%** GPS location tracking
- ☑ **40%** Automatic equipment alerts
- ☑ **39%** Connect landline to radio users
- ☑ **38%** Inventory management
- ☑ **32%** Work order tickets
- ☑ **28%** Remote facility management
- ☑ **18%** Transmit interrupt for important messages



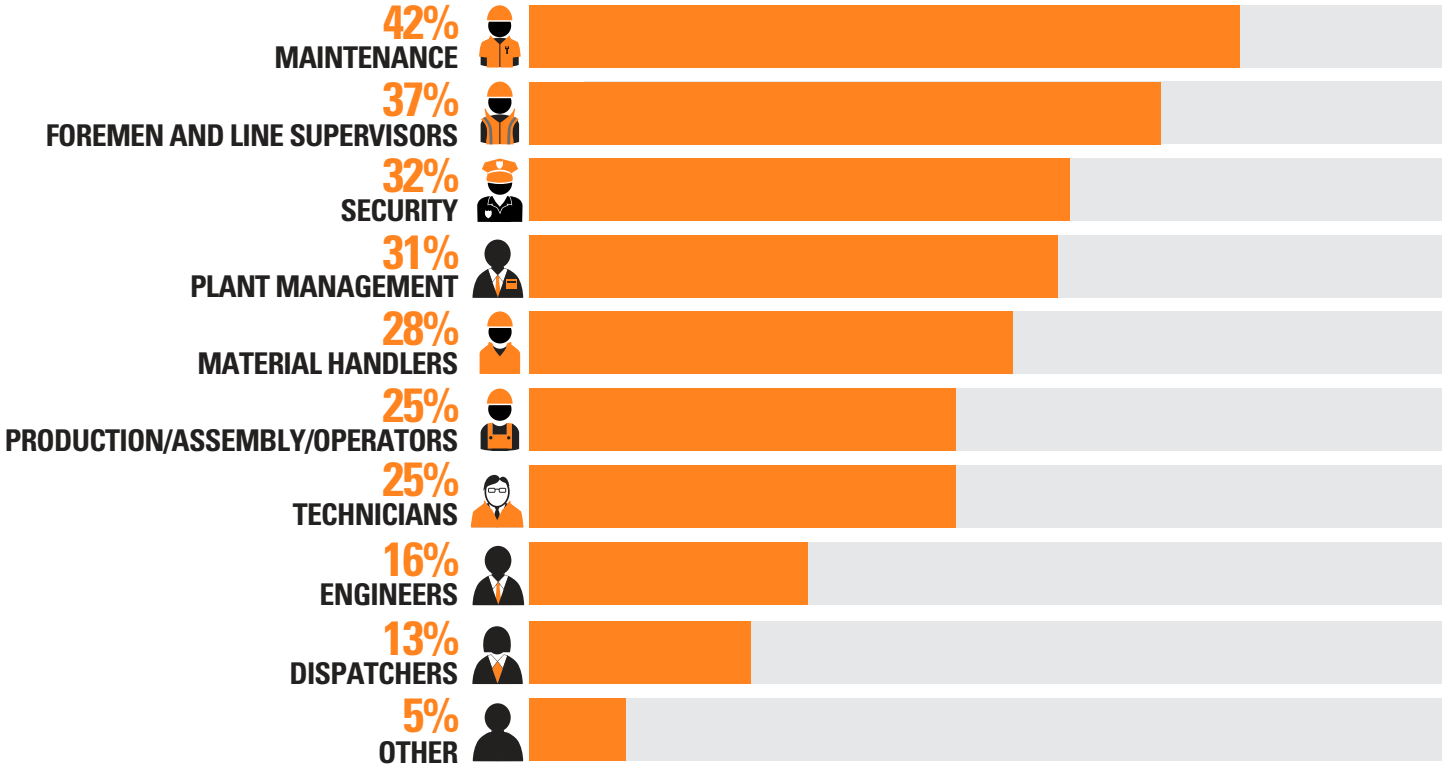
APP OPPORTUNITY: CONNECTING RADIO AND SMART PHONE USERS TOGETHER

A technician needs urgent advice from a plant manager traveling out of state. With the MOTOTRBO™ Anywhere app, he uses his digital radio to talk to the manager on his smart phone.

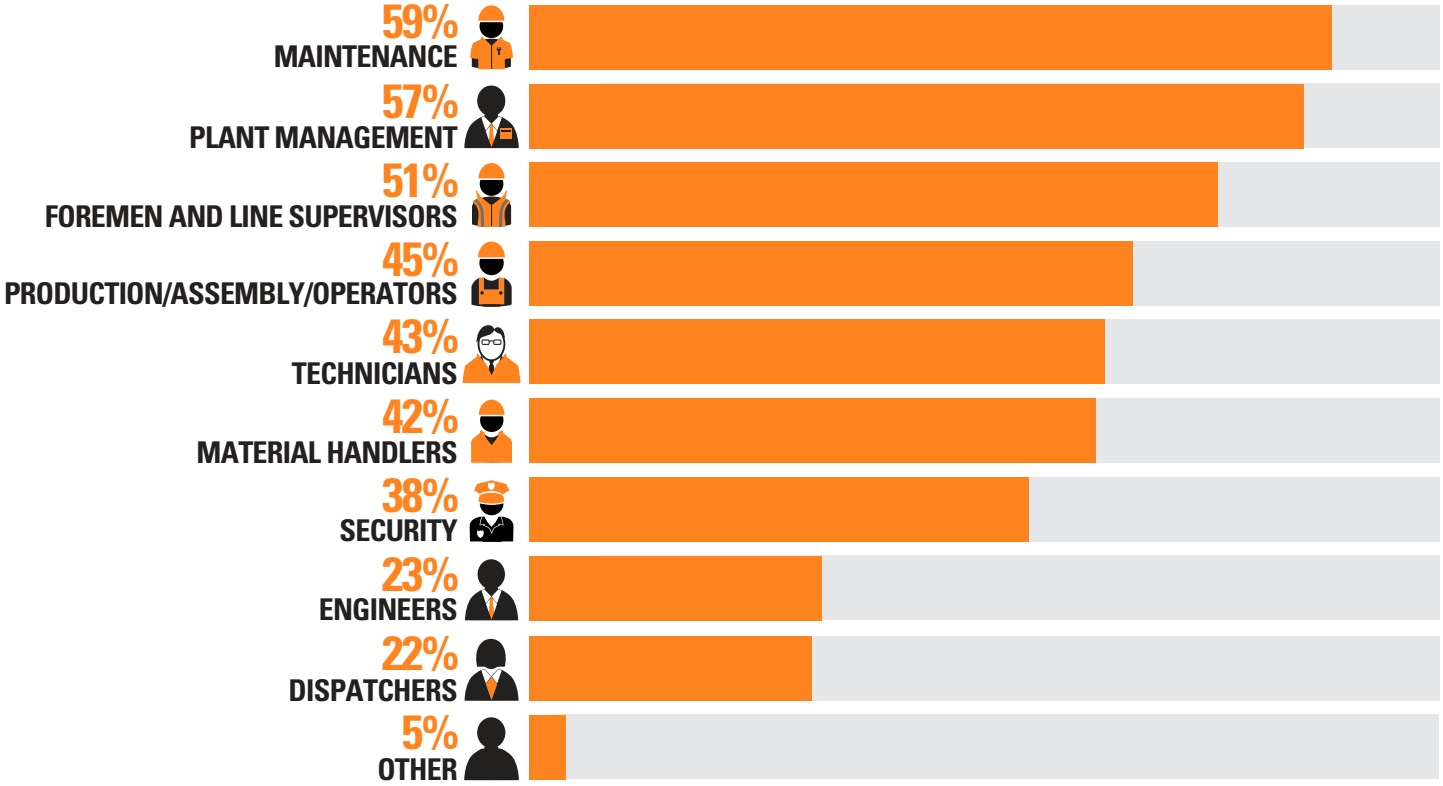
WHY PLANTS NEED TO RAMP UP THEIR CURRENT COMMUNICATIONS



WHO USES TWO-WAY RADIOS IN PLANTS TODAY



WHO WOULD BENEFIT MOST FROM DIGITAL RADIOS



The 2014 study is part of an ongoing Motorola research initiative to help identify and report on trends affecting communications technology. For more information on planning and deploying a unified communication solution to help improve safety, productivity and operational efficiency, talk with your local Motorola representative or go to www.motorolasolutions.com/MOTOTRBO.

SOURCES

1,2,6,8 Mobile Device TCO Models for Line of Business Solutions, VDC Research, March 2013

3 Enterprise Mobile Communications Decision Maker Survey, VDC Research, April 2014

4 "The Hidden Cost of Downtime: A Strategy for Improving Return on Assets," Maintenance Technology

5,7 "Enterprise Mobility and Connected Devices," VDC Research, August 2013

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