



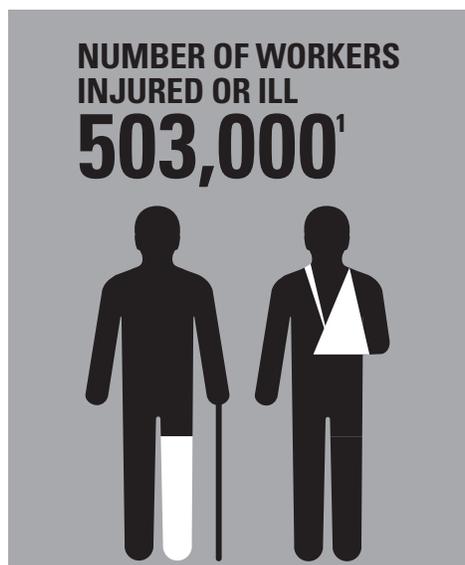
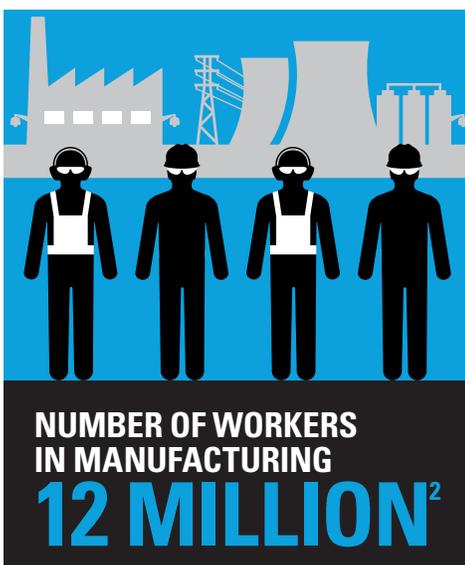
# TRANSFORMING MANUFACTURING WITH DIGITAL COMMUNICATIONS

## KEEP WORKERS SAFE IN THE WORKPLACE CUT DOWNTIME DOWN TO SIZE CONTROL COSTS WHILE ACHIEVING BOTH

Manufacturers everywhere are maneuvering through a minefield of safety issues in their plants. As a responsible employer and business owner, you're under increasing pressure to safeguard your employees and minimize the financial impact of workplace injuries.

Recent data shows that there were 12 million workers employed in manufacturing in the U.S. in 2012, and nearly 503,000 reported injuries and illnesses – a rate of 4.3 cases for every 100 full-time workers. More than 50 percent of these cases were so serious, they involved days away from work, job transfers or restrictions.<sup>1</sup> The financial fall-out is far-reaching for manufacturers. The ten most disabling U.S. workplace injuries totaled \$51.1 billion in direct compensation to U.S. workers in 2010.<sup>3</sup> A single fatality or severe irreversible disability to just one worker cost a company over \$1.3 million in 2011.<sup>4</sup>

After safety, your next priority is minimizing downtime. It's so damaging to productivity that up to 40 percent of profits are lost to unplanned downtime each year.<sup>5</sup> Downtime not only impedes workflow it creates a domino effect that impacts output. Manufacturers of every size know that unexpected delays and costly disruptions take a huge bite out of revenue-generating production.



WHAT CAN MANUFACTURERS DO TO CREATE A SAFE WORK ENVIRONMENT,  
REDUCE DOWNTIME AND CONTROL COSTS?

## DIGITAL TECHNOLOGY DOES IT ALL, ALL THROUGHOUT THE PLANT

Your analog two-way radio system is a workhorse, but has run its course. In the dynamic production environment, you need a solution that goes beyond simple voice to deliver advanced capabilities. Digital radios can help you to increase efficiency, productivity and safety.

### IMAGINE WHAT YOUR OPERATION COULD DO WITH DIGITAL TWO-WAY RADIOS

Ensure emergency calls get to the right person immediately whenever there is an issue.

Know exactly where your employees are anytime, anywhere in the plant or outside of it.

Expedite resources outside the plant to respond more quickly.

Make sure workers can communicate clearly and protect hearing in the noisiest environments.

Be confident your workers have a radio battery that can last an entire shift.

Leverage the benefits of radio communications without a significant up-front capital investment.



## FROM VOICE-ONLY ANALOG TO DATA-EQUIPPED DIGITAL RADIO

Two-way radios are deployed in three of every five manufacturing enterprises.<sup>6</sup> While analog radios have been tried-and-true technology for previous generations, digital radios deliver an ideal set of advantages for today's plants: exceptionally clear voice communication; greater coverage and capacity for hundreds or thousands of workers; longer battery life for lengthy shifts; and data applications customized to operations. As plants migrate from voice communication to integrated voice and data, they're discovering that applications on digital radios drive significant gains in productivity, safety and efficiency. In fact, manufacturers who implemented mobile applications in their plants increased productivity by 42 minutes per employee each day.<sup>7</sup>

## "C" WHY DIGITAL RADIOS ARE EVERYWHERE

<b>COVERAGE</b>	MEET SPECIFIC REQUIREMENTS, FROM A SINGLE-SITE WAREHOUSE TO MULTI-SITE MANUFACTURER
<b>CAPACITY</b>	HANDLE PEAK USAGE, USE DEDICATED LICENSED SPECTRUM AND ARE RIGHT-SIZED TO AN OPERATION'S NEEDS, SO CALLS ALWAYS GET THROUGH
<b>COST</b>	HAVE PREDICTABLE COSTS, WITH NO ADDITIONAL AIRTIME FEES LIKE CELL PHONES
<b>CONTROL</b>	HAVE A HIGH DEGREE OF CONTROL OVER SYSTEM REQUIREMENTS, DESIGN, PRIORITIES, FEATURES AND OPERATION; SYSTEM CAN BE CONFIGURED FOR A SPECIFIC USE CASE
<b>CAPABILITIES</b>	INTEGRATE CAPABILITIES SUCH AS GPS, TEXT MESSAGING, AND TRANSMIT INTERRUPT THAT WERE NOT COST-EFFECTIVE ON ANALOG SYSTEMS

## DIGITAL RADIOS HELP YOU INCREASE PRODUCTIVITY



### REMOTE EQUIPMENT MANAGEMENT (SCADA) MONITORS EQUIPMENT AND AUTOMATICALLY COMMUNICATES STATUS

A machine malfunctions in Production Room C. The SCADA application automatically alerts a plant engineer of the malfunction.



### WORK ORDER TICKETING ENSURES THE RIGHT PEOPLE GET THE MESSAGE IMMEDIATELY

Assembling equipment breaks down on the plant floor. Work order ticketing automatically alerts the correct technician to remedy the problem.



### MOTOTRBO ANYWHERE NOTIFY ANYONE IN OR OUTSIDE THE PLANT WITH A MOBILE PHONE

A plant technician needs advice from the head engineer who is out of town. With MOTOTRBO Anywhere the radio can connect directly with a smartphone.

## DIGITAL RADIOS HELP YOU ENHANCE SAFETY



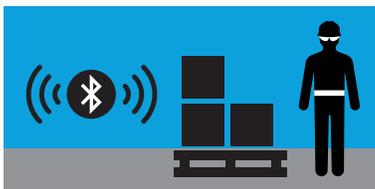
### LONE WORKER AUTOMATICALLY CALLS FOR HELP WHEN AN INDIVIDUAL CAN'T

A forklift driver in the warehouse isn't responding to an inventory query. The radio activates an alert if the driver does not answer within a set period.



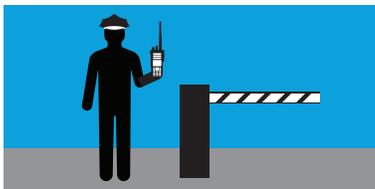
### GPS LOCATION TRACKING MONITORS VEHICLES AND MANAGES LOGISTICS

A delivery driver enroute to the plant neglects to call in and confirm arrival time. The radio pinpoints the vehicle's location so dispatch knows when the cargo should arrive.



### BLUETOOTH® BEACONS MONITORS PERSONNEL INSIDE THE PLANT

Diesel fumes overcome a materials handler in a warehouse. The dispatcher knows the exact location of the incident thanks to the Bluetooth indoor location tracking system.



### TRANSMIT INTERRUPT AUTOMATICALLY PRIORITIZES EMERGENCY CALLS

A security guard at the gate receives an urgent package and informs dispatch. The dispatcher overrides all other radio traffic and sends a priority message to the plant supervisor about the package.

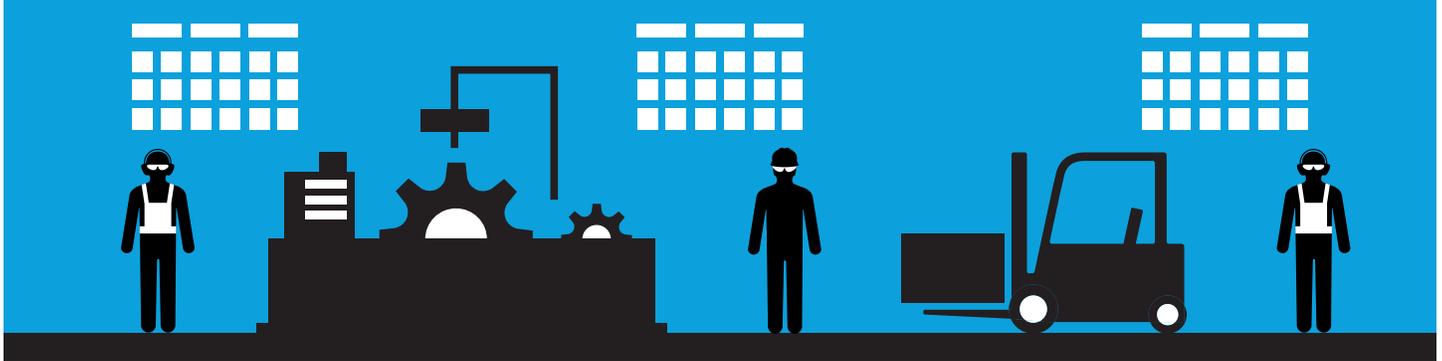


### EXCEPTIONAL AUDIO ASSURES COMMUNICATIONS ARE CLEAR AND HEARING IS PROTECTED

An assembler working next to extremely loud equipment needs to communicate with the supervisor. Advanced digital noise-cancellation technology ensures the message is heard clearly, without compromising hearing protection.

## PRODUCTIVITY GAINED BY MANUFACTURERS WHO IMPLEMENT MOBILE SOLUTIONS ON THE PLANT FLOOR

# 42 MINUTES PER EMPLOYEE PER DAY<sup>7</sup>



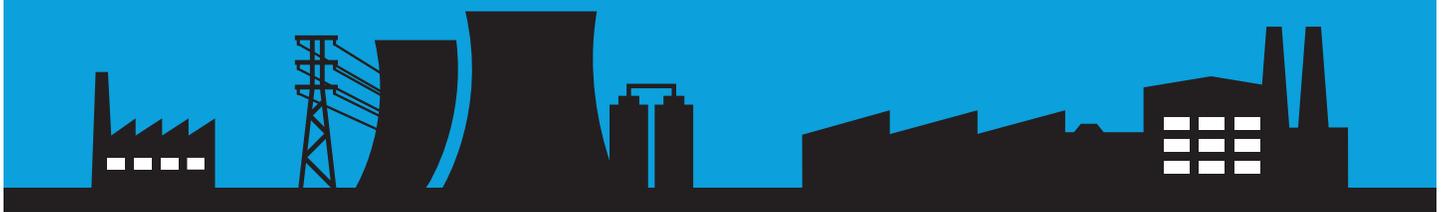
## DIGITAL RADIOS HELP YOU CONTROL YOUR COSTS

Manufacturers large and small are improving their return on investment (ROI) because of the increased productivity that digital technology brings. Digital radios help them streamline processes, automate controls and run operations more efficiently.

Because digital radios deliver so many advantages over analog – including longer battery life, greater capacity and coverage, and clearer voice quality – they can operate a high-performing digital communications system throughout the entire facility inexpensively. They gain greater capacity for more workers on a single channel, fewer repairs and less battery replacement, and start seeing cost savings right away.

## DIGITAL SOLVES PROBLEMS THAT ANALOG SIMPLY CAN'T

Digital radios resolve issues that disrupt workflow and affect safety, integrate voice and data seamlessly and unify communications throughout the plant. With the largest array of applications, exceptionally clear voice, noise-canceling accessories and Motorola's expert partner network, MOTOTRBO is helping manufacturers make the shrewd move to digital to transform their operations.



### SOURCES

1. "Employer-Reported Workplace Injuries and Illnesses – 2012," Bureau of Labor Statistics, November 7, 2013
2. "Safety Issues in the Manufacturing Industry," The Houston Chronicle
3. 2012 Workplace Safety Index, Liberty Mutual Research Institute for Safety
4. "The Costs of Injuries: How Much Do You Really Pay?," National Safety Council, 2011
5. "The Hidden Cost of Downtime: A Strategy for Improving Return on Assets," Maintenance Technology
6. Motorola Manufacturing Barometer Survey, 2013
7. Motorola Enterprise Mobility Manufacturing Barometer Survey, 2009

To transform your manufacturing operation with digital communications, visit [motorolasolutions.com/mototrbo](http://motorolasolutions.com/mototrbo) or contact your local Motorola representative.

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