

# 2015 STUDY: INNOVATIONS IN PLANT COMMUNICATIONS



## SURVEY OF U.S. MANUFACTURERS

Motorola's annual manufacturing survey offers timely insights into communication trends in plants nationwide. The findings are particularly relevant as manufacturers ramp up production. Large operations are preparing to improve their tactical radio systems, expand distribution centers and produce more product – all signs of increased capital investment in a robust U.S. economy.<sup>1</sup>

This year's survey reflects input from manufacturers in 38 states. Thirty-four percent of companies responding had less than 50 workers, 14 percent with 50-100 personnel, 33 percent with 101-500 workers, and 16 percent with over 500 personnel.

Virtually every department was represented: 30 percent of survey respondents were in plant management and operations, 20 percent in information technology and 16 percent in engineering. Participants also included owners, CEOs, maintenance, quality/safety/compliance, production/assembly, security, purchasing, and warehousing and distribution.

## TOP RESPONDENTS

REPRESENTING 38 STATES

30% PLANT MANAGEMENT/  
OPERATIONS



20% INFORMATION  
TECHNOLOGY



16% ENGINEERING



## SURVEY HIGHLIGHTS

### TREND #1

#### **CLARITY AND COVERAGE IS THE BIGGEST CHALLENGE AND TOP PRIORITY.**

Forty-four percent see this as their greatest hurdle. "Hearing clearly anywhere in noisy conditions" is the most important priority for over 90 percent of survey participants compared to other priorities such as secure communications and integrated voice and data applications.

### TREND #2

#### **REAL-TIME MESSAGING APPLICATIONS ARE MOST DESIRED.**

When asked which capabilities are most important for a plant communications system, 63 percent want text messaging and 52 percent ask for messaging from equipment.

### TREND #3

**PLANT COMMUNICATIONS MUST BE IMPROVED FOR EMERGENCY PREPAREDNESS AND RESPONSE.** Only 20 percent believe their current system works well during an incident. Twenty-nine percent indicate their system is adequate. Forty percent believe their communications need to be improved.

### TREND #4

#### **TWO-WAY RADIOS ARE OF GREATEST VALUE FOR INCREASING COLLABORATION.**

Accelerating problem resolution and improving worker safety round out the top three benefits of radios by almost 60% of respondents.

### TREND #5

**GROWING NEED TO CONNECT TWO-WAY RADIOS TO OTHER DEVICES.** Almost 60 percent say this is important. Over 50 percent want to connect radios to tablets and laptops; 92 percent want to connect radios to smartphones, a sizeable increase from 61 percent in last year's survey.

### TREND #6

#### **TWO-WAY RADIOS ARE THE PRIMARY FORM OF PLANT COMMUNICATIONS.**

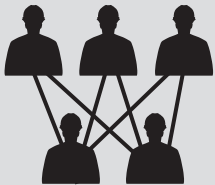
They are relied on by 32 percent of manufacturers, followed by cell phones at 28 percent. With Internet/email at 15 percent, overhead paging at 11 percent, and landline phones at 10 percent, many manufacturers could benefit from linking different communication systems together.

# GREATEST COMMUNICATION CHALLENGES FOR MANUFACTURERS



## CLARITY AND COVERAGE

The results are clear, even though plant communications might not always be. Forty-four percent of manufacturers say that clarity and coverage is one of the greatest challenges. Seventy-two percent emphasize the need to improve communications on the noisy production floor.



## CONNECTING WORKERS ANYWHERE

Thirty percent of manufacturers say connecting their workforce on the move is one of the major hurdles. "Reaching workers anywhere they travel, inside and outside the plant" was important to more than 75 percent.



## BATTERY LIFE

When batteries last the entire shift, manufacturing runs smoothly. Almost 25 percent of survey respondents indicate that battery life and maintenance is one of the biggest challenges. "Using a communication device that is reliable and has long battery life" was important for over 90 percent of manufacturers.



## DURABILITY AND RELIABILITY

Almost 20 percent say the durability of their devices and reliability of communications is one of the biggest problems. Having a "ruggedly-built device" was desired by 88 percent. Ensuring communications are "always on" during emergencies and outages was important to 89 percent.



## LACK OF DATA CAPABILITIES

Integrating voice and data to link plant workers to each other and to machines is essential for increasing efficiency and productivity. Eleven percent of respondents say not having enough applications is one of their key issues. Fifty-eight percent would like to have integrated voice and data.

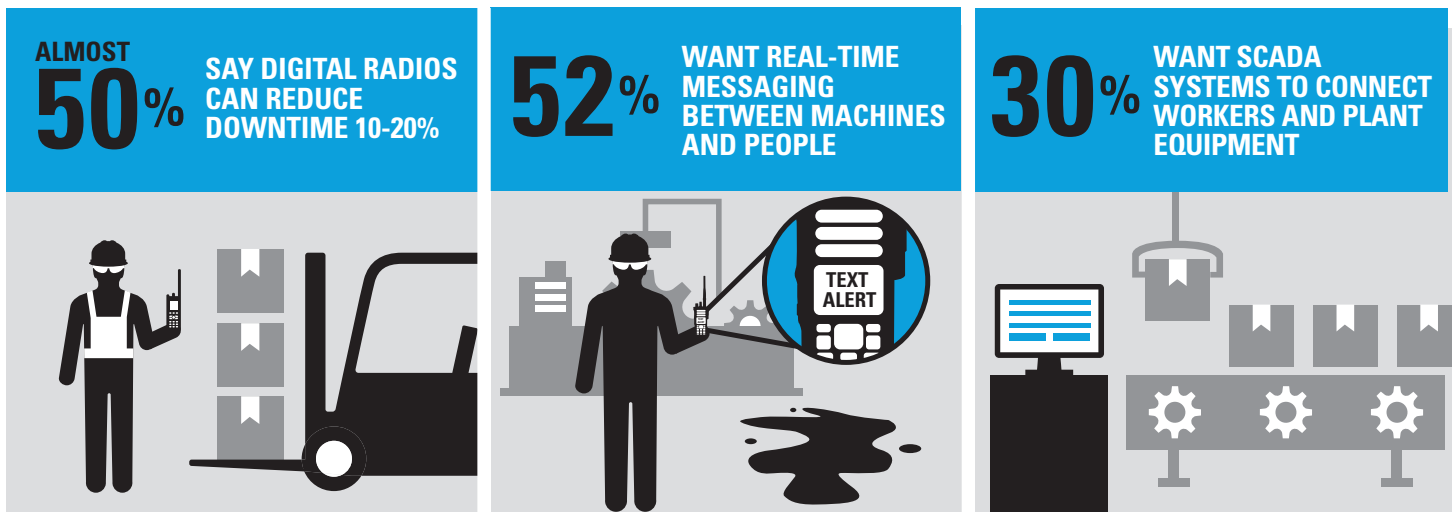
# TOP PRIORITIES FOR PLANT COMMUNICATIONS

	VERY IMPORTANT	IMPORTANT	OVERALL
<b>HEAR</b> clearly anywhere	70%	22%	92%
<b>RELIABLE</b> device with long battery life	63%	28%	91%
<b>ALWAYS ON</b> communications	60%	29%	89%
<b>RESOLVE</b> problems quickly	57%	32%	89%
<b>RUGGED</b> device for manufacturing	59%	29%	88%
<b>PROTECT</b> worker safety	63%	23%	86%
<b>SAVE</b> money with no usage fees	59%	26%	85%
<b>EFFICIENCY</b> among workers	52%	29%	81%
<b>PRIVATE</b> secure communications	44%	34%	78%
<b>REACH</b> workers anywhere	44%	32%	76%
<b>SUPPORT</b> after warranty expires	33%	39%	72%

## LESS DOWNTIME, GREATER EFFICIENCY

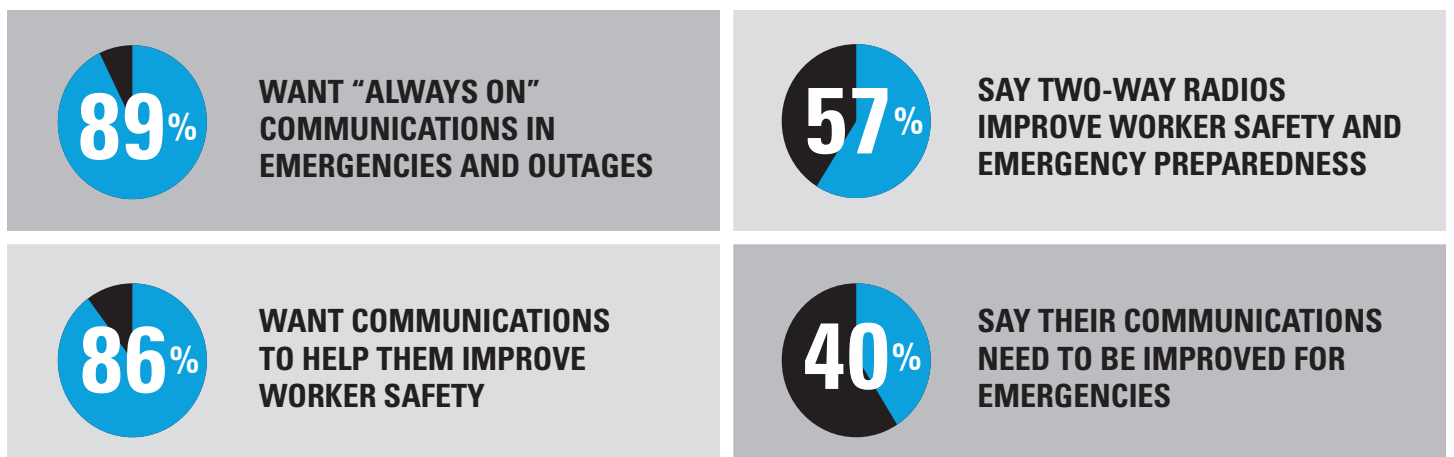
The risk of downtime is on the rise as equipment technology becomes increasingly complex. Unplanned downtime can erode profits 30 to 40 percent.<sup>2</sup> With fewer skilled workers, manufacturers must take every opportunity to head off potential problems and accelerate resolution time.

When machine performance is being monitored and personnel alerted, downtime can be significantly reduced or even avoided. Survey respondents believe that real-time plant floor messaging and Supervisory Control and Data Acquisition (SCADA) connectivity between equipment and personnel can keep operations running more efficiently.



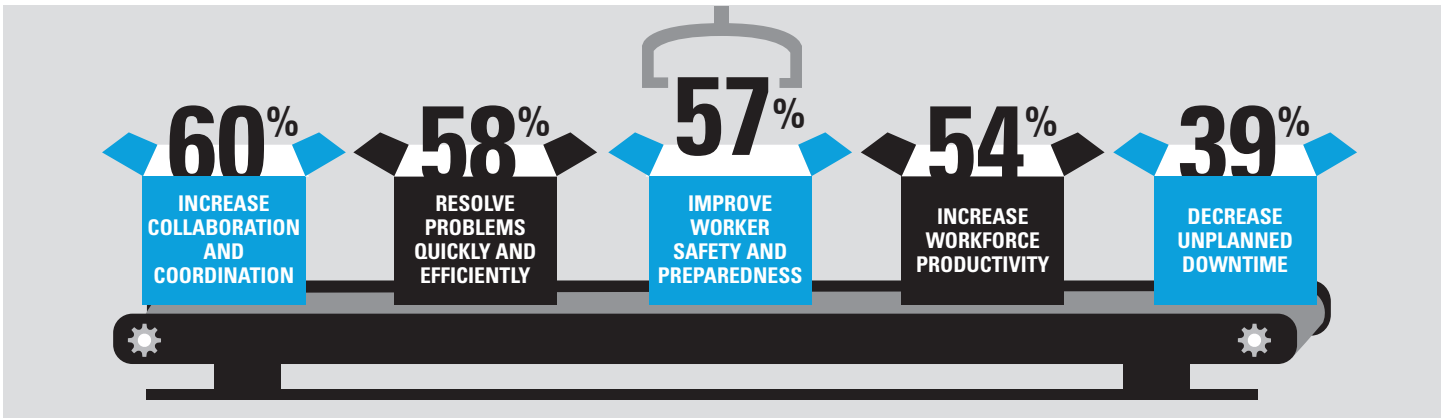
## SAFETY FIRST, FOR EVERYDAY AND EMERGENCY OPERATIONS

Unreliable communications pose a threat to worker safety and plant productivity. As manufacturers are pressured to do more with less, they are looking to technology to generate greater efficiencies and elevate safety. An updated communication system is a critical tool for keeping all workers connected, facilities emergency-ready and production lines hitting targets.



# TWO-WAY RADIOS BOOST PLANT PRODUCTIVITY AND SAFETY

When asked how two-way radios could be of greatest benefit in their operations, respondents hit all the hot buttons transforming manufacturing today.

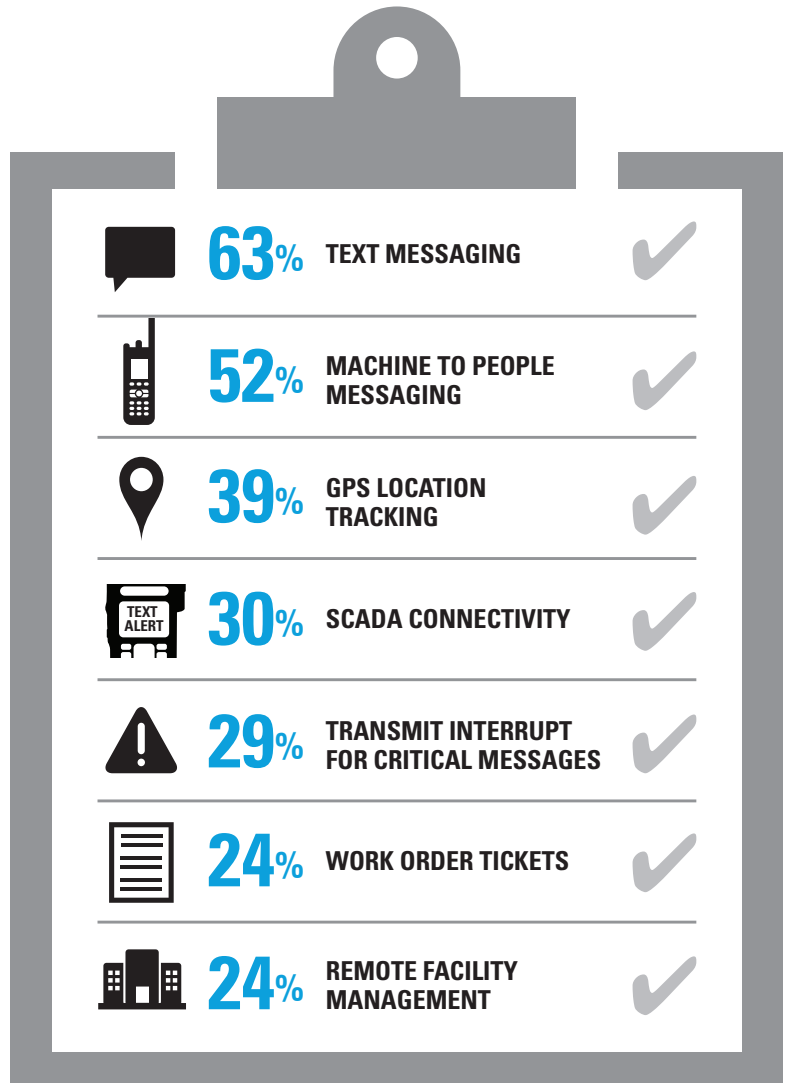


## MOST-WANTED APPLICATIONS

Beyond voice calling, manufacturers expressed a desire for greater data capabilities in their plant communications system. Whether responding to equipment issues, tracking shipments, or remotely controlling lights and gates, they expect their devices to help them work more safely and efficiently.

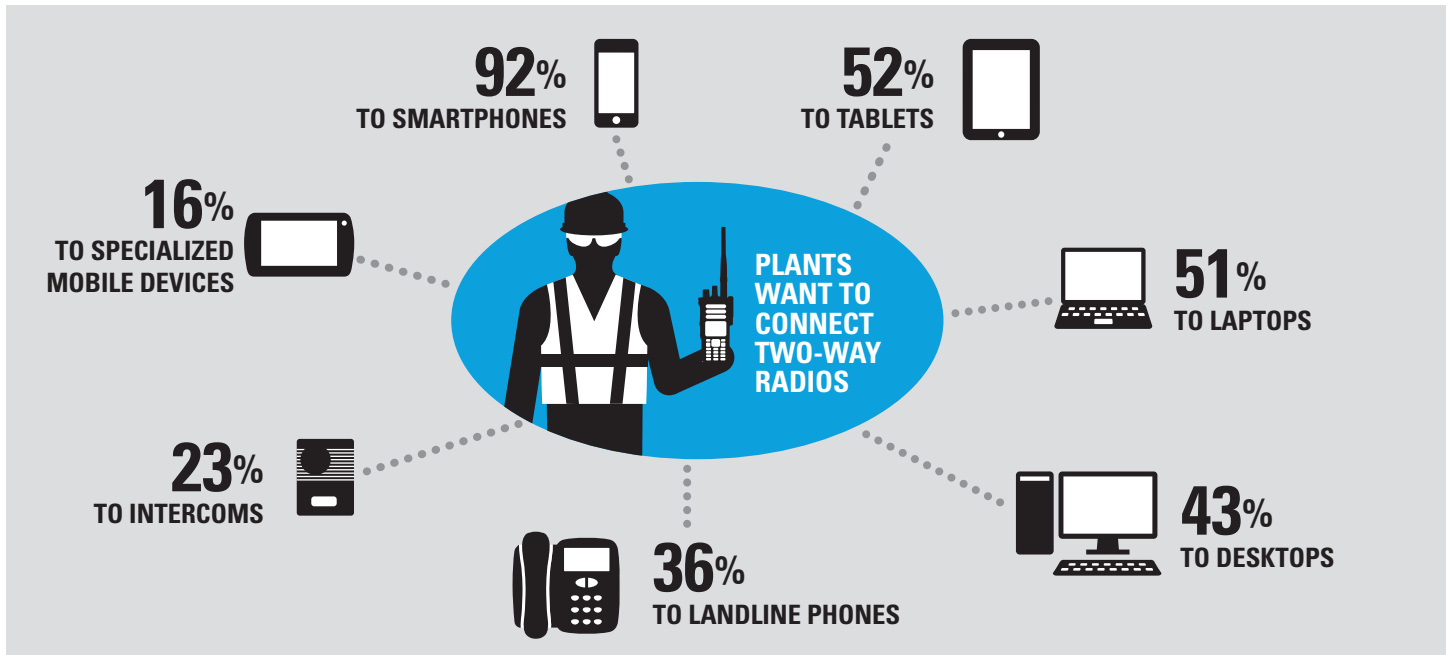
**PROBLEM PREVENTED**

A SCADA alarm signals low oil pressure in line equipment. The plant engineer is automatically alerted with a text message on his MOTOTRBO™ radio and heads over to the right machine to correct it.



# WHEN DEVICES ARE LINKED TOGETHER, WORKERS CONNECT ANYWHERE

Manufacturers are looking for ways to connect two-way radios to other technology quickly and securely, from overhead paging systems to handheld mobile devices. Almost a third of respondents say connecting workers together is their biggest challenge and 76 percent believe it is “very important” or “important” to their operations. Fifty-six percent of manufacturers want to connect different devices together.



## OPTIMIZING PERFORMANCE AROUND-THE-CLOCK

Manufacturers recognize that as plant communication systems become more sophisticated with greater functionality and features, so does the complexity. Maintaining peak performance requires dedicated staffing to proactively detect, troubleshoot and rapidly resolve communication issues before they have an impact. Operations must assess their capabilities to handle device maintenance and network monitoring in-house or source it out.

**OVER 90%**  
WANT A DEVICE THAT IS RELIABLE WITH LONG BATTERY LIFE

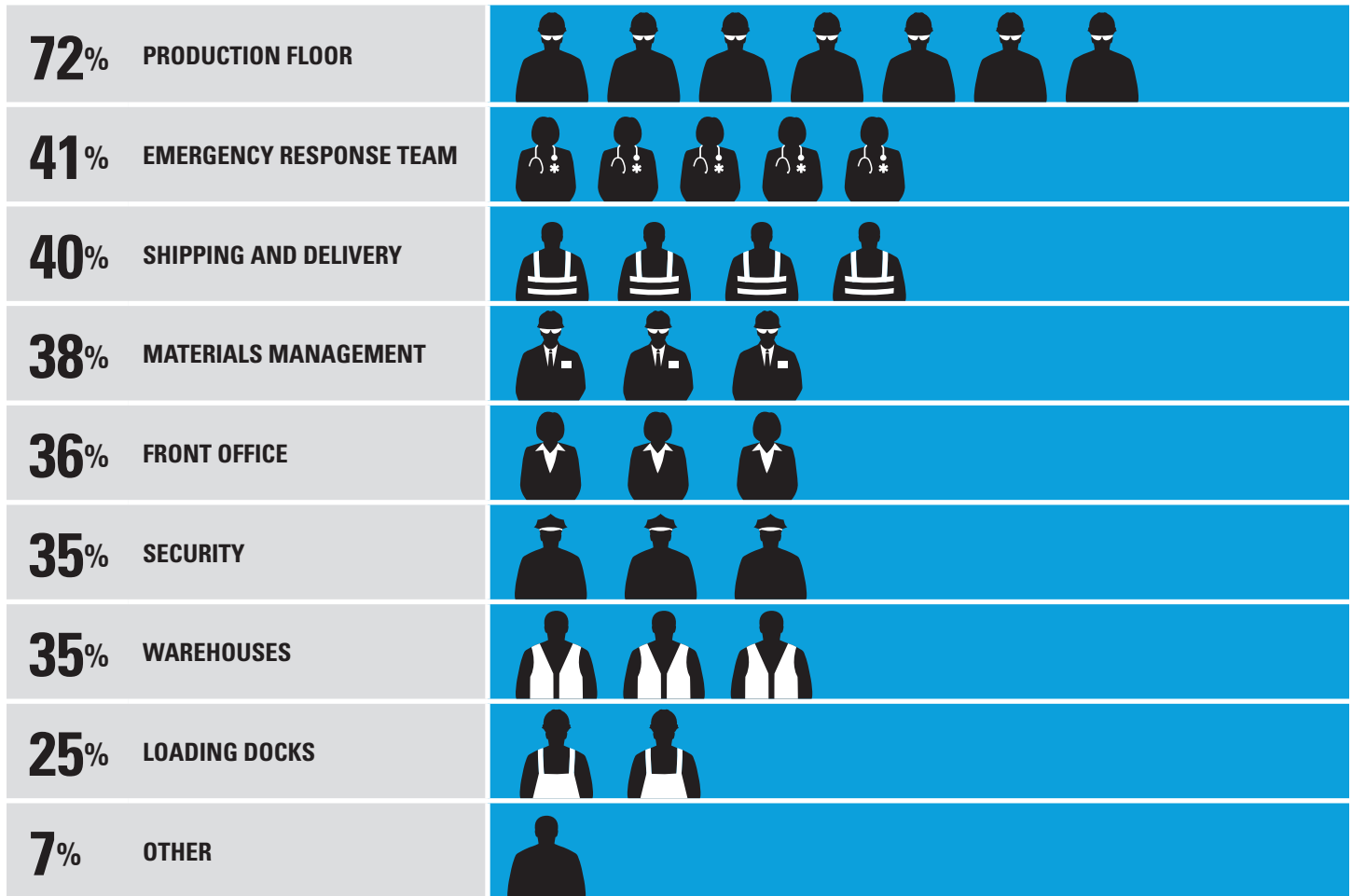
**OVER 70%**  
WANT EXTENDED SUPPORT WHEN THE WARRANTY EXPIRES

**OVER 35%**  
DO NOT MONITOR THEIR COMMUNICATIONS SYSTEM

**MAKE A SMART DECISION ON THE MOVE**

A technician sees a potential safety hazard and needs advice from the plant manager. Although the plant manager is away on business, the WAVE™ Mobile Communicator on her smartphone enables her to talk securely and quickly with the technician on his MOTOTRBO digital radio. Hazard averted.

## DEPARTMENTS THAT BENEFIT MOST FROM DIGITAL RADIOS



Motorola delivers all of these integrated communication solutions and advanced capabilities for different users in diverse environments. We interconnect people, equipment and departments to keep operations running smoothly and give manufacturers the competitive edge in today's high-speed world.

This 2015 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, efficiency and productivity, talk with your local Motorola representative or go to [motorolasolutions.com/manufacturing](http://motorolasolutions.com/manufacturing).

### SOURCES

1. "Big Firms Finally Start to Ramp Up Spending," The Wall Street Journal, March 4, 2015
2. "The Hidden Cost of Downtime: A Strategy for Improving Return on Assets," Maintenance Technology

Motorola Solutions, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. [motorolasolutions.com](http://motorolasolutions.com)

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