



The tech race and IoT

How technology can sharpen your competitive edge

MANUFACTURING • TRANSPORTATION • SUPPLY CHAIN





THE RESEARCH IS IN AND IT'S TIME TO GO BIG.

Join the tech race with the Internet of Things to help improve your competitive edge.

Technology is rapidly advancing, and your competition remains fierce. Take a look at IoT trends converging in manufacturing, transportation, and supply chain. If you aren't thinking about how the Internet of Things (IoT) can improve your business, you should be.



In this eBook, we share survey results about IoT and its adoption within the manufacturing, transportation, and supply chain industries. This research suggests that IoT and business strategies to maintain your competitive edge go together—enabling faster, more timely, and more informed decision-making.



The #1 reason for IoT is timeliness of information¹



Manufacturing



Transportation



Supply Chain

52%

of manufacturers adopt IoT to be on the cutting edge of technology.²

From GPS to sensor logistics

Moving beyond simple location tracking

More business leaders are turning to IoT to sense and adapt, improve operational visibility, address regulatory and compliance requirements, and respond to competitive pressures. While many have IoT solutions in place today, approximately 87% are looking to expand their use and include more diverse sensor information as part of their data collection process.

Sensors considered high in importance include those that measure motion, humidity, vibration, shock, pressure, and even light exposure. The top three uses of sensors are for measuring speed, temperature, and asset security.

87%

of respondents are looking to expand their IoT.

41%

already have an IoT strategy in place.

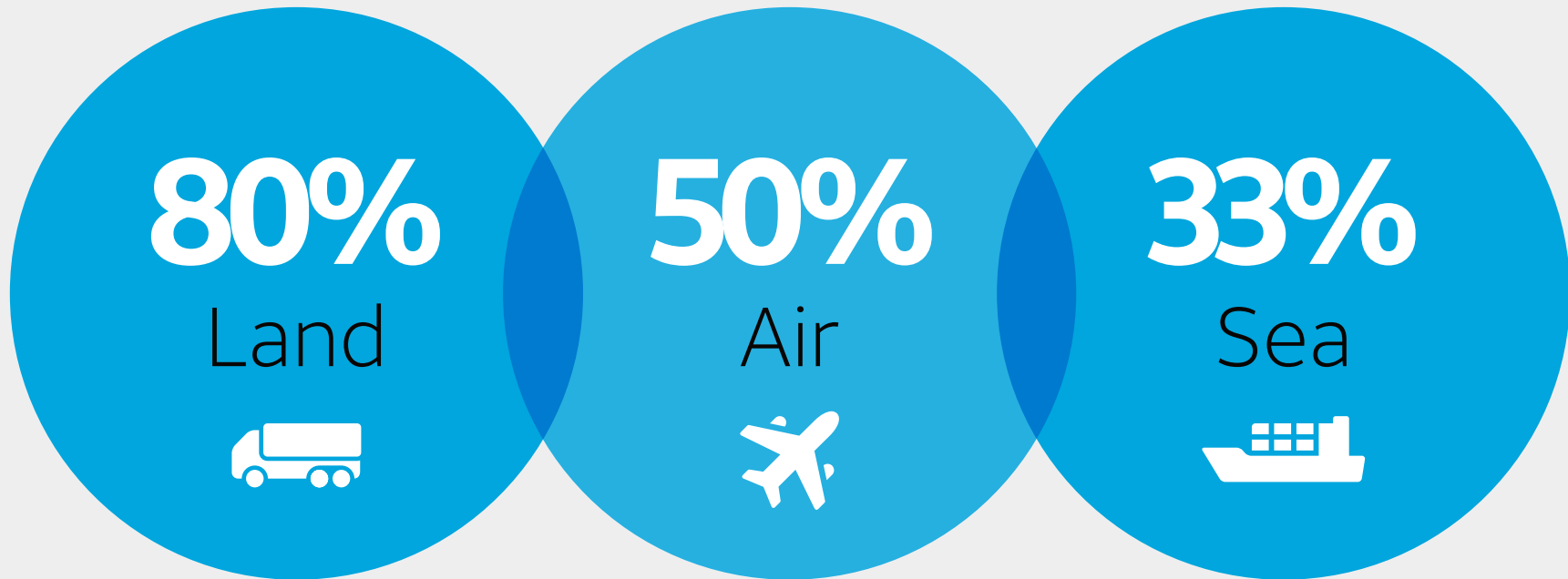
64%

have or are planning an IoT strategy.

Top 3 uses for sensors in the supply chain are for measuring speed, temperature and asset security.



Where are companies looking to improve operational visibility?



80% of supply chain companies use GPS location information.



Companies' #1 concern is loss prevention and theft.



Manufacturing and supply chain visibility

Revealing your blind spots



50%

of manufacturers value IoT solutions for quality control, supply chain and inventory management.



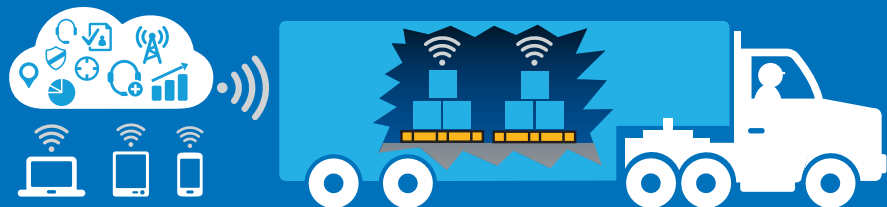
1 out every 2 manufacturers are driven to IoT by a desire to be on the cutting edge of technology and to be more responsive to market conditions. A smooth supply chain operation is one way of keeping a production line moving so that manufacturers can make and deliver goods on time.

Supply chain visibility, management, and quality control are high priority areas for manufacturers. Shipments today move across many geographies, transfer through integrated supply chains, and change hands frequently. This can increase the potential for supply chain delays that can, in turn, impact production schedules for manufacturers. IoT and sensor-based visibility can clear up blind spots, enable risk mitigation, and help with quick response times.

For manufacturers that use IoT today, more solutions were implemented for supply chain tracking and equipment and machinery management. Of those surveyed, 55% of discrete manufacturers had implemented IoT for supply chain tracking along with 71% of process manufacturers.



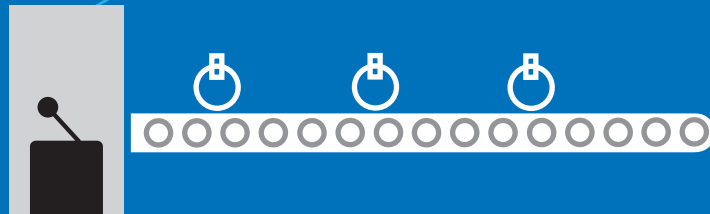
IoT solutions can help you increase visibility from the point of manufacturing to the point of delivery.



IoT inside manufacturing, transportation, and supply chain

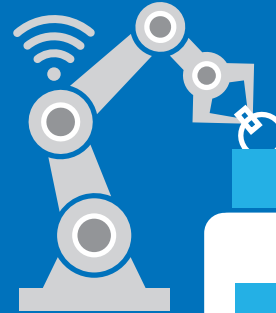
High Vibration
ALERT

Sensors, alerts, and notifications can help protect workers



Reduce machine downtime with predictive maintenance alerts

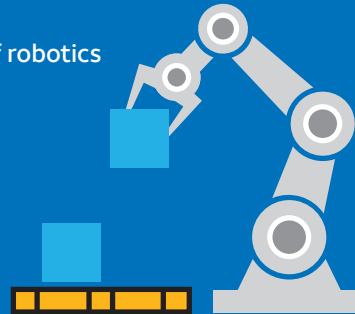
Need Maintenance
ALERT



Remotely manage equipment, set limits, and reduce costs with global visibility and automation tools



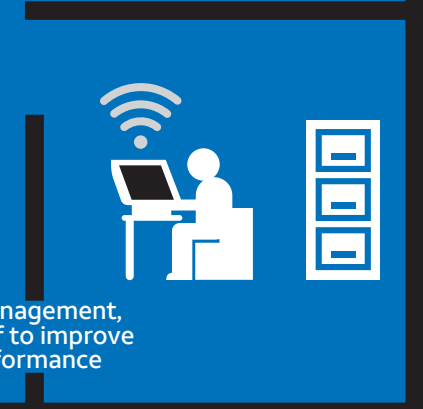
Monitor the health of robotics



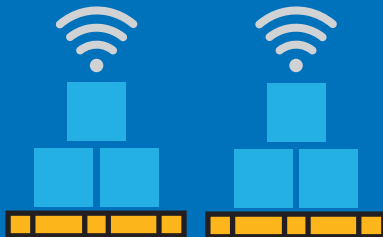
Get near real-time data about assets, components, and operating systems, thus helping eliminate inefficiencies



Share data across management, field workers, and staff to improve operations and performance



Get cross-channel inventory and tracking visibility



Employ telematics, routing, and fleet management and other tools to help save time and money



On-time Departure
ALERT



Use near real-time vehicle and asset management data with condition-based alerts for quality control and to reduce costs in transportation and supply chain

Lift Detected
ALERT

Know the benefits

The tech touch in your operations

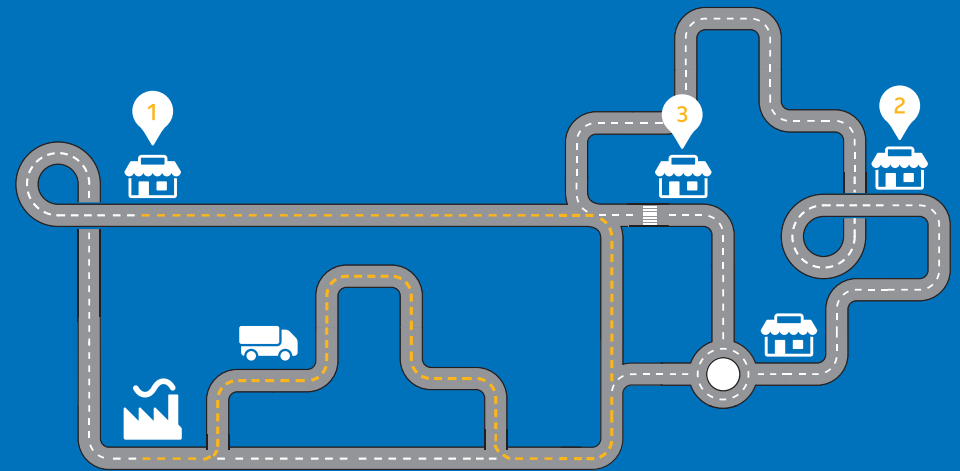
Today's IoT can deliver near real-time, end-to-end operational information that can help companies sense and adapt to change.

With emerging IoT solutions, transportation companies can:

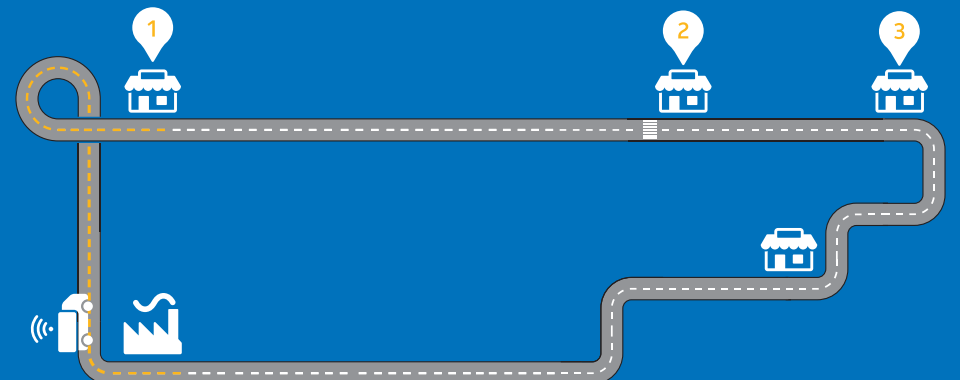
- Build on operational effectiveness with new asset management and mobile productivity tools
- Stay compliant on current laws, policies, and regulations
- Employ proactive maintenance to plan for scheduled downtime
- Improve equipment operation while extending the life of equipment
- Improve supply chain visibility and enable quick response times
- Utilize IoT visibility technology and sensors to help guard against theft and pilferage

Reduce costs and create new efficiencies with fleet management and intelligent routing

Routing Without Fleet Management



Routing With Fleet Management



1 IN 3

companies have implemented IoT solutions for manufacturing. Another 35% are considering adoption in the near future. On average, companies have used IoT solutions only 2-3 years.



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Top reasons for implementing IoT are to be on the cutting edge of technology and to improve responsiveness.

Key concerns include selecting the right solutions, upfront costs, security concerns, and implementation costs.

Connected pallets allow businesses to monitor and track goods. Sensors inside the pallets can transmit information about location, temperature, humidity, shock, and other data to enable improved inventory management, cargo condition and security, improved customer satisfaction, and more.

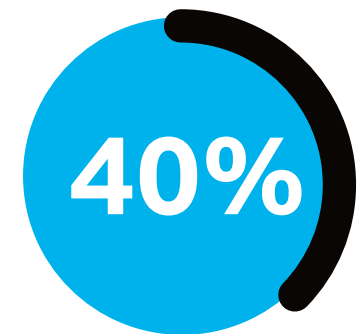
"2017 Voice of Customer Study in IoT Manufacturing,"
Frost & Sullivan "What Do Shipping Pallets Have to do with Reducing Carbon Emissions?"
AT&T Blog, June 27, 2017 http://about.att.com/content/csr/home/blog/2017/06/what_do_shippingpal.html

When IoT data flows in, will you use it or lose it?

The right information can help manufacturers respond faster to changing market conditions. But only 40% of manufacturing companies believe their organization is knowledgeable about IoT solutions. Those reporting an "excellent" knowledge level were just 16% of large businesses and 12% of small businesses. That said, about 60% of manufacturers reported plans to spend more on IoT in the next 12 to 24 months. When it's time for your business to take advantage of a sensor enriched supply chain, will your business be ready?



About 60% will spend more on IoT in the next 12-24 months.



40% of manufacturing companies believe their organizations are knowledgeable about IoT solutions for manufacturing.



**IoT solutions
can help your
business manage
regulatory and
compliance needs**

Regulatory and compliance

Achieving the right checks with IoT

IoT can help you monitor and improve your compliance with laws, policies, and regulations.

ELD Mandate and Hours of Service

The Federal Motor Carrier Safety Administration (FMCSA) enforces regulations such as the Electronic Logging Device (ELD) mandate to help prevent commercial motor vehicle-related fatalities and injuries and to make it easier to share records of duty status (RODS). Fleet management solutions with services such as Hours of Service (HOS) automate data collection and help companies stay compliant.

Food Safety Modernization Act

The Food Safety Modernization Act (FSMA) brought new regulations on food transportation. IoT solutions help companies stay compliant through detailed monitoring and record-keeping using sensors that report shipping time, temperature, and other metrics required by the new U.S. Food and Drug Administration (FDA) regulations.





ROI
12 to 18 mos.

MAX. WT.	32,500	KGS
TARE WT.	3,800	KGS
PAYLOAD	28,700	KGS
CU. CAP.	72.4	CU. M.

Return on investment

IoT can yield fast returns

IoT is on the minds of manufacturing, transportation, and supply chain companies because the investment can pay off and the benefits realized with a timely return. 50% of respondents revealed achieving a return on their IoT investments in as fast as 12 to 18 months.

Some of the top reasons to utilize IoT include:

- Increased visibility
- Improved operational efficiency
- On-time delivery
- Enhanced customer experience
- Risk mitigation
- Response time speed
- Inventory visibility
- Increased asset utilization
- Quality assurance

Survey results on ROI

Initial deployments are achieving faster ROIs than in the past, many realizing goals within 12 to 18 months.

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[**Data Driven Transformation**](#)

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