

# 6 Things to Know About Global IoT Adoption

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Michael Kuptz -

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Given the numerous industries impacted by COVID-19 it may come as a surprise that global IoT adoption has grown. In fact, according to the [2021 IoT Signals](#) report, 44 percent of organizations have increased IoT funding—especially here in the United States, where GDP growth took a smaller hit than other markets.

Now in its third year, the Microsoft IoT Signals report investigates the global state of IoT in industries like manufacturing, smart places, energy, and mobility (automotive, transportation, and logistics). The report surfaces valuable insights around IoT adoption rates, benefits, challenges, and emerging technologies that are helping businesses in the United States and abroad compete at a higher level. Below, I've highlighted six IoT adoption trends impacting the competitive landscape—and how the United States measures up.

Despite numerous industries impacted by COVID-19, global IoT has increased in 2021 according to Microsoft's IoT Signals report.[Click To Tweet](#)

## **When It Comes to Global IoT Adoption, the United States Ranks #3**

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IoT is the rule, not the exception, with global adoption rates averaging 90 percent. This is up from 85 percent when the first edition of this report came out in 2019. But three countries stand out when you look at the IoT adoption scoreboard: Australia (96%), Italy (95%), and the United States (94%).

Additionally, here in the United States, 87 percent of survey participants state they have at least one IoT project in use, with projects taking 11 months on average to reach the use stage. This is approximately one month faster than the global average. Some of the common US challenges impacting adoption rates and use of IoT projects technical complexity, security risks, and consumer privacy concerns.

## **Combining IoT and Edge Computing Enables Better Security**

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Pairing the capabilities of IoT with emerging technologies such as edge computing opens up new opportunities and helps address some of these identified challenges. By shifting AI, analytics, and business logic to devices at the edge, businesses are alleviating privacy and latency issues and enabling offline solutions.

Within the United States, 77 percent of organizations surveyed are combining IoT with edge computing. Security stands apart as a key reason that organizations integrate edge computing with IoT, with 40 percent of those surveyed citing cloud security as the most important reason for combining these technologies, followed by device and asset security at 36 percent.




At 88 percent, the mobility sector leads the pack when it comes to using IoT at the edge. Together, these technologies enable solutions that benefit from offline computing capabilities, such as autonomous vehicles and end-to-end logistics visibility and quality.

## **Automation and Efficiency Are Driving IoT Adoption Across Manufacturing, Energy, and Smart Spaces**

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When you dig into the data, automation, and efficiency also stand out as prime motivators within each vertical, followed by safety. However, the specific reasons and use cases vary. For example, 47 percent of manufacturers are looking to improve quality and compliance, and 45 percent are adopting IoT for industrial automation. Energy companies are focused on smart grid automation (44%), improving grid maintenance (43%), and enabling remote infrastructure maintenance (40%). Oil and gas companies prioritize workplace safety (45%) and employee safety (43%). For the smart places industry, productivity and workplace analytics top the priority list at 47 percent, followed by building safety at 42 percent.

Here in the United States, leading use cases across verticals include quality assurance, cloud security, device and asset security, operations optimization, and employee productivity. It's also worth noting that US organizations report the highest satisfaction rates with IoT, citing efficiency and safety as the top benefits.

EXHIBIT 7 TOP REASONS FOR IoT ADOPTION BY INDUSTRY									
Manufacturing		Power & Utilities		Oil & Gas		Mobility		Smart Places	
Quality and compliance	47%	Smart grid automation	44%	Workplace safety	45%	 Inventory tracking and warehousing	48%	Productivity enablement/workplace analytics	47%
Industrial automation	45%	Grid asset maintenance	43%	Employee safety	43%	 Manufacturing operations efficiency	40%	Building safety	42%
Production flow monitoring	43%	Remote infrastructure maintenance	40%	Remote infrastructure maintenance	39%	Surveillance and safety	34%	Predictive maintenance	41%
Production planning and scheduling	38%	Smart metering	37%	Emissions monitoring and reduction	35%	Remote commands	34%	Regulations and compliance mgmt	36%
Supply chain and logistics	38%	Workplace safety	37%	Asset and predictive maintenance	35%	Fleet management	32%	 Space mgmt and optimization	34%

Credit: IoT Signals Report – Edition 3

## IoT and AI Power Scenarios Like Smart Spaces And Predictive Maintenance

Within the United States, 81 percent of businesses are combining AI with IoT, which is slightly ahead of the global average (79%). Of the organizations leveraging AI with IoT, 67 percent cite predictive maintenance as the top reason followed closely by prescriptive maintenance. Additionally, organizations are integrating AI to improve user experiences, enabling capabilities like visual image recognition and interpretation, as well as natural language recognition and processing.

In the smart places sector, businesses are using AI and IoT to make buildings more sustainable and improve worker health and safety. Businesses in the manufacturing and energy sectors are running machine learning algorithms to predict and prevent equipment failures. Businesses in the mobility sector are combining AI and IoT to monitor driver safety and optimize routes in real time.

## IoT and Digital Twin Technology Boost Quality and Revenue

Digital twin technology enables virtual replicas of the physical world, whether a railway, farm, wind turbine, or satellite. And IoT provides a link to that physical world. Within the United States, 74 percent of businesses surveyed are combining digital twin and IoT technologies, compared to the global average of 81 percent.

The top benefits of digital twin projects include improved quality, which 72 percent of organizations report. Furthermore, 63 percent note increased revenue, and 59 percent cite reduced operations costs. In this area, manufacturing leads the way, with 86 percent reporting the use of digital twins in their IoT solutions.

Organizations that combine IoT with digital twins also reduce operational costs, enhance warranty costs and services, and shorten the time to market for new products. For example, manufacturers can see the interaction of parts from various suppliers and resolve quality issues in the virtual environment. Building developers can predict building efficiency and optimize spaces. Energy companies can maximize energy production at wind farms.

## Sustainability Emerging as a Key IoT Use Case

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As organizations seek to green up business practices, sustainability has emerged as the 12<sup>th</sup> most common use case for IoT. Applications range from keeping tabs on power, water, and fuel usage to monitoring water pipelines for leaks to tracking waste collection—all with an eye to curtail consumption, lower emissions, and maximize resources.

In fact, 34 percent of organizations surveyed say they're prioritizing sustainability in the next year. Interestingly, of the 73 percent of IoT adopters who see IoT as very important for achieving near-term sustainability goals, only 43 percent are currently employing it to achieve those goals. It turns out that sustainability is a frequent side benefit of IoT adoption. Using IoT to reduce costs and boost efficiency often means organizations use fewer natural resources.

## Download the Global IoT Signals Report

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With all of its benefits, IoT adoption is here to stay—especially when combined with emerging technologies. For a more in-depth exploration into how businesses in the United States and abroad are leveraging IoT, be sure to read the full IoT Signals report. This year's edition also drills down into top-of-mind topics such as cybersecurity and implementation strategies.

