



The Feds Have Seen the Future of IoT, and It Is Accelerating Toward 5G

Pandemic Response Boosts Government Interest and Adoption

In recent years, the federal government has keenly eyed the power of interconnected devices, or the Internet of Things (IoT) — defined as any network of physical, internet-connected objects that can independently collect and transfer data over a wireless network. This growing interest aligns with trends across industries: Gartner, for example, predicted the number of active IoT devices would grow to 20 billion in 2020, while the overall ecosystem would expand rapidly. And after a COVID-19-era slowdown, IDC expects global IoT spending to return to double-digit growth rates in 2021.

For military and civilian agencies, the power of IoT is particularly enticing, as they seek to improve oversight and operational efficiencies in areas such as security, logistics, supply chain and inventory. The State Department, for example, is using IoT to foster more resilient and secure embassies by constructing a network of IoT sensors for generators and building management systems, as well as gathering data around such points as air quality. The Department of Defense, too, continues to develop and implement IoT technology for day-to-day operations to improve productivity, efficiency, and the bottom line, as well as the emerging Internet of Battlefield Things, which predicts small, portable sensing, computing, storage and analytic devices will become common in wartime.

Meanwhile, legislation around federal IoT has expanded as well: Bipartisan legislation to improve the cybersecurity of internet-connected devices was introduced in 2019 in the Senate and the House of Representatives, which would require that devices purchased by the U.S. government meet certain minimum security requirements. In addition, the Senate passed legislation in January 2020 that would establish an interagency panel to help prepare the federal government and the private sector for the IoT era. It would direct the Secretary of Commerce to convene a working group composed of federal stakeholders to study the ongoing explosion of growth in connected devices.

In addition, the pace of change towards IoT has only accelerated due to the COVID-19 pandemic: According to the CIO COVID-19 Impact Study, IT leaders are prioritizing more efficient processes, such as increasing operational efficiency and transforming existing business processes. Overall, initiatives to create a more digital operation continue to be top of mind for IT leaders and businesses.

Increased IoT Spending, Focus on Security

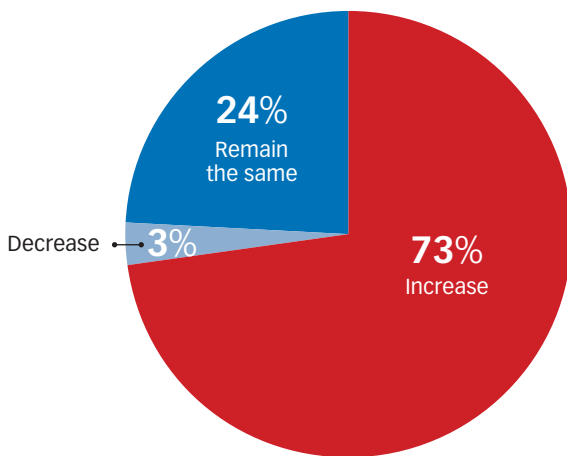
The IDG/Verizon Marketpulse Research study *IoT Use Cases in Federal Government* offers insight into current IoT awareness and anticipated use in the federal government. It surveyed federal IT leaders about what is driving current IoT initiatives at their agencies as well as the ways in which IoT technology may be adapted to help meet objectives in the “new normal.”

The results of the survey are crystal-clear: IT leaders say the federal government’s investment in the Internet of Things will increase. This is not only because of common use cases for remote sensors (such as location tracking, facility management, military operations and public safety) but additional opportunities in the era of COVID-19 — such as body temperature monitoring, remote facilities management, and emergency device connections for rapid response. Also, as agencies prioritize the next stages of their IoT implementations, securing IoT data in transit is top of mind, as well as technology implementation, project planning and driving analytics in real time — including through edge computing.

Digital Transformation and COVID-19 Challenges Fuel IoT Investment Increase

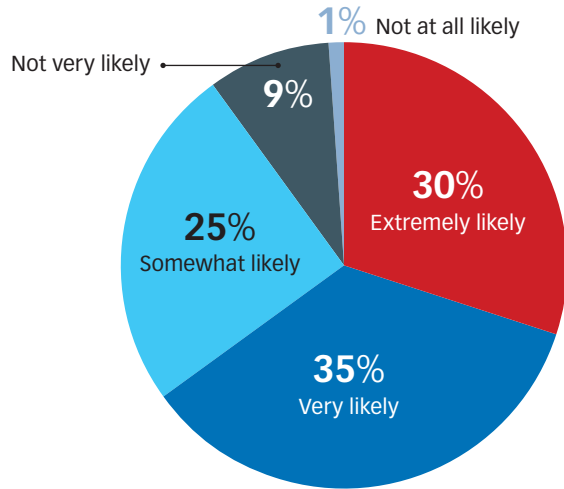
Moving toward IoT maturity, however, is no easy task for defense and civilian agencies. According to the Center for Data Innovation, a non-profit, non-partisan think tank studying data, tech, and public policy, agencies often lack the strategic leadership or skills on how to use IoT, or have insufficient funding to modernize IT infrastructure to enable IoT projects.

FIGURE 1.
How will you investment in IoT change in the next 12 months?



Source: IDG MARKETPULSE RESEARCH: IoT Use Cases in Federal Government On Behalf of Verizon, July 2020

FIGURE 2.
Will the pandemic response accelerate IoT initiatives?



Source: IDG MARKETPULSE RESEARCH: IoT Use Cases in Federal Government On Behalf of Verizon, July 2020

This is not surprising: Historically, the federal government has often been behind the curve when it comes to digital transformation, even though agencies recognize that they must become more agile and innovative to compete in today’s landscape. Gartner research found that 80% of government organizations are still at the initial or developing maturity stages of digital transformation. However, over a third are feeling increased urgency to transform. This tracks a similar market-wide finding by the IDG COVID-19 Impact Study that showed 61% of IT leaders said the “effects of the pandemic are accelerating our digital transformation efforts.”¹

That urgency, it seems, is now paying off with plans for IoT action: Nearly three-quarters of survey respondents (73%) expect IoT to increase as an investment priority over the next 12 months. In addition, a solid 45% of agencies are already implementing or expanding IoT projects, typically led by IT and security teams.

The top drivers for these new initiatives include the potential for increased data analysis (36%), cost savings and efficiency (32%), increased productivity (31%), improved decision-making (31%) and better asset management/maintenance (28%). Two-thirds of respondents use or plan to use sensors for remote data collection, including location tracking, facility management, military operations, public safety monitoring, asset tracking, and secure device/data management.

¹ COVID-19 Impact Study, April 2020. <https://www.idg.com/how-are-it-leaders-responding-to-the-pandemic/>

The challenges of the COVID-19 pandemic have also driven urgency among both civilian and military agencies toward increased IoT investment. They recognize additional opportunities for the government to retool sensors and devices, such as body temperature monitoring, remote facilities management, and emergency device connections for rapid response. Overall, 65% of survey respondents report a high likelihood that the COVID-19 pandemic will accelerate their IoT initiatives.

“While federal organizations already implementing IoT projects are the most likely to accelerate their initiatives, there is a clear increase in potential positive outcomes with these projects related to everything from public and worker safety to streamlining processes and improving decision-making,” says Jeffrey Schweitzer, the Public Sector 5G Innovation Architect at Verizon. “While state and local governments may need to first focus on the basics due to the impacts COVID-19 has had on budgets, perhaps one of the bigger challenges is simply in identifying the best use cases to prioritize for maximum return once we stabilize. We can already accomplish or create solid outcomes on today’s 4G LTE infrastructure.” While Verizon has achieved speeds of 1.45 Gbps in a real-world environment on its 4G network, “understanding the benefits that ultrafast speeds, lower latency, and zero trust security models might have on this next wave of IoT initiatives is a prime area of new innovation potential.”

Infrastructure and Technology Impact: A Need for Speed

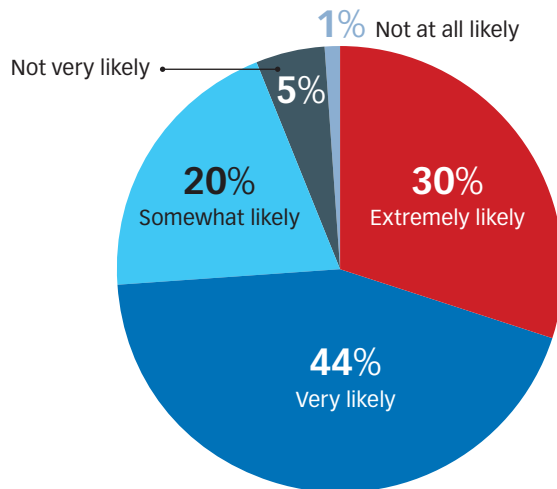
Almost three-quarters (74%) of survey respondents anticipate a high likelihood that IoT-enabled apps will require much faster speeds and lower latency than their organization or agency is currently able to provide.

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— JEFFREY SCHWEITZER
THE PUBLIC SECTOR 5G INNOVATION ARCHITECT, VERIZON

FIGURE 3.

Will IoT-enabled Apps Require Ultra-fast Speeds, Lower Latency?



Source: IDG MARKETPULSE RESEARCH:
IoT Use Cases in Federal Government
On Behalf of Verizon, July 2020

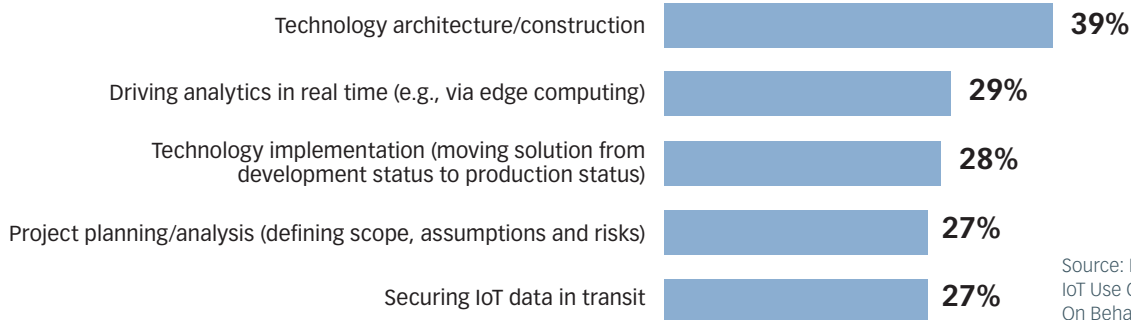
This need for a faster network with higher capacity has led to a strong focus on the powerful potential of fifth-generation (5G) wireless access to provide communication with and between IoT devices and sensors. 5G offers reduced latency and speeds that are up to 100 times faster than the current fourth-generation Long-Term Evolution (LTE) technology.

More than half of respondents (54%) see 5G wireless access as the top consideration to provide communication with and between IoT devices and sensors. By comparison, 46% plan to use WiFi. Over the next year, the use of WiFi may be boosted by WiFi 6, which will offer increased bandwidth and faster internet speeds. WiFi 6 is expected to be 50% of all IP traffic in the next two years, driven primarily by bring-your-own-device and IoT capabilities. Meanwhile, 37% of survey respondents plan to continue to use existing 4G LTE wireless networks for their IoT efforts.

As civilian and military agencies work to meet IoT objectives, many respondents also expect their organizations to seek assistance from third parties. More than a third (39%) say they would seek third-party help for technology architecture and construction, while 29% would with driving analytics in real time (such as via edge computing) and 28% with technology implementation (moving a solution from development to production).

FIGURE 4.

Where will Federal Agencies Look for 3rd-Party Help?



Source: IDG MARKETPULSE RESEARCH: IoT Use Cases in Federal Government On Behalf of Verizon, July 2020

The Future of Federal IoT Looks Bright

No matter how organizations decide to move forward, it’s clear that there are a variety of big problems that IoT can help government agencies with right now. Respondents cited everything from monitoring health during COVID-19 and providing technology for remote workers, to monitoring resource usage and tracking assets as they enter and leave facilities.

In addition, there is no doubt that awareness and usage of IoT and IoT-enabled initiatives is on the rise. Beyond the 45% of organizations that are already implementing and expanding their IoT initiatives, 26% are considering projects — that is, leadership and staff understand some of the potential of IoT and are in discussions about how it could impact the organization. Another 20% are in the planning stage, in which leadership and staff have the desire to implement IoT and have moved to working on analysis, planning and/or gaining approval. Finally, another 9% are in the piloting phase, with the agency/organization currently testing projects to demonstrate IoT viability.

Federal agencies are preparing to take IoT efforts to the next level over the next year. In addition, in the wake of COVID-19, there are new untapped opportunities to adapt IoT technology to help meet

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government objectives in the “new normal.” However, much will depend on a continued commitment to digital transformation.

IoT use cases are expanding, but prioritizing the modernization of network infrastructure is a must. Agencies must ensure they have the security, speed and flexibility teams need to take advantage of today’s IoT capabilities.

Learn more about transformative IoT solutions to advance any organization.