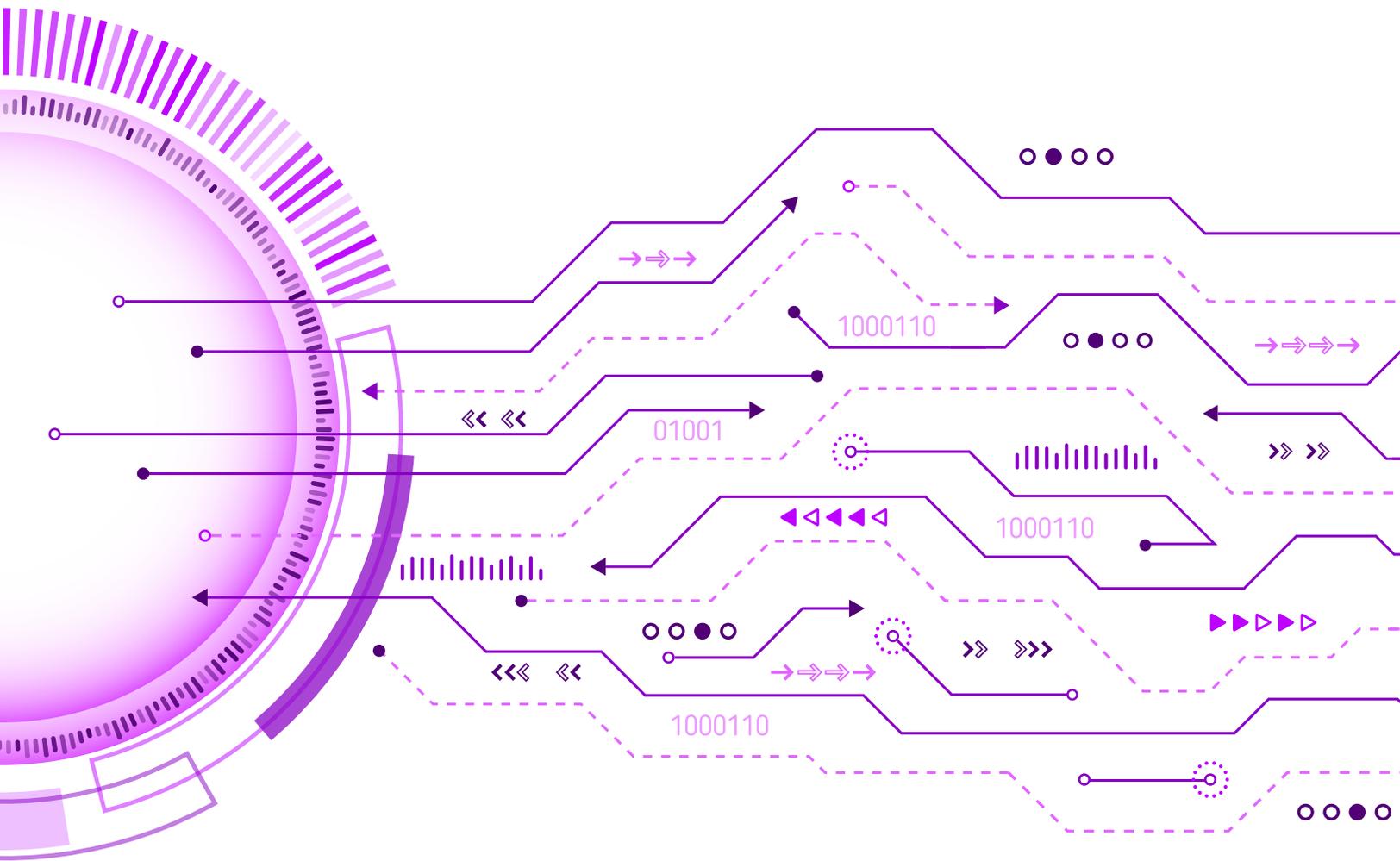


MODERNIZE WITH IMPACT

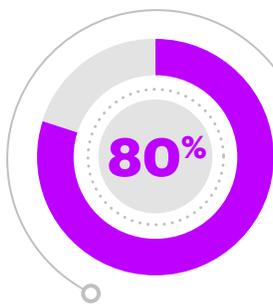


How federal agencies can scale innovation and achieve real value with Future Systems

Across the U.S. government, federal agencies are investing significantly in IT technologies. Yet most agencies are not capturing full value from their investments.

There are varied reasons for this. Budget and administrative constraints, for example, encourage agencies to pursue piecemeal approaches to IT modernization, which tend to be less effective. Spending on the maintenance of legacy IT systems has ballooned as a result. (During 2014–19, such spending rose by 13%, to consume nearly 80% of the U.S. government’s total IT spending.)¹

Our research indicates that this tendency—deploying technologies in pockets, with limited tools for scaling and delivering sustained impact—is very common in both the public and private sectors. However, CIOs and other senior IT executives can learn from the federal agencies that are getting their IT modernization efforts right.



During 2014–19, spending on the maintenance of legacy IT systems rose by 13%, to consume nearly 80% of the U.S. government’s total IT spending.

These Leaders are replacing stove-piped applications and operating models with open, standards-based, IT ecosystems—what Accenture calls “Future Systems”—that can scale innovations repeatedly and foster strategic agility. Three broad lessons emerge from our research into what Leaders are doing differently.

The first is that Leaders adopt new technologies sooner (and in more deliberate fashion); and they reinvest more frequently. Second, Leaders focus on how to scale new technologies across their agencies. Third, Leaders prepare better for the challenges of pairing new technologies with the people and processes already in place.

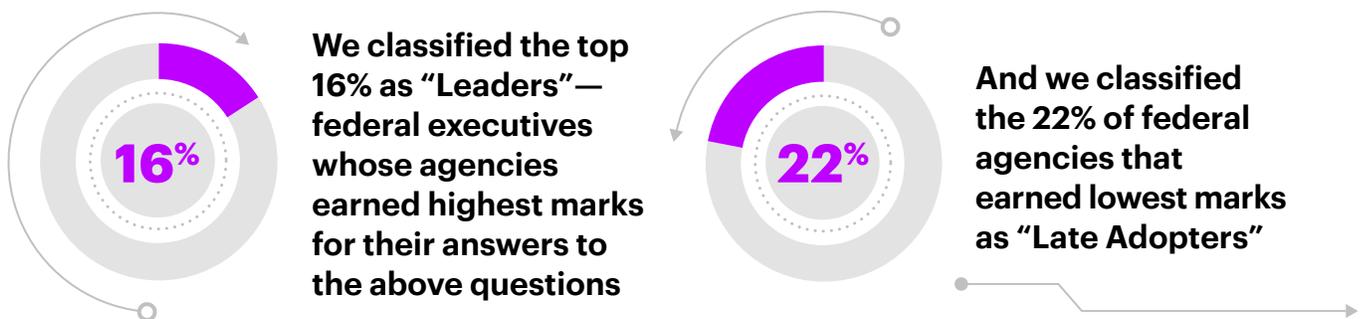
Federal agencies that heed these lessons, to master Future Systems, will fulfill their missions more effectively—improving the lives of citizens and making better use of taxpayer dollars.

Future Systems create more value

Accenture's Future Systems research includes our largest-ever survey on the topic of IT system performance in the public and private sectors.² We interviewed 8,356 c-suite executives in 20 countries, including 353 in agencies across the U.S. government. The survey sought answers to three big questions:

- 01** What information technologies are being adopted?
- 02** How widely are they being implemented in the organizations that adopt them?
- 03** How are organizational cultures adapting to the use of these technologies?

This report focuses on the survey's findings for U.S. government respondents (though the results discussed below are similar to those for the broader survey).³ We classified the top 16% as "Leaders"—federal executives whose agencies earned highest marks for their answers to the above questions (agencies, in other words, that have embraced Future Systems with gusto).⁴ And we classified the 22% of federal agencies that earned lowest marks as "Late Adopters". These results are similar to our commercial findings, with a slightly larger number of Leaders in the federal government.



Our survey revealed a widening "innovation-achievement gap" between U.S. government Leaders and Late Adopters, one that reflects the difference between potential and realized value from IT investments. Notably, 67% of Leaders said that they're satisfied with their return on their technology investments, compared with only 16% of Late Adopters (in the private sector, we found that Late Adopters were also foregoing up to 46% of their potential revenue growth over an eight-year period).

Federal Leaders enjoy wide-ranging benefits from their embrace of Future Systems. Here are just a few.

Leaders are more likely than Late Adopters (54% vs. 26%, respectively) to see high levels of **citizen satisfaction** with government services. Leaders are also more likely to reduce citizens' waiting times for services (46% vs. 28%) and to prioritize citizens' user experiences when designing processes and services (95% vs. 50%).

Another area of benefit involves **cost-savings** and **improved performance**. We found that Leaders are more likely than Late Adopters to experience—after adopting new technologies—a decline in the time needed to launch a new product or service (49% vs. 13%). Leaders are also more likely to launch a new technology quickly (39% vs. 16%), to improve operating margins after investing in technology (35% vs. 20%), and to prioritize adopting and scaling new technologies (98% vs. 64%).

Yet another area of benefit involves **organizational strategy** and **operating models**. We found that Leaders are more likely than Late Adopters (98% vs. 42%) to deploy mechanisms to track returns from their technology investments—essential for measuring progress. They're also more likely to use reliable data to form insights and drive business change (95% vs. 53%), to see a large, positive impact from new technology on business operations and change-management processes (80% vs. 42%), and to systematically manage artificial intelligence (AI) responsibly (98% vs. 45%).

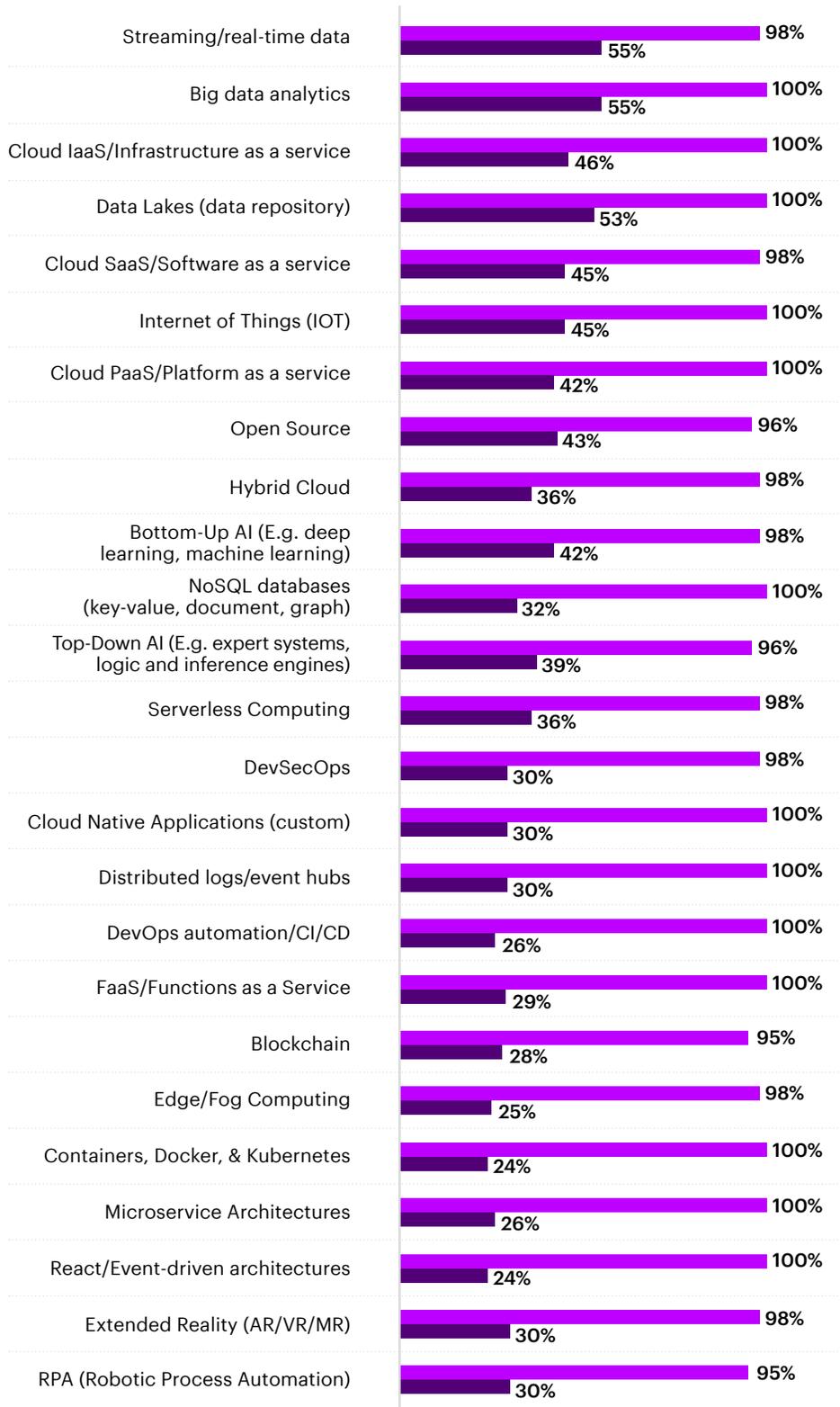
IT modernization lessons

Three broad lessons emerge from our research into what IT modernization Leaders are doing differently.

LESSON 1: INVEST MORE—AND MORE WISELY—IN INNOVATION

Federal Leaders invest more in promising new technologies. For example, we found that they're more than twice as likely as Late Adopters to be early adopters of technologies such as AI, streaming data, data lakes, Cloud SaaS, and hybrid clouds (**Figure 1**).

Figure 1: Technology adoption, Leaders vs. Late Adopters*



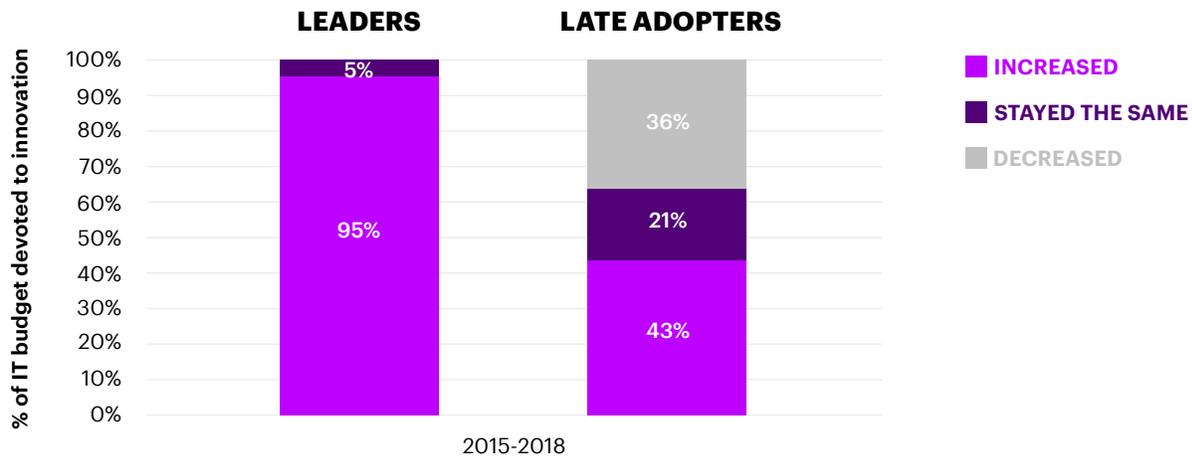
* Refers to: technologies used within the last year, more than a year ago, more than 3 years ago, or more than 5 years ago

* 3D Printing and Robotics only include the following industries: Automotive; Chemicals; Consumer Goods & Services; Energy (Inc. Oil & Gas); Health; High Tech; Industrial Equipment; Life Sciences; Metals and Mining; Retail

LEADERS
LATE ADOPTERS

During 2015–18, the share of Leaders that increased the percentage of their IT budgets spent on innovation was also more than double that of Late Adopters (**Figure 2**). Leaders reinvest in technologies they’ve already adopted—to ensure their continued high performance—at much higher rates, too.

Figure 2: IT investment trends during 2015–18, Leaders vs. Late Adopters



We also know that Leaders develop higher levels of expertise around the technologies they adopt. And they’re more likely to pursue innovation in smart ways, such as by using a “minimally viable product” approach (an efficient development technique that emphasizes prototyping). In this and in many other ways, Leaders avoid silo mentalities (applying technology solutions to isolated problems); instead, they create wide-ranging functional and enterprise capabilities.

LESSON 2: FOCUS ON SCALING

Moving IT projects from prototype to production or from pilot to enterprise adoption is a common challenge for many federal agencies. However, Leaders show a greater awareness of what it takes to scale new technologies. For example, before investing in AI (which 97% of Leaders do, while only 41% of Late Adopters do), Leaders invest in complementary technologies, such as data lakes and cloud services, to help AI act as a catalyst for agency-wide innovation.

Leaders also create cultures and organizational designs that are conducive to scaling. We found that Leaders are twice as likely as Late Adopters to have at least 20% of their workforce dedicated to innovation functions.

Leaders in our study do many other things that make them better at scaling. They're more adept at using AI, analytics, augmented reality, and digital-learning platforms to retrain employees. They're more supportive of technology experimentation, such as by promoting cultures that don't stigmatize failure. And they typically do a better job of aligning the incentives of their business groups with those of their IT groups, to build agency-wide support for scaling.

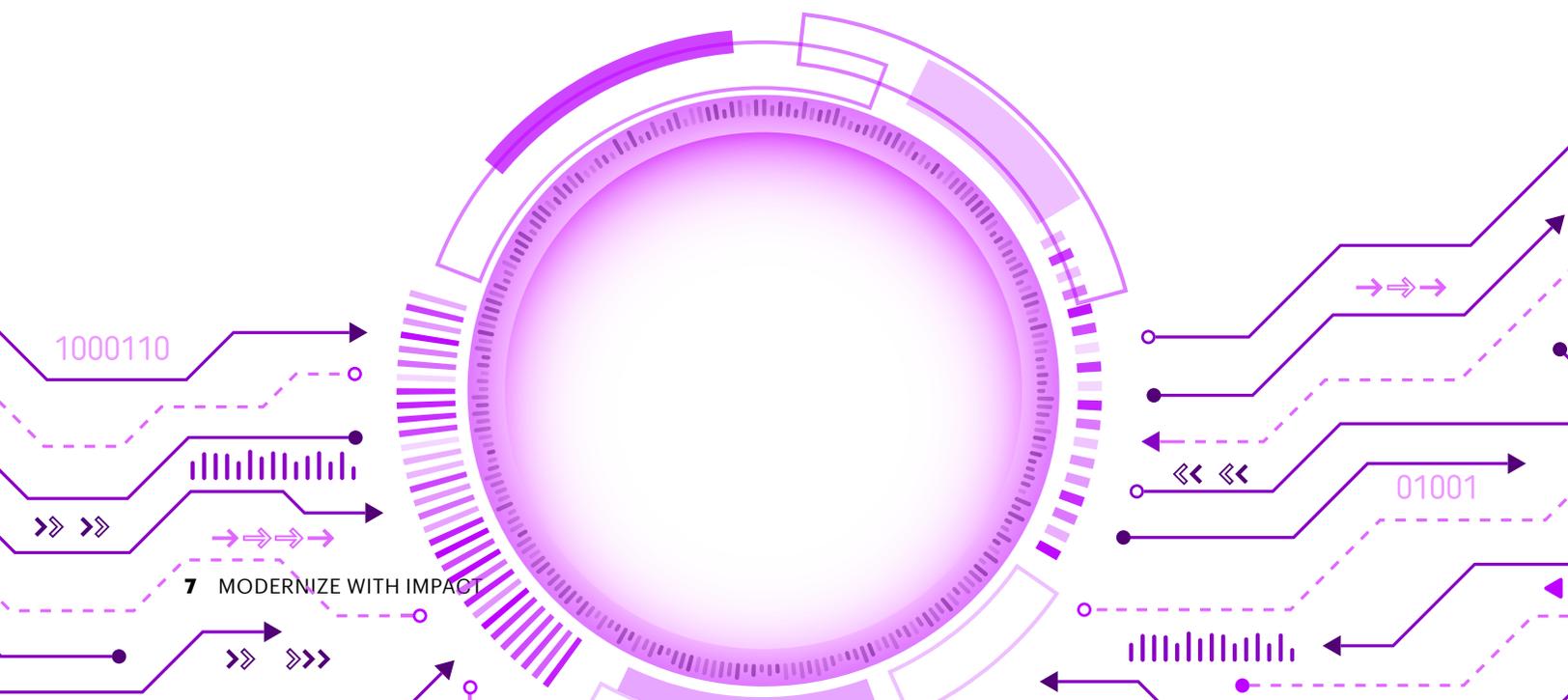
LESSON 3: DISRUPT, ADAPT, AND BE HUMAN-CENTERED

Leaders understand that Future Systems must be disruptive, adaptable, and human-centered. Start with disruptive. Leaders take advantage of blurring boundaries—whether between humans and machines or between IT infrastructure and applications—to create new spaces where ideas and partnerships flourish. In such environments, Leaders do a better job of creating shared insights from converged data sources, employing platforms and teams to connect with ecosystem partners, and fueling innovation through crowdsourcing.

Leaders prioritize adaptability, deploying Future Systems that learn, improve, and scale on their own. Leaders understand that Future Systems will make their agencies more agile. They also appreciate the need to (1) decouple data from legacy infrastructure and (2) decouple existing applications from old hardware.

Finally, Leaders understand the importance of human-centered—at Accenture, we call it “radically human”—Future Systems that talk, listen, and observe. Leaders, in other words, believe that technology—harnessing rapid advances in natural-language processing, computer vision, voice recognition, and machine learning—should support more natural interactions, adapting to how people work, not vice versa.

Leaders, for instance, are twice as likely to combine teams of IT and non-IT workers to create customer-centric solutions. And Leaders apply responsible AI frameworks, to strengthen humans' confidence in machines.



Leaders in action

The **U.S. Department of Agriculture (USDA)** has been a pathfinder in putting human-centered design at the heart of its IT strategy. Its efforts were recognized, most recently, by the Technology Modernization Fund (established in 2017 to provide public seed money to federal agencies with promising IT projects), which selected USDA as one of its first awardees.⁵

USDA's embrace of human-centered design is visible across its front-end (i.e., user-facing) tech stack, including its online presence.⁶ (On the USDA's revamped job posting webpage, for example, better search and application tools encourage visitors to linger longer, boosting traffic time by 45%, on average.) The agency has also made use of a cloud platform to develop internal IT capabilities, to better understand customers.⁷ One example is the creation of dashboards, which integrate customer data from 29 sub-agencies, to offer insights to USDA executives.⁸

The U.S. Department of Education's **Office of Federal Student Aid (FSA)** has worked hard to make its services more digitally accessible. For example, FSA revamped StudentAid.gov to make it easier for students and parents to access needed information and complete necessary steps to receive grants, loans and work-study funds. The redesigned mobile responsive website consolidated business functions from across four disparate websites into an integrated, personalized customer experience.⁹ Still more recently, FSA launched "Aidan", a virtual assistant that can instantly answer more than 800 common questions about federal student aid, on its website; in 2020, FSA will offer Aidan on its mobile app as well.¹⁰



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"DevOps" refers to practices that connect software development with an organization's IT operations, to allow continuous delivery of high-quality software. But extensive legacy technology infrastructure and operations, as well as cumbersome procurement processes, can limit the effectiveness of DevOps, as the **U.S. Air Force (USAF)** discovered.

To navigate these hurdles, USAF developed “DevSecOps”, which relies on authority-to-operate controls (i.e., permission for a product to be used in an existing system), cloud and software factories, and rapid IT migration.¹¹ Thanks to DevSecOps, USAF is both meeting its software acquisition requirements and speeding up the delivery and use of high-quality software.

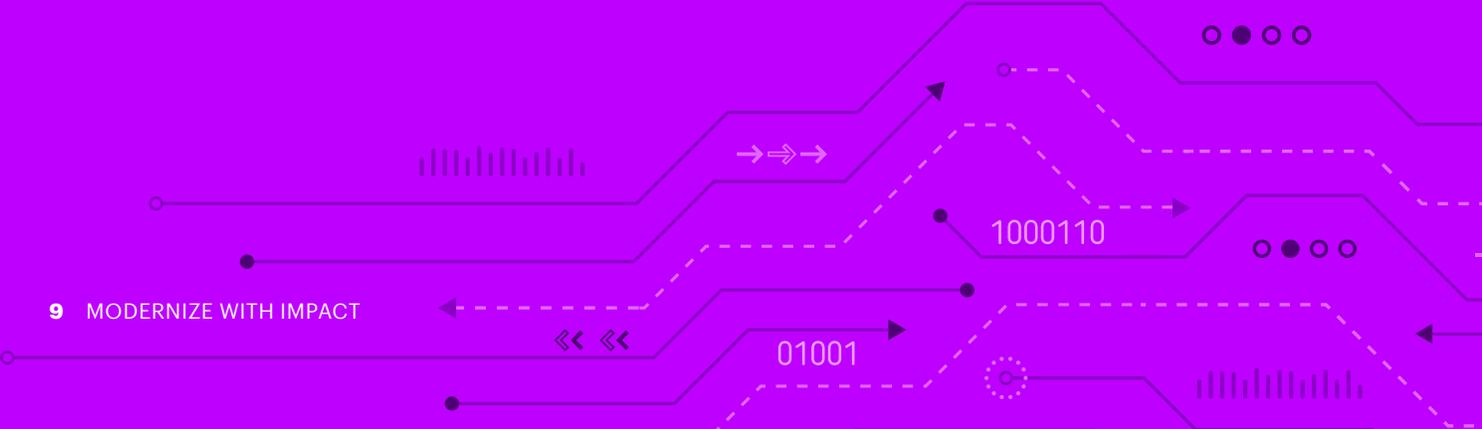
The **U.S. Department of Veterans Affairs (VA)** has also embarked on a wide-ranging IT modernization program. “We’re really looking at how to re-architect our network ... we don’t want to replace, we want to improve,” says Dominic Cussatt, the VA’s Deputy Chief Information Officer.¹²

The program’s ambitious initiatives include moving half of the VA’s technology portfolio (comprising roughly 350 applications and systems) to the cloud by 2024; and committing strongly to AI, by creating a National Artificial Intelligence Institute (launched in December 2019) and by appointing a Director of Artificial Intelligence.¹³ The VA will use AI to reduce patient waiting times, to identify patients at high risk of suicide, to help doctors interpret cancer lab tests, and to advise doctors on the most effective therapies, among other uses.¹⁴

Follow the leaders

Many federal agencies are not getting the most out of their IT investments. A change in strategy is needed.

To continuously scale innovation and respond faster to rising citizen demands, agencies should shift away from viewing technologies as a patchwork of single-point solutions. Instead, they should prioritize the development of holistic Future Systems, which boost organizational agility and allow innovations to be scaled with ease. To do this, they’ll need to cultivate both the methods and mindsets of IT modernization Leaders.



Resources

¹ <https://federalnewsnetwork.com/ask-the-cio/2018/08/spending-on-legacy-it-continues-to-grow-but-there-is-light-at-the-end-of-the-tunnel/>

² <https://www.accenture.com/us-en/insights/future-systems/future-ready-enterprise-systems>.

³ The survey was “double-blinded”. Respondents were not required to name their agency. The agencies surveyed in this report operate in the following areas: social services, tax, postal, policing, justice, pensions, education, defense, national security, central administration, and customs.

⁴ In our broader survey, organizations that ranked in the top 10% were classified as Leaders; those in the bottom 25% were classified as Laggards. To get the 16% (and 22%) threshold used in this report, we took the number of federal agencies that qualified as Leaders (and the number that qualified as Late Adopters) in the broader survey, and divided it by the number of federal agencies in our sample (353).

⁵ <https://tmf.cio.gov/projects/>

⁶ <https://www.nextgov.com/it-modernization/2019/05/inside-usdas-farmer-first-approach-digital-transformation/157385/>

⁷ <https://www.fedscoop.com/cloud-platform-proves-instrumental-usdas-modernization-journey/>

⁸ <https://www.usda.gov/media/blog/2018/08/02/usda-becoming-more-data-driven-customer-focused-organization>

⁹ <https://www.ed.gov/news/press-releases/us-department-education-announces-vision-transform-federal-student-aid-improve-customer-service>

¹⁰ <https://www.edsurge.com/news/2019-12-04-meet-aidan-the-u-s-education-department-financial-aid-chatbot>

¹¹ <https://defensesystems.com/articles/2020/01/09/af-kubernetes-f16.aspx>

¹² <https://federalnewsnetwork.com/veterans-affairs/2020/01/1b-in-technical-debt-driving-vas-massive-it-modernization-efforts/>

¹³ <https://www.research.va.gov/currents/0719-VA-aims-to-expand-artificial-intelligence-research.cfm>

¹⁴ <https://www.va.gov/opa/pressrel/pressrelease.cfm?id=5369>

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