AI-powered innovation:

Transforming federal software development for mission success
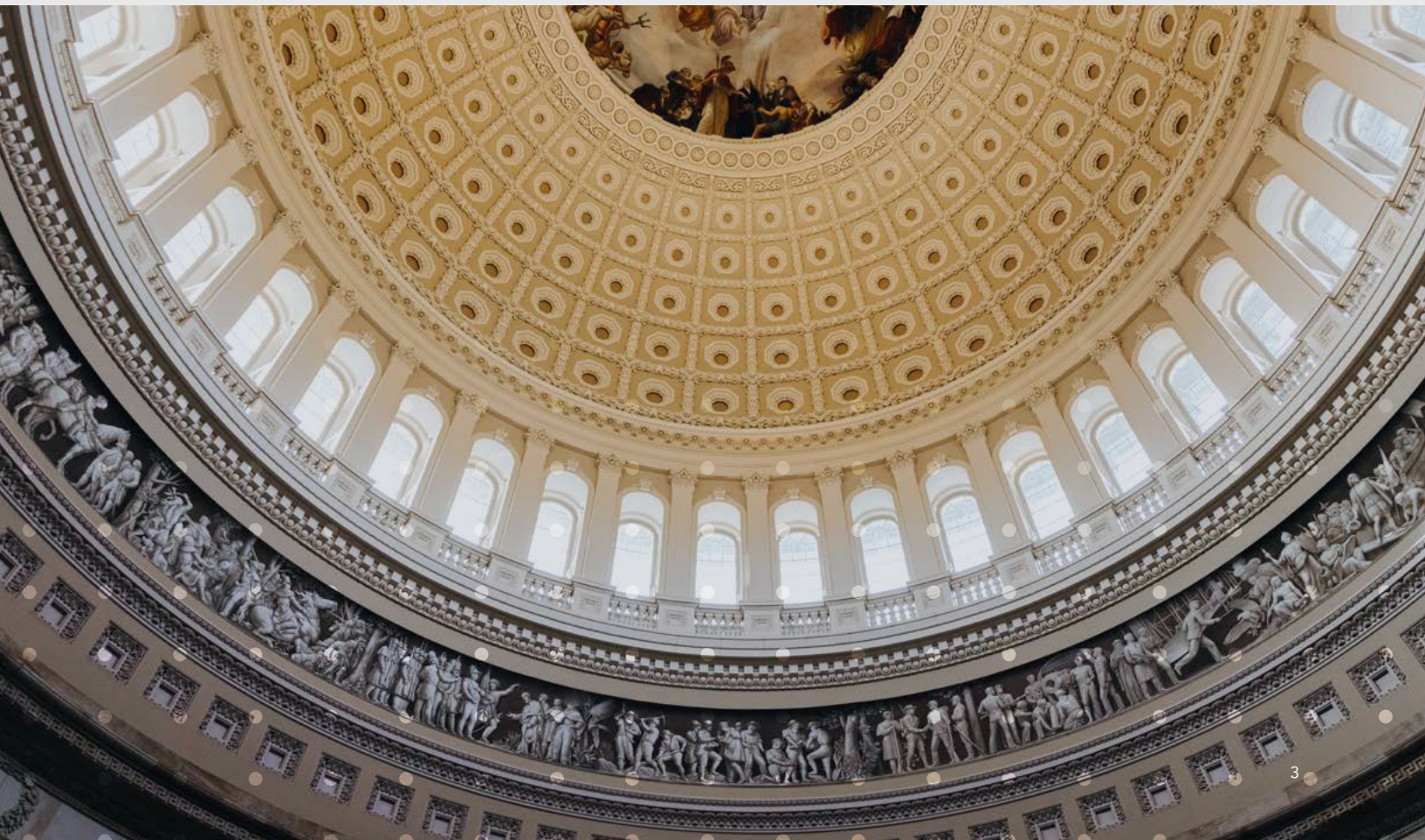
Contents

Introduction

A new survey reveals how artificial intelligence is modernizing federal software development—yet agencies must act now to harness its full potential.

AI is propelling federal agencies into a new era of efficiency, innovation, and mission success. From streamlining operations to reimagining how software is built, its impact is already reshaping government.

ICF's latest findings highlight how AI is transforming the software behind federal missions.

The transformative impact of AI

Through our digital modernization work with federal agencies, we see AI's impact firsthand—boosting productivity, enhancing mission effectiveness, and driving efficiency.

To better understand how IT leaders are adopting AI in software development and the challenges they face, we partnered with MeriTalk to survey 100 federal IT decision-makers. The findings offer a clear look at AI's role, potential, and roadblocks in advancing mission outcomes.

These findings highlight the progress government leaders have already made on the nuts and bolts of integrating AI into their software development processes. They also offer a glimpse into a bold future where agencies continue to accelerate innovation to deliver smarter, faster, and better government services.

Optimizing the power of AI requires agencies to shift from talk to action.

"To build momentum in modernization, agency IT leaders should prioritize immediate, practical action to start using AI—rather than getting stuck in prolonged planning or overcomplicated frameworks."

—Kyle Tuberson, Chief Technology Officer, ICF

AI can bring welcome advantages to federal software development strategies—which need an overhaul. Just over a third of federal civilian IT decision-makers give their agency's software development practices an "A" for security and efficiency, at 38% and 37%, respectively. Even fewer, only 28%, say the same about their ability to support innovation. By embracing AI, federal agencies can close these gaps, bringing greater security, efficiency, and ingenuity to their software development practices.

What can AI-assistance do for federal agencies?

AI is rapidly advancing technologies across the federal government, including software development. While only 46% of federal employees consider themselves core users of AI-assisted software development, all agencies are taking steps to expand their use of AI.

"It's essential to leverage pre-built solutions as key enablers for rapid progress, helping to bypass initial bottlenecks and kickstart AI initiatives right from the start."

—Ratima Kataria, Vice President, Strategy and Growth, Federal Health, ICF

How agencies are leveraging AI largely depends on the user group. For example, core AI users—IT decision-makers who say they "almost always" use AI-assisted software development—point to data analysis as their top application, while less frequent users focus on detecting security vulnerabilities.

Leveraging pre-built accelerators can help agencies achieve AI benefits and ROI quickly.
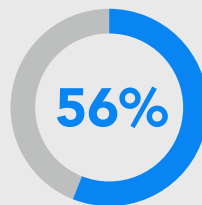
ICF

Developing software using AI

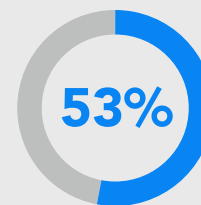These are the specific steps agencies are taking to adopt or expand their use of AI-assisted software development:
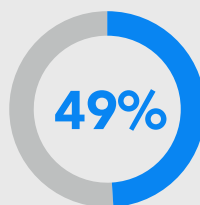
Provide AI training for developers

60%

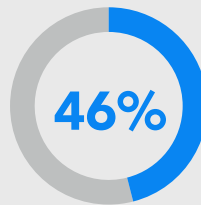Develop an AI strategy for software development

56%

Allocate a specific budget for AI-assisted development

53%

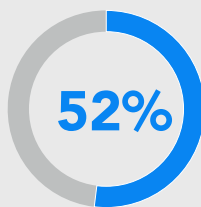Create an AI-focused team or working group

49%

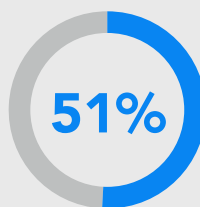Partner with external vendors for AI expertise

46%

Top areas of focus for AI software development

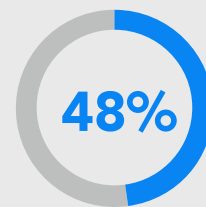This is how federal agencies say they're using AI for software development:
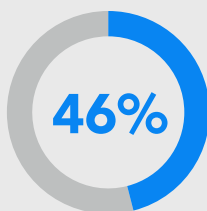
Data analysis for better decision-making
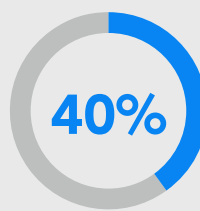
52%

Security vulnerability detection and remediation

51%

AI-powered code reviews

48%

Code interpretation, generation, and completion
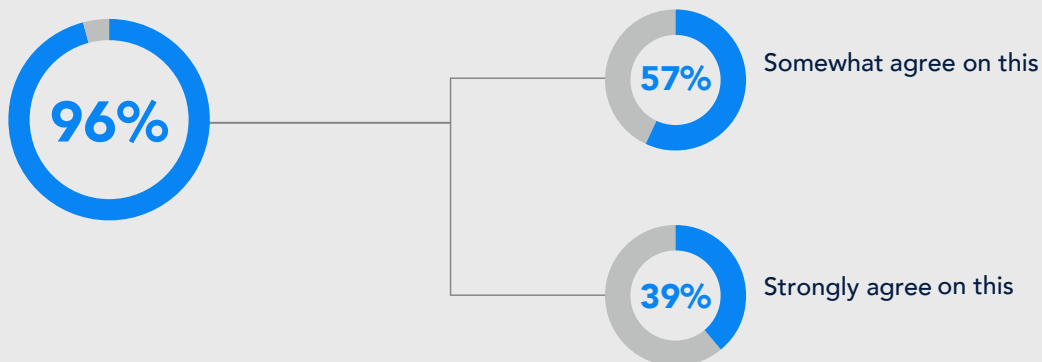
46%

Project management and resource planning
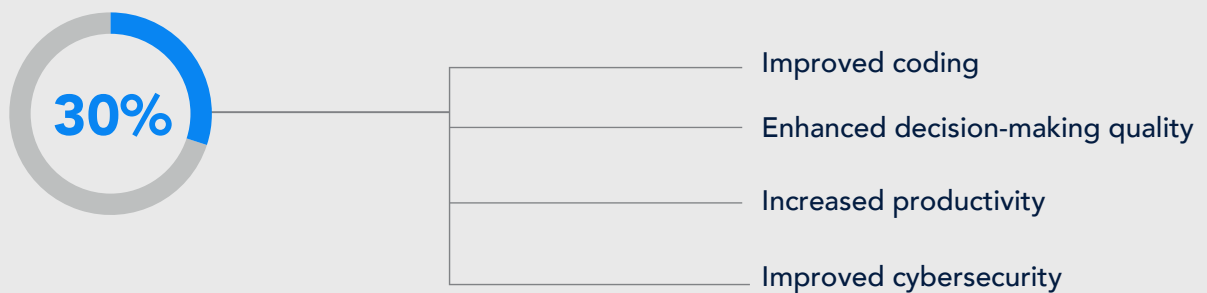
40%

Source: MeriTalk and ICF

The impact of AI on federal agencies

The vast majority of IT leaders agree on AI's ability to reduce project timelines:

IT leaders who say AI significantly accelerates development timelines

96%

57% Somewhat agree on this

39% Strongly agree on this

Reduction in project timelines enabled by AI-assisted software development tools. Additional benefits span:

30%

Improved coding

Enhanced decision-making quality

Increased productivity
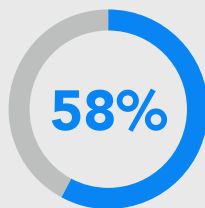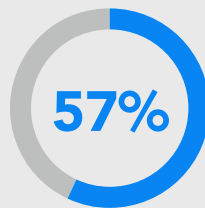
Improved cybersecurity

Source: MeriTalk and ICF

Driving documented AI improvements across key areas

Areas where agencies have seen measurable improvements using AI-assisted software development include:
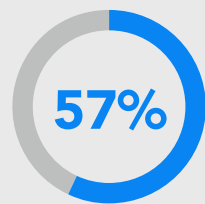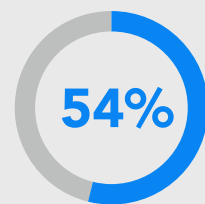
Data and decision making

58%

Code quality

57%

Cybersecurity

57%

Productivity

54%

Source: MeriTalk and ICF

How is AI-assisted software helping agencies achieve their missions?
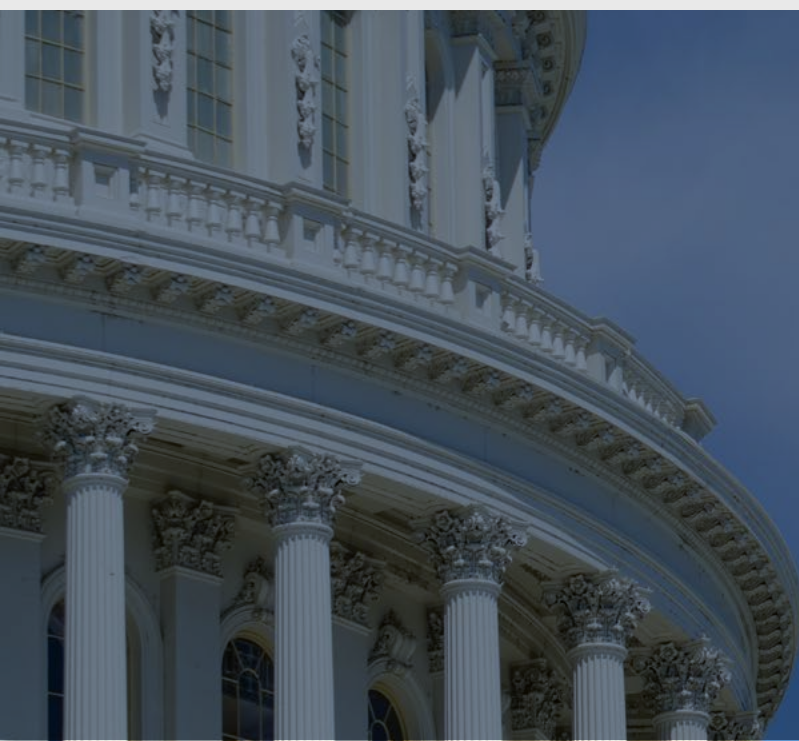
This is what stakeholders say:

- Improved decision-making speed, optimized workflows, and advanced overall goals

- Enhanced operational efficiency, improved decision-making, and enabled data-driven insights

- Detected vulnerabilities and anomalies

- Optimized project management via improved delivery timelines and outcomes

The time to act is now

AI-assisted software development can drive innovation and turbocharge efficiency. To realize these benefits, federal agencies must continue adopting AI-powered development tools to automate repetitive tasks, streamline testing, and improve real-time decision making.

"To successfully scale AI adoption across the enterprise, begin with your current capabilities. Focus on practical, high-impact outcomes by embedding AI seamlessly into existing workflows, accelerating efficiency, insights, and value."

—Patrick McConnell, Senior Vice President, Scaled Delivery Services, ICF

Integrating AI into key software development workflows, while also providing employee education and training, will enable federal agencies to accelerate project timelines, reduce manual errors, and optimize resources for high-impact, mission-driven activities. Achieving success requires agencies to acknowledge and resolve the challenges of AI, while driving incremental progress.

The next four years can be a turning point for software innovation. Nearly three-quarters, 71%, of federal agencies are optimistic that the new administration will usher in a new era of innovation for software development. By embracing AI-powered development, agencies can transform this optimism into tangible progress to drive the next wave of government innovation.

Who we surveyed

ICF worked with MeriTalk to survey 100 IT decision-makers from federal civilian agencies to explore how these leaders are transforming software development strategies—and advancing their missions—with open source, AI, and cloud.

"Federal Software Reimagined: Fueling Mission Success with Open Source, AI, and Cloud," MeriTalk, ICF, February 2025.

About ICF

ICF is a global consulting and technology services company, but we are not your typical consultants. We help clients navigate change and better prepare for the future.

Our team provides digital, cyber, and cloud-based platform services that drive transformational solutions across business and government. From cloud platforms and automation to machine learning and AI, we provide the foundation to meet dynamic end-user requirements and stand up a modern enterprise. We combine the best of advanced analytics, industry expertise, and enterprise technologies to build agile solutions that evolve to meet your changing needs. Our extensive suite of proprietary software and other technology tools add value to your projects from the outset.

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