Government of the Future

Surveying Federal Leaders on the Impact and Anticipation of Intelligent Technologies

Underwritten by

accenture

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Overview

Purpose

The federal government is on the brink of transformation. A wealth of cognitive technologies are on the horizon, promising new capabilities that can reduce error, boost productivity, and eliminate the mundane so federal employees can focus their full attention on mission outcomes.

At the same time, the introduction of such technologies demands a receptive workforce: are federal employees prepared for the changes these advancements will bring? Are they motivated to learn new skills that enable them to thrive in this future workforce? What are their concerns and how are agencies communicating solutions to these concerns? To answer these and many other questions, Government Business Council (GBC) conducted an in-depth research study of federal employees on the subject of intelligent technologies.

Research Methodology

In May 2018, GBC released a survey exploring perceptions of intelligent technologies and their potential impact on the federal workforce. 496 respondents from the federal government participated in the survey: 69% identified as federal non-DoD civilians and 31% identified as either Active duty military or DoD civilians. 52% of respondents self-identify as GS/GM-13 rank or higher.

Executive Summary

Respondents recognize growing role and relevance of AI

Half of all respondents express medium to high confidence that their current skills and abilities make them an attractive worker for a 'government of the future'. Among those lacking in confidence, a majority (54%) would be very or extremely interested in learning the skills required to succeed in the future. More than a third recognize that developing skills to work with AI will be very or extremely important in the next 3 to 5 years.

Adaptability, interpersonal communication, and receptiveness to others' ideas are seen as the most valuable attributes for succeeding in future government. What would motivate respondents to embrace these new skill sets? 55% point to funding that could cover their training costs as a major factor, and 50% say genuine interest in learning new skills would be sufficient motivation.

Agencies have not adequately communicated AI's future impact

While half approve of their agency's support, 29% of respondents disagree that new technologies are introduced to benefit worker skills and abilities. Moreover, a significant majority (73%) feel their agency has failed to communicate the impact that intelligent technologies may have on their job. When it comes to internal priorities, just 15% feel the focus is on *people* compared to 38% who feel *process* improvements are the prime objective.

Many are cautiously optimistic about the impact of intelligent technologies in the near future

A majority of respondents (54%) are still unsure how AI will impact their work, but more tend to believe it will create opportunities (31%) rather than challenges (14%).

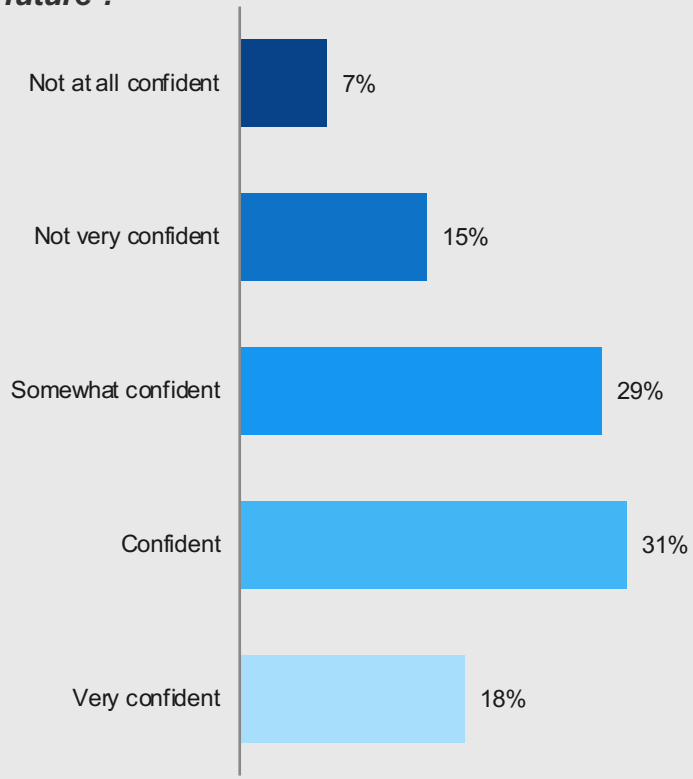
When considering benefits, respondents are most excited by AI's ability to reduce repetitive tasks (59%), improve productivity (53%), and minimize human error (46%). However, 61% are concerned there will be a lack of technical support and training when rolling out AI companions. Likewise — budget limitations, fear of displacement, and competing priorities are all considered major hurdles to deploying these technologies.

Research Findings

Nearly half of federal employees feel they can succeed in future operating environments

The rise of new technologies, mobility, and changing workforce models will dramatically impact the federal government in the near future. In anticipating this 'government of the future', half of all respondents feel confident that their technical skills can enable a successful transition going forward.

How confident are you that your technical skills and abilities make you an attractive worker in a 'government of the future'?



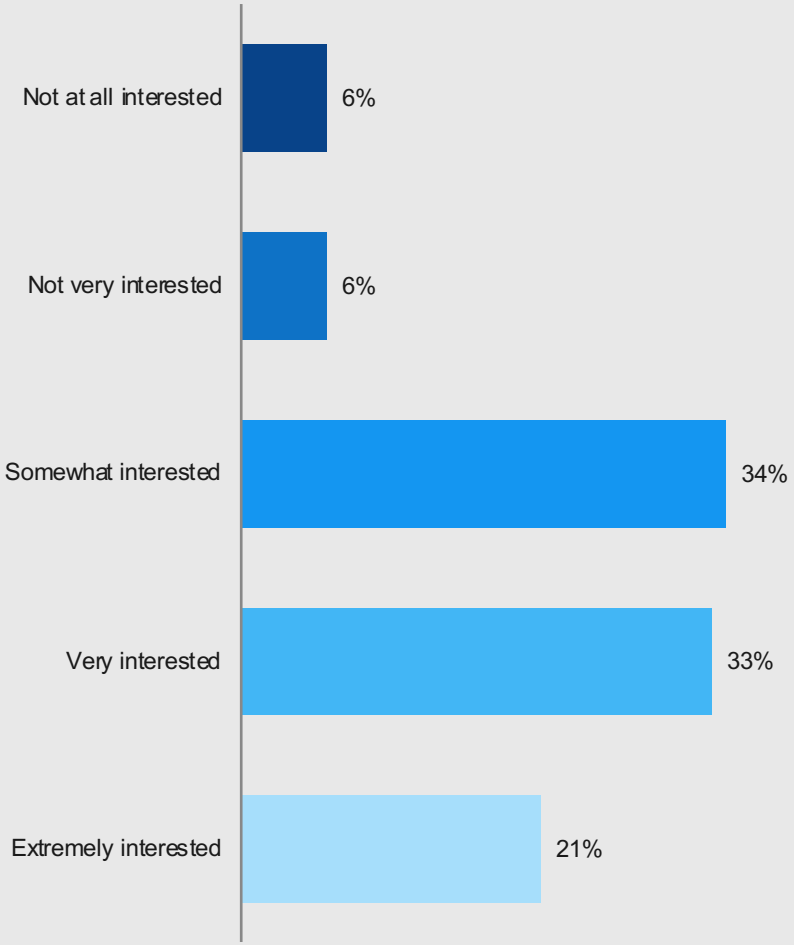
Percentage of respondents, n=496
Note: Percentages may not add up to 100% due to rounding

1 in 2

respondents are confident or very confident that their technical skills and abilities make them an attractive worker for future government service.

Among those with low confidence in current abilities, a majority welcome learning new skills

How interested are you in learning the technical skills and abilities that may be required for work in a 'government of the future'?



Percentage of respondents, n=246
Note: Percentages may not add up to 100% due to rounding

54%

of respondents who expressed minimal to no confidence in their technical skills (see p. 5) are very or extremely interested in learning such skills so they can succeed in the future mission environment.

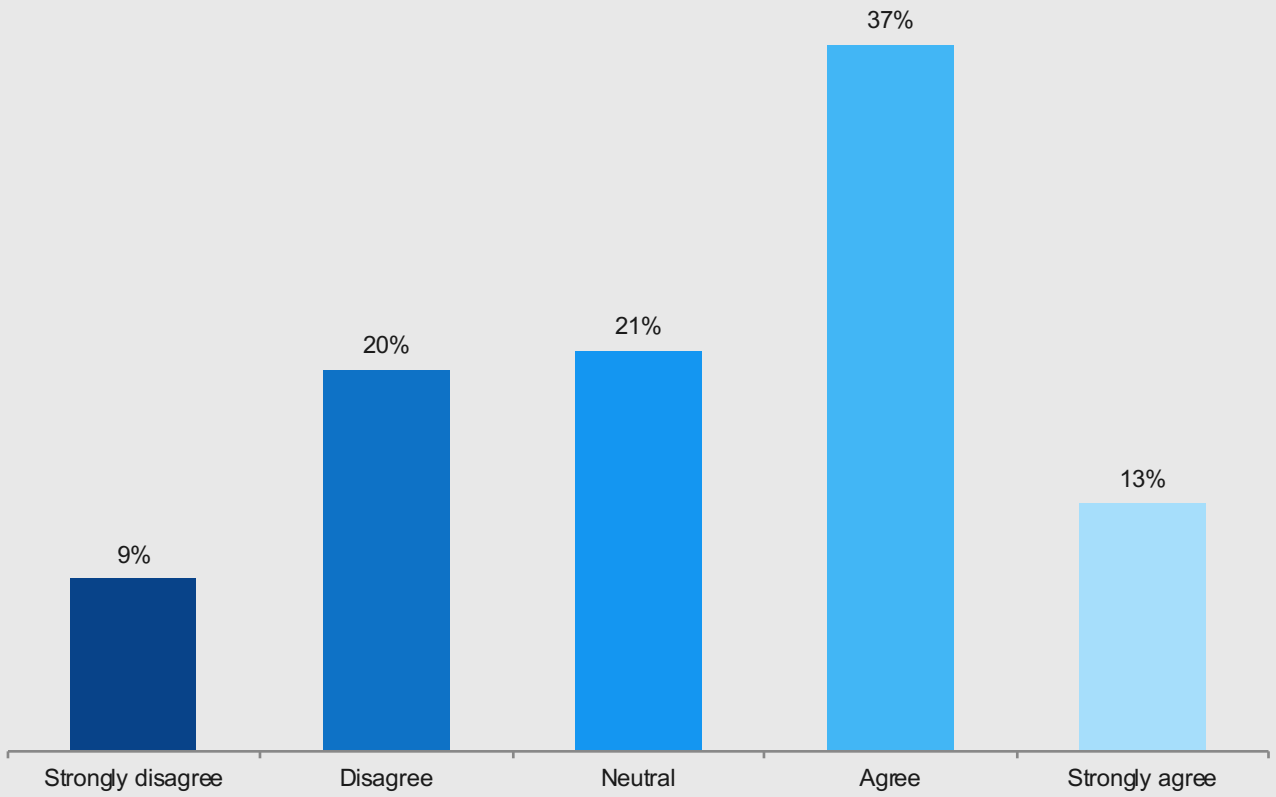
"Workforce development opportunities need to be part of the deployment of AI along with a plan for sustainment training so workers can take on new and different roles over time."

Anonymous Survey Respondent

Respondents are split on whether new technologies are acquired for the benefit of employees

50% of respondents agree or strongly agree that their agency is committed to ensuring employee skills benefit from new technologies. 21% neither agree or disagree with this sentiment, and another 29% are of the opinion that new technologies are introduced without regard to benefiting employees' current responsibilities.

"My agency is committed to ensuring my role and skills benefit from new technologies."



Percentage of respondents, n-490
Note: Percentages may not add up to 100% due to rounding

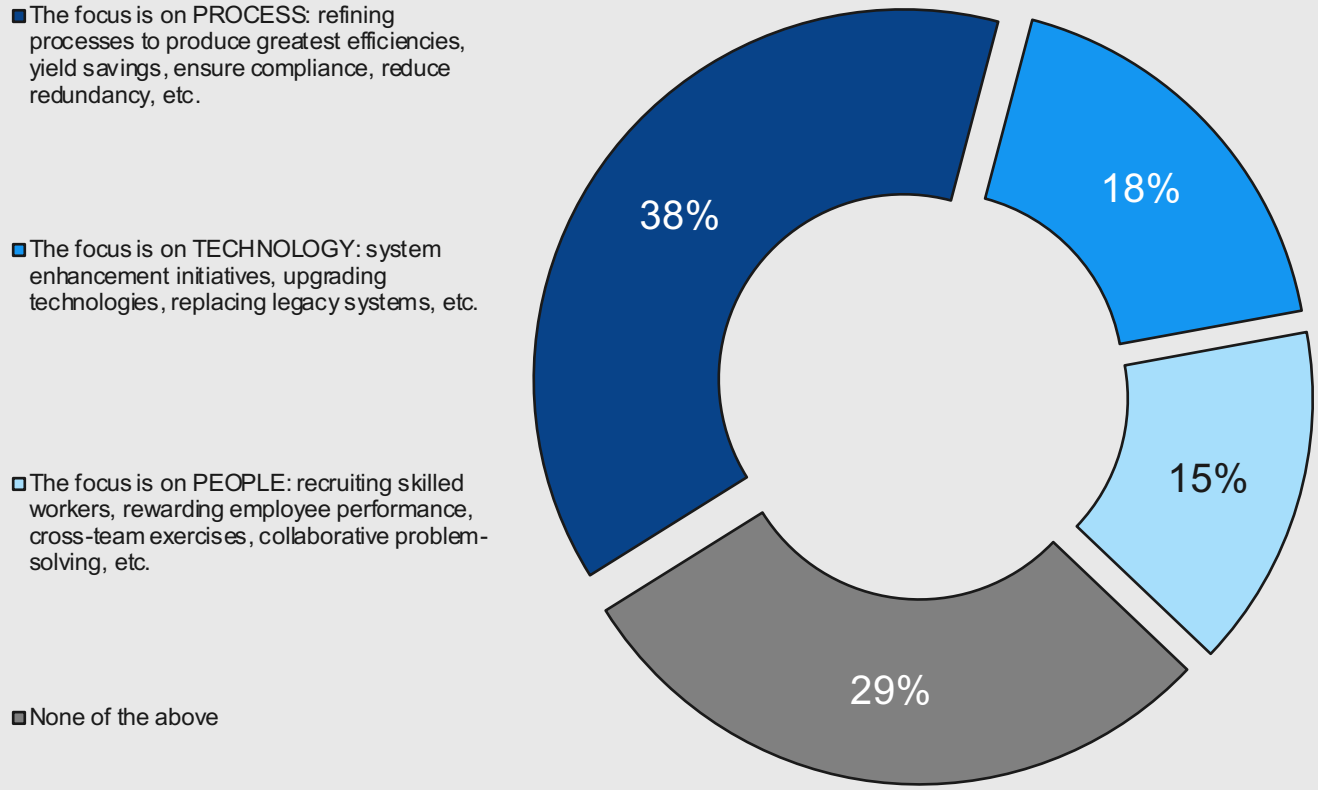
> AI needs to be presented as a tool to help us in our business processes, not as something that takes them over. Dependence is going to be a matter of developing trust in the system, which isn't quite there yet.

Anonymous Survey Respondent

More respondents cite process as a stronger priority than people initiatives or technology upgrades

When asked to gauge their agency's internal priorities, a plurality of respondents (38%) say *process* takes precedence over other considerations like technology (18%) and people (15%). In these organizations, the focus revolves around improving efficiencies, yielding greater savings, ensuring compliance, and reducing redundancies.

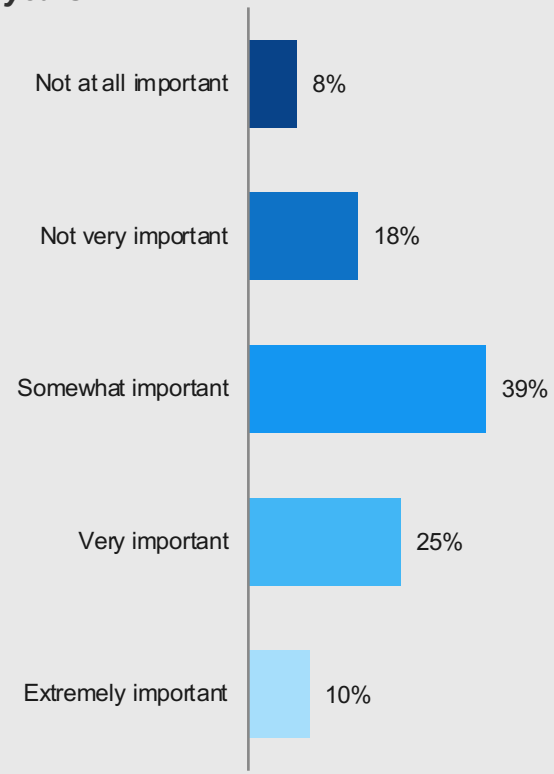
Which description more accurately depicts your agency's internal priorities?



Percentage of all respondents, n=495
Note: Percentages may not add up to 100% due to rounding

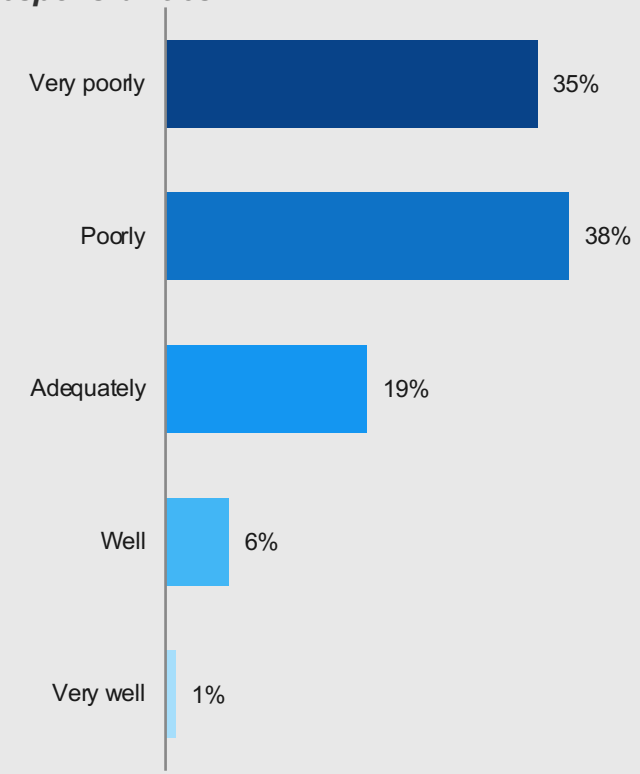
Respondents recognize growing importance of AI, but agencies have not communicated its impact

How important do you think it will be for you to develop skills to be able to work with artificial intelligence in the next 3 to 5 years?



Percentage of respondents, n=484
Note: Percentages may not add up to 100% due to rounding

How well has your agency communicated the impact that intelligent technologies (like AI) may have on your role and responsibilities?



Percentage of respondents, n=465
Note: Percentages may not add up to 100% due to rounding

3 in 4

respondents feel it will be somewhat, very, or extremely important to develop skills allowing collaboration with AI in the next 3 to 5 years.

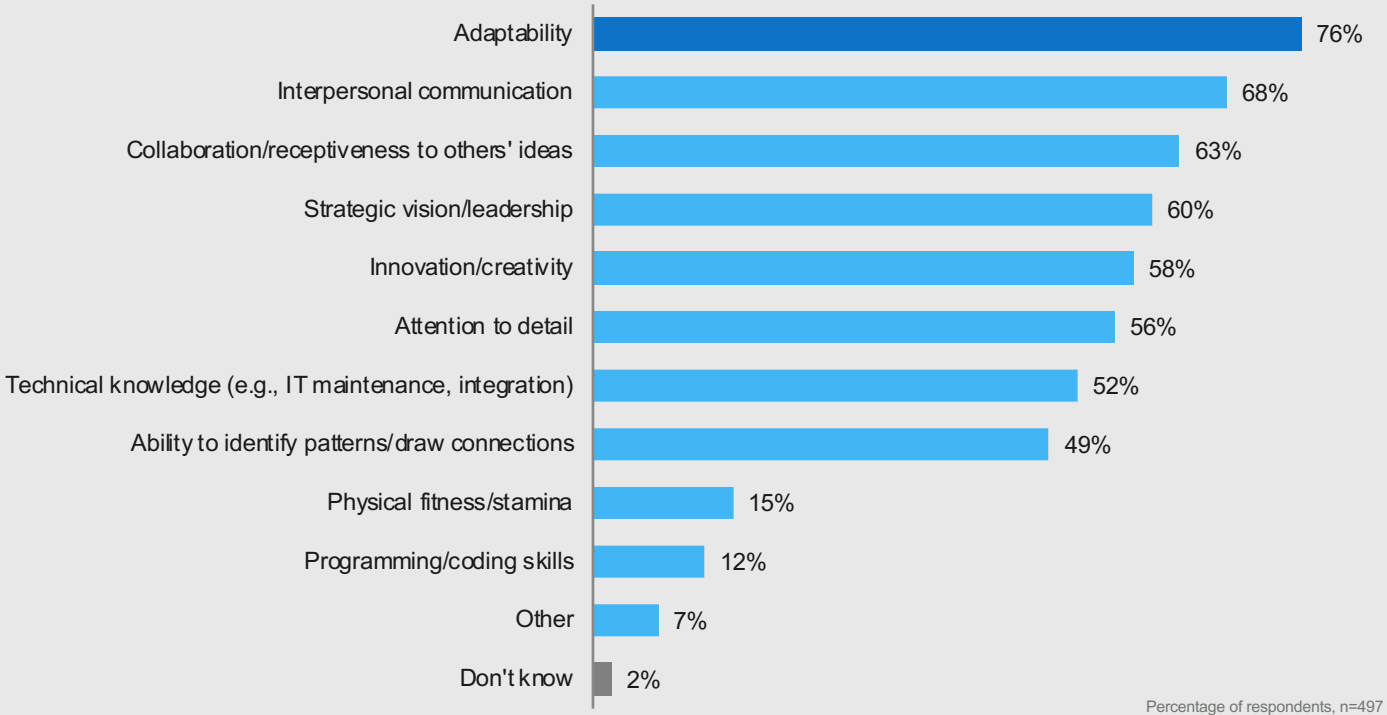
73%

of respondents believe their agency has done a poor or very poor job of communicating AI's potential impact on their role and responsibilities.

Respondents prize adaptability, communication, and collaboration in the future workforce

More than 3 in 4 respondents single out adaptability as an essential skill for navigating government assignments in the future. Many also place a premium on other 'soft skills' like interpersonal communication (68%), collaboration (63%), and strategic leadership (60%).

Which of the following skills or attributes do you perceive as most valuable for an individual operating in a 'government of the future'? Please select all that apply.



Percentage of respondents, n=497
Respondents were asked to select all that apply

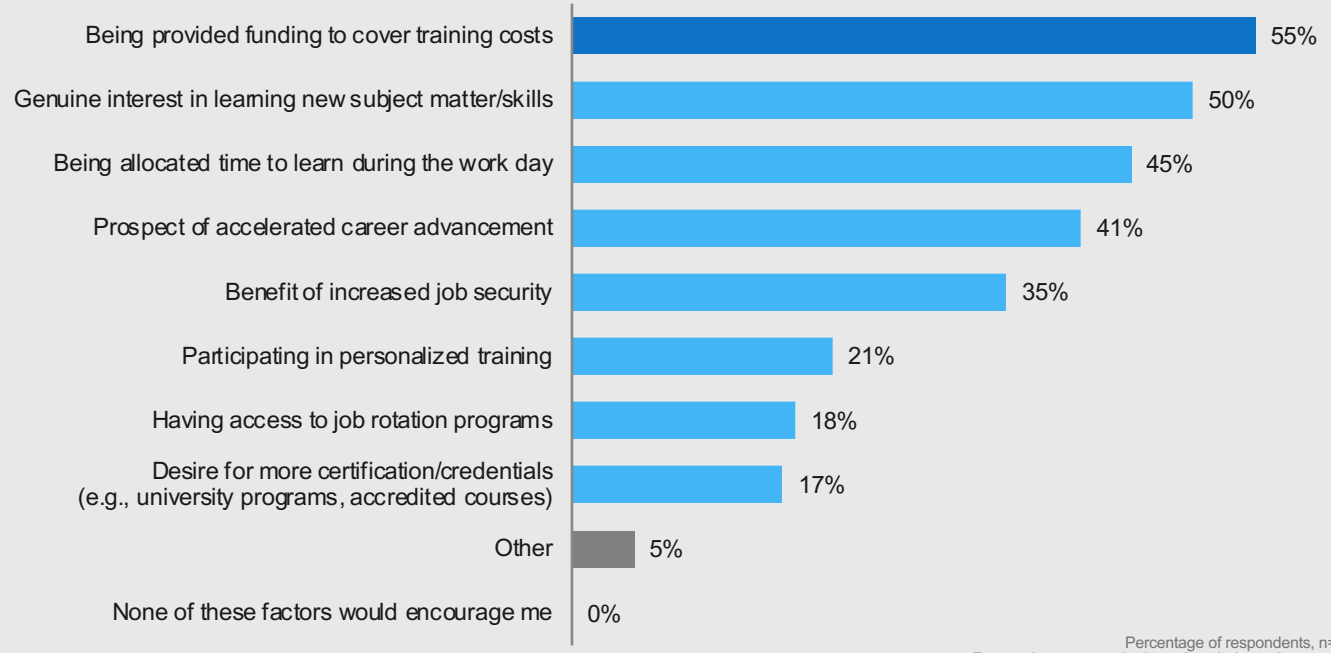
"Other" includes responses such as customer service, accountability, information retrieval, financial integrity, forecasting, analytical problem-solving, training, robotics, and the ability to convey complex issues and make recommendation.

68%
of respondents believe interpersonal communication will be a valuable skill to have in a government of the future.

Funding and genuine curiosity in learning would motivate majority of respondents to develop skills

55% of respondents say they would find sufficient motivation in learning new skills under the condition that funding is provided to cover training costs. Likewise, many would appreciate being allocated more time during the day to develop skills required in a future workforce, and at least half express a genuine desire to learn new subject matter.

Which of the following factors would motivate you to develop new skills in a future workforce? Please select your top three options.



Percentage of respondents, n=497
Respondents were asked to select their top three options

"Other" includes responses such as being able to scout job prospects following retirement, opening positions that enable advancement beyond internal agency roles, the ability to serve others better, and higher pay and bonuses upon completion.

50%
of respondents say genuine interest in learning new subject matter would be sufficient motivation to develop skills.

Intelligent Technologies

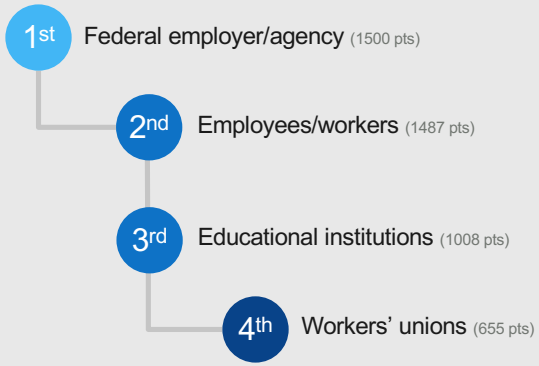
Intelligent technologies are set to disrupt government, transforming public service as we know it

As used in this survey, ***intelligent technologies*** refer broadly to a set of computing tools that can accomplish tasks traditionally requiring human intelligence. By processing vast amounts of data, these self-learning technologies can be used to automate repetitive tasks as well as augment human thinking with insights derived from large data stores.

> “In the summer of 1956, a dozen American scientists gathered on Dartmouth’s campus with the goal to ‘find how to make machines solve the kinds of problems now reserved for humans.’ Now, nearly 62 years later, the age of artificial intelligence is here, and with it the hope of better lives for the American people.
>
> **Michael Kratsios, Deputy Asst. to President for Technology Policy**

Respondents consider their employer and themselves most responsible for future development of skills

Whom do you consider responsible for ensuring workers' skills maintain relevance in the future?

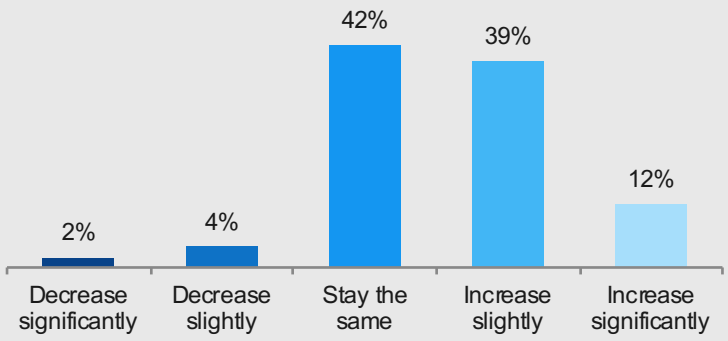


Percentage of respondents, n=465
Note: Percentages may not add up to 100% due to rounding

Who is responsible for ensuring federal employees have the skills necessary to thrive in future public service? According to federal employees, the burden rests primarily on their agency and the individual workers themselves.

Rankings and total scores are displayed here using the Borda count method, where each answer choice earns points based on the order in which respondents placed them. Please see Appendix for further detail.

How do you expect the share of roles requiring collaboration with intelligent technologies to change in your agency over the next 3 years?



Percentage of respondents, n=441
Note: Percentages may not add up to 100% due to rounding

51%

of respondents feel that the amount of roles requiring collaboration with intelligent technologies will increase slightly or significantly in the next 3 years.

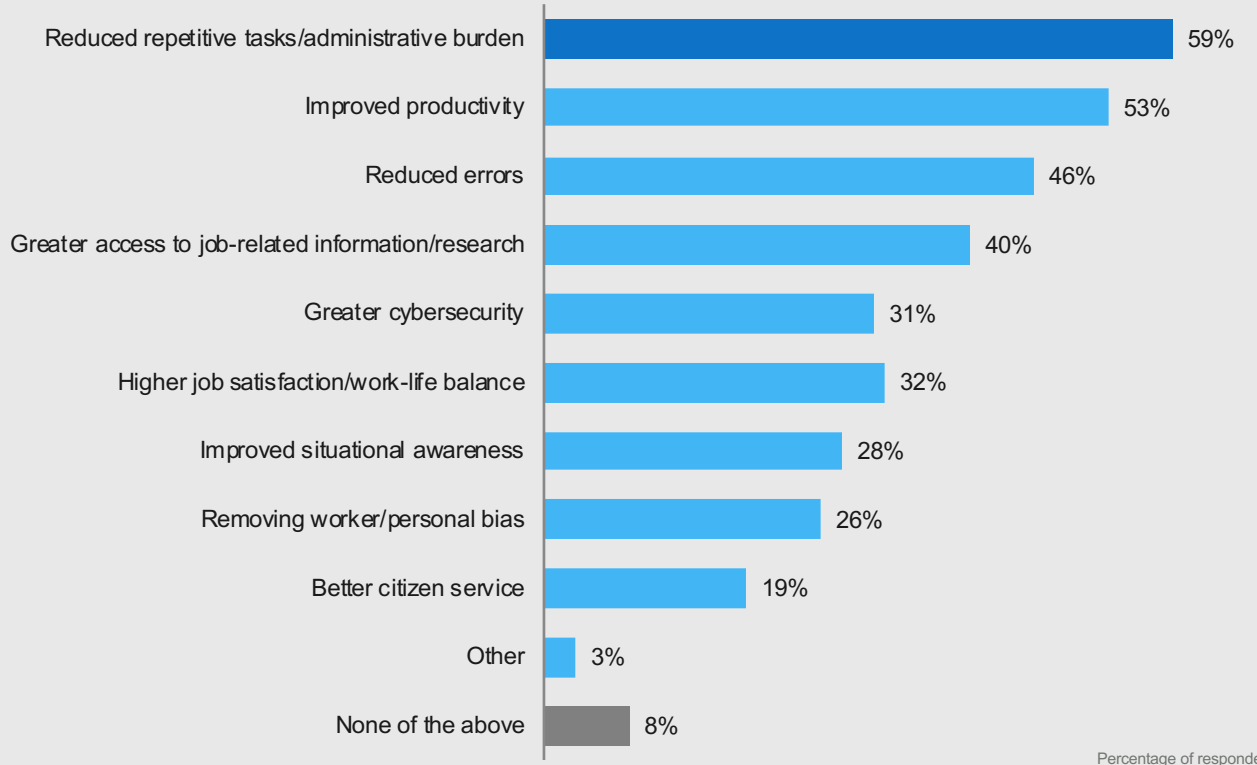
> The development of artificial intelligence is advancing at a rapid pace, and the 2019 Budget invests in fundamental AI research and computing infrastructure to maintain U.S. leadership in this field. AI holds the potential to transform the lives of Americans through improved technology integration in the workplace and enhanced standards of living at home.

White House FY2019 Budget Request

https://www.whitehouse.gov/wp-content/uploads/2018/02/ap_18_research-fy2019.pdf

Reduced administrative burden and greater productivity lead list of benefits to intelligent tech

Which of the following potential benefits of intelligent technologies would produce the most positive impact on your agency's mission? Please select all that apply.



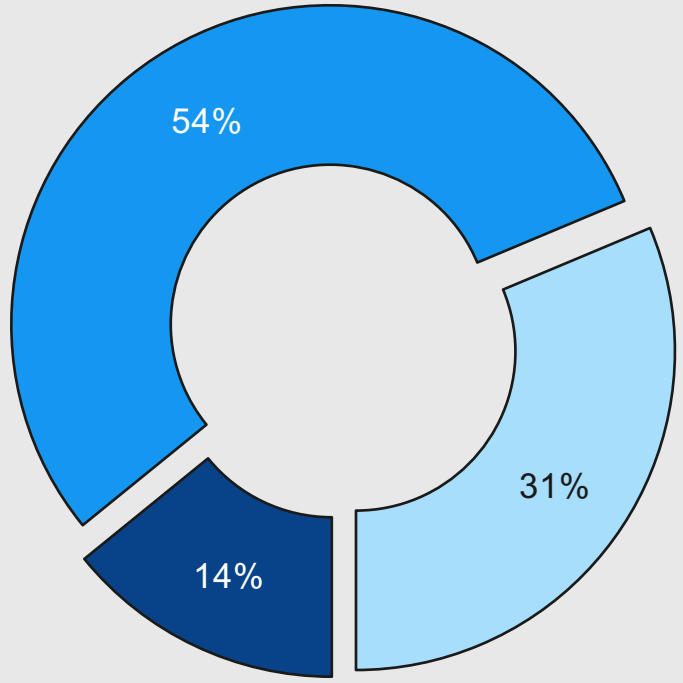
Percentage of respondents, n=497
Respondents were asked to select all that apply

"Other" includes responses such as reducing duration of programs, being able to devote more time to learning, reducing costs, improving inventory accountability, and helping to determine solutions to problems that are currently lacking.

53%
of respondents believe intelligent technologies has the potential to improve general productivity.

While many respondents are undecided, more feel that intelligent technologies will help than hinder

Which best describes your attitude towards the impact that intelligent technologies will have on your work in the next 3 years?



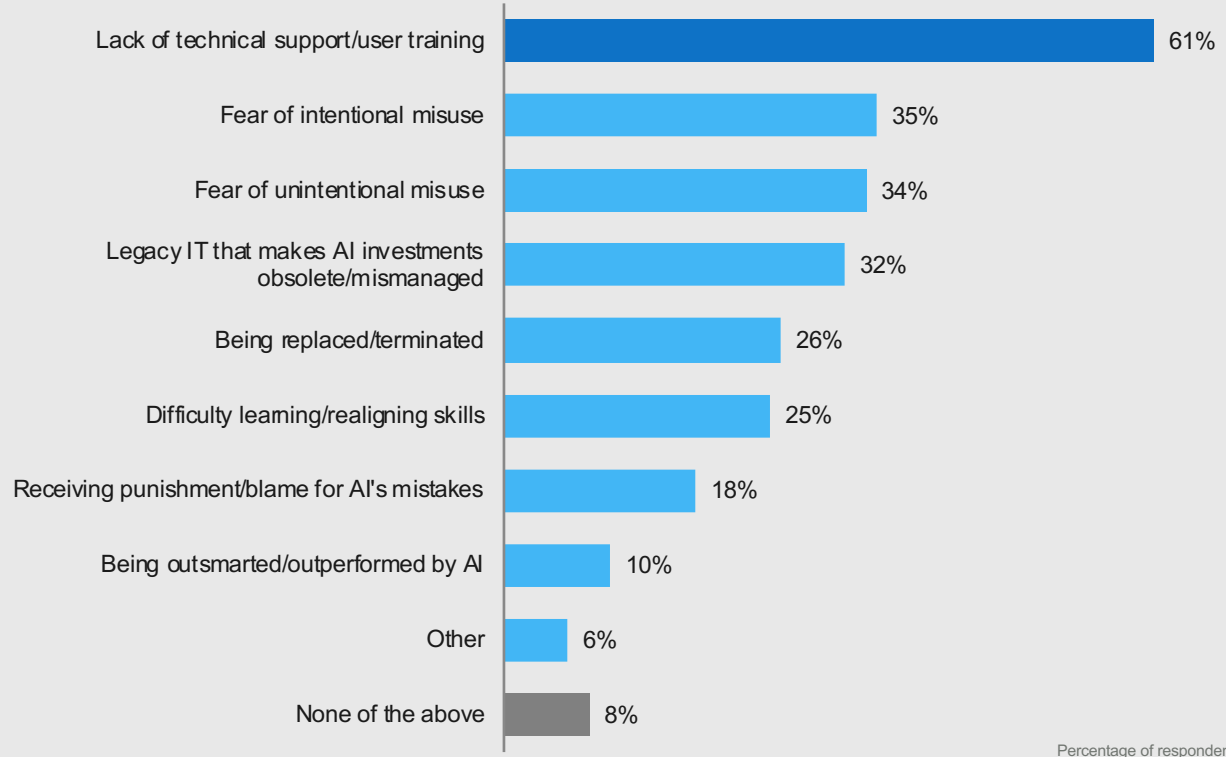
Percentage of respondents, n=467
Note: Percentages may not add up to 100% due to rounding

Over half of respondents don't have an opinion currently on the potential impact that intelligent technologies will have on their work going forward.

However, among those who do, more feel positively (31%) than negatively (14%) that such technologies will create new opportunities in their line of work.

Large majority of respondents fear not being provided sufficient training to work alongside AI

What concerns do you have about intelligent technologies and their potential impact on your job? Please select all that apply.



Percentage of respondents, n=497
Respondents were asked to select all that apply

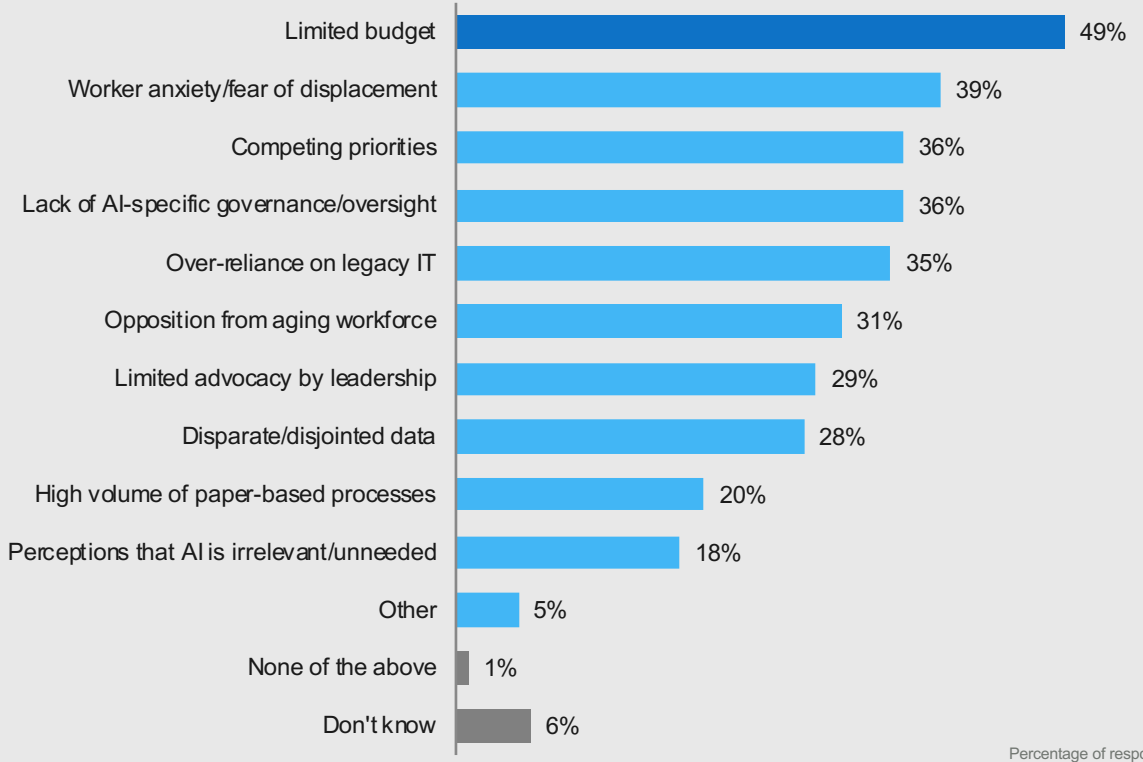
"Other" includes responses such as unrealistic expectations for what AI can accomplish, putting unskilled workers in charge and not capitalizing on AI capabilities due to lack of confidence, placing too many restrictions which prevent AI from being fully utilized, reduced cybersecurity, and assigning AI to tasks without proper analysis of how this will affect those currently performing such tasks.

26%

of respondents are concerned that they could potentially be replaced or terminated as a result of onboarding intelligent technologies like AI.

Budget limitations, worker anxiety, and competing priorities are most common impediments to new AI

Which of the following are challenges to introducing intelligent technologies (i.e. having AI as a coworker) in your agency? Please select all that apply.



Percentage of respondents, n=497
Respondents were asked to select all that apply

"Other" includes responses such as incompatibility with legacy systems, organizational inertia, poor security, inappropriate application of AI, unrealistic managerial expectations, over-abundance of AI-specific oversight, unlabeled or unreliable data, and a lack of appreciation for existing, streamlined processes.

36%

of respondents say competing organizational priorities will challenge efforts to deploy intelligent technologies effectively.

What Respondents Say…

"Can you share any specific challenges that your department faces in preparing for a future where AI and humans work together?"

- **Leadership and the aging workforce will give all outward indication of fully supporting AI, however little effort and resources will actually be allocated for that purpose**
- **Users not being involved in the creation / implementation of any AI technology, resulting in a product that requires more work for the user than is necessary**
- **Biases**
- **Continued pervasiveness of manual processes**
- **Inadequate resources and funds**
- **Management is resistant to change they can't control. They will take training to advance themselves, but not the employees. Actual training for working employees is minimal, and repairing this antiquated, broken system will be a major challenge if AI is to succeed**
- **There's no input from people who are actually using the technology, therefore there are a lot of errors.**
- **Knowing what to buy**
- **Budget and resistance to change remain the largest obstacles**
- **Cultural adjustments and change management**
- **I believe my agency is stuck in the 'this is the way we have always done things' mindset, and is too overburdened by redundant regulation to progress to an efficient future**
- **The challenge of losing jobs**
- **Lack of training in new technologies**
- **Finding adequate funding not just to acquire AI, but to maintain it once it is in place**
- **I believe AI will occur at higher levels first, which will create problems for lower-level workers to keep up. Most of our processes require human labor. AI will develop ideas and solutions which I don't think could match with the current hiring and firing regulations. Managers are very limited in changing work requirements or setting new standards**
- **Understanding what safeguards are in place to ensure AI produces the correct results**

What Respondents Say…

"Can you provide any information regarding your agency's current intelligent technology initiatives/projects?"

- **Financial and billing software is being looked at, but current technologies are antiquated and require excessive manpower to correct mistakes or create/edit claims**
- **Upgrading CRM initiatives and greater involvement in cybersecurity workload**
- **Using AI for intelligence analysis, pattern analysis, and logistics guidance in weapon systems support and cyber defense**
- **Leadership does not present a focus for discussions regarding intelligent technology initiatives or projects to the larger organization**
- **Our agency is rolling out improved item recognition software**
- **All of our projects are in association with energy reduction, contracts, or IT acquisition for communication**
- **We're moving to systems that can do facial recognition, multi-database searches, and integrated processing that will make our paper records obsolete, providing a much better service for both the applicant and the government officer**
- **The primary AI opportunity at our agency is data mining in identifying high-risk programs and contract actions for audit or investigative review**
- **Using robotics to perform standard, repetitive tasks**
- **We're attempting to automate functions that are always unique at the expense of product veracity**
- **AI initiatives are extremely limited to non-existent**
- **Our agency is too rapidly 'rushing towards failure' to ever be able to utilize intelligent technology**
- **We're currently in the early stages of discussing the implications of its use**
- **We're now looking to purchase a ERP type program to run one of our factories. We're also looking to buy a new software program to manage our reimbursable supply inventory which requires a POS element**
- **Since we are primarily an engineering facility, a lot of people are independently looking into how AI will play in their projects**

What Respondents Say…

"Is there any specific intelligent technology that you are most excited about using?"

- Production management AI
- Traffic control in the office for public affairs
- Interactive technology
- Planned maintenance
- We have some clear sense of where AI and ML [machine learning] can improve existing HR processes, but no solid plans or means to operationalize intelligent technologies just yet
- Budgetary formulation functions; currently establishing and utilizing for my assigned accounts
- Robotics
- Mechanics
- I am not involved with any new innovations like AI. However, I am open to learning more, particularly if it can ease some of my administrative burden or catch any human errors I might have made before I finalize an action
- Blockchain technology
- We would benefit by extracting data from databases for trend analysis
- X-ray and explosive detection technology
- I would like AI to be able to handle repetitive tasks and help me be better organized
- Data warehouse technology that feeds real-time dashboards for operational and situational awareness
- Intelligent assistants
- I believe data analytics will be extremely useful in my job. Any AI that supports my in my duties would be obviously beneficial
- The use of Building Information Systems to improve design, construction, and operation of new projects
- Pattern recognition of information from analysis of multiple TB [terabytes] of data
- Robotics and automation of repetitive tasks
- Our fraud detection and national security data system has advanced from being an information repository to also being a system that can do data search and investigation referrals that tie in to all of our officers
- Data analytics

Looking Forward

When considering how to deploy AI going forward:

Capitalize on curiosity and employee growth

More than half of respondents share the opinion that AI will boost productivity and reduce repetitive tasks, enabling employees to divert attention and resources to more pressing challenges. Moreover, 49% are confident that their current technical skills and abilities make them an attractive worker for future government operations. Even among those who have little to no confidence, enthusiasm for learning new skills is very high — with 88% feeling somewhat interested, very interested, or extremely interested in acquiring the knowledge necessary to succeed in this new era. The curiosity and will to learn is there; agencies can capitalize on this excitement by keeping talent and workforce development front-and-center in their AI plans.

Correct personnel gaps and identify training needs

While respondents are generally receptive to working alongside AI, a significant majority still have no clear direction from their agency about the impact that intelligent technologies will have on their job. A lack of technical support and user training is a major concern for 61% of those surveyed, and just 15% feel their agency prioritizes *people* over other agendas such as *process* improvements and *technology* advancements.

The findings here provide agency leadership a blueprint for correcting these gaps. According to respondents, agencies need to address worker anxiety over AI (39%), competing priorities (36%), and lack of AI-specific governance (36%) to ensure all stakeholders are on board. By communicating expectations and delegating decision-making authority over AI appropriately, the federal workforce will be better positioned to harmonize existing skills with their cognitive technology helpers going forward.

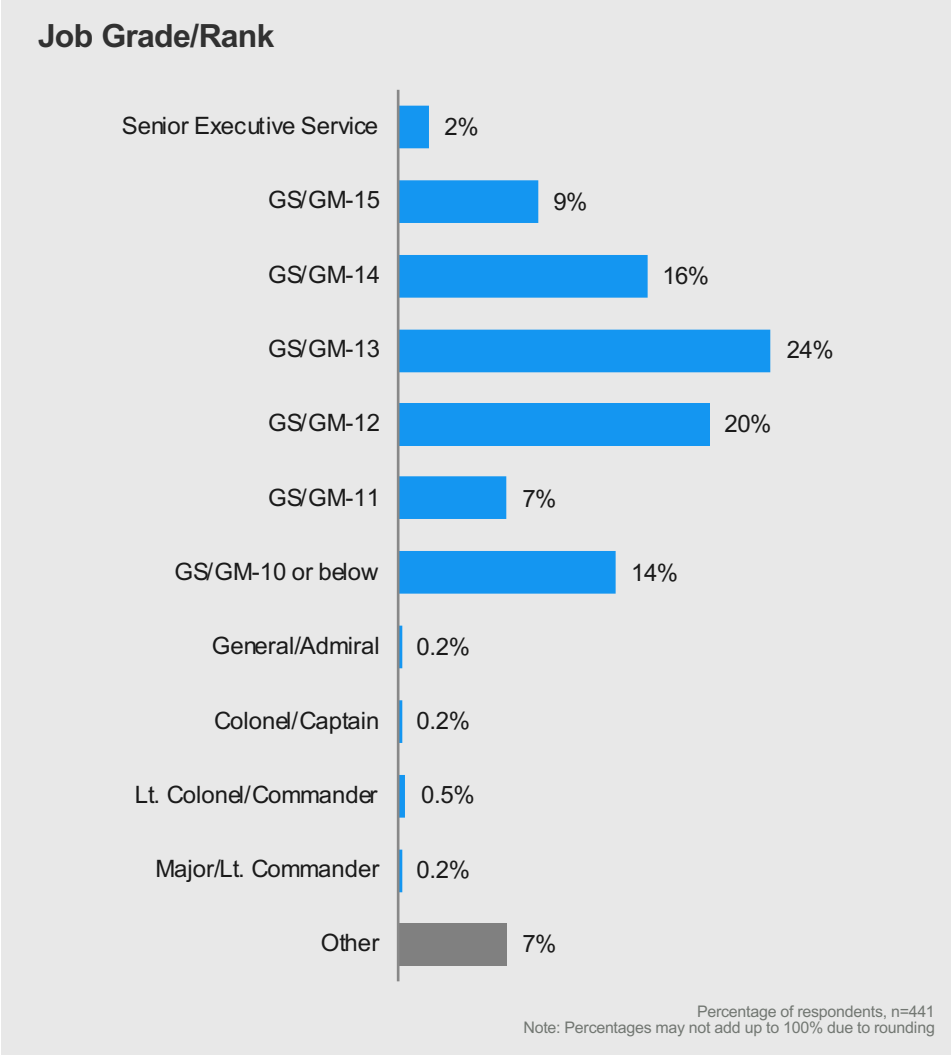
Accenture's Perspective

AI has the demonstrated ability to transform how government delivers vitals services and safeguards the nation. The technology is already being used today to either augment or automate a number of core government functions and processes, such as customer service, claims adjudications, cybersecurity and intelligence analysis.

Agencies should think big but start small in building a strategic, sustainable and responsible enterprise AI program. Engaging employees with the most in-depth knowledge of operational requirements and available data is often critical to unlocking AI's full potential. Furthermore, this adoption should be pursued in the context of shifting employees from low-value to high-value work. Employing a design-led approach and co-creation can ensure that employees are leading the identification of where AI tasks augment their work, reinforce trust in the solution and new relationship, and ultimately, encourage the adoption of AI technologies that will help meet rising demands.

Respondent Profile

Majority of survey respondents hold senior-level positions in government agencies



52%

of respondents hold senior positions at the GS/GM-13 rank or above, which include Senior Executive Service and those of equivalent officer rank.

Most widely represented are program managers, technical specialists, and administrative officers

Job function

Percentage of respondents, n=441
Note: Percentages may not add up to 100% due to rounding

Respondents were asked to choose which single response best describes their job function.

Departments and agencies represented

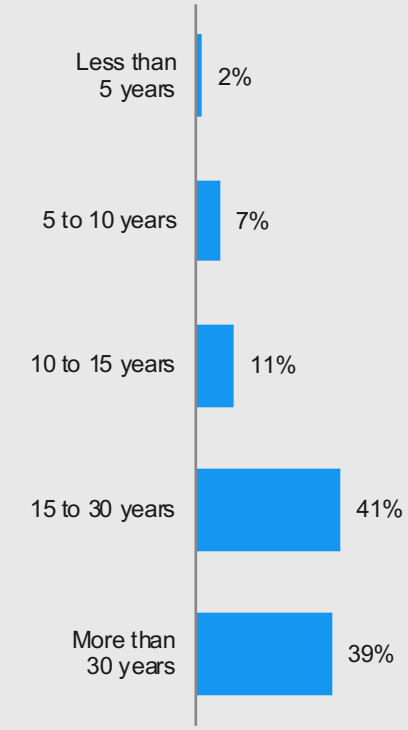
- Army
- Air Force
- Veterans Affairs
- Treasury
- Interior
- Agriculture
- Navy
- Transportation
- Office of the Secretary of Defense
- Health & Human Services
- General Services Administration
- Homeland Security
- Justice
- Environmental Protection Agency
- NASA
- Social Security Administration
- Energy
- Housing & Urban Development
- Marine Corps
- General Services Administration
- Health & Human
- Agency for International Development
- Combatant Commands
- Office of Personnel Management
- Intelligence Community/ODNI
- Labor
- Education
- State
- Government Accountability Office
- Commerce
- Multiple departments/agencies (e.g., IPO)
- Other independent agency

Respondents, n=497

Departments and agencies are listed in order of frequency.

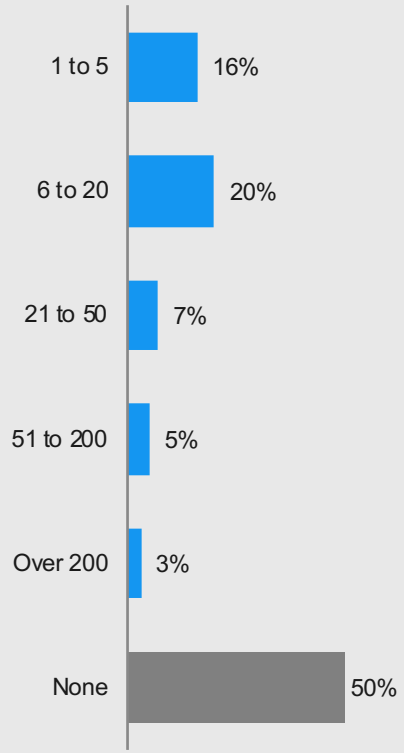
Many respondents have substantial experience serving in government

Years of Public Service



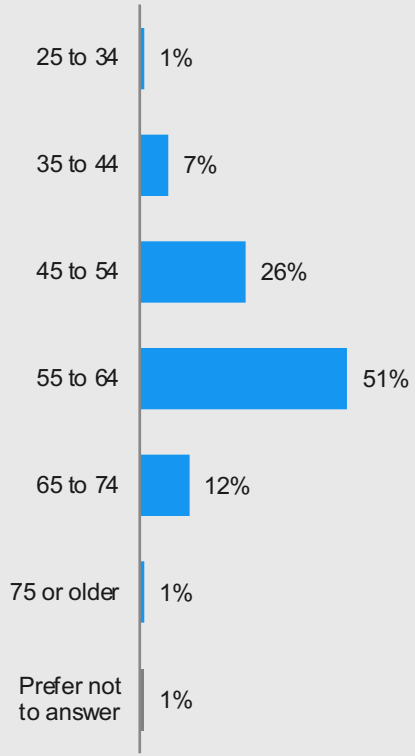
Percentage of respondents, n=441
Note: Percentages may not add up to 100% due to rounding

Direct Reports



Percentage of respondents, n=441
Note: Percentages may not add up to 100% due to rounding

Age Group



Percentage of respondents, n=497
Note: Percentages may not add up to 100% due to rounding

80%

of respondents have 15 or more years of service experience in government.

50%

of respondents are supervisors who oversee at least one employee either directly or through direct reports.

63%

of respondents identify as 55 years or older.

Appendix

The following graphic explains Borda count methodology for the question on Page 14, which asked respondents to rank groups by level of responsibility for ensuring worker skills maintain relevance in the future.

Whom do you consider responsible for ensuring workers' skills maintain relevance in the future? Please rank options by responsibility, where '1' is most responsible and '4' is least responsible.

	Count per rank				Total	Borda count
	1	2	3	4		
Federal employer/agency	209	172	64	20	465	1500
Employees/workers	191	189	71	14	465	1487
Educational institutions	54	76	229	106	465	1008
Workers' unions	11	28	101	325	465	655
Number of respondents	**465**	**465**	**465**	**465**	**465**	**4650**

Ranked by Borda count, n=465

Rankings and total scores are displayed here using the Borda count method, where each answer choice earns points based on the order in which respondents placed them. Each respondent's top answer choice receives the maximum score of n points for that respondent, where n is equal to the total number of options. Each subsequent choice receives 1 less point than the one ranked ahead of it. Unranked answer choices receive zero points.

For instance, if a respondent's ranked choices were 1) Federal employer/agency, 2) Employees/workers, and 3) Educational institutions, those responses would receive 4, 3, and 2 points respectively. These points would be added to the Borda count of each answer choice.

With 465 respondents and 4 choices, the maximum score possible for any single answer choice (i.e., if every respondent ranked it as their top outcome) is equal to 1860 points (465 x 4).

About

About Government Business Council

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Report Author: Daniel Thomas

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