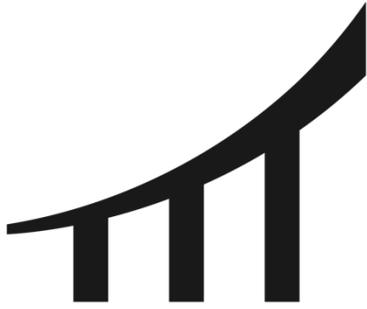


Building Public Capacity on Artificial Intelligence



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The authors thank Erie Meyer and Michael Linden for helpful comments, and Monica Miecznikowski for research assistance.

Executive Summary

In this paper, we propose two ways to build public sector capacity on artificial intelligence. First, we propose that the President creates a U.S. Artificial Intelligence Service (USAIS) by executive order. Similar to the U.S. Digital Service (USDS) established in the Obama administration, the USAIS would advise and support federal agencies that seek to use AI to improve government services and need assistance in understanding AI technologies for executing on their policymaking, regulatory, and enforcement duties. Second, we propose that Congress establishes a U.S. Technology Administration (USTA) to ensure coordination across all IT and technological support offices in the federal government, to expand funding for technological improvements and utilization, and to streamline and improve technology initiatives and recruiting.

Our proposals address five urgent challenges, given the scale and scope of how AI could transform public services. These challenges include scaling expertise and workforce to fully engage with new technologies; the difficulties of recruiting skilled, talented people in a competitive area; insufficient institutional attention to AI; the severe problems with relying on outsourcing to private consulting firms; and a lack of coordination on major tech initiatives. By expanding, elevating, and focusing the government's efforts, the USAIS and USTA have the potential to rapidly build federal capacity on AI, both to address its challenges and to take full advantage of its opportunities.

Table of Contents

Executive Summary	2
Introduction	4
I. The Need for Government Capacity on AI	6
II. Overview of Existing Technological Capacity	8
III. Problems with Current System	12
1. Scale.....	13
2. Recruiting Talent and Building Public Confidence	13
3. Attention to AI.....	15
4. Outsourcing to Private Consulting Firms	15
5. A Lack of Coordination on Major Initiatives	17
IV. Existing Proposals.....	18
V. Expanding AI Capacity: The U.S. Artificial Intelligence Service (USAIS)	20
VI. Improving Tech Coordination: The U.S. Technology Administration (USTA).....	23
VII. State, Local, Territorial, and Tribal AI Capacity.....	25
Conclusion	25
Appendix: Draft Executive Order Creating a USAIS	26
Endnotes.....	29

Introduction

In the ongoing policy debate over artificial intelligence, many prominent participants have warned that the government does not have enough technical capacity to address this technology. Senate Majority Leader Chuck Schumer recently observed that “This is the most difficult issue that Congress is facing because A.I. is so complex and technical.”¹ The National Artificial Intelligence Advisory Committee wrote in its annual report this year that “The U.S. government cannot keep pace with AI’s speed and the commensurate demand for AI talent.”² Industry titans themselves go even further: Eric Schmidt, the former Google CEO, said on *Meet the Press* that “There’s no way a non-industry person can understand what’s possible. It’s just too new, too hard; there’s not the expertise. There’s no one in the government that can get it right.”³

Such statements border on the hyperbolic. The truth is that there are people in government who can “get it right.” Though they are not household names, offices like USDS, 18F, the Presidential Innovation Fellows, and the AI Center of Excellence all employ technologists with extensive knowledge of machine learning and algorithms, who support departments and agencies ranging from the VA to the Centers for Medicaid & Medicare Services. In addition, many agencies have Chief Technologists and Chief Information Officers with real expertise.

The problem is not that AI is too complex for government officials to understand, nor is it that there is no capacity within government to deploy or regulate the technology. Instead, the problem is that there are far too few people in government with expertise in AI technology, and that existing offices do not always effectively coordinate their work.

AI has the potential to improve citizen-facing services and the efficiency of government operations, but building and deploying AI systems to improve public services at scale will require more technological expertise than most agencies currently have. Just as importantly, existing laws and regulations apply to new technologies, but determining how exactly they apply requires understanding the technology. Agencies may need a technical “consult” to ensure that they are understanding technology correctly when considering how to implement existing laws. In short: the federal government needs additional capacity to understand and utilize AI.

In this paper, we propose two ways to build public sector capacity on artificial intelligence. First, we propose that the President create a U.S. Artificial Intelligence

Service (USAIS) by executive order. Similar to the U.S. Digital Service (USDS) established in the Obama administration, the USAIS would advise and support federal agencies that seek to use AI to improve government services and need assistance in understanding AI technologies for executing on their policymaking, regulatory, and enforcement duties. Second, we propose that Congress establishes a U.S. Technology Administration (USTA) to ensure coordination across all IT and technological support offices in the federal government, to expand funding for technological improvements and utilization, to streamline and improve technology initiatives and recruiting.

Our proposals address five urgent challenges, given the scale and scope of how AI could transform public services. These challenges include scaling expertise and workforce to fully engage with new technologies; the difficulties of recruiting skilled, talented people in a competitive area; insufficient institutional attention to AI; the severe problems with relying on outsourcing to private consulting firms; and a lack of coordination on major tech initiatives. By expanding, elevating, and focusing the government's efforts, the USAIS and USTA have the potential to rapidly build federal capacity on AI, both to address its challenges and to take full advantage of its opportunities where they exist.

This paper proceeds in six parts. In Part I, we describe the critical need for building federal capacity on AI: Many federal agencies have already begun to experiment with internal and public-facing AI systems, and many more will likely want to implement them in the future. Still others require technical expertise to fulfill urgent regulatory and law enforcement obligations in areas including competition, worker protections, fair lending, financial security, and civil rights. Part II surveys the capacity that currently exists and related proposals to expand it. We provide an overview of the government's tech support network, including USDS and several organizations housed within the General Services Administration (GSA): 18F, the Presidential Innovation Fellows (PIF), and the AI Center of Excellence, among others. These resources, many of which were established within the last decade, are vital.

But as we show in Part III, there remain significant areas for improvement in government capacity that we believe the USAIS will help address. Significant challenges include insufficient scale, problems with recruitment and retention, a lack of attention to AI, a concerning overreliance on outsourcing, and challenges with coordination between offices. Part IV discusses existing proposals and their limitations. Part V proposes that the President create, by executive order, a U.S. Artificial Intelligence Service (USAIS) and details how the USAIS will help expand, elevate, and focus the government's AI capacity. Part VI proposes that Congress establishes a U.S.

Technological Administration (USTA), which would help address coordination problems. Headed by a U.S. Technology Administrator appointed by the President and confirmed by the Senate, the USTA would oversee all IT support offices in the federal government, and it would improve coordination, ensure accountability, and provide essential technological expertise to agencies—not just on AI, but for all digital technologies. A brief conclusion follows.

I. The Need for Government Capacity on AI

As AI’s constitutive technologies are rapidly implemented throughout the private sector, the need to invest in public sector capacity to keep pace has never been clearer. The reasons for this are twofold. First, federal agencies need internal expertise to deploy AI to improve government services where appropriate. Many federal agencies have already demonstrated an interest in using algorithms, advanced data

analytics, and other AI-related tools. The Department of Labor (DOL) lists 18 active AI use cases, from a chatbot on its website to automated document validation in its offices.⁵ The Department of State considers AI “another tool in [its] diplomatic toolbox.”⁶ These cabinet-level departments are not alone: Of the 142 non-military federal agencies examined in a 2020 study prepared for the Administrative Conference of the United States (ACUS), 64 had experimented with using algorithms according to publicly available information, the top ten of which are listed in the accompanying table by the number of AI programs considered or implemented.⁷

These experiments were undertaken either through procurement contracts with private sources, or by building the systems in-house,⁸ often initiated by individuals with uncommon facility and interest in AI.⁹ As AI technologies continue to grow in popularity, organized

Agency Name	Number of Programs Considered or Implemented (as of 2020) ⁴
Office of Justice Programs	12
Securities and Exchange Commission	10
National Aeronautics and Space Administration	9
Food and Drug Administration	8
United States Geological Survey	8
United States Postal Service	8
Social Security Administration	7
United States Patent and Trademark Office	6
Bureau of Labor Statistics	5
Customs and Border Protection	4

institutional knowledge—rather than individual initiative alone—will be needed to advise and support their responsible implementation at agencies. Such knowledge will not just accelerate adoption of AI technologies: it may help agencies make an educated decision as to whether to use an automated system in the first place.

Second, agencies must also understand AI sufficiently well to apply their existing regulatory and enforcement obligations. Many agencies have observed that their regulatory and enforcement powers extend to AI. Lina Khan, chair of the Federal Trade Commission, recently reminded readers of the *New York Times* that “Although these tools are novel, they are not exempt from existing rules, and the F.T.C. will vigorously enforce the laws we are charged with administering, even in this new market.”¹⁰ A report by the Consumer Product Safety Commission (CPSC) noted that “the Consumer Product Safety Act and other statutes enforced by the Commission provide CPSC authority to regulate consumer products Therefore, consumer products with AI/ML integrated into them are within the agency’s statutory authority.”¹¹ Rohit Chopra, director of the Consumer Financial Protection Bureau, has also indicated that his agency intends to vigorously fulfill its regulatory obligations as they apply to AI in credit lending, home appraisals, and other critical areas.¹² The Department of Labor, the Occupational Safety and Health Administration, and the Equal Employment Opportunity Commission (EEOC) also possess, and in some cases explicitly intend to exercise, regulatory authority governing AI systems as they affect workers.¹³

In applying existing laws to AI, these regulators and enforcers—and many others—may confront technical questions on which they have little expertise, from how large datasets are gathered and maintained, to whether algorithms can be designed to correct for certain kinds of inaccuracy or bias. Acknowledging a need for personnel to answer questions like these is not to play into the narrative propagated by industry that no one in government at present understands this technology well enough to regulate it.¹⁴ As we will show, there are people at several levels of government who possess deep technical knowledge of AI systems, and it is possible to hire many more. Instead, it is to say that the application of current laws across all agencies will require organized institutional knowledge at a large scale. Importantly, the tasks of improving public services and enforcing existing laws are not confined to one or even a few federal agencies or executive departments: every agency or department—or close to it—is likely to need expertise to make program improvements or address regulatory and enforcement issues.

II. Overview of Existing Technological Capacity

In 2020, Congress passed the National AI Initiative Act,¹⁵ the most significant legislation yet to build public sector capacity on AI. Among other things, it created the National AI Advisory Committee (NAIAC), made up of industry leaders, academics, and civil society representatives to advise the President on AI issues. In its first annual report, published in May 2023, the Committee concluded:

“The U.S. government cannot keep pace with AI’s speed and the commensurate demand for AI talent. It is true that the U.S. government has several successful efforts to bolster its ranks with technologists and other digital talent, such as 18F, the Presidential Innovation Fellows, GSA’s AI Center for Excellence, and the United States Digital Service. But these programs cannot supply talent at the scale needed for agencies across the U.S. government to ensure America’s AI competitiveness and trustworthiness.”¹⁶

In this Part, we survey the landscape of government technology services. Our review

Federal IT Offices and Their Functions ¹⁷	
18F	“Buy it / Build it”: Consults with agencies to build in-house tech infrastructure or procure it from third parties.
U.S. Digital Service (USDS)	“Fix it”: Repairs or replaces outmoded or broken systems, like websites.
Presidential Innovation Fellows (PIF)	“Try it”: Experiments with new technologies and their applications in public services.
Agencies	“Own it”: Use and maintain systems.

shows, in line with NAIAC’s report, that while there is extraordinary talent within the government, the design of the federal government’s technology services is not optimally aligned to address AI.

The U.S. Digital Service. Perhaps the most prominent of these entities is the U.S. Digital Service (USDS). Established in 2014 in the aftermath of the rollout of healthcare.gov, the website set up to help Americans get health insurance coverage under the

Affordable Care Act, USDS was established “to deliver better government services to the American people through technology and design.”¹⁸ Not surprisingly given its origin, it focuses on public-facing services, including websites and other tools used by citizens

when engaging with federal agencies. Some of its recent projects include redesigning the Department of Veterans Affairs' website, building tools to help citizens find COVID-19 vaccines, and updating the system used to make Medicare payments.¹⁹ Though it also consults on internal government functions like procurement, its principal focus, as USDS co-founder and current CFPB Chief Technologist Erie Meyer has observed, is in fixing systems when they break or require improvements.²⁰ In this capacity, USDS has formed an exemplary model for government IT offices with clear and beneficial results.

USDS screens prospective employees through its website before shepherding them through the formal hiring process for civil servants.²¹ To expedite this process, USDS uses what is known as "Schedule A" hiring authority.²² This authority allows agencies to fast-track hiring for internships, fellowships, and "programs that provide for a cross-fertilization between the agency and the private sector to foster mutual understanding, an exchange of ideas, or to bring experienced practitioners to the agency."²³ It allows agencies to hire personnel for two-year term appointments, with an option to extend for an additional two years—no more than four years in total.²⁴ By exempting applicants from the competitive civil service process²⁵, USDS can quickly hire private sector technologists to take on critical public sector projects.

Once its employees are hired, USDS's work is funded in three ways: through OMB's Information Technology Oversight and Reform (ITOR) account, from which it operated on a budget of \$8 million in FY2021; through direct line-item appropriations, as in the case of the \$200 million appropriated to it in the American Rescue Plan Act of 2021; or through reimbursements from agencies receiving its support.²⁶ As of January 2022, it employed 215 people, and sought to capitalize on a wave of resignations from private technology companies to hire additional personnel.²⁷ Its technologists hold expertise in one or more of five subject areas: engineering; design and user experience; data science; product, strategy, and operations; and procurement.²⁸ They are housed either at USDS's headquarters, or staffed out to particular agencies.²⁹

Given the diversity of USDS's offerings to agencies, AI appears to form a small subset of its expertise. Though much of its most heralded work to date has been fixing and redesigning websites and similar systems,³⁰ USDS currently seeks applicants with expertise in AI and machine learning.³¹

Presidential Innovation Fellowship. Since welcoming its inaugural cohort in 2012, the Presidential Innovation Fellowship (PIF) has hired experienced private sector technologists with a record of innovative leadership for one- to two-year assignments at federal agencies. True to its name, it puts a premium on innovation, with fellows

oriented towards experimenting with novel technologies and implementing them in creative ways (in Meyer's words, PIF's job is to "try it").³² It has gone through several iterations in its 11-year history: First established as an initiative within the Office of Science and Technology Policy (OSTP), PIF moved to GSA in 2013, where it remains housed in the Technology Transformation Services (TTS) division, part of the Federal Acquisition Service that oversees government procurement.³³ Later, it was made permanent through executive order in 2015 and codified in the TALENT Act of 2017.³⁴

In 2020, PIF's ranks included 62 fellows assigned to 25 different federal agencies.³⁵ Before 2022, it was funded through GSA's Acquisition Services Fund, which consists of reimbursements from partner agencies;³⁶ now, it is funded through GSA's Federal Citizen Services Fund, which received \$150 million in appropriations from the American Rescue Plan.³⁷ Its governing statute gives its director broad authority to determine the criteria and procedures for hiring new fellows; it, too, qualifies for Schedule A authority given its fellowship status.³⁸ Once hired, fellows work with agencies on complex tech initiatives, like building a platform to support research on automated vehicle safety at the Department of Transportation and analyzing health data from wearable medical sensors at the National Institutes of Health.³⁹ Beyond supporting federal agencies, PIF also serves as a strong pipeline for future leaders in government tech. Among its alumni are the current Deputy Chief Technology Officer of the United States and tech leaders in federal agencies and state and local governments.⁴⁰

Given its focus on novel technologies, some of PIF's recent work has focused on AI and machine learning applications. In one project, fellows collaborated with the Department of Transportation to build a platform to support research in automated vehicles.⁴¹ In another, they worked with the Department of Veterans Affairs to automate elements of the application process for veterans' benefits using machine learning.⁴² These projects demonstrate the type of work that agencies can undertake with support at a larger scale.

18F. In 2014, the same year that USDS was established, a group of entrepreneurially minded PIFs founded 18F, named after the address of GSA's headquarters in Washington.⁴³ It aimed to be a nimble, "start-up"-like organization within government to deliver critical tech services to federal agencies; in Meyer's words, its purpose is to build or buy it.⁴⁴ Though it is housed within TTS, like PIF, it does not receive appropriations: It is a cost-recoverable organization, meaning that it must charge partner organizations for its work.⁴⁵ It does this under two authorities: the Acquisition Services Fund, a revolving GSA fund of revenues from customer agencies; and the Economy Act, which permits agencies to purchase goods or services from other

agencies through memoranda of understanding (MOUs).⁴⁶ 18F's revenue in FY 2022 under both authorities was \$36.2 million.⁴⁷ However, its costs totaled to \$37.4 million, resulting in a net operating loss of 1.2 percent; according to a 2021 Government Accountability Office report, it had operated at a loss for three out of the previous four fiscal years.⁴⁸

As of April 2021, 18F employed around 120 people.⁴⁹ For its first five years, it hired most of its employees under expedited Schedule A authority, like USDS, for terms of no more than four years. But by 2019, recognizing the challenges of resource-intensive turnover and growing demand, it began to hire additional personnel under competitive service direct-hire authority, which provides for up to eight years of employment, rather than four. By March 2021, 40 percent of its staff were hired under direct-hire authority.⁵⁰

Today, along with USDS, 18F is perhaps the most prominent of the initiatives meant to boost federal tech capacity. Journalists covering government IT have noted its unique status as a public-sector start-up, and highlighted its efforts to build agency websites, reinforce cybersecurity systems, and even offer resources to state and local governments.⁵¹ However, concerns have also been raised that it has not sufficiently coordinated with other authorities in its guidance to agencies: In a 2021 report, GAO concluded that "by not coordinating in a more strategic manner on their guidance development efforts, USDS and 18F diminish their opportunities to leverage each other's resources and achieve greater outcomes."⁵²

United States Digital Corps. Established in 2021 by leaders in GSA, OMB, OPM, the Cybersecurity and Infrastructure Security Agency, and OSTP, the United States Digital Corps (USDC) is yet another initiative housed within TTS that provides for two-year tech fellowships.⁵³ Though similar to PIF in recruiting and funding, it differs in its focus on attracting early-career talent, rather than people with extensive prior experience. It does this both to promote cutting-edge technological expertise and strengthen the pipeline for future federal IT leaders.⁵⁴ Other than differences in recruiting criteria, its structure and projects are largely similar to other offices. Like USDS, the program splits fellows into "tracks" in different areas of specialization: software engineering, data science and analytics, product management, design, and cybersecurity.⁵⁵ Like PIF, it is funded through the Federal Citizen Services Fund account, which received \$150 million in funding from the American Rescue Plan to advance IT modernization goals.⁵⁶ It welcomed an inaugural cohort of 30 fellows in 2021 and staffed them at 15 federal agencies, including VA, Centers for Medicare and Medicaid Services, and the Consumer Financial Protection Bureau.⁵⁷

The IT Modernization Centers for Excellence. The six Centers of Excellence (CoEs) housed within GSA form another critical component of the federal IT support apparatus. Codified in the Information Technology Modernization Centers of Excellence Program Act of 2020 and funded through GSA’s Acquisition Services Fund (like 18F and PIF), each center is meant to incubate expertise and catalog best practices on specific areas of IT.⁵⁸ Among them is one dedicated to AI, as mandated by the AI in Government Act of 2020;⁵⁹ it has perhaps a more explicit focus on AI-related issues than any other IT support office in the government. Though its ranks are small, with GSA’s website listing two “artificial intelligence leads” among the Centers’ 33 staff,⁶⁰ its work is significant: The IT Centers of Excellence publish an AI Guide for Government, a regularly updated document that offers a detailed explanation of AI technology and its applicability to public services.⁶¹ This informative resource advises agencies on things to consider when determining how and whether to implement AI systems in a responsible way, with chapters on topics including terminology, workforce development, and data cultivation.⁶² Though it engages directly with agencies through trainings and consulting, including on use case discovery and selection,⁶³ the primary function that distinguishes it from other offices is in its role to catalog best practices, rather than engage in active, project-based consultation with agencies.

Agencies. One thing all these offices have in common is that they serve to collaborate with and supplement the IT capacity that exists within agencies themselves. Many agencies have a Chief Information Officer (CIO), who oversees the agency’s information resources, IT professionals, and procurement spending. This position was created at 24 of the major federal departments and agencies by the Clinger-Cohen Act of 1996, which decentralized authority over IT procurement from GSA and delegated it to individual agencies.⁶⁴ In total, across the entire federal government, federal agencies and programs spent an estimated \$92 billion on IT in FY2021.⁶⁵

III. Problems with Current System

Federal agencies are not faced with a lack of offices willing to support their IT needs. But there are problems with the current regime of government IT that will make AI deployment and regulation more challenging: inadequate scale, problems with recruiting, insufficient attention to AI and automated systems, an overreliance on outsourcing, and a lack of coordination. We address each of them in turn:

1. Scale

Current tech offices lack the scale needed to advise federal agencies on AI—a problem both of funding and of personnel. Combined, the USDS, 18F, and PIF have around 400 employees—not all of whom necessarily have expertise in AI. In 2020, the entire GSA Federal Acquisition Service, which houses TTS (and its constituent offices) employed 3,771 people—covering all types of acquisitions, from government vehicles to office supplies.⁶⁶ Despite significant advances in federal IT capacity, there simply are not enough people in government to support AI deployment. Funding, too, is a problem: As noted above, 18F is a self-funded organization, receiving no congressional appropriations and requiring the use of funds appropriated to other agencies. USDS received \$200 million in appropriations from the American Rescue Plan, a good start towards ramping up personnel. But the funds are only authorized for use until 2024 and are not enough to build and sustain AI capacity.⁶⁷ Without increased funding and personnel for federal IT support, efforts toward this end will be stalled.

Indeed, agencies may lack technical support sufficient to implement laws and executive orders already on the books. A 2022 analysis by researchers at Stanford University found that the implementation of three measures related to AI from 2019 and 2020—Executive Order 13,859 on AI Leadership, Executive Order 13,960 on AI in Government, and the AI In Government Act of 2020—faced serious challenges.⁶⁸ Major requirements remained unfulfilled, including the publication of AI use case inventories at all agencies, of which 76 percent were unavailable.⁶⁹ These failures suggest that agencies need assistance that far surpasses existing capacity—not only to build new systems, but to account for existing ones.

2. Recruiting Talent and Building Public Confidence

When government does big, important projects—like deploying AI to improve public services—its long-term success hinges, in part, on hiring enough people to undertake the initiative and gaining a high degree of public recognition and buy-in. Thus, any such initiative is likely to be more successful if it can grab the public’s attention and capture the imagination of prospective public servants—both of which our current regime could do better. As Suzanne Mettler observes in *The Submerged State*, policies that make complex changes across many different federal agencies and market relationships leave many Americans unaware of their impact.⁷⁰ The current federal IT

apparatus might be thought of as just such a policy: Given that AI expertise is spread among multiple offices, programs, and resources invisible to most Americans, the public might assume that no one in government knows anything about innovative technologies, as industry leaders have sometimes claimed. Such an assumption would naturally contribute to low levels of public trust and confidence in government to address the challenges that AI poses.

An even more practical concern is that of recruiting. On average, the hiring timeline for federal employees is 106 days, longer even than targets set by the Office of Personnel Management (OPM).⁷¹ Agencies are also limited in their inability to offer compensation comparable to similar positions in the private sector, particularly in the tech industry.⁷² Government tech offices, which already face steep salary competition from private sector firms, may be more likely to hire AI personnel with a splashy, unified brand to attract them, one that emphasizes the promise of using cutting edge technologies for the public good. AI efforts should thus seek to have enough salience to inspire recruits and to retain them.

Important to public confidence is accountability. Given that current AI expertise is spread among many different offices, it is more difficult for the President, Congress, and the public to hold responsible officials accountable. In the current ecosystem, with multiple leaders juggling overlapping responsibilities, it may be difficult for Congress and the public to even determine who is in charge when things go wrong or right. This is also oftentimes because leaders ostensibly responsible for tech initiatives are not directly involved in their implementation. As former Deputy U.S. CTO Jennifer Pahlka has observed,

“Digital work, which in our larger society commands so much attention (whether it’s lionized or vilified), in government is reduced to an afterthought. It’s not what important people do, and important people don’t do it. They hand it off to people many rungs down the ladder, or to companies hired to do it for them. At times it almost seems that status in government is dependent on how distant one can be from the implementation of policy.”⁷³

With a single leader overseeing AI technical support, by contrast, they would have direct knowledge and involvement in major implementation efforts. Stakeholders including agencies, Congress, the President, and the public would know exactly who is responsible, enabling them to exercise effective oversight and ensure accountability for mismanagement and error. By the same token, a single leader would also have

greater authority to coordinate and prioritize effort to accomplish goals—and would get credit for major initiatives.⁷⁴

3. Attention to AI

Though USDS, 18F, PIF, and other federal IT offices certainly employ some technologists with experience in AI and machine learning, there is no support office that is devoted exclusively to these technologies. We do not intend to suggest that the government ought to isolate consideration of AI from all other IT functions; quite the contrary. But we do believe that coordinating AI deployment within the whole ecosystem of government IT support will require an entity to make sure that AI experts have a seat at the table. To switch metaphors, if we liken the ecosystem to an orchestra, with sections of instruments devoted to areas like web and app design, procurement, and data, our moment requires a new instrument: one focused on AI.

4. Outsourcing to Private Consulting Firms

Another problem is that the lack of government capacity on AI may push the federal government to rely on outsourcing to consulting firms. Some of the leading government consulting firms are already taking advantage of interest in AI to market services to federal agencies. Booz Allen Hamilton, for example, describes itself as “the leader in providing AI services for the federal government.”⁷⁵ It offers consultation for federal agencies on AI applications including search algorithms, public health modeling, and security tools, as well as AI training and education to “enable federal agencies to lead the digital transformation of the workforce.”⁷⁶ Meanwhile, Accenture, a leading provider of cloud computing platforms and software, offers an entire host of services tailored directly to federal agencies, combining actual technology (like custom-built enterprise cloud platforms for the Department of Defense) with consulting. The firm offers three services for AI consulting: Their “Federal Generative AI Institute of Excellence,” designs prototypes and applies models at scale for government clients, while the Discovery Lab and Government Futures Lab offer data scientists, engineers, and strategists to partner with federal agencies.⁷⁷ It also markets a chatbot called FedGPT, which applies large language models (LLMs) to analyze sensitive government data.⁷⁸ Essentially, what these firms—including others like McKinsey & Company,⁷⁹ Deloitte,⁸⁰ and Boston Consulting Group⁸¹—purport to offer are ready-made AI systems and support teams for federal agencies, available by contract.

Such systems, by virtue of the AI industry's oligopolistic structure, are likely to be powered by one of a small number of large tech companies: Amazon, Microsoft, and Google. In the AI “tech stack,” this is particularly evident at the layer of cloud computing: The high capital costs and economies of scale present in maintaining large-scale compute infrastructure mean these companies' cloud services—Amazon Web Services, Microsoft Azure, and Google Cloud Platform, respectively—are the primary entities capable of offering these services at scale.⁸² So, when consultants market AI systems to federal agencies, they are partly marketing infrastructure provided by Big Tech—a fact that they publicly champion. McKinsey and Google Cloud Platform have a partnership in cloud computing.⁸³ Deloitte advertises its relationship with AWS.⁸⁴ If federal agencies outsource AI models and applications to consultancies, they may further entrench the dominance of these companies.

Beyond the likelihood of entrenching incumbents, outsourcing AI operations may also result in bureaucratic decay and higher expenses, threatening agencies' ability to deliver on their mandates. As Mariana Mazzucato and Rosie Collington document in their book *The Big Con*, outsourcing to private consultants often means artificially high costs, limited accountability, and weakened public sector capacity.⁸⁵ These problems hold concerning implications for outsourcing on AI.

First, private contractors often deliver projects at higher costs, on longer timelines, and of lower quality than agencies might themselves. Just ask the federal officials blamed for the initial failures of healthcare.gov when, in fact, CMS relied on 60 outsourcing contracts totaling \$1.7 billion in spending for the digital infrastructure needed to operate the online marketplaces—including contracts with Booz Allen and Accenture.⁸⁶ In the context of transit infrastructure, one New York University study found that hiring consultants was commonly accepted to be three times as expensive as developing in-house capacity.⁸⁷ Part of the problem is that, as Mazzucato and Collington explain, consultants often obtain their contracts through their ability to create an impression of value, rather than a quantifiable value-add to an organization.⁸⁸ Thus, their costs often far exceed the actual value of the service they provide, resulting in a form of rent extraction.⁸⁹ In the aggregate, consulting contracts also diminish the ability of civil servants to retain institutional knowledge in areas prone to outsourcing like IT—thus raising the costs of re-insourcing and entrenching a reliance on the very same consultants.⁹⁰ In other words: Once you start outsourcing, it is hard to go back, resulting in higher costs in the short, medium, and long term.

A related problem concerns accountability for critical public sector functions. By preventing the development of in-house knowledge, outsourcing makes it more

difficult for agencies to direct procurement and manage contracts with vendors—both of which are especially vital functions in the context of AI and IT more generally.⁹¹ Mazzucato and Collington discuss the example of the Danish government, which after years of outsourcing public sector IT infrastructure to private consultants found itself, at its own admission, “unable to manage IT systems efficiently and responsibly” and without “the necessary control over IT projects.”⁹² This was because, as one Danish official said, “all the knowledge and know-how and documentation . . . are in the hands of a few employees at certain vendors.”⁹³ This may be particularly troubling in the context of AI, in which opacity of algorithms is already a significant challenge to public sector norms of transparency and accountability.

Outsourcing also has implications for regulation. Without in-house expertise that they can turn to when developing and enforcing rules, regulators may have more difficulty regulating complex technologies.⁹⁴ Moreover, they may be left to seek information from the very actors they are attempting to regulate, or consulting firms that may partner with these companies. As in other regulatory contexts, this creates a conflict of interest that private firms may exploit.⁹⁵

Importantly, the problems with outsourcing extend far beyond efficiency in AI deployment and regulation: They concern the distribution of power in a democratic society.⁹⁶ As we embark on a new chapter in American technological development with the deployment of AI systems at scale, we also have an opportunity to construct a new system for building public sector capacity: one that avoids the pathologies of outsourcing and instead chooses to invest in a more accountable, manageable, and innovative technical infrastructure.

5. A Lack of Coordination on Major Initiatives

Deploying AI technology at scale is a massive undertaking. Even the implementation of something as seemingly simple to users as a chatbot on a federal agency’s website requires numerous inputs: procuring of cloud computing services; developing a model optimized for addressing the agency’s chatting needs; training the model; and integrating of the model into the design of the website itself to create the application.⁹⁷ Multiply this by the number of agencies looking to implement chatbots, and one gets a sense of the effort required to implement just a single type of AI application—not to mention the many more that may be useful to federal agencies and the public.

The federal government’s engagement with AI will require extensive coordination between government IT offices, including on procurement, research and development,

delivery, and guidance to agencies. There are reports, however, that a lack of coordination between existing offices has been a problem. In August 2023, *FedScoop* reported that a lack of coordination between the heads of USDS, OMB, and GSA had “caused severe delays” and “stymied progress” in the implementation of the 21st Century Integrated Digital Experience Act (IDEA Act), legislation passed in 2018 requiring agencies to modernize their websites, replace paper forms with electronic ones, and expand the use of electronic signatures.⁹⁸ Senior IT officials speaking on the condition of anonymity claimed that misalignment between these officials effectively resulted in smaller projects being prioritized over the significant deliverables the law required.⁹⁹ This is a concerning prospect for AI projects.

Internal government reports have recognized similar risks: In December 2021, a Government Accountability Office (GAO) report documented a lack of coordination between USDS and 18F on guidance issued to agencies, writing that “neither entity had an established, documented coordination approach, even though they had issued guidance on the same IT acquisition and development topics with similar content.”¹⁰⁰ Even more strikingly, the management of IT acquisitions and operations has been an area listed on GAO’s “High Risk List” every year since 2015.¹⁰¹ Though “the executive branch has undertaken numerous initiatives to better manage the more than \$100 billion that is annually invested in IT,” it has found that “federal IT investments too frequently fail to deliver capabilities in a timely manner.”¹⁰² As the GAO noted in 2021, “not coordinating in a more strategic manner” means IT offices are not as effective as they could be.¹⁰³

IV. Existing Proposals

We are not the first to observe that the federal government needs help in AI. In this Part, we review existing proposals and discuss why they may not be sufficient to address the challenges the federal government faces.

National Artificial Intelligence Research Resource. In the same National AI Initiative Act that created the NAIAC, Congress also authorized a task force to study the viability of developing a National Artificial Intelligence Research Resource (NAIRR): AI infrastructure for use by researchers and the public. Following the task force’s report, which was released in January 2023,¹⁰⁴ a bipartisan group of legislators have proposed to create the NAIRR in the CREATE AI Act. Run by an independent operating entity selected through a competitive bidding process—which may be a federally funded

research and development center (FFRDC)—the NAIRR would provide for a public-access to cloud computing resource that researchers, students, and businesses could use to study and develop new AI applications.¹⁰⁵ This is a strong proposal, but it does not address the concerns we outline in terms of the personnel needed for improving public services.

National Reserve Digital Corps. In a proposal endorsed by the NAIAC, the National Security Commission on Artificial Intelligence recommended the creation of a civilian National Reserve Digital Corps, which would fast-track the hiring of part-time civilian technologists to work at least 38 days per year to support government tech projects.¹⁰⁶ While this proposal could complement efforts to accelerate the hiring of AI experts, it would only boost short-term hiring for occasional work; it does not provide for hiring career technologists, nor is it likely to resolve the significant problem of scale. Nonetheless, it may be a helpful complement to other policies.

Chief AI Officers at Agencies. In July, the Senate Committee on Homeland Security voted to approve legislation sponsored by Senators Gary Peters and John Cornyn creating the position of Chief AI Officer at each federal agency, in the hopes that such a position will help guide the responsible implementation of AI at each agency. Called the AI LEAD Act, the bill would also create an interagency council of these officers to better coordinate on AI initiatives across the government.¹⁰⁷ While this proposal shares our goal of building capacity and improving coordination across agencies, we believe that more is needed. In addition to decentralized IT efforts across each agency, flexible capacity that can operate across all of government will be essential to achieve scale in an efficient manner. The proposal could be complemented by building out a workforce of AI technologists beyond these leadership roles, who could be deployed to work with the Chief AI Officers at different agencies based on need.

AI Training for Federal Officials. In May, another bill introduced by Senator Peters, co-sponsored with Senator Mike Braun, proposed creating an AI training program for federal supervisors and management officials.¹⁰⁸ Called the AI Leadership Training Act, it follows recommendations from NAIAC and NSCAI to promote AI capability among federal officials and would require the director of OPM to institute a training program covering AI's capabilities and risks, safety and ethical issues, and established best practices.¹⁰⁹ While this proposal, too, shares our goal of building public capacity, our proposal goes beyond training existing personnel to increasing the number of technologists who can consult with these personnel on a government-wide, project-by-project basis.

V. Expanding AI Capacity: The U.S. Artificial Intelligence Service (USAIS)

The problems of insufficient scale, challenges with recruiting, and outsourcing make clear that the federal government needs a team of technologists dedicated to AI, to coordinate, expand, elevate, and focus efforts to deploy and regulate this technology. A U.S. Artificial Intelligence Service (USAIS) could provide a comprehensive AI support system inside the government, concerned just as much with providing advice to federal agencies developing their own systems and approaches to AI governance as doing it on their behalf. Whether created as its new entity within OMB, or as a subgroup within USDS, the USAIS would consist of technologists with expertise in AI and would be run by a director with considerable experience in AI.

Creating the USAIS. While the USAIS could be created by congressional legislation, we believe that it can be implemented through executive order under existing legal and budgetary authorities. We provide a draft of such an executive order in the Appendix. It could be housed within OMB, co-equal with USDS, or created as a team within USDS. Either way, the authorities used to establish it would match those used to found USDS: Employees would be hired using OMB billets, and initial funding, at least until direct appropriations can be made, would be drawn out of the Information Technology Oversight and Reform (ITOR) account.¹¹⁰ It may also be possible that funding could be drawn from another tech fund, like the Technology Modernization Fund, which received \$1 billion in appropriations from the American Rescue Plan.¹¹¹

Most personnel would be hired under expedited Schedule A authority, allowing for up to four years of employment. Others could be assigned to USAIS through one of several partner programs: PIFs, for example, could be hired through that program and then assigned to the USAIS, as is often done at USDS and other IT offices. Presidential Management Fellows (PMFs)—recent graduates hired for two-year fellowships that can subsequently be extended into competitive civil service jobs—can also be assigned to the USAIS.¹¹² Beyond establishing these measures for funding and hiring, the USAIS could be directed to coordinate with existing offices on agency guidance, project management, and personnel, and immediately begin consulting with regulators and agency IT offices.

Importantly, hiring AI experts through these authorities—particularly Schedule A authority, which is time limited—would allow the federal government to recruit talented experts from the private sector. Private sector AI experts may want to work in the government for a few years to take on a new challenge and engage in public service—but without becoming career civil servants. This authority would enable such short-term hires, and it would ensure that the USAIS also has experts familiar with cutting-edge private sector AI developments.

Function of the USAIS. As a service, the USAIS would help agencies improve government services, and support them when they need assistance in understanding AI technologies.

It could work with agencies to ensure that AI tools are deployed within consistent standards set out by policymakers—including the OSTP’s Blueprint for an AI Bill of Rights.¹¹³ By helping agencies develop their AI applications in-house and keeping them from having to seek advice or capacity from expensive and unaccountable private consultants—not to mention Big Tech companies—the USAIS can help deliver a better AI user experience for citizens and civil servants alike.

Benefits of the USAIS. Creating a USAIS will be immediately valuable to agencies in search of expert guidance and technical support. By centralizing AI technical support in a single place, the USAIS would be a one-stop shop for federal agencies requiring AI help. By supplementing existing personnel with many new hires, it would quickly scale up the federal IT apparatus. Because it would be a notable, new focal point for federal AI efforts, the USAIS will be better able to attract technologists from the private sector and improve public confidence in the government’s ability to tackle new technologies. And if it scales up sufficiently, it could replace potentially costly and unaccountable private contractors. In short, the USAIS will signal to agencies, lawmakers, and citizens that their government is prepared and committed to address both the challenges and opportunities of technological development, no matter how complex.

Beyond its immediate usefulness to agencies, a USAIS may also have important downstream effects. By building a workforce of AI technologists with experience across the entire federal government, the USAIS has the potential to create a pipeline of people to join the staff of individual agencies. Just as former PIFs have gone on to oversee various federal and state IT offices, top USAIS alumni can go on to join the department of an agency as its CTO and build out sophisticated in-house capacity to address any number of current and future AI needs the agency might have. Others may also go on to help cities, states, and local governments build their own AI

infrastructure, extending their knowledge and experience to the often-unique problems of municipal and rural governance. Currently, several states—including California, Colorado, New Jersey, and Georgia—are creating their own public sector digital services.¹¹⁴ When these and other new organizations need to hire technologists with extensive public-sector AI experience, they will be able to draw upon USAIS alumni. Thus, the creation of a USAIS has the potential not only to build AI capacity at the federal level, but at all levels of American government.

Caveats. We must note some important caveats in our proposal. First, with respect to AI deployment, the USAIS should not simply respond to crises or do agencies' bidding on AI projects. As a team of well-rounded experts, it should work with agencies to address problems, including whether to use an AI system in the first place to achieve a particular objective. As Jennifer Pahlka explains:

“Because digital is seen as a mere implementation detail, separate from the important work of creating policy, it is assumed that digital teams should simply follow orders from above and not exercise their own judgment. The people implementing policy may (or may not) try to engage in problem solving, but they are constrained by the directives they received, which frequently make no sense for the on-the-ground conditions of implementation.”¹¹⁵

To avoid this problem, the USAIS should consult with agency leaders and IT teams to determine that the technological specifics are carefully tailored to the outcomes they hope to achieve. In many instances, agencies may wish to fulfill a particular objective—such as expediting an internal process or improving a public-facing service—but not know exactly what technology is best suited to fulfill that objective. An automated system might be the right choice, or it might not. If appropriate, the USAIS would help the agency build and implement an AI system, but if not appropriate, it should refer the agency to other government resources, like USDS or 18F, that might be able to offer a more appropriate, non-AI solution.

Second, it is also critical to note that the individuals employed by USAIS would not be AI policymakers, but technologists. As with USDS, the private sector technology experts joining government to work at USAIS would not be directing AI regulatory policy, which could leave the door open for industry capture. Instead, they would be providing technical expertise to support agencies in fulfilling their obligations to the public.

Third, the fragmentation of IT services across government presents issues beyond the deployment and regulation of AI—issues that in the short term may be exacerbated by

the addition of another office.¹¹⁶ However, given the importance of AI, a new office would help recruit and scale staff. We offer a proposal to address the challenges of coordination in the next Part.

Finally, we acknowledge that just as certain applications of AI in the private sector raise serious concerns related to privacy, civil rights, and other important issues, so too do certain applications in the public sector. We stress that it will be the obligation of USAIS leadership and staff—and the entire federal government—to ensure that AI technologies are deployed in ways that respect and protect these and other important rights.¹¹⁷ In addition, we note that the USAIS is meant to support civilian, not military, agencies.

VI. Improving Tech Coordination: The U.S. Technology Administration (USTA)

Establishing a USAIS will help address the immediate problem of a lack of capacity in AI, but significant challenges with the current system of tech service provision will likely remain—including from insufficient scale and funding, difficulties with hiring, and coordination. To address these broader issues, Congress should pass legislation to create a U.S. Tech Administration (USTA), a federal agency under which all existing IT offices—including USDS, 18F, PIF, *and* the new USAIS—would be housed. The USTA would be headed by an Administrator, who would be appointed by the president and confirmed by the Senate and could also be given the title of Chief Technology Officer of the United States.¹¹⁸ The USTA would function as a centralized clearinghouse for all the federal government's tech-related needs, including procurement, development, consulting, and training. The USTA could be a standalone agency, or it could be a successor to the TTS division within the GSA that raises the profile and standing of that office and its constituent parts. Critically, Congress should ensure that the USTA gets consistent and expanded appropriations from Congress.

The USTA would consolidate existing IT offices under a central structure. USDS, the new USAIS, 18F, PIF, USDC, and the IT Modernization Centers of Excellence would be brought under one roof with cross-cutting leadership. This would allow for greater strategic and tactical coordination between the existing offices, particularly where they

have overlapping functions, like supplying agencies with guidance and building out digital infrastructure. It would also allow for greater direct appropriations and more effective congressional and public oversight of the entire landscape of federal IT. A combination of competitive service hiring and short-term hires under Schedule A and direct-hire authority would allow the USTA and its constituent offices to rapidly scale up the number of federal tech workers and provide for their professional development in collaboration with one another, aiding in retention.

The most obvious benefit of the USTA is its ability to better coordinate the fragmented ecosystem of existing IT services to unite around a more integrated tech strategy. By empowering the Administrator to bring together existing offices and develop cohesive plans for guidance and deployment, the USTA can streamline the implementation not only of future tech initiatives, but also of statutory obligations, such as modernizing agency websites under the 21st Century IDEA Act.¹¹⁹

We acknowledge that a consolidation of government IT services, especially when they are to provide technical assistance to regulators, may result in industry capture. While we share concerns about capture, we believe that these concerns are misplaced here. Capture can exist even when there are separate, fragmented services across government, as is the status quo. Indeed, capture may even be more easily facilitated in the current state than it would be under our proposal: With multiple entities and individuals responsible for federal tech administration, it is harder for Congress, the press, and the public to exercise their oversight powers and hold government accountable for deploying technology.

That brings us to a second, and no less important, benefit of a USTA: its facilitation of greater accountability. As we note, both Congress and the public will be able to hold the federal IT apparatus more accountable than they are under the current framework. Moreover, because the Administrator holds ultimate responsibility for tech support initiatives, the public will know not only who to blame when things go wrong, but also who to praise—along with hard-working civil servants—when initiatives succeed.

A third and related reason for creating the USTA has to do with recruiting and public confidence. Creating a USTA will create not only a new managerial structure, but also a bold and unified public brand. This will help recruit and retain talented workers: For technologists interested in devoting part of their careers to public service at the federal level, they will have no further to look than the USTA—the organization that oversees all public sector tech development. By allowing personnel to move around among USTA's subsidiary programs and work with many different federal agencies in the

process, they can gain valuable professional development experience. Many may aspire to rise through the ranks of the organization as they might in a Silicon Valley firm, maybe even to become Administrator. Creation of the USTA would also likely be salient enough to capture the public's attention. By simplifying the federal tech apparatus and taking credit for projects that improve public services, the USTA could become a popular and trustworthy arm of government.

VII. State, Local, Territorial, and Tribal AI Capacity

The USAIS and USTA are proposals for the federal government to improve its capacity to use AI to improve public services and programs, but capacity on AI will also be necessary at the state and local level. As we have observed, building federal capacity may have positive spillover effects that benefit the states, local, territorial, and tribal governments—personnel with federal experience could move to these other jurisdictions to help them with their adoption of AI to improve public services.

But it is also possible that these other jurisdictions could create their own versions of the USAIS and USTA. Indeed, the USDS inspired several state governments to create services using a similar model.¹²⁰ On this approach, states and other jurisdictions could create offices to accelerate the hiring of technologists with experience in AI or offices that coordinate AI deployment with other digital and IT efforts. Given the variation between jurisdictions, developing such a proposal more fully is beyond the scope of this paper.

Conclusion

The introduction of AI technology at scale has created serious challenges that federal agencies must work to resolve. But it also creates a significant opportunity: The federal government has both the power to use this technology to improve public services and the responsibility to implement existing laws to protect the public. The creation of a USAIS and a USTA will be critical steps towards helping the entire federal government deliver for the American people.

Appendix: Draft Executive Order

Creating a USAIS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Sec. 1. Purpose. As artificial intelligence (AI) is rapidly implemented throughout the American and global economy, our Government must make significant investments in its capacity to harness the opportunities and address the risks of this technology. AI has the potential to improve public services, whether in the form of chatbots that make federal websites easier to navigate, or automated systems that reduce the paperwork burdens of federal employees, or algorithms designed to help federally funded programs engage in cutting-edge research. Just as importantly, regulators must be empowered with the technical understanding they need to be able to enforce the laws as they apply to AI in areas including civil rights, worker's rights, competition, credit and lending, housing, and more. Both tasks will require extensive technical support. Though our Government employs many capable and hard-working technologists, both at agencies and in dedicated cross-government information technology (IT) teams, far more are needed to assist in the deployment and regulation of AI at scale.

Executive Order 13,960 of December 3, 2020 (Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government) required agencies to publish inventories of AI use cases. The AI in Government Act of 2020 required the development of guidance for agency use of AI. The National Artificial Intelligence Initiative Act of 2020 created the National Artificial Intelligence Initiative Advisory Committee, and required that it advise the President on, among other matters, how to "streamline and enhance operations in various areas of government operations, including health care, cybersecurity, infrastructure, and disaster recovery," and "matters relating to oversight of artificial intelligence systems using regulatory and nonregulatory approaches, the responsibility for any violations of existing laws by an artificial intelligence system, and ways to balance advancing innovation while protecting individual rights." Executive Order 14058 of December 13, 2021 (Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government) declared that "Government must be held accountable for designing and delivering services with a focus on the actual experience of the people whom it is meant to serve." The Office of Science and Technology Policy's Blueprint for an AI Bill of Rights advanced five

principles to “guide the design, use, and deployment of automated systems to protect the American public in the age of artificial intelligence.” Consistent with these directives, this Administration will build additional capacity in the federal government to use artificial intelligence to improve public services and programs and assist agencies to execute on their missions.

Sec. 2. Policy. Executive departments and agencies (agencies) shall take actions within their respective authorities, including, as appropriate, through the provision of technical assistance and personnel, to enhance efforts to build government capacity on AI. It is the policy of the United States to:

- (a) Coordinate efforts to deploy AI technology to improve citizen services, while ensuring safety, trustworthiness, responsibility, and adherence to consistent standards, including the Blueprint for an AI Bill of Rights;
- (b) Empower regulators to apply existing laws to AI technology by providing them with expert technical guidance;
- (c) Increase the number of public sector technical personnel with expertise in AI technology;
- (d) Ensure that hiring and retention policies are consistent with the need to rapidly build technical capacity; and
- (e) Build in-house capacity on new technologies, instead of relying on outsourcing for critical operations, wherever possible.

Sec. 3. U.S. Artificial Intelligence Service. (a) There shall be established a U.S. Artificial Intelligence Service (USAIS), within the Office of Management and Budget (OMB).

(b) The USAIS shall be headed by a Director, who shall be appointed by the President. The Director shall advance responsible and trustworthy AI adoption and regulation, including by coordinating guidance and technical support offered to agencies on AI deployment.

(c) To the extent permitted by law, the Director of the Office of Personnel Management (OPM) shall authorize the Director of the USAIS to hire technologists with expertise in AI technology under one or more excepted service hiring authorities, or competitive service direct-hiring authority.

(d) The USAIS shall:

- (i) consult with agencies seeking to implement automated systems to improve public services or internal systems,

(ii) refer agencies to other IT offices to fulfill objectives when an AI system is not required, inappropriate, or not the most effective means of achieving the policy objective,

(iii) provide technical guidance at the request of agencies related to AI technologies or their uses.

(e) The USAIS shall not be authorized to provide input on matters of regulatory policy except by the provision of neutral technical guidance at the request of regulatory authorities.

Sec. 4. Report. The Director of the USAIS, within one year of the date of this order and annually thereafter, shall submit a report to the President through the Director of the OMB describing the USAIS's activities over the preceding year and making recommendations on what additional resources are needed to successfully achieve its objectives, as defined by this order.

Sec. 5. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

Signature of President

Endnotes

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⁴ David Freeman Engstrom, Daniel E. Ho, Catherine M. Sharkey, and Mariano-Florentino Cuellar, *Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies*, ADMIN. CONF. OF THE UNITED STATES 16 (Feb. 2020).

⁵ *Artificial Intelligence Use Case Inventory*, U.S. DEPT OF LABOR, <https://www.dol.gov/agencies/odg/ai-inventory> (last visited August 23, 2023). The publication of agency AI use case inventories was a requirement of Exec. Order No. 13,960, 85 Fed. Reg. 78,939 (Dec. 3, 2020).

⁶ Kathleen Walch, *How the U.S. Department of State Is Transforming Decision-Making By Leveraging Data Analytics And AI*, FORBES (Aug. 5, 2023), <https://www.forbes.com/sites/cognitiveworld/2023/08/05/how-the-us-department-of-state-is-transforming-decision-making-by-leveraging-data-analytics-and-ai/?sh=234a97316012>.

⁷ Engstrom et al., *supra* note 4, at 7, 16.

⁸ *Id.* at 18 (noting that 53 percent of identified use cases were built in-house, while the remainder were done under contract with commercial, non-commercial, or undetermined private sources). Though the authors remark upon the notably high proportion built in-house, they do not suggest that existing capacity is enough. Elsewhere, they emphasize the need to build in-house capacity on AI to ensure system usability and accountability across the board. See DAVID FREEMAN ENGSTROM AND DANIEL E. HO, *Artificially Intelligent Government: A Review and Agenda*, in ROLAND VOGL, ED., RESEARCH HANDBOOK ON BIG DATA LAW 57, 64-67 (2021).

⁹ Engstrom et al., *supra* note 4, at 39 (describing Gerald Ray of the Social Security Administration, who “played an important role in creating the seedbed for prototyping AI tools” and whom a colleague deemed “the Steve Jobs of the SSA”), 40 (describing Kurt Glaze, an attorney and programmer whose knowledge of natural language processing enabled him to build an AI tool for spotting errors in draft adjudication opinions).

¹⁰ Lina Khan, *We Must Regulate A.I. Here's How*, N.Y. TIMES (May 3, 2023), <https://www.nytimes.com/2023/05/03/opinion/ai-lina-khan-ftc-technology.html>. See also Rebecca Kern and Josh Sisco, *POLITICO Summit: Khan Puts AI Companies On Notice*, POLITICO (Sept. 27, 2023, 5:17 PM), <https://www.politico.com/news/2023/09/27/ai-lina-khan-monopolies-ftc-00118402> (quoting Khan: “There is no AI exemption to the laws on the books.”); Alvaro M. Bedoya, “Early Thoughts on Generative AI”: *Prepared Remarks of Commissioner Alvaro M. Bedoya, Federal Trade Commission Before the International Association of Privacy Professionals*, FED. TRADE COMM’N 15-16 (April 5, 2023) (noting that existing laws governing unfair and deceptive trade practices, civil rights laws, and tort and product liability laws all apply to AI).

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¹³ Amba Kak and Sarah Myers West, *AI Now 2023 Landscape: Confronting Tech Power*, AI NOW INSTITUTE 54 (Apr. 11, 2023); Cat Zakrzewski, *Federal regulators call AI discrimination a ‘new civil rights frontier’*, WASH. POST (Apr. 25, 2023) (quoting EEOC chair Charlotte A. Burrows: “We are looking not just at what we’re seeing being deployed now, but also down the road to be prepared for and to sort of really put up some guardrails.”).

¹⁴ Ongweso Jr., *supra* note 3.

¹⁵ *Nat’l Artificial Intelligence Initiative Act of 2020*, Pub. L. No. 116-283, § 5001, 134 Stat. 4523 (2021).

¹⁶ NAIAC REPORT, *supra* note 2, at 48.

¹⁷ Erie Meyer, *So you want to serve your country: A (biased) guide to tech jobs in federal government*, MEDIUM (Nov. 14, 2020), <https://eriemeyer.medium.com/so-you-want-to-serve-your-country-a-biased-guide-to-tech-jobs-in-federal-government-c2d3fd567af>.

¹⁸ *Our Mission*, U.S. DIGITAL SERVICE, <https://www.usds.gov/mission> (last visited Aug. 23, 2023).

¹⁹ *Projects*, U.S. DIGITAL SERVICE, <https://www.usds.gov/projects> (last visited Sept. 12, 2023).

²⁰ Meyer, *supra* note 17.

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²² GOV’T ACCOUNTABILITY OFF., DIGITAL SERVICE PROGRAMS NEED TO CONSISTENTLY COORDINATE ON DEVELOPING GUIDANCE FOR AGENCIES 11 (Dec. 2021).

²³ 5 C.F.R. § 213.3102(r); *Id.* at 11 n.25.

²⁴ GOV’T ACCOUNTABILITY OFF., *supra* note 22, at 11.

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²⁶ EXEC. OFF. OF THE PRESIDENT, INFORMATION TECHNOLOGY OPERATING PLAN 4, 8 (June 2022); GOV’T ACCOUNTABILITY OFF., *supra* note 22, at 10.

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²⁸ *How We Work*, U.S. DIGITAL SERVICE, <https://www.usds.gov/how-we-work> (last visited Aug. 30, 2023).

²⁹ *Hiring FAQ*, *supra* note 21.

³⁰ *Projects*, *supra* note 19 (noting USDS’s hand in building or fixing websites related to the child tax credit, veterans affairs, Medicare benefits, and immigration, among other issues); Meyer, *supra* note 17; *This little-known program has played a central role in the U.S. government’s coronavirus response*, CBS NEWS (June 6, 2020), <https://www.cbsnews.com/news/coronavirus-us-digital-service-technology-government/>; Henry Farrell, *This simple technological fix helped veterans get health benefits*, WASH. POST, (Feb. 22, 2018, 8:00 AM), <https://www.washingtonpost.com/news/monkey-cage/wp/2018/02/22/a-simple-technological-fix-helped-veterans-get-what-they-deserve-heres-how/>.

³¹ *How We Work*, *supra* note 28.

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³⁶ GEN. SERVS. ADMIN., FEDERAL CITIZEN SERVICES FUND FISCAL YEAR 2022 BUDGET REQUEST 2 (2021)

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³⁸ *TALENT Act*, *supra* note 34 (providing that “The Director shall prescribe the process for applications and nominations of individuals to the Program.”); 5 C.F.R. § 213.3102(r).

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⁹⁰ *Id.* at 97, 164.

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⁹² *Id.* at 163.

⁹³ *Id.*

⁹⁴ *Id.* at 165 (noting that “the more that responsibility for delivering core functions is privatized, the harder it is for the government to ensure in-house regulatory skills are up to date and improving”).

⁹⁵ *Id.* at 9 (describing an analogous conflict of interest in the field of climate consulting, in which “big firms work simultaneously for governments ... *and* for the fossil fuel companies”).

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