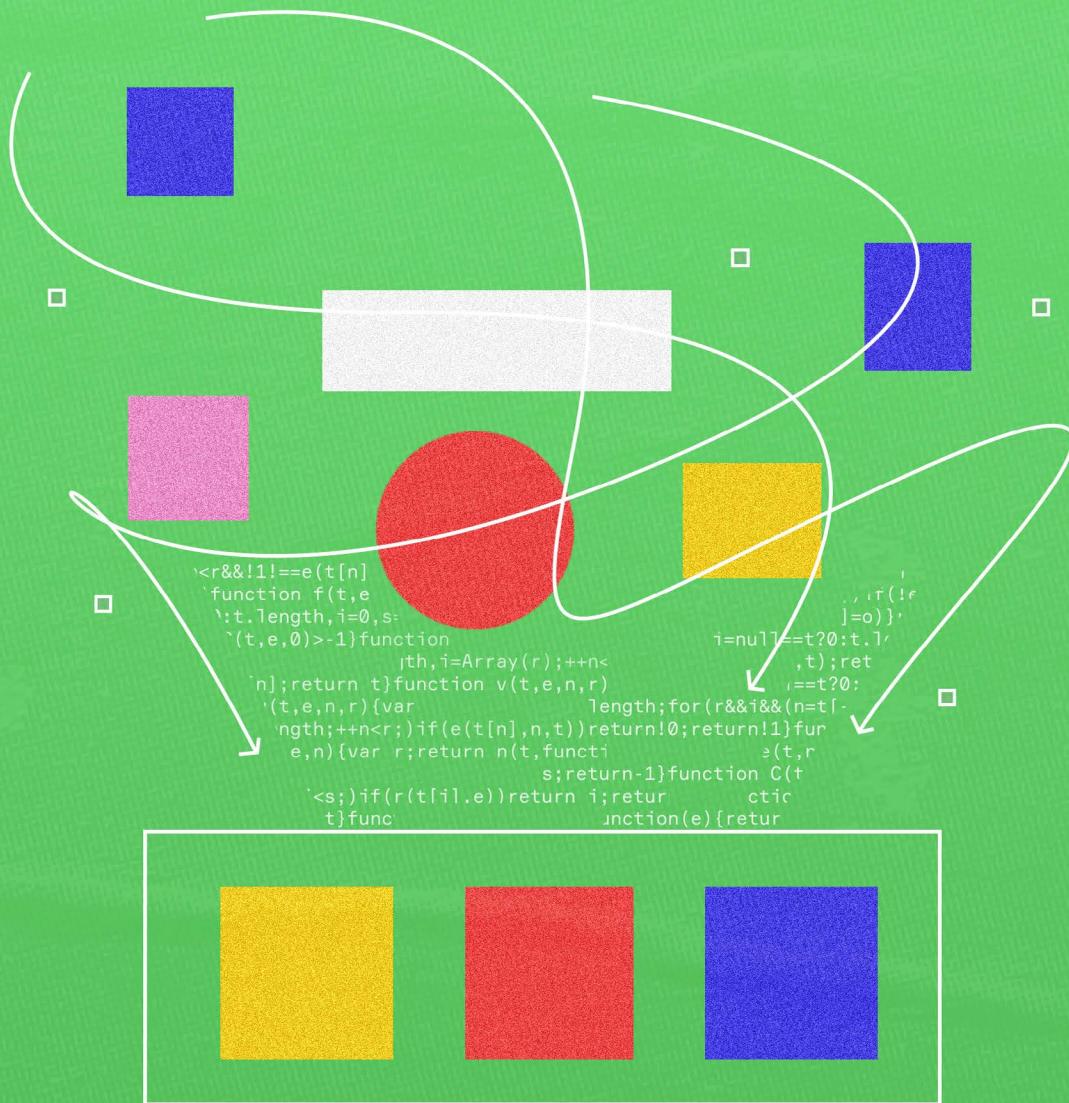


Generative AI can help transform government procurement

Combining the analytical strength of generative AI with human judgment can make government procurement both more efficient and more effective in how it serves the public.

A report from the Deloitte Center for Government Insights



Deloitte.

Table of contents

02 . . . Introduction

03 . . . The challenges of government procurement

03 . . . What's different now?

06 . . . AI can help improve both efficiency and effectiveness

08 . . . Adopting AI at scale can be hard, especially in government

09 . . . Getting started

10 . . . Endnotes

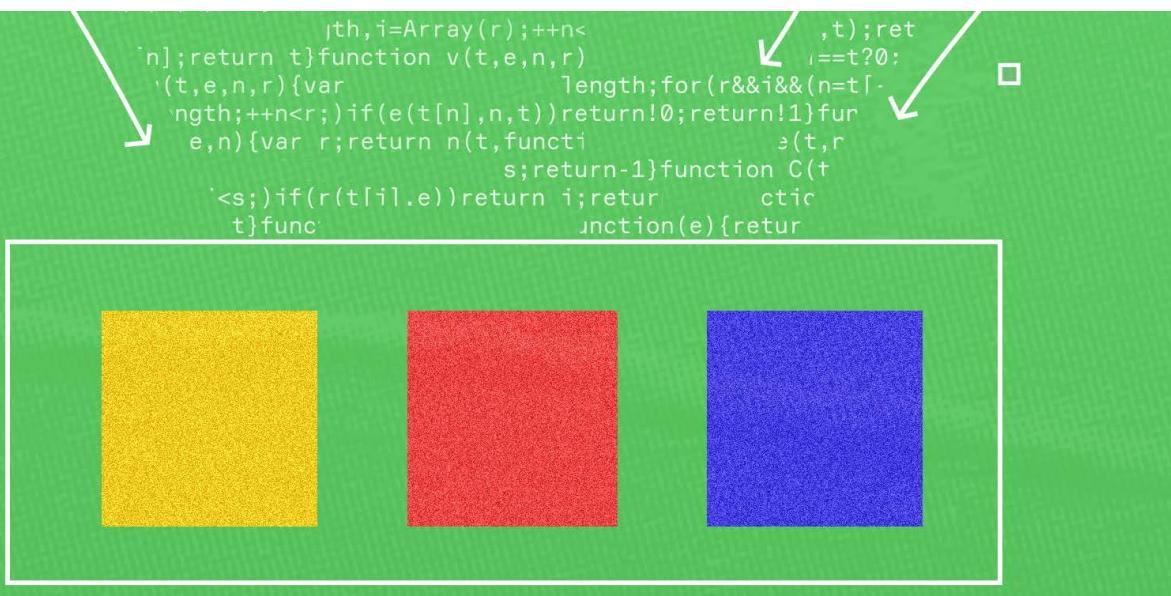
Introduction

Government procurement is how rubber meets the road. The Federal government in particular is seeking to use its buying power to help accomplish a number of goals, from improving the economy to fighting climate change. Much of the burden of these efforts falls on government procurement professionals, and that burden is only growing.

Over the past decade, the Federal government's spending has increased by 4.5% each year; however, the total number of contracting actions has increased by more than 22% each year.¹ And the workforce handling this avalanche of paperwork has not grown at the same rate. According to the data available, in fiscal year 2022, for every Federal contracting officer, an average

of 2,000 contracting actions had to be executed per year, compared to only 300 in 2013.

Government procurement professionals need help. If government is to achieve the ambitious aims that the public expects, procurement professionals need tools to process large volumes of data with precision and with attention to the unique circumstances of every contracting action. For years, that combination of traits sounded like science fiction, but today, with the emergence of generative artificial intelligence (gen AI), we may be at the cusp of being able to transform government procurement. By pairing the analytical strength of AI with the judgment of human workers, technology can make government procurement both more efficient *and* more effective in how it serves the public.



The challenges of government procurement

Government procurement often sees extremes of too much and too little. There is usually too little time and too much information to handle.

Unfortunately, neither of these constraints is likely to ease in the near future. In fact, they may even get worse. For example, even if government does not adopt gen AI, others likely will. Contractors could use gen AI to write large

proposals more easily. While this could help smaller and nontraditional vendors compete for government contracts, it could also increase the number of proposals that contracting officials must review. More proposals means more time spent on reviewing and vetting compliance. And without increasing the workforce, more time on compliance can mean less time spent on core tasks like choosing the right acquisition strategy, selecting meaningful evaluation criteria, and selecting the best value offer(s).

What's different now?

The US government has been executing contracts since 1791.² The constraints of too much information and too little time are not new. In fact, even AI isn't new to government procurement. Bots have been used to spot and deobligate unobligated funds, and to perform closeout activities for several years now.³

So, what's different now?

The short answer is that the emergence of gen AI has put a missing puzzle piece on the table that can allow several different types of tools to fall into place. Because gen AI works differently than previous generations of AI, it has different strengths and weaknesses. While gen AI can do things that traditional machine learning (ML)

cannot, such as creating new text or images, it can occasionally struggle with accuracy in ways that traditional ML does not. Similarly, all forms of AI can exceed a

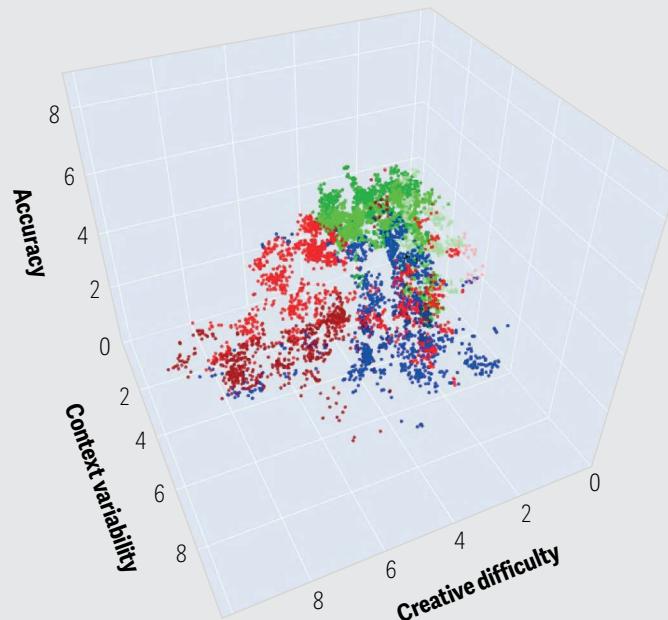
human's ability to handle large volumes of data, but humans naturally excel at tasks that strain AI, such as highly variable or social tasks (figure 1).

Figure 1

Different tools work differently and are therefore suited to different tasks

All tasks of Federal workers rated by the accuracy, creative difficulty, and context variability required

● Human-only ● Gen AI ● Other automation



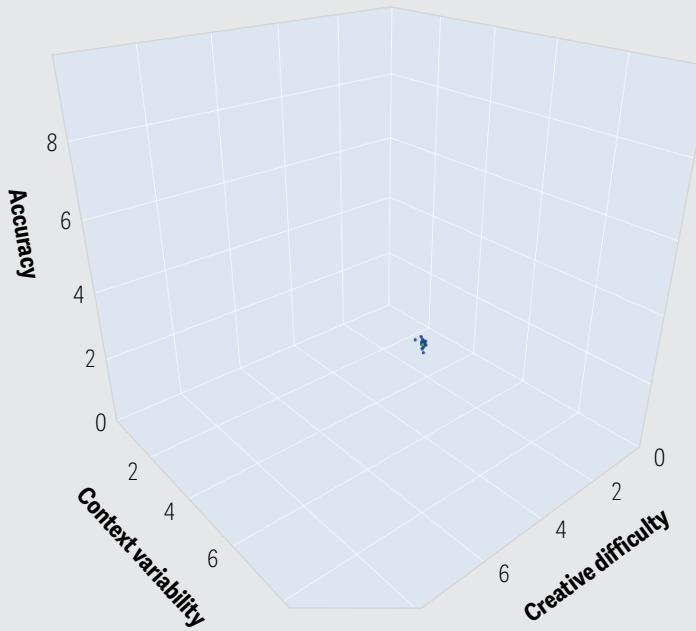
Source: Deloitte analysis of Department of Labor O*Net data.

The potential impact of gen AI can be seen when looking at procurement occupations. Only a handful of the tasks commonly performed by procurement professionals, for

example, were suitable for older generations of AI. Yet, with the advent of gen AI, many more of those tasks could be aided by automation (figure 2).

Figure 2

Several tasks commonly performed by procurement professionals are amenable to generative AI



Source: Deloitte analysis of Department of Labor O*Net data.



AI can help improve both efficiency and effectiveness

A

I can help procurement officials with the crush of proposals by screening for compliance, identifying the best subset of offers for further evaluation, or comparing proposals to outside market data on firms to verify the accuracy of their proposals.

Greater efficiency

AI, and gen AI specifically, could help overcome the time challenge facing procurement professionals. Documenting is *the* most time-consuming task across Federal government.⁴ From using gen AI to generate documents and reports to having ML produce demand forecasts, AI can help reduce the time needed to create and process procurement request documents such as market research reports, statements of work, and purchase requests.

Greater effectiveness

This goes beyond just speeding up processing and help make officials' judgment more effective. Effective procurement should blend the mission knowledge of line-of-business experts and contracting knowledge of procurement experts. But finding individuals or even teams that have detailed knowledge of both the procurement process, as well as the details of the market, can be difficult. For example, procurement teams typically have a deep understanding of procurement regulations but may not be familiar with the market. On the other hand, program offices will typically know the market well, but not have the same level of knowledge of procurement processes. Gen AI models can help bring both of these bodies of

knowledge together. It can distill down huge volumes of supply chain, economic, and market research into short consumable market research reports that can help procurement officials quickly get smart about a new topic. Gen AI models can also help communicate in the other direction, by turning common language prompts into statements of work and other requirement documents that incorporate market research and describe agency needs.

Another opportunity may lie in applying advanced tools to help create new buying processes. For example, gen AI could create not just one, but several different requests for proposals, each using a different buying strategy. Procurement officials could then choose among these based on agency goals and the relative strengths or weaknesses of each approach. This can be a good mechanism to facilitate the exchange of perspectives between mission and procurement leaders through debating the relative merits of the different options.

Efficiency + effectiveness

These uses of AI aren't meant to replace the human element within the procurement process; rather they aim to break the constraints of too much information, too little time. By making processes more efficient, AI can allow strained procurement staff to focus on tasks that require human judgment: carefully planning acquisition strategies; developing meaningful evaluation criteria; or engaging industry to better understand what's emerging in the market, how to incentivize responses that incorporate new technical capability (like gen AI), and how to strengthen industry and government relations to improve contract performance.



Ultimately, it's both. By allowing human workers to move up the value chain, and spend less time on routine processing and more time thinking about the type of procurement that would best meet agency goals, AI can help government be more efficient *and* more effective in how it buys (figure 3).

For example, gen AI could gather data about past contract performance from public records. Then, traditional ML models can evaluate that past performance's information to analyze outcomes by contract type and other

factors. This can help procurement officials understand which contract types are most appropriate for their goals and what it will take for vendors to execute. Informed with this information, requiring offices could leverage gen AI to craft statements of work with clearer requirements, based on historical performance. Subsequently, contracting officers can consider shifting time-and-materials contracts to more firm-fixed price contracts, shifting performance risk from government to contractors, all while having confidence that work can get done on time, on budget, and to the agency's standards.

Figure 3

By examining the tasks needed across the procurement life cycle, leaders can find opportunities for AI to both increase the efficiency and effectiveness of government

	● AI improving effectiveness	● AI improving efficiency	
Transforming tasks	Generative AI can summarize program requirements in common language	US Department of Veterans Affairs is using AI to process disability claims, cutting time from 10 to ½ days	Conversational AI can provide automatic status updates to customers
Enhancing existing tasks	<ul style="list-style-type: none"> ● USDA is using rules engine to streamline farm insurance applications ● Computer vision can extract data from multiple forms to personalize an intake process 	<ul style="list-style-type: none"> ● California is using AI to identify potential unemployment insurance fraud ● Estonia is using machine learning to pair jobseekers with work and training opportunities 	<ul style="list-style-type: none"> ● Many agencies use chatbots to answer frequently asked questions
	Intake	Processing	Customer engagement
			Task life cycle

Source: Deloitte analysis.



Adopting AI at scale can be hard, especially in government

Given the power of AI, leaders are already adopting it to help with procurement. Deloitte's annual *Global Chief Procurement Officer Survey* found that industry leaders tended to have 16x the number of AI full-scale deployments as industry followers.⁵ But even so, only 29% of industry leaders surveyed had adopted an AI solution at scale. Scaling AI is not a trivial exercise and can pose a real challenge even to leading organizations.

First, AI (even the new gen AI large language models) isn't magic. Sure you can ask them to take on large tasks, but the larger the context of a task, the more their accuracy is likely to degrade. Rather, AI tools may work best as small parts of a larger solution, taking on tasks tailored to their strengths. For procurement professionals, this means that the more you can narrow the scope of a tool, the better it will perform. Gathering best of breed contracts and past performance reports can help fine tune large language models and improve the performance of both gen AI and traditional ML models.

Many different automation tools working together with human judgment represents a fundamentally new business process for many organizations. This means that simply bolting new technology onto existing business processes may be a losing proposition. Dropping AI into business processes built for manual work will likely not only fail to take full advantage of the strengths of AI, but can also result in some highly undesirable side effects. For example, when individual sellers started

using automated pricing algorithms on an online book reseller, two opposing algorithms quickly got into a loop, bidding up the price of one biology textbook to more than US\$23 million!

While the challenges of fine-tuning models and adapting business processes apply to every organization, some challenges to scaling AI are unique to government. For example, fine-tuning models may rest on gathering appropriate data, but there is also a need to protect confidential government data such as proprietary vendor information, source selection, or even classified information. This may constrain the types of AI models that procurement professionals can use to avoid releasing sensitive data to public models. Similarly, models themselves can carry the inbuilt assumptions of their designers. For example, models evaluating past performance could outweigh certain outcomes that disadvantage small businesses, reinforcing the need for continual human oversight of models.

Protecting the fairness and transparency of AI used in government procurement is paramount. Even the perception of bias or impropriety can sink an entire effort. Therefore, government leaders should pay attention to all of the [dimensions of trustworthy AI](#) development from model design, data selection, training, through to use. And it shouldn't stop once a model is deployed. Model drift and other challenges mean that models should be continually evaluated and updated to ensure they are still fit for purpose.

Getting started

The challenges with adopting AI at scale can seem insurmountable. However, our research has found that the right mix of technical and organizational capabilities can improve the chances of adopting AI or other automation at scale. While the journey to AI transforming procurement is generally a long one, a few key steps can help your organization get started.

Growing technical capabilities to consider:

- Tailor your solutions and data. For example, collect representative contracts to fine-tune models, especially for large language models that may otherwise produce incorrect results influenced by other, more common data.
- Don't go it alone. Almost no organization has within it all the technologies and skills needed to scale AI. Tapping into a wide ecosystem of academia, industry, and even other government organizations can be keys to success. As per one study, surveyed organizations with a diverse ecosystem of partners were almost five times as likely to have their AI solutions "exceed expectations."⁷

Growing organizational capabilities to consider:

- Use AI to build value. Start with use cases that either relieve low-value work from workers or allow high-value tasks to be done in new, more effective ways.
- Create shared incentives. Institute shared budgets or other governance processes that give procurement, IT, and line-of-business leaders incentives to work toward shared goals.

Nearly every service that government provides to the public involves procurement at some stage. So, improving the efficiency and effectiveness of procurement doesn't just allow for back-office work to be completed faster, it touches the core of what citizens receive from government. The emergence of gen AI offers a new moment to harness technology and human judgment together to deliver more of what citizens desire, for less.

Endnotes

1. Data for personnel figures comes from FedScope data on GS-1102 series. Data on contracting actions and obligations comes from Federal Procurement Data System-Next Generation.
2. The Cape Henry Lighthouse is the first public works project by the new United States government. Authorized in 1789, the construction contract was signed in 1791.
3. US General Services Administration blog team, “Technology in action: How robotic process automation is working to transform federal buying,” August 10, 2022.
4. Ibid.
5. Deloitte, “2023 global chief procurement officer survey,” accessed October 19, 2023.
6. Olivia Solon, “How a book about flies came to be priced US\$24 million on Amazon,” *Wired*, April 27, 2011.
7. Edward Van Buren, William D. Eggers, Tasha Austin, Joe Mariani, and Pankaj Kamleshkumar Kishnani, *Scaling AI in government: How to reach the heights of enterprise-wide adoption of AI*, Deloitte Insights, December 13, 2021.

About the authors

Scott Palmer

scopalmer@deloitte.com

Scott Palmer is a specialist executive within Deloitte Consulting's Supply Chain & Network Operations market offering. He applies his federal procurement experience to help clients produce superior outcomes. Palmer specializes in procurement organizational transformation, focusing on people, processes, and tools to optimize the workforce, minimize transaction time, and utilize data to improve operational and strategic decisions.

Jason Myers

jasmyers@deloitte.com

Jason Myers is a leader of Deloitte Consulting's Sourcing & Procurement market offering within the GPS practice, where he works with clients to solve complex supply chain issues such as category management implementation, strategic sourcing execution, digital procurement transformation, and operating model design optimization. Myers has more than 14 years of experience in delivering sourcing and procurement solutions across a variety of sectors, including defense and national security, civilian government, federal health, and state and local government.

Joe Mariani

jmariani@deloitte.com

Joe Mariani is a senior research manager with Deloitte's Center for Government Insights. His research focuses on innovation and technology adoption for both national security organizations and commercial businesses. His previous work includes experience as a consultant to the defense and intelligence industries, high school science teacher, and Marine Corps intelligence officer.

Acknowledgments

The authors would like to thank **Rupesh Bhat** and **Shambhavi Shah** from Deloitte Insights for their editorial support and inputs.

About the Deloitte Center for Government Insights

The Deloitte Center for Government Insights shares inspiring stories of government innovation, looking at what's behind the adoption of new technologies and management practices. We produce cutting-edge research that guides public officials without burying them in jargon and minutiae, crystalizing essential insights in an easy-to-absorb format. Through research, forums, and immersive workshops, our goal is to provide public officials, policy professionals, and members of the media with fresh insights that advance an understanding of what is possible in government transformation.

Continue the conversation

Industry leadership

Scott Palmer

Specialist executive | Supply Chain & Network Operations | Deloitte Consulting LLP
+1 202 308 6781 | scopalmer@deloitte.com

Scott Palmer specializes in procurement and organizational transformation, focusing on people, processes, and tools, to optimize the workforce and minimize transaction time.

Joe Mariani

Senior research manager | Deloitte Services LP
+1 312 486 2150 | jmariani@deloitte.com

Joe Mariani focuses on innovation and technology adoption for both national security organizations and commercial businesses.

Contributors

Editorial: Rupesh Bhat, Shambhavi Shah, and Debasree Mandal

Cover artwork: Sofia Sergi and Sonya Vasilieff

Creative: Molly Piersol and Pooja N Lnu



Published in collaboration with Deloitte Insights.

About this publication

This publication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms, or its and their affiliates are, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your finances or your business. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. None of Deloitte Touche Tohmatsu Limited, its member firms, or its and their respective affiliates shall be responsible for any loss whatsoever sustained by any person who relies on this publication.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the "Deloitte" name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see www.deloitte.com/about to learn more about our global network of member firms.