

Realizing the potential of generative AI in human services: Use cases to transform program delivery

A report from the Deloitte Center for Government Insights

Generative AI is a powerful tool that, when used in concert with other AI tools and appropriate governance mechanisms, can help services reach people more quickly and equitably.

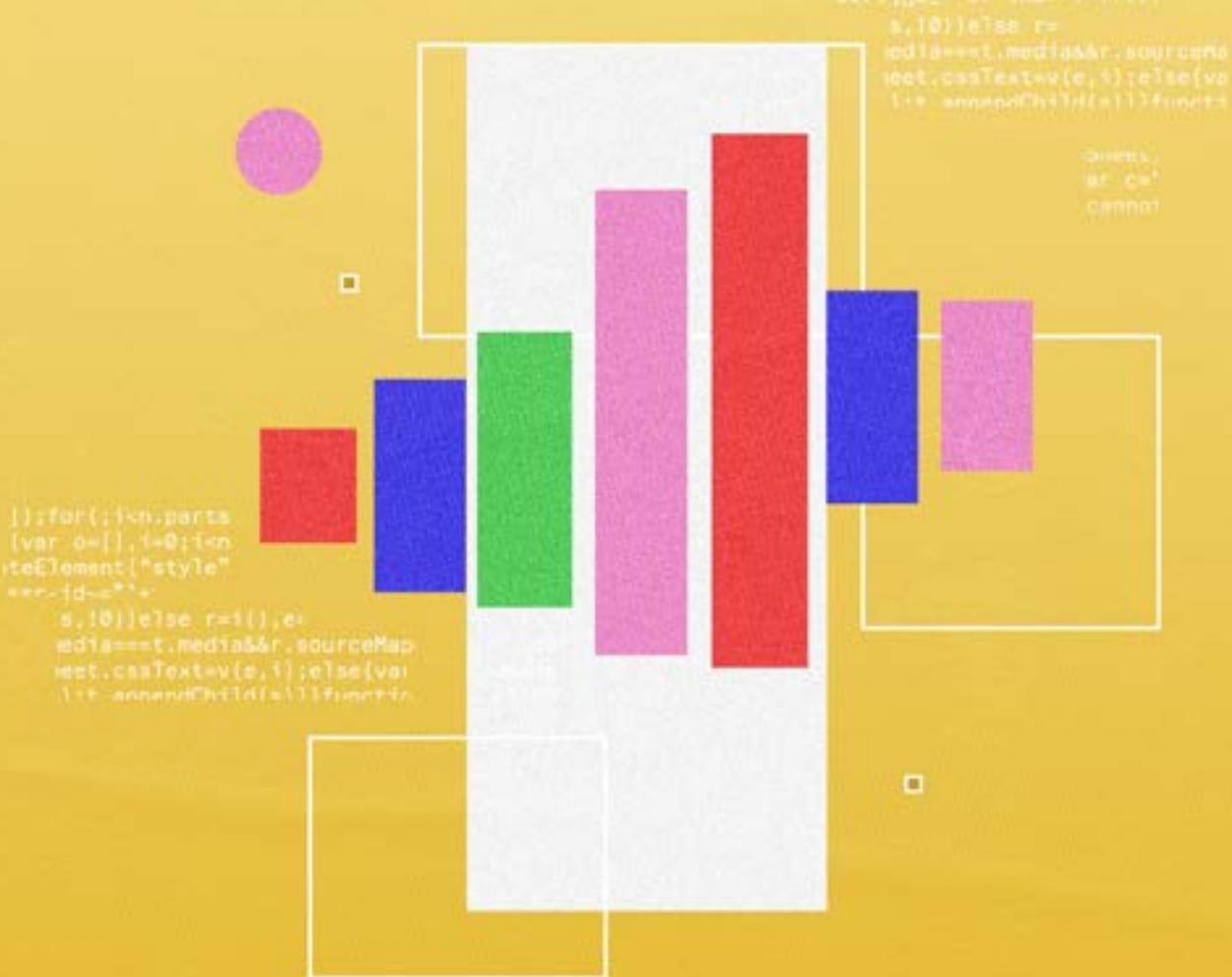


Table of contents

02 . . . Introduction

*03 . . . Three principles that can help realize the potential of
generative AI*

06 . . . So, how can AI transform human services?

09 . . . Managing challenges of ethical AI

10 . . . Best practices for getting started

11 . . . Endnotes



Introduction

"I was coping with my cases, but as it seemed there would be no end to the additions to my caseload, it would not be long before I couldn't."¹ That is how one caseworker described the crush of cases that drove them to quit the profession. Caught between the desire to deliver high-quality services to individuals and families needing assistance and the significant demand for services, many human services staff and administrators are feeling the strain.

It can seem like an intractable problem. Hiring is difficult, and when human services agencies do hire, new employees often take months to become fully productive. The resulting capacity deficit can impact an agency's ability to carry out its mission.

On the client's side, lack of timeliness and accessibility of services, poor customer experience, and inequities in service delivery remain challenges. Individuals and families often spend considerable time manually clicking through a website to find information on programs and services they may be eligible for. Government call centers can often have frustratingly long waits. Language barriers can make it difficult to interact with agencies. The list goes on.

With the recent emergence of generative artificial intelligence, there appears to be an opportunity for improvement. Generative AI has the ability to create personalized content (including text, images, audio, code, voice, and video) at scale, potentially reducing the administrative burden on the workforce. For example, generative AI can intelligently copilot a case with a caseworker by answering case-specific questions in the context of the system and policy, simplifying policy guidance and rules, extracting information from case notes, supporting training and onboarding, and helping make data-driven decisions. Core AI technologies can be leveraged in tandem with generative AI to help lessen caseworkers' workload by prepopulating data from paper applications, automating system actions, sending reminders and other communications to clients, and recommending interventions.

While generative AI is not a cure-all, it can be a part of the solution when applied to the right tasks and paired with other tools and human judgment.

Three principles that can help realize the potential of generative AI

Human services organizations can leverage generative AI by adopting a use case-driven approach to identify appropriate AI tools, integrating the right AI tools within existing systems and processes, and reimagining business processes and workflows.

Adopt a use case-driven approach to identify appropriate AI tools

A strength of AI is that it operates differently than humans do. Moreover, each AI model works distinctly, giving them each unique strengths and weaknesses. Generative AI, for example, can do creative tasks that traditional machine learning models cannot, but potentially at the cost of some degree of accuracy.

To deliver optimal results, organizations will likely need not only human-machine teams but human-machine-machine teams where tasks are performed by the teammate best suited for them. Tasks requiring creating repetitive content, such as transcribing case notes, generating reports, or analyzing client sentiment on a call, could be performed by generative AI. Tasks involving finding patterns in large volumes of data with a high degree of precision, like predicting delinquencies or detecting fraud, could be assigned to traditional machine learning models. Finally, tasks with high variability or social components could be reserved for human judgment (figure 1).

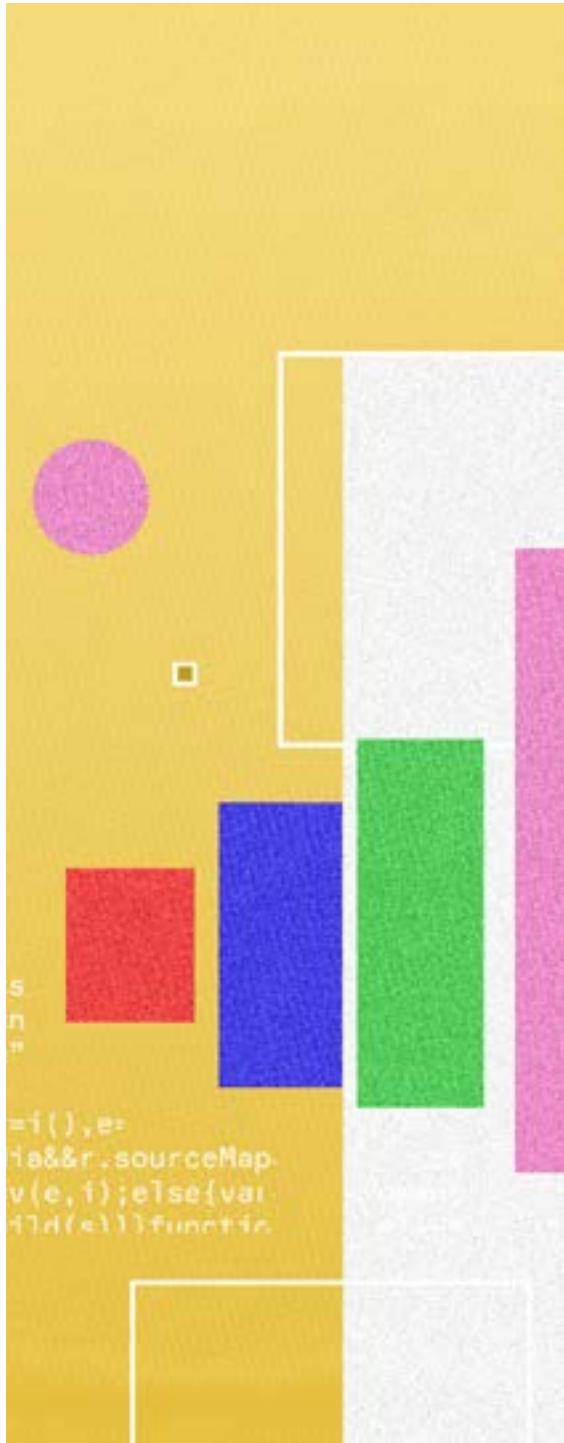
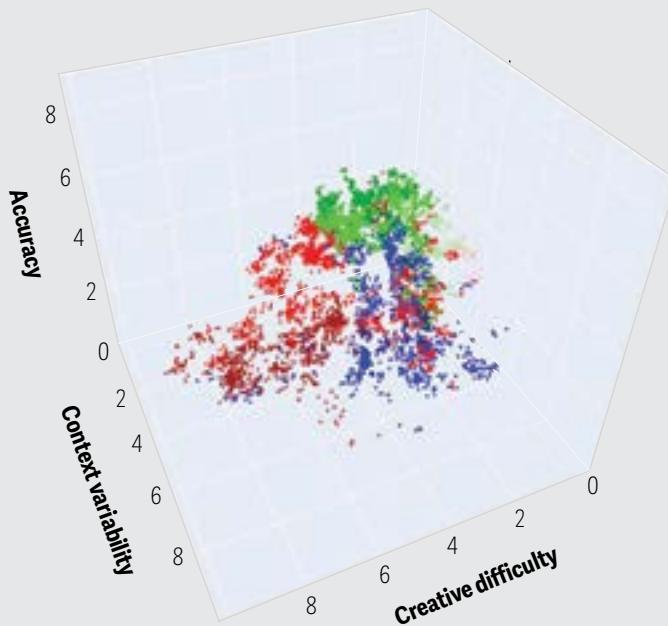


Figure 1

Humans and various AI tools have unique strengths, making them suitable for different tasks

All tasks performed by federal workers rated by the required accuracy, creative difficulty, and context variability

● Human-only ● Generative AI ● Other automation



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

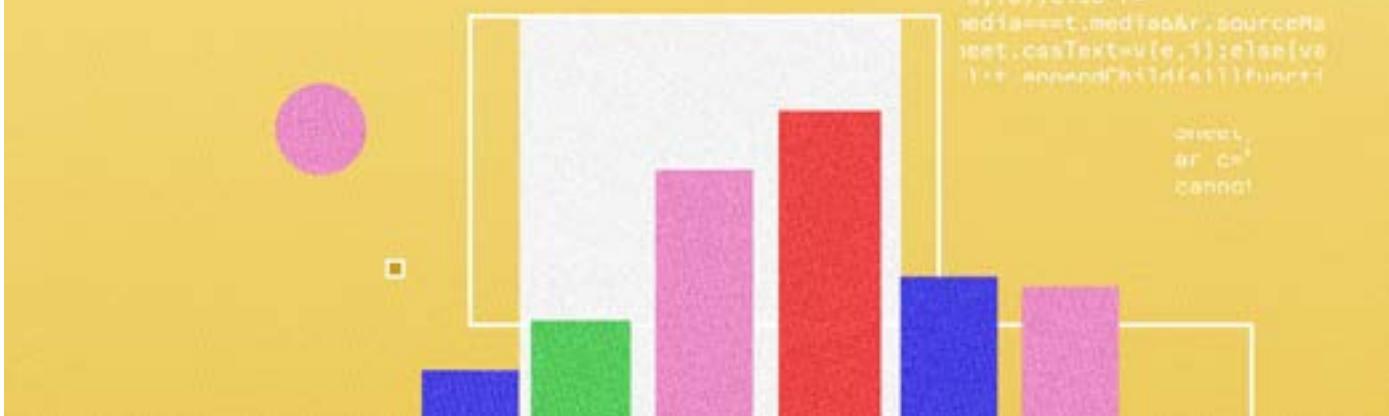
GENERATIVE AI IS THE LATEST IN A SERIES OF AUTOMATION TOOLS TO HELP HUMAN SERVICES AGENCIES

The human-like performance of large language models may seem like something straight out of science fiction, but it is just the latest step in a long line of automation tools. As tools become more capable, they can handle more complex tasks with less human interaction. These can range from simple tools like robotic process automation (RPA) to more intelligent automation like handwriting or voice recognition to true AI and generative AI tools. (Many states have already embarked on

their AI journey to tackle operational and customer experience challenges).

In 2021, nearly half of government respondents in one survey indicated that they either used RPA or were getting ready to implement it within the next two years.² Deployed across functions ranging from hiring to finance, RPA tools automate business processes, saving government workers millions of hours each year.³

Even more complex tools, like voice recognition, have been helping human services organizations for years. With the average person speaking at a rate of about 130 words per minute, taking accurate conversation notes can be challenging for even the best typists. As a result, several state human services agencies are using speech-to-text software to help transcribe case notes, improving accuracy and allowing caseworkers to focus on the important human details of the interaction.⁴



Integrate the right AI tools within existing systems and processes

Many human services agencies across the country have invested in building and integrating systems that caseworkers and families use for services. Rather than creating new, independent solutions that exist outside this ecosystem, agencies should look to integrate solutions into existing workflows and harmonize AI with existing systems. Also, because different AI models do different things, it follows that the best results might not come from applying any single monolithic tool but rather when multiple tools are used in concert, each playing to its particular strengths.

An agency wanting to improve its application or renewal processing, for example, could have generative AI try to process and respond to all forms, but this can lead to problems with hallucination—when a model generates information that is inconsistent with the dataset it was trained on—and other issues. A better approach may involve layering tools onto discrete subtasks: building an intelligent optical character recognition solution within the existing document management software to extract data from written forms and enter it into existing databases; employing RPA to determine if the application can be processed automatically in the portals and databases based on defined rules or if it needs human attention; and once a judgment is made, generative AI can tailor messages to specific recipients, letting them know the status of their application and next steps through existing correspondence and notification systems (e.g., text, email, and physical notice), in the applicant's preferred language.

By integrating an appropriate combination of traditional AI, generative AI, and human intelligence into existing systems, agencies can deliver a more seamless and integrated user experience.

Reimagine business processes and workflows

In 1959, the postal service tested sending mail via a submarine-launched cruise missile.⁵ Perhaps, not surprisingly, the experiment was abandoned after only one test. The issue is that bolting new tools onto existing processes is rarely the right solution. The same holds true for AI: Merely adding AI to processes designed for humans can not only miss out on the benefits of AI, but it could also be counterproductive.

Agencies should first reimagine their desired business outcomes and then apply AI to help achieve them. This approach can both increase the utility of AI and increase the chances of success for an AI project. For example, the State of Ohio identified the need to ensure that newborns covered by Medicaid have access to care as soon as they need it. In response, the state first transformed its previously disparate newborn reporting process and standardized how managed care organizations share this information. RPA tools then use this information to assist workers in determining a newborn's eligibility for Medicaid, which has helped reduce the administrative burden for staff. By first tackling the root of the problem, the State of Ohio can now provide newborns with access to Medicaid the same day the information is received, a process that previously took seven to 10 business days. Further, a recent Deloitte survey reaffirms the importance of reimagining processes. The survey found that organizations that adapted their workflows to AI were 36% more likely to achieve the desired outcomes from their AI projects.⁶



So, how can AI transform human services?

T

he strengths of AI and other technologies—handling large volumes of data, automation, and accuracy—can help human services agencies augment the capacity of their workforces and improve the experience of individuals and families

interacting with human services programs. Using the three principles as a guide, human services organizations can use a combination of traditional AI and generative AI to transform how they deliver services (figure 2).

Figure 2

Transforming human services tasks through AI

● AI improving effectiveness

● AI improving efficiency

Transforming tasks	● Recommending other eligible human services programs ● Auto-filling applications forms	● Generating assessment plans with recommended interventions ● Case copilot or assistant	● Assess equity in services ● Assist with hearings and case prep
Enhancing existing tasks	● Automating data entry from paper ● Addressing queries of applicants ● Automating application screening	● Fraud detection ● Predicting and preventing delinquencies ● Prioritizing inspections	● Automating verification of data ● Client follow up and documentation
Intake	Case planning	Service delivery and case management	Human services life cycle

Source: Deloitte analysis.



Processing intake forms and case management

Applying or reapplying for benefits can be a lengthy and cumbersome process. Even though many applications have moved online, agencies still receive paper applications and renewals. Intelligent optical character recognition can extract information from these applications and put it in a master data management system with the help of RPA. A rules-engine software can do the first evaluation and case setup, with caseworkers validating the output and spending more time on complex cases. Then, generative AI can provide detailed reasoning behind eligibility determinations, which can be conveyed to eligible and noneligible applicants while simultaneously helping the caseworker with any remaining questions. Agencies can then use generative AI to tailor messages to eligible individuals about how to access services in their preferred spoken or written language. When additional policy questions arise, generative AI can assist in answering them, using policy manuals, system documents, and systems rules as inputs and providing citations to relevant documents and administrative rules that caseworkers can reference.

Moreover, generative AI can improve the experience of individuals and families applying for benefits. Through interactive forms or a chat interface, generative AI can support applicants by simplifying difficult policy questions or phrases and helping nudge them if and when they get stuck. It can also be an effective navigator tool for individuals and families that might not know what services they even need or might be eligible for, demystifying hundreds of programs and pages of content into simple language tailored to their needs.

Onboarding new caseworkers

Attrition has been a long-standing challenge for human services agencies. One problem with high turnover is the associated loss of institutional knowledge. Quality and efficiency can vary greatly as new workers get up to speed.

To improve the onboarding process, generative AI can automatically code exit interviews of retiring, more experienced caseworkers to distill important lessons for new hires. Additionally, generative AI can automatically generate onboarding documents and assist new hires so that they can benefit from the wisdom of more experienced caseworkers. Further, generative AI—trained on policy manuals, program rules, and case data—can help to answer questions and provide critical live on-the-job support within the context of the case they are processing. This support could be available 24 hours a day, simplifying access to help workers and freeing up crucial agency trainer time to focus on business priorities (e.g., accuracy improvements, customer service, etc.).

Reducing the administrative burden for caseworkers

Documenting and recording information are the most time-consuming tasks in government, taking up around 10% of federal and state workers' time. For federal workers alone, it amounts to more than 400 million hours annually.⁷ Caseworkers are required to document their client interactions and regularly submit assessment and intervention reports. AI can help by extracting key information from case notes or an interview call and

```
});for(i<n.parts  
  (var b=[],i=0;i<n  
iteElement("style"  
  var id=""+  
  );  
  s.(0))else rxi(),e  
  media===""&r.sourceMap  
  ieet.cssText=v(e,i);else{var  
  l+=annandCh(11)i++}T1functio
```

entering it into the system. Generative AI can then use that information to produce first drafts of reports that a caseworker can review and submit. Beyond speeding up paperwork, AI can also augment decision-making by analyzing historical cases, identifying patterns, and generating summaries of interventions. Moreover, generative AI can assist caseworkers in researching the individual needs of families, assessing their case progression timelines, and identifying any major themes (e.g., safety), helping caseworkers to make well-informed decisions.

Making service delivery more inclusive and equitable

Twenty-six million US residents (roughly 9% of the population) have limited English proficiency.⁸ Language barriers often lead to incorrect forms, delays in benefits, and difficulties with service delivery, among other things. The COVID-19 pandemic amplified this inequity in customer service. Individuals and families were forced into virtual-first or virtual-only environments, relying on online websites or mobile apps that may not have the same features or availability in languages other than English, exacerbating their experience. Besides language barriers, virtual interactions have also highlighted additional inequities in interactions with agencies for those

with intellectual disabilities and hearing and visual impairments. Outside the United States, countries are using a combination of technologies to help tackle such barriers.

In India, for example, *Jugalbandi*, a WhatsApp-based chatbot, is trying to bridge language barriers where only 11% of population speak English.⁹ The chatbot is trained on a large language generative AI system, and Artificial-Intelligence For Bharat (AI4Bharat), a government-backed program, powers its speech recognition models.¹⁰ The chatbot works by having a user send a text or audio message to the WhatsApp number, which is then transcribed using AI4Bharat's speech recognition model. The transcription is then translated to English by another translation language model. The English translation serves as a prompt for the generative AI system, which retrieves information on the relevant government program or service. The answer is translated into the user's native language and sent back to the user via WhatsApp.

The chatbot currently supports 10 of India's 22 official languages and provides information on over 170 government programs. Once connected to online government services, applicants can complete an application through voice commands.¹¹

Managing challenges of ethical AI



As AI and generative AI continue to revolutionize how human services are provided, agencies should focus on developing and deploying ethical AI systems. Improperly trained or supervised algorithms can perpetuate existing biases, particularly in sensitive areas such as child welfare, elder care, and unemployment benefits. And while the emergence of generative AI gives agencies a powerful tool, it also introduces new sources of risk, such as data privacy issues or hallucinations.

Mitigating bias: AI models are only as good as the datasets used to train them.¹² Diverse training data representative of the population served by human services agencies can help reduce the risk of bias.¹³ However, addressing bias is not a one-time activity. Agencies should monitor the accuracy of their models continually. Further, agencies can conduct third-party audits to assess potential bias introduced by the developers of models.

Protecting privacy: Human services agencies deal with sensitive personal information, and some generative AI systems can expose data from queries or training to developers, raising privacy risks. One potential solution is to use anonymized data to protect citizens' privacy.

The US Census Bureau has anonymized the census data by applying a differential privacy technique, which adds statistical noise to the data to prevent the identification of individuals or households.¹⁴ Human services agencies can also follow a similar approach to protect privacy.

Ensuring accuracy: There is also a growing concern about the risk of hallucinations where AI-generated content may not reflect reality. As discussed earlier, generative AI systems may generate false or misleading information in certain contexts. Agencies can reduce the hallucination of generative AI and improve the accuracy of any AI model by introducing additional information from human users. One way of doing this is by curating the data that a large language model runs on so that rather than producing answers from its own training data, the model pulls only from selected case files or regulations. Similarly, models can query databases that contain more information about objects, improving their accuracy.¹⁵

The deployment of generative AI requires a careful balance between increasing the data available for model training and protecting privacy. Human services agencies should tread that balance carefully as AI increasingly gets integrated into program delivery.



Best practices for getting started

Generative AI can open up transformative possibilities for human services when thoughtfully paired with complementary AI tools and human judgment. Yet, the path to adopting this new technology can be daunting. To help improve the transforming processes, rather than simply adding more steps, human services agencies should consider the following as they embark on their generative AI journey:

- **Become familiar with underlying technology:** Because generative AI is a rapidly evolving technology, it's important to acquire a fundamental understanding of the technology, the risks it carries, and its capabilities and to monitor its evolution continually. This includes understanding the legal and cybersecurity issues associated with it, which should be considered as solutions are evaluated.

- **Reimagine use cases:** Think big and identify ways human services agencies can leverage generative AI to address problems that haven't yet been solved. An outcome-driven approach aligned with an agency's mission can help maximize the use of the technology.
- **Put users at the center:** Generative AI can produce impressive concepts, but it needs humans to function. Designing and solutioning should prioritize end users, including caseworkers and clients.
- **Invest in trust and governance:** Trust is critical to the adoption of AI by caseworkers and clients. Ethical controls should be embedded in every step of model development, underlying data and bias protection, and change management for adoption.

Endnotes

1. Andy Faulkner, "Why I quit social work...after four months," *CommunityCare*, August 23, 2016.
2. Robert Snow, "How government CIOs can realize the true potential of robotic process automation," *Gartner*, February 16, 2022.
3. Deloitte, "Automation with intelligence," June 30, 2022.
4. Nuance Communications, "Speech-to-text for the e-government revolution," *Nuance*, June 15, 2021.
5. Kat Eschner, "Mail delivery by rocket never took off," *Smithsonian*, June 8, 2017.
6. Edward Van Buren, William D. Eggers, Tasha Austin, Joe Mariani, and Pankaj Kamleshkumar Krishnani, *Scaling AI in government: How to reach the heights of enterprise-wide adoption of AI*, Deloitte Insights, December 13, 2021.
7. Peter Viechnicki and William D. Eggers, *How much time and money can AI save government?*, Deloitte Insights, April 26, 2017.
8. Sweta Haldar, Drishti Pillai, and Samantha Artiga, "Overview of health coverage and care for individuals with limited English proficiency (LEP)," Kaiser Family Foundation, July 7, 2023.
9. Rukmini S, "In India, who speaks in English, and where?" *Mint*, May 14, 2019.
10. Sarasvati NT, "Jugalbandi, a chatbot for rural India by Microsoft and Ekstep: What to know and think about?" *MediaNama*, June 3, 2023.
11. Priyanka Sangani, "India's Jugalbandi AI bot steps into the light at MS Build," *Economic Times*, May 24, 2023.
12. Tasha Austin, Joe Mariani, Devon Dickau, Pankaj Kamleshkumar Krishnani, and Thirumalai Kannan, "How teaming artificial intelligence (AI) with humans can help debias decision-making," *Deloitte AI Institute for Government*, July 2023.
13. Tasha Austin, Kara Busath, Allie Diehl, Pankaj Kamleshkumar Krishnani, and Joe Mariani, *Trustworthy open data for trustworthy AI*, Deloitte Insights, December 10, 2021.
14. Ruobin Gong, Erica L. Groshen, and Salil Vadhan, "Differential privacy for the 2020 census: How can we make data both private and useful?" Harvard University, July 11, 2022.
15. Anirudh VK, "The secret to reducing large language model hallucinations lies in the database," *Analytics India Magazine*, July 28, 2023.

About the authors

Tiffany Fishman

tfishman@deloitte.com

Tiffany Fishman is a senior manager with the Deloitte Center for Government Insights. Her research and client work focuses on how emerging issues in technology, business, and society will impact organizations. She has written extensively on a wide range of public policy and management issues, from health and human services reform to the future of transportation and the transformation of higher education.

Jamia McDonald

jammcdonald@deloitte.com

Jamia McDonald is a principal and highly experienced government leader in Deloitte Consulting LLP's Human Services Transformation practice, where she leads the firm's national program and policy team serving its Government and Public Services industry. She also serves as a leader for Deloitte's State, Local and Higher Ed Artificial Intelligence practice.

Hariharan Murthy

hamurthy@deloitte.com

Hari Murthy is a managing director in Deloitte Consulting LLP's Public Sector practice, serving as the industry technology service area leader. He is collaborating with state and local government organizations to design citizen-centric services using state-of-the-art digital transformation and cloud platform technologies.

Naman Chaurasia

nchaurasia@deloitte.com

Naman Chaurasia is a senior manager with Deloitte Consulting LLP's Strategy and Analytics practice. He leads AI and operational efficiency efforts for state health and human services agencies in response to constituent demands, policy changes, performance issues, or technology changes.

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.

Pankaj Kamleshkumar Kishnani

pkamleshkumarkish@deloitte.com

Pankaj Kishnani is a research specialist with the Deloitte Center for Government Insights. His research focuses on identifying trends in emerging technologies and innovations that can transform public sector. He also closely tracks digital transformation, regulation of emerging technologies, and service delivery innovations in government.

Acknowledgments

The authors would like to thank Simon Tam, Josh Hjartarson, Joana Valente, Tharani Jegatheeswaran, Jeroen Van Eeghem, Andreas Nikolajsen, Lotte van den Berg, Thor Hvidbak, Rasmus Vibaek Soerensen, Mathias Holtse Christiansen, Oliver Ungermann Snebjerg, and Michael Theill for their invaluable contribution in shaping this piece. They also thank Kavita Majumdar and Shambavi 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

Jamia McDonald

Principal | Deloitte Consulting LLP
+1 717 562 5431 | jammcdonald@deloitte.com

Jamia McDonald is a principal and highly experienced government leader in Deloitte Consulting LLP's Human Services Transformation practice.

Contributors

Editorial: Kavita Majumdar, Shambhavi Shah, Emma Downey, and Debasree Mandal

Creative: Meena Sonar, Govindh Raj, and Molly Piersol
Cover artwork: Sofia Sergi and Sonya Vasilieff



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.