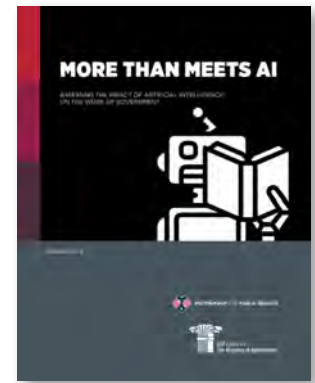# More Than Meets AI: Assessing the Impact of Artificial Intelligence on the Work of Government

Edited by Michael J. Keegan

Our second contribution to this forum addresses how government can best harness AI's potential to transform public sector operations, services, and skill sets. The report draws on insights from a series of roundtables with government leaders to explore pressing issues surrounding AI, share best practices for addressing solvable challenges, and work toward an implementation roadmap for government to maximize the benefits of AI. What follows is excerpted from the report, *More Than Meets AI: Assessing the Impact of Artificial Intelligence on the Work of Government*.

Introduction

How agencies incorporate AI into their work and manage the potential impact on the workforce has implications beyond the professional lives of federal employees. Federal agencies must become knowledgeable about AI if they hope to develop effective policies for technologies such as self-driving cars or applications that protect our national security.

AI is expected to revolutionize how government works. For one, AI could enable federal employees to focus on core responsibilities related to their agencies' missions and spend fewer hours on administrative duties. They are likely to have more time to deliver services, interact with customers. and perform other mission-related tasks. Should AI become pervasive in federal agencies, employees will need to enhance their digital and data literacy and learn how best to use the technology to work with citizens effectively. AI systems require critical thinking. Jobs based mainly on tasks that can be automated would likely be phased out, and employees would have to learn new or different skills for other jobs.

The insights excerpted here derive from a report based on two roundtable discussions the Partnership and the IBM Center hosted in July and October of 2018, as well as interviews conducted in October and November of 2018. The 43 people who participated have AI expertise in a variety of sectors and fields.
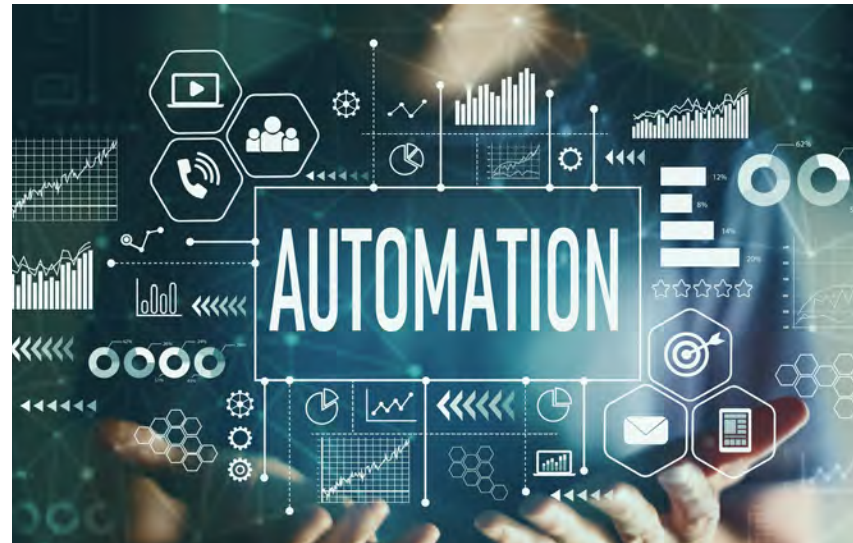
AI Will Transform the Federal Workday

Experts predict that automating administrative tasks will be one of AI's initial benefits. Over time, federal employees will spend less time on repetitive administrative work and more of their workday on tasks that are core to their agencies' missions, from mitigating hazards in workplaces to following up on complicated applications for grants or other government services.

A food safety inspector, for example, could spend more time advising on sanitation standards in restaurants or stores than on processing food sample data, with AI pointing out where and how facilities are falling short. Likewise, a tax examiner could take more time to follow up with taxpayers whose returns AI identifies as potentially incorrect rather than spend hours compiling and recording routine tax returns. And an occupational safety technician might use more of the day developing recommendations for safer workplaces than on categorizing information on job injuries, based on AI's determination of which occupations are most hazardous.

AI may also enable agencies to do things in new ways: reach more people, do things faster, and do things on a larger scale. For example, the U.S. Coast Guard now uses AI to analyze satellite images to identify vessels at sea that might be smuggling humans, wildlife, drugs, or arms. This saves the Coast Guard from patrolling randomly, hoping to stumble upon criminals in action. National Aeronautics and Space Administration (NASA) scientists use AI to search for planets in data and images that space telescopes collect. In 2017, AI helped NASA discover a new planet—Kepler-90i—by analyzing more than 35,000 pieces of telescope data.

These are just a couple of examples of AI's progression in government. In the long term, the transformation of federal work will likely go beyond automating the routine and will impact the nature of jobs. For some employees, the change might mean safer jobs. For example, AI could protect the lives of law enforcement agents, who can now police high-crime areas using a video recording drone with help from AI to analyze the footage. For other federal employees, AI could lead to more engaging jobs. AI is helping the Labor Department's Bureau of Labor Statistics read and sort through hundreds of thousands of responses to an annual survey on occupational injuries and illnesses. Bureau staff can now focus on more complex tasks.

Recommendations. Agency political leaders and senior executives will have to manage change if artificial intelligence transforms the federal workday as foreseen.

- Leaders should communicate with employees early and often about the potential of AI to disrupt and alter their work. Leaders and managers should learn from early adopters of AI, such as the U.S. Coast Guard, NASA, and the Department of Health and Human Services. They should find out the extent to which the workday changed for employees, what types of agency work AI helped these organizations accomplish, which tasks were automated successfully, and what kind of work employees might start doing in place of current, repetitive tasks that AI could perform.

- The Office of Management and Budget (OMB) should focus on AI in the context of cross-agency priority (CAP) goals, showing the federal workforce the "art of the possible." Through these CAP goals, OMB and agencies should focus on governmentwide areas of concern where AI could improve mission delivery, such as helping connect health care data across agencies or identifying critical talent gaps and searching through resumes for qualified candidates. Government also

should monitor progress made toward the CAP goal to demonstrate AI's value to agency missions and reveal potential challenges agencies will need to address.

Using AI to Personalize Services

If AI, as predicted, decreases time spent on clerical work and increases the amount of information that can be collected and analyzed, employees could focus more of their attention on customer service and tailor services to the needs of individuals.

The shift toward employees engaging more with agency customers is expected to be one of several possible effects of automating administrative tasks. Personalized customer experience is the norm in the private sector, and people's expectations for good service have risen. Government lags behind in this area for the most part. Some agencies are already responding. The U.S. Agency for International Development (USAID), for example, is partnering with organizations such as Colombia's International Center for Tropical Agriculture to help farmers predict rain, drought, other weather conditions, and when and what to plant, and when to harvest. More accurate weather forecasts help with those decisions. AI enables USAID and other agencies to reach a larger number of people in an individual way and offer services geared toward individual farmers or families.

Recommendations. As artificial intelligence enables employees to focus more on the customer, federal agencies should help their employees improve their customer service skills.

- Federal employees should receive training that emphasizes skills for handling interactions with agency customers with the help of AI. "Social literacy" entails skills such as active listening, communication, critical thinking, negotiation, persuasion, reading comprehension, and writing. These skills will become more important as employees are able to spend more time with customers.

- Agency recruiters and hiring managers should assess job applicants for the skills listed above. Some digital tools already enable hiring managers to assess job candidates for these capabilities. For one, USA Hire, an online skills and qualifications assessment offered to agencies by the Office of Personnel Management (OPM), measures social literacy through decision making, interpersonal skills and reading comprehension, among other skills.

AI Puts Technical and Data Skills Front and Center

Federal employees in the future will need new skills to succeed in a world with AI. Creating, understanding, managing, and working with AI requires technical, digital, and data literacy that much of the workforce currently lacks.

With less need for human beings to do clerical work, library technicians could use more of their day writing information-cataloguing software. Environmental scientists might spend more time evaluating sample data that machines compile for them, instead of on the initial steps of transferring and compiling the data. Claims specialists could use their statistical skills to discern why an AI system recommends approving or denying customers' applications for government services, rather than on transcribing paperwork.

Understanding AI means comprehending probability theory, the branch of mathematics that measures the likelihood of events occurring. AI arrives at its conclusions based on the probability of a picture showing a cat rather than dog, for example, or a person saying, "real eyes" rather than "realize."

Additionally, employees will need to understand the data AI uses, how AI algorithms work with the data, and how to interpret the results of AI's data analysis. Their work will entail evaluating the quality of data going into the system to determine if bias exists and whether AI's predictions or recommendations can be trusted.

Employees would need analytical skills to recognize the potential bias in job application data, deduce the cause, and fix the problem. Federal employees also must be able to assess whether AI presented the right conclusion, and explain how AI arrived at its conclusion, whether it's to a grant applicant whose request was denied or to a congressional committee with questions about the process. Everybody will be a bit of a data scientist in the future. It doesn't matter if

you are from HR, IT, or the business side. There's a general data literacy that we will have to have. Yet training for new job skills has not been available to the degree many federal employees would like.

Recommendations. As artificial intelligence becomes more ubiquitous in federal workplaces, the federal government should emphasize expertise in technical, digital, and data skills.

- The Office of Management and Budget and Congress should provide sufficient funding for AI and related technical training. Federal employees will need extensive and ongoing training in technology, digital skills, and data analysis to succeed in an AI workplace.

- The Office of Personnel Management should consider establishing an AI occupational series in line with the proposed AI in Government Act of 2018, which directs OPM to create a new occupational series or change an existing one to focus on AI-related tasks. Employees in this AI job series would have the primary responsibility for managing AI in government.

- OMB should work with the General Services Administration to establish a team for AI talent similar to the U.S. Digital Service, an information technology talent and consulting group in government. This AI team should be governed by rules that make it easy to hire top AI talent from the private sector for time-limited stints in government, helping federal agencies that need expertise for AI projects.

Conclusion

The federal government, one of the world's largest employers, is bound to face disruption from AI. As leaders incorporate the technology into their agencies, they will have to oversee employees who will face myriad changes in their work lives. At the same time, federal employees will play a crucial role for other sectors adopting AI, whether by writing regulations on self-driving cars or ensuring malicious actors are not exploiting AI-powered algorithms. This essential role underscores the need for government to become a responsible user and customer of the technology, address ethics and transparency in AI implementation, and translate its experience with AI into guidance for other sectors. Every part of our government, from federal agencies to the White House to Congress, plays a role in ensuring this transition to an AI-augmented federal workplace is as smooth as possible and that federal employees have the skills to thrive.