What is Generative AI?

There are generally two types of generative AI:

1. **Uncurated models**: Trained with massive amounts of data from publicly available sources. These models are self- or semi-supervised and don’t involve much human intervention, potentially leading to bias and misinformation.

2. **Curated models**: Proprietary models that a public or private organization owns. These models use only an organization’s curated data and are monitored in accordance with the U.S. AI Bill of Rights or other governance policies to maintain proper compliance and prevent bias.
“These models are massive — we often see them operating with billions of parameters,” says Mike Ross, IBM Director and Account Technical Leader for State and Local Government. “That can lead to unplanned and undesirable behaviors, such as biases, hallucinations or answers that turn out to be incorrect.”

“For that reason, generative AI models must be transparent, controllable, explainable, fair and equitable,” Ross says. “They mimic human forms of intelligence, and they interact with large swaths of the public. So these models need to be trustworthy, and ownership and responsibility for their results must be well-defined.”

While AI presents risks, its potential benefits are monumental. AI can reimagine government services in five critical areas:

1. Health and human services (HHS)
2. Sustainability
3. Cybersecurity
4. Higher education
5. Employment/unemployment insurance (UI)

AI & HHS: Driving Whole-Person Care

Where we are now:
The HHS ecosystem is fragmented, with huge volumes of disconnected data and disparate systems that rarely talk to each other. This prevents interoperability and impedes care coordination, holistic visibility into an individual’s interactions across the HHS continuum, and the delivery of quality, whole person-centered care.

An AI-driven future:
AI can upend the status quo by automating data collection and analysis and supporting predictive analytics that drive more informed, forward-looking decision-making. For example, generative AI could allow a state Medicaid agency to use data about its policies as the foundation for a self-service application where health care providers can ask questions in a constituent’s native language.

Across the country, states realize the critical need to better understand massive amounts of data on individuals who receive HHS services. With AI, states could build domain-specific foundation models based on large, curated data sets, such as public health data or social determinants of health data. States could use these models to assess care quality and tailor interventions through their Medicaid and Medicare programs. They could also help individuals qualify and receive services faster by using automation to replicate white-glove service in a self-service environment.

Generative AI can enhance decision-making, automate repetitive tasks and provide insights based on large datasets, ultimately helping state agencies improve efficiency and effectiveness and optimize the delivery of constituent services. However, it’s important to consider ethical and privacy concerns when implementing generative AI in government contexts and ensure transparency and accountability in its use,” says Myra Dudley, IBM Technology Sales Director for State and Local Government. “For HHS agencies, generative AI can be a powerful tool to improve healthcare delivery, patient outcomes and overall efficiency of the system.”

AI & Sustainability: Protecting Our Planet

Where we are now:
With weather events intensifying every year, rising sea levels that threaten coastal communities, and threats to food security caused by changing temperatures and precipitation patterns, sustainability must be a priority.

An AI-driven future:
AI’s unrivaled data processing, automation capabilities and ability to digitize any physical asset will allow agencies to better manage intelligent grid systems, support renewable energy infrastructure, monitor water and air pollution, and more.

“AI can automate data collection as well as the decision-making process of sustainability, which in the past has been a human-owned task,” says Calvin Lawrence, Chief Technology Officer (CTO) for Responsible AI for the Americas at IBM, CTO for IBM’s business in Georgia, and an IBM Distinguished Engineer.

For example, IBM is collaborating with NASA to build a new immense foundation model for climate science that will allow NASA and other climate scientists to build tactical AI models much faster.

AI & Cybersecurity: Safeguarding the Public Sector

Where we are now:
State and local governments are attractive targets for cybercriminals because of the sensitive data they collect and legacy systems that often increase vulnerabilities.

An AI-driven future:
AI can reduce the likelihood of cyber incidents by automating threat prevention, detection, response and recovery. The technology safeguards digital and physical
infrastructure; supports continuous, dynamic authentication and verification; and streamlines incident recovery in the event of a breach. Many ports — which serve as the main thoroughfare by which goods enter and leave the U.S. — are using AI-enabled cybersecurity platforms to automatically detect threats and deploy a course of action to the right stakeholders.

AI can also help under-resourced security operations analysts stay ahead of threats. Curating threat intelligence from millions of research papers, blogs and news stories, AI can identify new threats and provide rapid insights to cut through the noise of daily alerts, drastically reducing response times.

AI can also act as the foundation for speech-to-text systems that allow teachers to better serve multilingual and multicultural student populations. The technology can support development of synthetic voice tools that speak either slower or louder for neurodiverse learners and streamline the creation of customized videos that incorporate different learning styles.

AI & Employment/UI:
Preparing Tomorrow’s Workforce

Where we are now:
Over the last three years, government agencies have stretched systems to meet new service delivery demands and maintain compliance. Unfortunately, many agencies struggled to successfully navigate this balancing act when demand for unemployment surged.

An AI-driven future:
State and local governments need to strengthen the resilience of their systems, particularly those that serve as a lifeline to vulnerable populations.

AI can support intelligent knowledge navigator tools and self-service applications that guide individuals through the unemployment insurance, worker’s compensation or disability insurance application process, providing a seamless experience on the front end.

AI also uses data analysis and pattern recognition to help agencies analyze potential fraud at the point of transaction. AI inferencing, the process of applying a trained AI model to make predictions or decisions based on new data, can support the development of preventive controls for stronger, real-time fraud detection and monitoring. AI is a powerful tool for managing activities across the fraud lifecycle, including payment tracking and fraud investigations.
AI is just as valuable for workforce development and reskilling. It can support job and skills matching, analyzing a nearly incalculable amount of data to align a job seeker’s skills with current openings — in a fraction of the time a human recruiter could do the same. “AI foundation models can help individuals see how their current skills and experiences map to new jobs and careers,” Ross says.

Next Steps with Next-Generation AI

AI — and generative AI in particular — can transform government service delivery and the constituent experience.

To realize this vision, state and local governments must use AI responsibly and collaborate with technology partners who also prioritize trustworthy AI. Varshney says organizations that rely on models developed from curated data, and data that fully represents the diverse range of constituents they serve, will be able to use AI more responsibly.

This piece was written and produced by the Center for Digital Government Content Studio, with information and input from IBM.

Endnotes: