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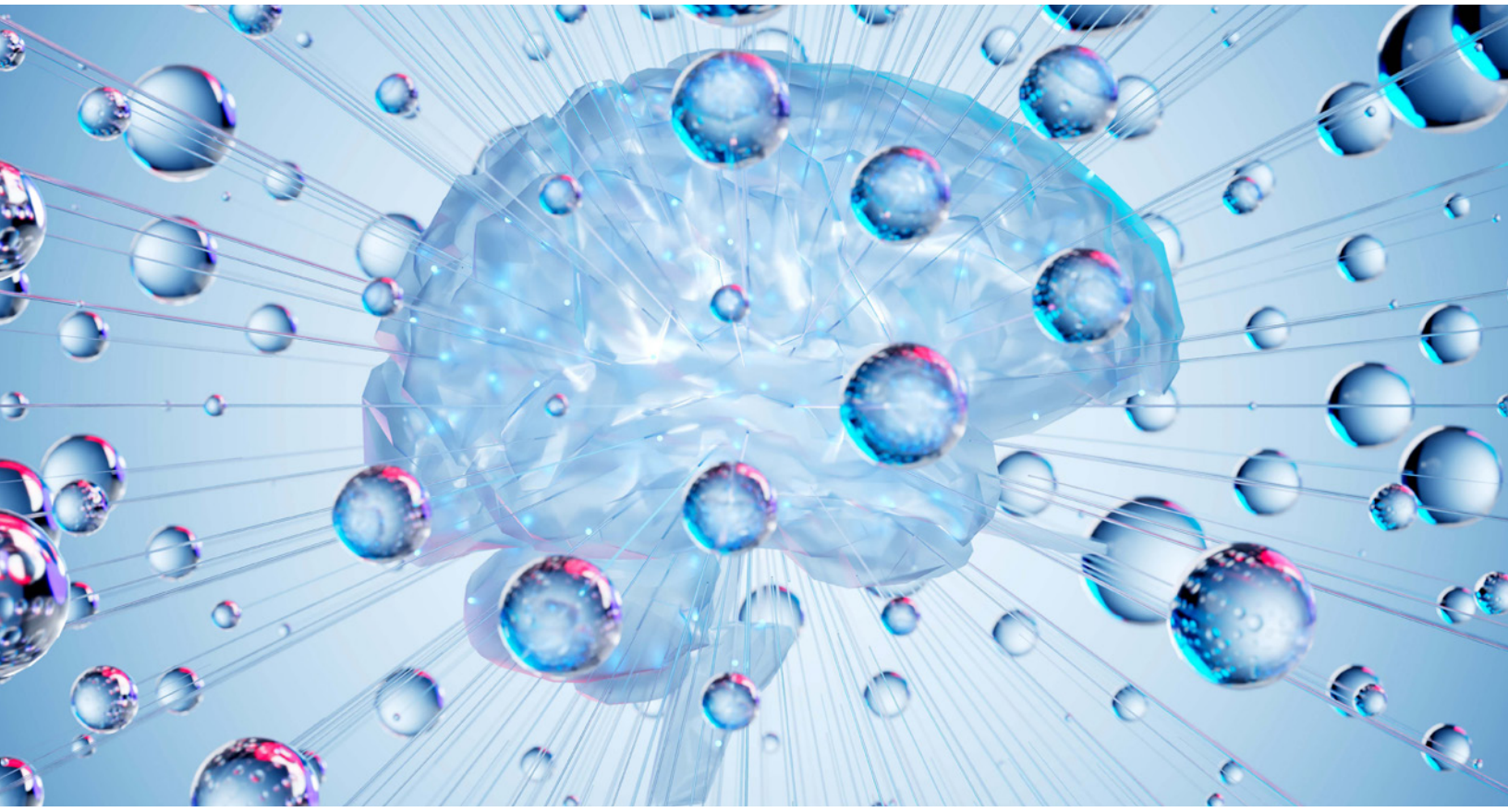
Public Sector Practice

Deploying generative AI in US state governments: Pilot, scale, adopt

States could have much to gain from using generative AI tools in their operations. A low-risk strategy may be to test some applications while preparing a longer-term implementation plan.

This article is a collaborative effort by Trey Childress, Sameer Chowdhary, Drew Erdmann, Gayatri Shenai, and Tim Ward, representing views from McKinsey's Public Sector Practice.



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Generative AI (gen AI) presents a sizable opportunity for US state governments to redefine services to residents and revamp service delivery. At the same time, it highlights new uncertainties. Given the technology's potential risks, an effective strategy for state leaders may be to set risk guardrails and prepare to move at scale while piloting lower-risk applications along the way. Such an approach brings real-time application and learning to the process of setting up robust enterprise governance and an adoption road map.

Understanding this opportunity as well as its risks, governments and private sector groups are addressing measures for the appropriate and safe adoption of gen AI. In October 2023, President Joe Biden issued an executive order to govern the development and use of AI in a "safe, secure, and trustworthy" way.[1] In the past year, many US state governments have followed suit by considering or introducing similar regulations, with the goal of improving state government operations while managing the technology's downsides such as risks related to data security and privacy.[2]

Gen AI's potential is unique. Unlike traditional AI, gen AI can work on unstructured data. This could enable organizations to leapfrog older approaches to digital innovation. States that lead the way in gen AI adoption may find themselves in the enviable position of achieving the following:

— enhancing the customer experience for residents despite persistently high turnover in some state roles and challenges in recruitment

— hiring and developing public sector professionals to deliver essential services efficiently, even in a tight labor market

— improving productivity and reducing backlogs in the face of ongoing budget revisions

— modernizing legacy IT systems to reduce technical debt (the off-balance-sheet accumulation of all the technology work a company needs to do in the future) and the risks associated with older software

Some state leaders have already initiated efforts to set an adoption road map and organizing principles for gen AI. To name a few, the governors of California, Oklahoma, and Virginia have issued executive directives designed to address the operational, IT, workforce, and risk dimensions of gen AI.[3] Given the speed of gen AI development and adoption, leaders are piloting early use cases and preparing for a broader rollout at the same time. In this article, we discuss a four-pronged framework that state leaders can use to create longer-term gen AI strategies for their governments. We also provide a step-by-step guide to help ensure these strategies address five critical areas: adoption, governance, technology and data, talent, and operations.

Four gen AI application archetypes can help leaders get started

State leaders should be aware of some popular myths about gen AI as they plan for its implementation. One misconception is that gen AI is a technology of the distant future. In a recent McKinsey survey, one-third of respondents say their organizations are already regularly using the technology in at least one function.[4] Another mistaken belief—that gen AI is the exclusive domain of tech experts—is countered by the fact that gen AI solutions are user-friendly because they can use natural language. Previous McKinsey research reveals that about 25 percent of C-suite executives say they personally use gen AI tools for work and 56 percent of workers report using gen AI tools.[5] Executives may believe that gen AI adoption requires a complete overhaul of IT infrastructure. In reality, many "out of the box" gen AI

[1] "Executive order on the safe, secure, and trustworthy development and use of artificial intelligence," White House, October 30, 2023.
[2] Cecilia Kang, "In U.S., regulating A.I. is in its 'early days,'" *New York Times*, July 21, 2023.
[3] "Governor Newsom signs executive order to prepare California for the progress of artificial intelligence," Office of Governor Gavin Newsom, September 6, 2023; "Governor Stitt announces AI task force," Office of Governor J. Kevin Stitt, September 25, 2023; and "Governor Glenn Youngkin signs executive order on artificial intelligence," Office of Governor Glenn Youngkin, January 18, 2024.
[4] "The state of AI in 2023: Generative AI's breakout year," McKinsey, August 1, 2023.
[5] "The state of AI in 2023," McKinsey, August 1, 2023; "Majority of US workers are already using generative AI tools—but company policies trail behind," Conference Board press release, September 13, 2023.

tools are deployable with minimal one-time and recurring investments on top of the current infrastructure.[6]

Perhaps the most pervasive myth is that gen AI will only eliminate jobs. In fact, the career categories most exposed to generative AI could continue to add jobs through 2030, as gen AI accelerates shifts across occupations. Some occupations such as STEM jobs will likely increase by 23 percent during this period as organizations undergo major digital transformations. Other job categories, such as administrative and retail jobs, may decline.[7] The automation of individual work activities could provide the global economy with an annual productivity boost of 0.2 to 3.3 percent from 2023 to 2040, with gen AI contributing 0.1 to 0.6 percentage points of that growth.[8]

Among the positive outcomes of gen AI, the following are particularly relevant to state governments:

— *Improved operational efficiency.* Gen AI can streamline repetitive administrative tasks, with the potential for substantial cost savings of around 20 percent year over year.[9]

— *Better resident experiences.* Public services can deploy nearly seamless, around-the-clock support through virtual assistants and chatbots. As an early adopter, the Dubai Electricity and Water Authority is using gen AI to better understand and resolve customer problems.[10] Early use cases employ gen AI as a support for live agents to mitigate risks.

— *Practical insights.* Gen AI can empower governments to extract useful insights from vast data sets. The Brazilian government, for example, is now using gen AI to analyze case notes for tax notices and contacts[11]—a use of unstructured data that would otherwise involve an enormous investment of labor.

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[6] "Technology's generational moment with generative AI: A CIO and CTO guide," McKinsey, July 11, 2023.
[7] For more, see "Generative AI and the future of work in America," McKinsey Global Institute, July 26, 2023.
[8] "The economic potential of generative AI: The next productivity frontier," McKinsey, June 14, 2023.
[9] Arif Cam, Michael Chui, and Bryce Hall, "Global AI Survey: AI proves its worth, but few scale impact," McKinsey, November 22, 2019.
[10] "DEWA's digital transformation accelerates Dubai's smart city vision," Electric Energy Online, August 21, 2023.
[11] Alfredo Collosa and Domingo Carbajo Vasco, "Can ChatGPT be used in tax administrations? (Part 1)," Inter-American Center of Tax Administrations, March 1, 2023.

— *Enhanced talent management.* Gen AI can greatly improve how state governments recruit and develop staff, notably when hiring for critical roles and streamlining core HR processes such as writing job descriptions.

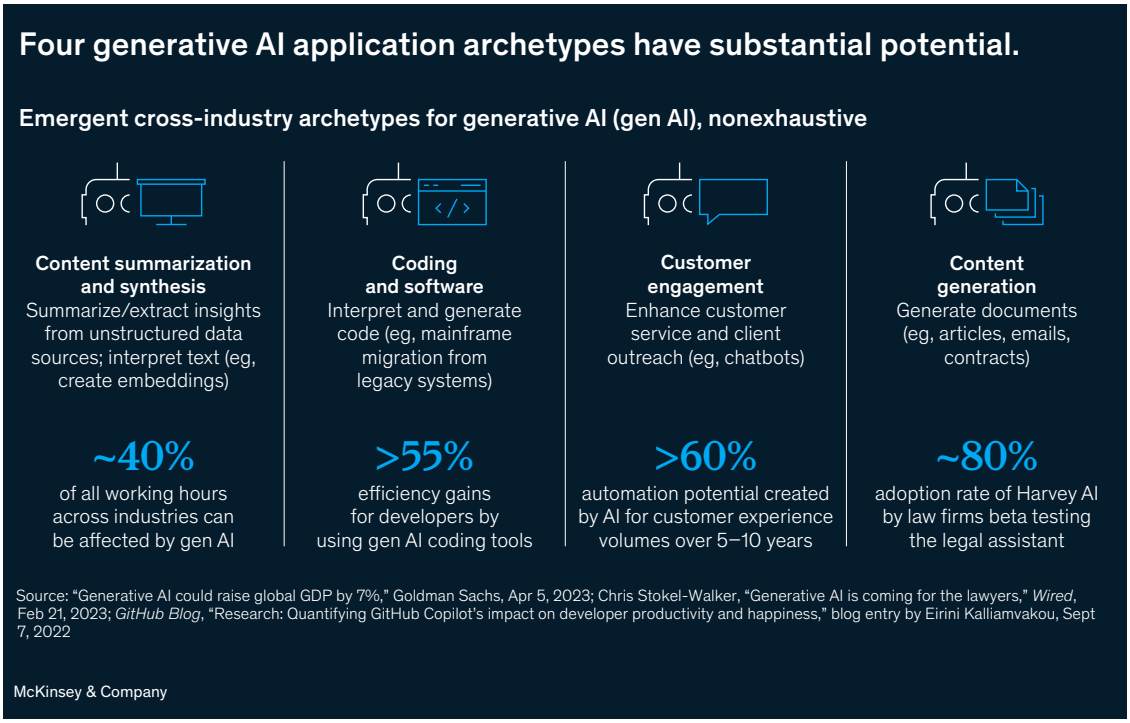
As gen AI evolves, governments could consider four archetypes of gen AI tools to propel operational improvements (Exhibit 1):

— *Large data-set-driven decision making (content synthesis).* These tools derive insights from large amounts of existing and potentially unstructured data. A gen AI model trained on complex technical documents, for instance, could answer questions in a structured format within seconds instead of hours. Some organizations have already begun to equip their frontline staff with such tools.

— *Systems innovation (coding).* State governments often rely upon legacy IT systems. New gen AI tools can provide coding support to help transform such systems. These tools can "read" legacy COBOL applications and suggest code rewrites in another language, produce technical documentation, and even suggest scenarios to test the new code. For many governments that face the risk of their IT becoming obsolete, such capabilities could accelerate mitigation measures and reduce the costs of transformation. Early experience indicates that experienced coders' productivity can increase by as much as 25 to 30 percent with gen AI tools.[12]

— *User interaction (customer engagement).* The chatbots used for this purpose are more sophisticated than those of yesteryear. They

Exhibit 1



[12] "Unleashing developer productivity with generative AI," McKinsey, June 27, 2023.

provide a more natural and continuous customer interaction and equip staff to provide real-time advice and problem solving to help residents navigate more complex challenges. Some private sector call center operations have already demonstrated gen AI's power to deliver an improved customer experience. In banking, call center agents get support from real-time prompts based on ongoing dialogue that streamline and enhance customer experiences.

— *Personalized content (content generation).* These tools allow for rapid content generation (for instance, text, images, voice), enabling governments to support residents on an individualized level. Residents, for example, can find it challenging to navigate government processes to receive benefits for which they are eligible. Using gen AI content tools, social service case managers can mine the facts of an individual's case and provide options for the resident. Recruitment and onboarding of new employees can be tailored to each individual. The private sector has already pioneered such approaches to personalize content. Call center agents, for instance, can synthesize customer data to create tailored information on relevant services.

Design an implementation plan

Using the tools outlined in our framework, state leaders may wish to develop their gen AI strategies in five critical areas (Exhibit 2).

Exhibit 2

Five critical areas can guide US state governments when implementing generative AI.

Illustrative timeline for organizing states for generative AI (gen AI) ■ Governor's office ■ Agencies ■ CIO

	IMMEDIATELY	1–2 MONTHS	3–6 MONTHS
Adoption road map	Communicate the state's approach to gen AI to agency leadership and the public	Launch gen AI pilot(s)	Communicate learnings from gen AI pilots to staff and the public
	Identify pilot use cases based on technology, process, and risk readiness	Build a road map for future gen AI deployments	Authorize and resource deployments based on road map of prioritized use cases
Governance	Establish a multidisciplinary team to issue risk and adoption guidance	Establish risk guardrails and reporting	Refine risk guardrails and reporting based on pilot experience
Technology and data	Assess potential pilot use cases for technology readiness	Launch a refresh of data architecture and governance	Begin implementation of refreshed architecture and governance
		Inventory and prioritize legacy systems that may benefit from gen AI coding	Modernize priority legacy systems with gen AI coding support
Talent	Establish clear staff communications and trainings on gen AI use	Reevaluate talent strategy for roles most immediately affected	
Operations	Identify potential pilot use cases based on readiness and risk	Inventory and assess readiness and impact of gen AI on agency processes	Deploy gen AI use cases based on prioritized use case road map
		Deploy gen AI diagnostic tools to identify potential process improvements	

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Adoption road map

Pilot gen AI in carefully chosen use cases first. Consider focusing on a critical business need or pain point before rolling out an enterprise-wide application. Leaders, for example, may prioritize building a "virtual expert" that enables frontline workers to tap proprietary sources of knowledge and offer the most relevant content to customers. This has the potential to increase productivity as well as build enthusiasm and enable an organization to test gen AI internally before scaling to customer-facing applications. Questions to ask while establishing your adoption road map include the following:

- What is my organization's tolerance for risk? Do we envision being an innovator and creator (a "maker"), early adopter and adapter (a "shaper"), or a steady and deliberate adopter of established technologies (a "taker")?[13] Organizations may answer these questions at the level of specific use cases. On some use cases—perhaps for human resources or finance—the organization may decide to be a "taker." On others, where the use case may be more critical to resident experience or equity, the organization may choose to be a "maker."

- Across the business functions in my state, which business processes have the greatest potential to offer value to residents and staff if we adopt gen AI?

- Which agencies or business functions are best situated for AI adoption?

- What resources are necessary—and in what order—for effective AI adoption?

- Where in my organization might lower-risk and ready-to-use tools serve to kick off potential "lighthouse" or small-scale projects?

Governance

Establish a cross-functional team to provide ongoing oversight, direction, and guardrails. Building a robust governance framework for gen AI adoption is an essential requirement. Few organizations appear fully prepared for widespread use of gen AI. In a recent McKinsey survey, only 21 percent of respondents say their organizations have established policies governing employee use of the technology in their work, and just 32 percent report that their organizations are addressing AI-related inaccuracies.[14] A robust approach should mitigate for risks relating to inaccuracy, cybersecurity, regulatory compliance, privacy, and equity and fairness.

State leaders may consider setting up a cross-functional group of professionals—agency leaders; data scientists; and engineering, legal, and cybersecurity experts—to help govern enterprise-wide efforts. Such a group can integrate the diverse expertise and perspectives needed to explore and adopt gen AI safely. Relevant questions to ask while considering your governance approach could include the following:

- How is my organization monitoring enterprise adoption of gen AI, whether such use is sanctioned or unsanctioned?

- What are our protocols for continual risk assessment and monitoring as gen AI evolves and the organization's approach matures?

- What are our guidelines for official and unofficial use of gen AI? Do we have plans to periodically refresh those guidelines based on experience and as technology advances? Levers may be as diverse as procurement guidelines, technology standards, and employee conduct policies, to name a few.

- Are we evolving the membership of this governance body to include expertise as needed and as adoption matures?

Technology and data

Evaluate your infrastructure and data architecture needs. To generate value, these models need to work with the government's existing systems and applications. Meaningful changes in architecture

[13] "Technology's generational moment with generative AI," McKinsey, July 11, 2023.
[14] "The state of AI in 2023," McKinsey, August 1, 2023.

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and data governance can take years to achieve for many state governments, so getting started now will be essential. Such efforts can be more cost-efficient when using gen AI tools themselves, including more efficient coding and technical debt reduction. McKinsey research shows that gen AI coding support and code translation for legacy systems can help software engineers develop code 35 to 45 percent faster, refactor (improve or update code) 20 to 30 percent faster, and perform code documentation 45 to 50 percent faster.[15] When assessing technology readiness across your government, consider the following questions:

- How is my organization's IT team assessing readiness for potential gen AI pilots?
- How is our technical team assessing IT infrastructure needs, including opportunities to improve software development efficiency and technical debt using gen AI tools (both internal and outsourced)?
- Will our enterprise data architecture and governance approach fit these new needs? Early projects may include categorizing and organizing structured and unstructured data for gen AI models. Data sharing agreements—a particular challenge for states and cities given potential legal and regulatory barriers—are another factor to consider.

Talent

Prepare your leaders and plan for the effects of gen AI on recruitment, retention, and capability building. As gen AI functionality continues to be embedded in common word processing, email, and communications tools, it may have a profound impact on ways of working across the entire organization, including different working patterns and training needs. When planning for talent readiness across your government, consider the following questions:

- Are agency leaders ready to lead through gen AI transformations? It may be helpful for senior leaders themselves to develop a deeper understanding of gen AI so they can better lead their organizations through its adoption.
- How knowledgeable and prepared are the agency's employees? They may need special training to use state-approved gen AI and to appropriately use other tools not supplied by the state. Such training should be tailored to achieve the desired outcomes and mitigate risks.

[15] "Technology's generational moment with generative AI," McKinsey, July 11, 2023.

— Does the talent strategy meet the needs of gen AI in government? Approaches will need to vary by roles and proficiency because of the varying impact of gen AI tools.

Operations

Identify business processes for which gen AI may create the greatest value. Adoption of gen AI in state government business processes will affect entire workflows, often eliminating steps for staff and those being served. While the technology itself may be relatively straightforward to deploy, the business process implications may be more complex. Agency leaders could consider identifying all major business processes that could benefit from gen AI and sketching out road maps for adoption. Questions to consider include the following:

— Which business processes may benefit most from a gen AI pilot?

— Have agency leaders inventoried all business processes, identified dependencies, and assessed readiness for gen AI adoption?

— Are there business processes for which gen AI adoption would reduce risks inherent to the organization's legacy process? Where, for example, might gen AI lead to reliably better outcomes for residents?

Gen AI is already here, and it will shape the future of work. The technology provides state governments with an opportunity to enhance services, streamline operations, and make data-informed decisions. Balancing the risks and rewards will require leaders to organize and build capabilities in new ways. By piloting gen AI while simultaneously organizing for scale, state governments can capture gen AI's value for residents and employees while adjusting to risks along the way.

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