How governments can harness the power of automation at scale

Process automation and technologies based on artificial intelligence can bring benefits across numerous functions of government.

Jens Riis Andersen, Matthias Daub, Andrew Goodman, and David Taylor

Governments around the world are under pressure to operate more efficiently, serve citizens better, and provide more satisfying working environments for their employees. Lessons from the private sector show automation at scale has the potential to serve those purposes, but to get there governments must become more strategic in their approach, embrace new technologies, and be prepared to act at scale.

Process automation and technologies based on artificial intelligence can bring benefits across numerous functions of government, including much lower operating costs, more efficient processes, and less wastage and errors. McKinsey estimates that as many as four out of five processes in HR, finance, and application processing are at least partially automatable, with the potential to reduce costs by at least 30 percent.

The benefits of automation can be achieved relatively quickly. Many of the solutions can be built on existing IT systems without significant additional investment. The approach to rolling out automation at scale is intuitive, starting with an assessment of the opportunity, launching pilots, building the infrastructure required, and then scaling.

Many governments have already made significant progress in creating online processes for citizens to complete applications and communicate with providers of services. The next stage is to use automation at scale to bring internal operations and processes up to date, helping them become digital organizations at their core.

The private sector has taken a lead

Many private-sector companies have implemented automation at scale, helping them reduce operating costs, improve service offerings, work faster, and cut mundane manual tasks and processes. A leading oil company has cut four days from its financial-close process through automation of over 10,000 tasks. One insurer has automated 120,000 transactions per month across 14 processes, realizing cost savings of about 30 percent per process. A large telecom operator uses automated processes for more than 400,000 transactions per month. Governments can take lessons from their approach.

Private firms have married lean process design, which is focused on minimizing waste and maximizing value, with robotics and machine learning to push automation into new activities, many of which previously required human input. Processes such as procurement, from purchase request to order, are now automated to operate around the clock and at around a third of the cost of manual approaches. A key private-sector focus has been administrative activities, which account for around a quarter of public-sector employment, suggesting governments can make significant efficiency and productivity gains in that area.

Automation offers accuracy, consistency, scalability, and traceability. The impact in government is likely to be an improved service offering, more transparency, and more consistent data and analysis for tasks such as crime prevention. Automation can also boost employee satisfaction—repetitive manual work is frequently cited as one of the main sources of public-sector job dissatisfaction. Six technologies in particular are likely to be useful in driving the change process (exhibit).

Opportunities for automation at scale in government

In recent years, some governments have made significant process in digitizing citizen-facing services. Among many examples, the UK Government Digital Service has successfully migrated departmental publishing onto the GOV.UK platform and digitized services, including passport and driver's-license applications. Estonia's tax-filing system allows 95 percent of residents to file their tax returns online, and the US Digital Service has built a digital College Scorecard.

Exhibit

Six technologies in particular are likely to be useful in driving the change to process automation.

6 keys to driving the change process

Robotic process automation	Smart work flows	Optical character recognition	Machine learning	Natural-language processing	Cognitive agents
Automates routine tasks (eg, data extraction, cleaning), using solutions such as Automation Anywhere and Blue Prism	Integrates tasks performed by humans and machines (eg, month-end processes), with providers such as Appian and Pegasystems	Converts typed, handwritten, or printed text into machine-encoded text (eg, PDF/JPG image to text/CSV), using tools such as ABBYY and IRIS	Uses algorithms to enable systems to learn from experience without being explicitly programmed, using platforms such as SparkBeyond	Analyzes text and speech using learning algorithms (eg, data-to-story translation), with providers such as Arria NLG and Narrative Science	Creates a virtual workforce capable of supporting employees and customers (eg, employee service centers), using tools such as IBM Watson and IPsoft

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Still, while some interfaces have gone digital, automation of core processes has proved to be more challenging, denying governments the chance to achieve efficiencies at scale. In finance, HR, and procurement, some 60 to 80 percent of tasks are automatable, creating potential for net long-term savings (after accounting for implementation and ongoing software costs) of at least 30 percent:

- *Finance.* Government departments conduct many of the same core finance processes as private-sector firms—they disperse cash, manage month- and year-end financial-close processes, and conduct budgeting, financial planning, and analysis—and often use the same enterprise-resource-planning and financial systems. In the United Kingdom, 11,000 civil servants work in the finance function across 25 government departments, many as large in budget terms as FTSE 100 companies. Some 80 percent of tasks performed in private-sector finance functions have at least some potential

for automation, according to McKinsey research, and a similar proportion can be assumed in government. General accounting operations, cash disbursement, and financial control are standout areas of opportunity. One large European utility piloted the automation of new vendor creation and of period closing and found the processes were 70 and 50 percent automatable, respectively. McKinsey's own Finance Shared Services Center has realized 50 percent automation of expense allocation.

- *HR.* Government is the single largest employer in many countries. In the United States, the Office of Personnel Management alone employs more than 5,000 people (in addition to HR staff in departments and agencies) to manage the federal government's workforce of approximately 2.8 million people. Some 80 percent of HR processes are at least somewhat automatable, with payroll administration, record keeping, benefits administration, and recruitment administration—

functions that many governments still perform in-house—at the top of the list. In the private sector, one large energy provider was able to automate 90 percent of its onboarding process, including ordering and delivery of passes, phone, and office equipment ready for day one, leading to more than 20 percent cost savings.

- *Applications and processing.* Governments process applications and claims for a range of payments and services, from social welfare to visas and tax returns. There has been significant innovation in the citizen-facing front end over the past two to three years. However, in part because of legacy IT systems, digital front ends find themselves interfacing with clunky back offices and siloed databases, leading to rekeying requirements. Automation can help by reading and writing data between applications, checking consistency and completeness, and even sending and interpreting emails, bridging the gap between digital front ends and legacy systems. The efficiency potential is significant. One insurance firm used software to automate subrogation claims processing and reduced time per claim from 10.0 minutes to 3.5 minutes, increasing the volume of claims processed per week by a third.

Getting started on automation at scale
The fact that much of automation software sits on top of existing technology stacks means it is possible to get started quickly—with the initial phases completed in weeks. To make early gains and promote internal buy-in, we suggest governments or ministries take a three-step approach, comprising start-up, launch, and scaling.

1. Start-up: Understanding automation potential and proving the concept
Assess the opportunity. Governments or individual ministries embarking on a program to automate at scale should begin with a top-down assessment of potential gains across administrative and corporate functions, citizen-facing services, and public-leadership roles. The private sector provides useful benchmarks to inform the process. Project leaders should set out their plans to develop use cases over a given period, with targets defined in terms of financial impact or volume, or both. The vision should be transformational, rather than incremental or tactical, aiming, for example, to impact more than 50 percent of tasks and processes. In the private sector, one global bank set a goal of $1 billion of financial impact from enterprise-wide automation over three years.

Select technology partners. Once the assessment phase is complete, leaders should launch a process to select a portfolio of technologies and vendors. Procurement may be governed by a central framework, but it is likely to leverage the services of a range of vendors and include a number of platforms and tools catering to different use cases identified in the initial assessment.

Pilot proofs of concept based on use cases. Having put the requisite vendor relationships in place, ministries should conduct proof-of-concept sprints for specific use cases. The sprints should be run on an agile basis, allowing flexible development and decision making. Common initial use cases include invoice verification, vendor procurement, expense allocation, and month-end close processes.

This start-up phase can be completed in as little as eight to 12 weeks, assuming access to the right data, and with a team of fewer than ten people. The Danish government has launched pilots to test both robotic process automation in shared-services centers and machine learning.

2. Launch: Building the infrastructure for automation at scale
The physical, operational, and human infrastructure required for automation includes new capabilities and cross-functional teams, governance frameworks, and suitable IT and data models.

Build cross-functional teams. Cross-functional teams are necessary to work across capabilities and may include a delivery lead responsible for multiple processes (to plan, manage delivery, and remove obstacles), an automation architect (to design target solutions), developers (to code, configure, test, and improve), and a business analyst (to manage specifications and coordinate handover to end users). The teams need access to subject-matter experts and to IT and legal support. It is a good—but rare—practice to designate an owner for each process to be automated.

Establish clear governance. As more processes are automated and delivery teams grow, dedicated governance frameworks are required. Most private-sector firms opt for a federated model, with a center of excellence (COE) coordinating automation across lines of business or activity and creating links to continuous-improvement teams. During the start-up phase, development activity typically takes place in the COE. When moving to the launch phase, development and delivery teams are commonly located in the relevant line of business or activity.

Agree the IT and data model. Successful automation at scale requires a coherent IT and data model that maximizes flexibility. However, it's important not to get locked in to one protocol. This should include clear direction about where to involve the IT department—for example, in installing platforms, deploying software, and ensuring information security.

Moving from start-up to a successful and sustainable launch of automation at scale—for example, automating ten or more processes and with the relevant infrastructure in place—can take six to 12 months, building a team of 15 to 20 people along the way. As use cases develop, some employees who have been coopted into COEs may return to ministerial duties.

3.Scale: Sustaining and delivering value from automation at scale

Governments have found it particularly challenging to scale automated solutions. This is in part structural—ministries tend to work in silos—but can also be cultural (for example, manifested in risk aversion in relation to IT projects) and a result of talent shortage, amid intense competition for expertise.

Establish centers of excellence. An essential step in making the move to sustainable scaled solutions is to work programs based on a road map of priority processes and planned workforce changes. Typically, the COE will set out a standardized approach and provide program-management resources, but individual ministries or teams will drive delivery. Senior-management teams can provide support and encouragement by setting targets for back-office (such as finance, HR, and procurement) and citizen-facing functions (such as applications and claims).

Invest in capability building. Private-sector firms that have successfully launched automation at scale have made it a priority to invest in capability building, in particular, ensuring not to become overly reliant on external suppliers and putting in place the HR processes to attract, develop, and retain individuals with the relevant technical skill sets. Employees can also benefit—in acquiring the basic skills around automated processes, they can improve the efficiency and quality of their daily work and equip themselves for future opportunities. A key element is to educate technology users, who are often surprisingly averse to using new tools, even when they find their old systems frustrating.

Plan and budget for ongoing maintenance. Departments, grounded in the business case for each process, should plan and budget for ongoing maintenance and support of automated processes. Failing to do so creates an unrealistic view of

efficiencies and will mean that changes may not be financially sustainable.

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The opportunity for automation at scale in government is significant and accessible, and private companies are already seeing the results. The same tools these companies use can help governments reduce costs, improve the employee experience, and provide faster and better services. However, governments must take urgent action to instigate change, as they have done for some citizen-facing services. That means developing methodologies that can be hardwired into the automation process and taking a strategic approach to planning, piloting, and scaling. ■

Jens Riis Andersen is a partner in McKinsey's Copenhagen office, **Matthias Daub** is a partner in the Berlin office, and **Andrew Goodman** is a partner in the London office, where **David Taylor** is an associate partner.