



A whole of government transformation model towards AI-native nations

A series on government transformation in the age of AI



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01

Executive summary

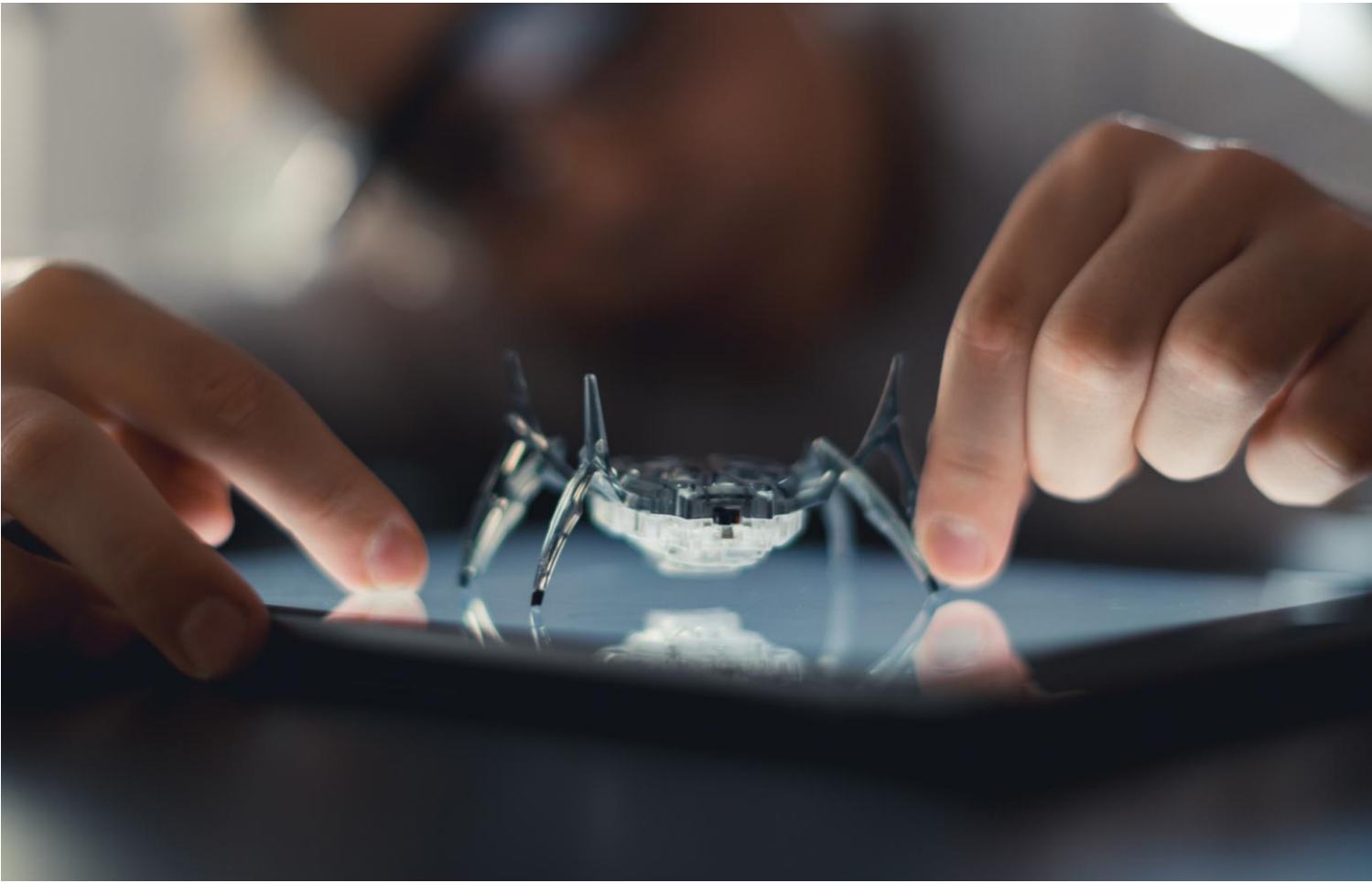
In the Middle East, governments have made significant progress in digital transformation. National digital identity, cloud strategies, service platforms, data programmes, central delivery units and emerging AI capabilities are already a part of the public-sector transformation agenda. These building blocks have helped regional governments digitise services, improve access for people and support national priorities around economic diversification, competitiveness and citizen experience.

PwC Middle East's earlier report, [The Journey to Digital Government 5.0](#), captured this shift in its second part, [The Digital Transformation Journey of GCC Governments](#). It showed how governments in the region have moved from digitising individual services towards more citizen-centric, whole-of-government models, where services are designed around citizens and supported by stronger governance, digital trust, regulation, data sharing and cross-agency coordination.

This paper builds on that foundation and asks what comes next.

Despite strong progress in some of the key economies of the region, policy, funding, procurement, service delivery and performance measurement could often sit in separate layers, supported by fragmented data flows and limited feedback loops. This could make it complex to translate ambitious national agendas, such as the Saudi Vision 2030, UAE Centennial 2071, Qatar National Vision 2030 and Jordan's Public Sector Modernisation Roadmap 2033, into outcomes at the speed intended.





The next phase of transformation is therefore a move towards the ‘intelligent government’: a whole-of-government operating model that can plan, deliver, measure, learn and adapt continuously. Digital government often takes an existing process and moves it online. Intelligent government redesigns the process around data, platforms and decision intelligence, so services can anticipate need, decisions are supported by evidence and the system improves with every transaction, budget cycle and delivery record.

This paper argues for an AI-enabled, closed-loop operating model built around five phases: plan and govern, enable and procure, deliver and operate, engage and transact, and measure and learn. Together, these phases create a whole-of-government lifecycle that connects strategy, policy, funding, procurement, delivery, citizen engagement and performance measurement into one adaptive system.

The model is enabled by a set of foundational capabilities:



Sovereign cloud, compute, model access, data and interoperability



Cybersecurity, digital identity, privacy and operational resilience



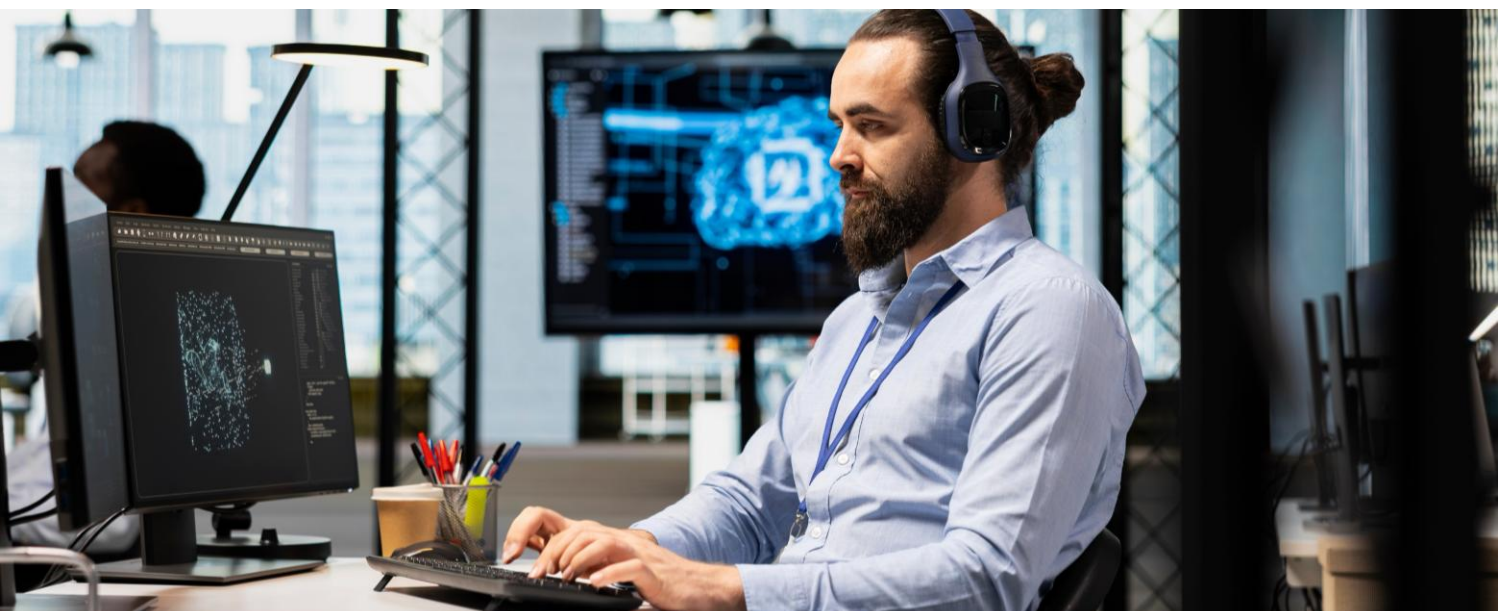
Workforce redesign, AI fluency, institutional capability and clear decision rights



Model and agent assurance, human oversight, Arabic-language performance, accessibility and environmental sustainability

These foundations support the five-phase lifecycle and ensure that AI is secure, capable, inclusive, auditable and sustainable. This is not simply a technology stack, but a state-level operating architecture that connects institutions, data, people and decisions.

Drawing on global examples, the report shows the significant opportunity for regional governments to move towards more connected, adaptive and AI-native models of transformation. With strong reform mandates and fewer legacy constraints in many areas, the region can design AI-native government architectures from first principles. This shift can help governments move from reactive service delivery to predictive and anticipatory models of government. The prize is a more connected, intelligent and continuously learning state, one that can deliver national priorities faster, improve citizen outcomes, strengthen trust and position the Middle East as a leader in the next generation of government transformation.



02

An intelligent, continuously learning system for an AI-native government

Most digital-government strategies ask how many services can be digitised, how many platforms can be procured or how many pilots can be launched. Today, those questions are becoming less differentiating.

What now separates leaders from the rest is whether the institutional architecture of the state can learn. Can a decision taken today be measured, understood and used to improve the next decision without waiting for a committee, a consultant or a crisis? In this model, AI is not added at the edges. It is embedded into the architecture of government itself, so intelligence supports decisions across policy, funding, delivery and measurement.

An AI-native government is the next evolution of digital government. It builds on digital identity, cloud, interoperable data and service redesign, adding adaptive intelligence, proactive delivery and continuous learning.

But an AI-native government must be accountable by design. High-impact decisions need human review. Automated and AI-supported decisions should be traceable, auditable and contestable. Citizens need clear routes to redress. Data sharing should be lawful, proportionate and governed by common standards. The goal is not automation for its own sake, but accountable augmentation: using AI to reduce manual friction, improve decisions and strengthen outcomes while preserving trust.



Therefore, the priority now is to start with a link between planning and measurement. Procurement can be tied to strategic intent, delivery can be assessed against outcomes, and budgets can move towards what works.

For the Middle East, the opportunity is to build AI-native government architectures from the start. With fewer legacy constraints, there is an opportunity for **governments in the region to move towards:**



- **Event-driven architectures where real-time coordination is required, rather than waiting for the next scheduled update**

- **AI agents to support workflows, triage and decision preparation, rather than purely manual processes**

- **Real-time data pipelines instead of static reporting**

- **Policy encoded as executable logic rather than static text**

This creates the potential to move directly towards more predictive and anticipatory models of government, where public institutions can identify needs earlier, respond faster and adapt policy based on evidence.



03

The missing feedback loop – from digitisation to intelligence

Citizens increasingly expect government services to be simple, timely and, where appropriate, proactive. The level of automation should be proportionate to risk, with inclusive alternatives, clear explanations and accessible human review, instant transactions and autonomous service delivery. Government systems, however, often remain:



**Reactive
rather than
predictive**



**Fragmented
rather than
interoperable**



**Rule-based
rather than
learning-based**

That means the challenge is no longer only a digital gap. It is increasingly an intelligence gap.

Around the world, despite rapid growth in GovTech and AI adoption, data remains siloed across ministries, decision-making is largely manual, feedback loops are slow or non-existent, and AI shows up as isolated pilots rather than system-wide capability. The result is low system-level optimisation, even where local improvements exist.



The cost of this gap is measurable. Large-scale public-sector technology programmes often struggle when policy, procurement, delivery and measurement are managed as separate activities. In the United Kingdom, for example, the National Programme for IT in the National Health Service changed its approach after £2.7bn had been spent on care records systems, with a further £4.3bn still planned.¹ In 2019 federal agencies in the United States have spent about 80% of their IT budget on operating and maintaining existing systems rather than modernisation.² That maintenance burden limits the funding and capacity available for the connected platforms, data flows and AI-enabled ways of working that whole of government transformation requires.

The trust risk is just as important. Citizens increasingly expect government services to be simple, joined up and responsive. AI adoption should therefore be supported by clear accountability, human review for high-impact decisions, auditable data flows and feedback mechanisms that help government learn before problems scale.

The challenge may lie in the limited coordination that can sometimes exist across platforms and decision-making processes:



01

Policy is defined without real-time evidence

02

Budgets are allocated without dynamic optimisation

03

Services operate without continuous learning

04

Outcomes are measured without feeding back into decisions



The problem becomes clear when you follow an initiative through the system. A strategy is written, then handed to a budget process that does not know what last year's spending achieved. A budget funds a programme that may have no live link back to the policy it serves. The programme is measured in a report that arrives too late to change delivery and may not feed into the next planning cycle. At each handoff, information is lost.

This is why local fixes do not add up. A ministry can digitise its own services, automate its own workflow, even run its own AI pilots, and the state as a whole still does not improve, because the loop between its parts stays open. Optimising one node of a disconnected system lifts that node and leaves the system where it was. Closing feedback loops is a critical systems enabler, allowing evidence from delivery and outcomes to improve subsequent policy and funding decisions. Its impact depends on complementary leadership, incentives, institutional capability, legal authority and public trust.



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04

The solution – government as a learning system

The whole of government lifecycle turns that feedback loop into an operating model, in which:



Data flows continuously across all phases



AI models generate predictions and recommendations



Decisions are augmented or automated, with human oversight where risk is high



Performance is monitored continuously and outcomes are assessed against better evidence



Feedback informs policy, funding and resource allocation dynamically

In practice, the architecture works as a learning loop. Data moves forward through the five phases (refer to section 5 of the report for the five phases), with each phase passing a clearer signal to the next. Evidence then flows back from measurement into planning, so the next cycle starts with what the previous cycle proved. The forward flow helps government coordinate. The feedback loop helps government learn. This is what turns government from a set of connected digital services into an intelligent system that can adapt and improve over time.



What holds the loop together

The lifecycle is supported by four groups of cross-cutting foundations: Core platforms and infrastructure: sovereign cloud, compute, model access, data and interoperability. Trust, security and resilience: cybersecurity, digital identity, privacy and operational resilience. People and operating model: workforce redesign, AI fluency, institutional capability and clear decision rights. Assurance, inclusion and sustainability: model and agent assurance, human oversight, Arabic-language performance, accessibility and environmental sustainability.

These foundations become the connective tissue of intelligent government. They must be designed once, governed consistently and reused across all five phases.



What gives the lifecycle discipline?

The lifecycle also needs proven governance and quality disciplines. That is where the seven frameworks come in (see table below). Each framework strengthens a different part of the whole-of-government cycle – from planning and governance to procurement, delivery, service experience, measurement and continuous improvement. The value is not in applying these frameworks separately, but in integrating them into one lifecycle.

These frameworks provide established principles, disciplines and practices that inform different parts of government transformation; they are not, however, intended to represent the integrated operating model proposed here. The whole-of-government models lifecycle brings these elements together by explicitly connecting strategy, policy, funding, procurement, delivery, citizen engagement and performance measurement through a common flow of data and decisions, with evidence from outcomes feeding back into the next planning cycle. Its distinction therefore lies in the orchestration of these capabilities as one continuously learning system, rather than in replacing the individual frameworks.

AI then extends these frameworks by adding:



Machine learning for prediction and optimisation



Knowledge graphs for policy and entity relationships



Agentic AI for task execution and orchestration



DataOps pipelines for continuous data integration



MLOps for the lifecycle management of models

In other words, the frameworks provide structure; AI provides intelligence; and the feedback loop turns both into a learning system. In the table below, we have examples from established frameworks that support the different phases of the whole-of-government lifecycle (refer to Section 5 of the report for the five phases). Each of these frameworks was designed for its own era and was part of its own cycle.

Framework	Contribution	Whole of government phase
1- OECD digital government ³	Target-state vision: citizen-centric, data-driven, open	All phases
2- PDCA (ISO 9001) ⁴	Continuous improvement discipline	Phase 3
3- Six Sigma (DMAIC) ⁵	Process rigour, root-cause analysis, variation reduction	Phase 3
4- Results-based management ⁶	Outcome traceability, results logic	Phase 1 and Phase 5
5- ROAMEF ⁷	Full-loop policy management, mandatory feedback	Phase 1 and Phase 5
6- Public financial management ⁸	Fiscal discipline, budget-to-outcome linkage	Phase 1 and Phase 2
7- OECD good practice principle for public service design and delivery in the digital age ⁹	User-centred, accessible, seamless and joined-up public service design and delivery	Phase 4

Synthesised, they cover the full lifecycle from direction to learning. AI can increase the cadence, scale and analytical depth with which these disciplines are applied. The frameworks and accountable institutions remain essential for defining decision rights, controls, quality standards and legitimate human judgment.



05

A deep dive – the five phases of an AI-enabled government

In the Middle East, AI-enabled government transformation can raise efficiency, improve quality, accelerate delivery and strengthen decision-making. But AI should not be treated as an overlay to existing systems. It should be embedded across the whole-of-government lifecycle — as a decision, automation and intelligence layer that helps policy, funding, delivery, services and measurement work as one system.

The five phases below show what this means in practice. Each phase first explains the shift from fragmented, ministry-by-ministry activity to a more coordinated whole-of-government capability. It then shows how AI can improve outcomes for government and citizens, supported by a global example and the specific opportunity it creates for the Middle East.

The central point is that each phase should become a capability the government builds, owns and scales — with common systems, connected data and clear governance designed once and used across the whole of government.



5.1

Phase 1: Plan and govern

Setting national direction

Every government sets a direction, but that direction often gets split across different parts of the system. The strategy sits in one place, the law that supports it in another, the budget that funds it somewhere else, and the KPI in a separate reporting process.

When these elements are not connected, it becomes difficult to see whether a national priority is actually funded, delivered and achieving results. Leaders may need manual investigations to understand progress and even reported KPIs can drift from reality if they are not linked to delivery data.

The result is that money can flow towards activity rather than outcomes.

The whole-of-government approach links them into one chain where:



Strategy is enacted through the laws, policies or regulations



It's delivered through the programmes that carry it out



Budgets fund it, often in parallel with policy design



KPIs measure it, defined from the strategy level down and tracked through to outcomes



Any priority can be traced from intent to result



How AI helps

AI turns this chain into a live system rather than a filing exercise. It can draft and check legislation against the existing body of law, flag where a new rule conflicts with an old one and model a policy's likely impact before it is enacted. A leader can ask whether a priority is funded and on track and get an answer in seconds, not weeks. When a new law, strategy or budget is issued, AI reads it, recognises which existing items it affects, and updates the links between them in the national knowledge base, flagging any broken or missing connection for human review.



The United Kingdom provides an example of what this can enable. Its official law repository holds Acts of Parliament going back to 1267.¹⁰ The same repository publishes consolidated UK legislation through a public API, so the statute book can be read and reused by machines.¹¹ Separately, the Financial Conduct Authority has piloted writing regulation in a machine-executable format, so reporting rules can be interpreted directly by systems.¹²

In the United States, federal reviews of duplication and overlap across government, have led to about US\$725bn in financial benefits since 2011 to 2025.¹³

For the Middle East, where national visions are already clearly articulated, AI can help connect vision, law, budgets, programmes and KPIs into one living system, giving leaders a clearer view of whether national priorities are actually funded, delivered and achieving results. Once direction is traceable, the next question is whether the state can resource it with the same discipline.

Phase 2: Enable and procure

5.2

From procurement workflows to intelligent capacity

Phase 2 turns approved policy into real capacity. Governments can do this in two ways: buy capability through procurement, or build capability through shared platforms, solutions and skills that can be reused across agencies.

A whole-of-government approach treats this capacity as a shared state asset. Instead of each ministry buying or rebuilding similar tools in isolation, government can buy once on better terms, build once for wider reuse, and make clearer choices about where public money creates the most value.

This requires two moves. On the buy side, government needs an end-to-end procurement system that connects need, tender, award, contract, payment and vendor evaluation — with each commitment linked to an approved budget and policy priority.

On the build side, the priority is people and platforms: equipping employees to use AI in daily work, and designing secure, AI-enabled systems that can support agents and scale across government.

How AI helps

AI strengthens both routes. On the buy side, it helps procurement move beyond compliance towards value and risk. Given the scale of public procurement, which averaged about 13% of GDP across OECD countries in 2021,¹⁴ AI can assess bids more intelligently, predict supplier and delivery risk, and flag collusion or price anomalies.

On the build side, AI supports reuse over reinvention. It can help teams assemble services from shared components, identify existing tools that can be adapted, and reduce duplication across government.

Global examples show what this can enable. In South Korea, the national procurement platform, KONEPS, processed around KRW 157.98tr worth of transactions in 2025 across more than 634,291 suppliers.¹⁵ In Singapore, a shared government technology stack gives agencies reusable building blocks for identity, payments and hosting, reducing the time and cost of launching new services.^{16,17,18,19}

Whether capability is bought or built, the test is the same: integrity, budget-to-outcome traceability and reuse over reinvention. For the Middle East, where governments are investing heavily in national infrastructure and digital programmes, this phase is about turning spending into delivered capability — not duplication, delay or leakage.



Phase 3: Deliver and operate

5.3

From service delivery to autonomous operations

This is where government most directly touches citizens, across services and casework, regulation and enforcement, and infrastructure and operations. A whole-of-government approach brings these domains into one operating layer, so every case is handled to the same standard, regardless of where it enters the system.

To make this work, government needs an orchestration layer that connects entities and coordinates activity between them. It routes each request to the right place, links to the AI agents that support the work, and passes information through the wider lifecycle. For citizens, the effect is simple but significant: whichever entity they approach, they experience one government, with one case identifier, one way to track progress, one route to raise a complaint and one channel to give feedback.

How AI helps

AI is what makes the coordination layer intelligent. It helps government triage cases, automate routine steps, predict demand, identify risk and flag likely failures before they happen — allowing the system to do more without increasing headcount at the same pace. It also strengthens accountability: consequential decisions remain with humans, but every action is recorded, so citizens can see where their case stands and auditors can understand why a decision was made.



Estonia shows what this can look like in practice. When a birth is registered, eligible family benefits are granted automatically because the population register and benefits system are connected.²⁰ Through the X-Road data layer, Estonia manages billions of data exchanges each year and saves significant administrative time.²¹ The citizen does not need to apply; the state already knows.

The UK offers another example. HMRC's Connect system analyses data from a wide range of financial sources, allowing the tax authority to target enforcement by risk rather than at random. Investigations based on it generated an extra £4.6bn in tax in a single year, up more than a third on the previous period.²²

For the Middle East, the opportunity is to extend existing operational intelligence, from AI-enabled transport to predictive maintenance of critical assets, across every service domain through one casework system. Each service interaction is also a citizen touchpoint, which is where the next phase begins.

Phase 4: Engage and transact

5.4

From portals to intelligent citizen interfaces

For citizens, government is first experienced through services used: the portals, apps and service centres where they transact. The common failure is fragmentation – separate portals, logins and payments for each ministry. In effect, back-office silos become visible to the citizen.

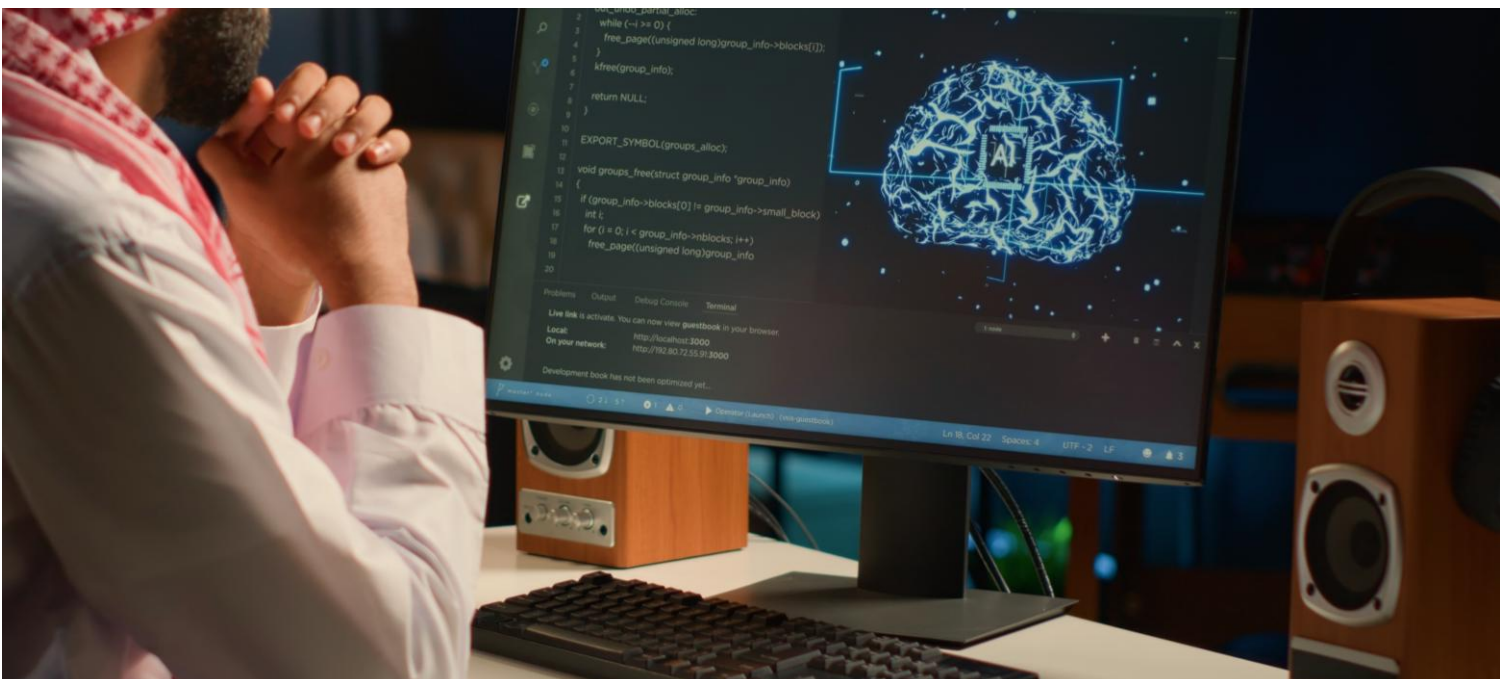
A whole-of-government approach reverses the design. It organises services around citizens and life events, such as having a child, starting a business or retiring – with a single identity that carries them across agencies.

Three design choices make this work:

First, every channel through which a citizen reaches government, such as an app, chat, voice or service counter, should be AI-enabled, so the experience is consistent wherever they start.

Second, this layer should connect to the coordination layer in Phase 3, giving government a single view of each citizen's information, requests and history. That allows government to act proactively, rather than wait for the citizen to navigate the system.

Third, the guiding principle should be “ask once”: government should not ask citizens for the same information twice, or for information it already holds, has generated or can retrieve through its own integrations.



How AI helps

AI helps government meet people in plain language and anticipate their needs. A citizen can describe what they need, and the system can assemble the right services, pre-fill what government already knows and continue the interaction across web, phone and service counter without losing context. In the Middle East, this also means designing Arabic-first experiences from the start.

At its best, government acts before the citizen asks: a new parent is offered the benefits unlocked by a birth, or a new business is guided towards the licences it needs. The gain is not only convenience, but access and dignity. Services become easier to use for everyone, including people who may struggle to navigate complex forms or fragmented portals.

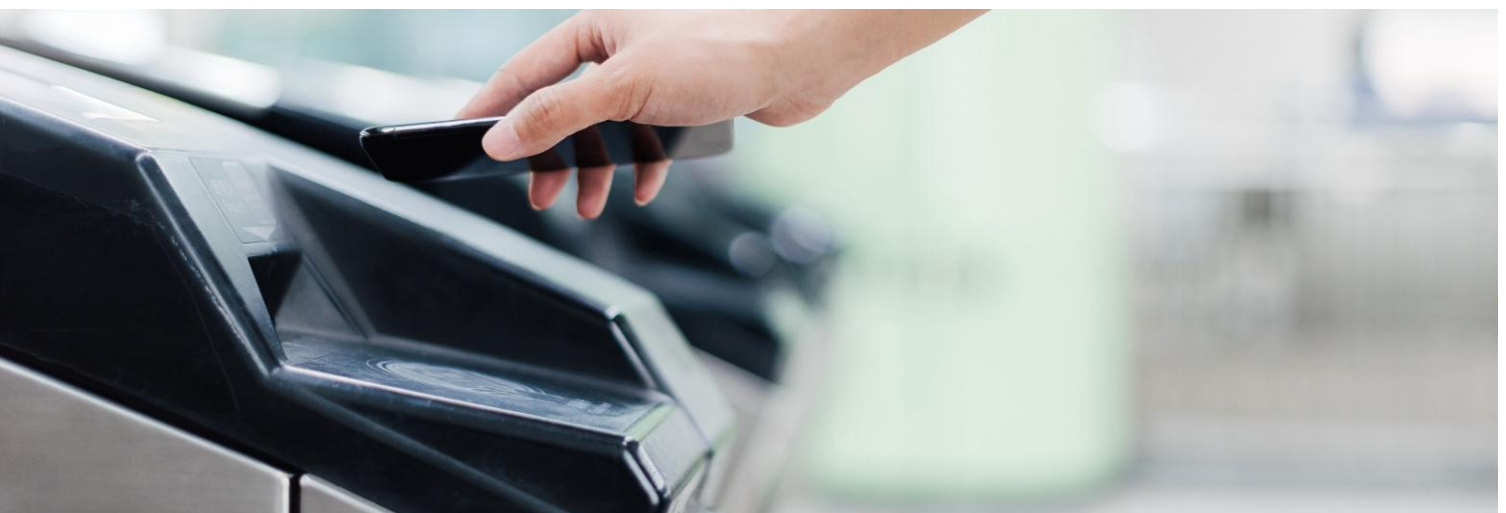


The UAE shows what scale can look like. UAE PASS gives more than 11 million registered users a single national digital identity, with access to over 15,000 services across government, semi-government and private sector entities.²³ Singapore's Singpass offers a similar model, serving millions of users across thousands of services, with biometric authentication and digital signing built in.²⁴

The Middle East has already shown that citizens will adopt digital government at scale when services are simple and trustworthy. The next step is to unify what sits behind the interface, so one identity and one profile can carry a citizen across every agency. Each interaction then becomes more than a transaction; it becomes a source of evidence that helps government understand needs, improve services and measure performance.



Each interaction becomes more than a transaction; it becomes a source of evidence that helps government learn.



Phase 5: Measure and learn

5.5

From reporting to continuous learning systems

Most governments measure performance in fragments. Each entity reports its own numbers, often annually, into documents that rarely change decisions. A whole-of-government approach turns measurement into a continuous evidence system that tracks outcomes across the state and feeds insight back into planning.

Data from planning, procurement, delivery and citizen engagement flows into this layer, creating a single view of performance against the strategic direction set in Phase 1. Progress becomes visible across government, not entity by entity.

How AI helps

AI shifts measurement from hindsight to foresight.

Continuous monitoring and AI-enabled controls can complement risk-based sampling, statutory audit and independent evaluation by identifying anomalies earlier. Funding decisions should combine predictive insight with causal evaluation, value-for-money analysis, distributional impacts and strategic judgment.



Research in Slovakia explored machine-learning models to predict how long jobseekers may remain unemployed, achieving almost 78% accuracy. The study suggests such models could help employment agencies identify individuals at risk of long-term unemployment and provide more targeted support.²⁵

The UK's Public Sector Fraud Authority shows how continuous AI controls can strengthen oversight, it delivered over £480m in audited counter fraud benefits in 2024/25, of which £329m came from its analytics and AI services.²⁶

Across the Middle East, national delivery units are already the seed of this capability. The decisive move is to connect their evidence to the next budget cycle, turning annual budgeting from precedent-based negotiation into evidence-led decision-making. This is the feedback arrow that closes the loop and allows government to learn.

06

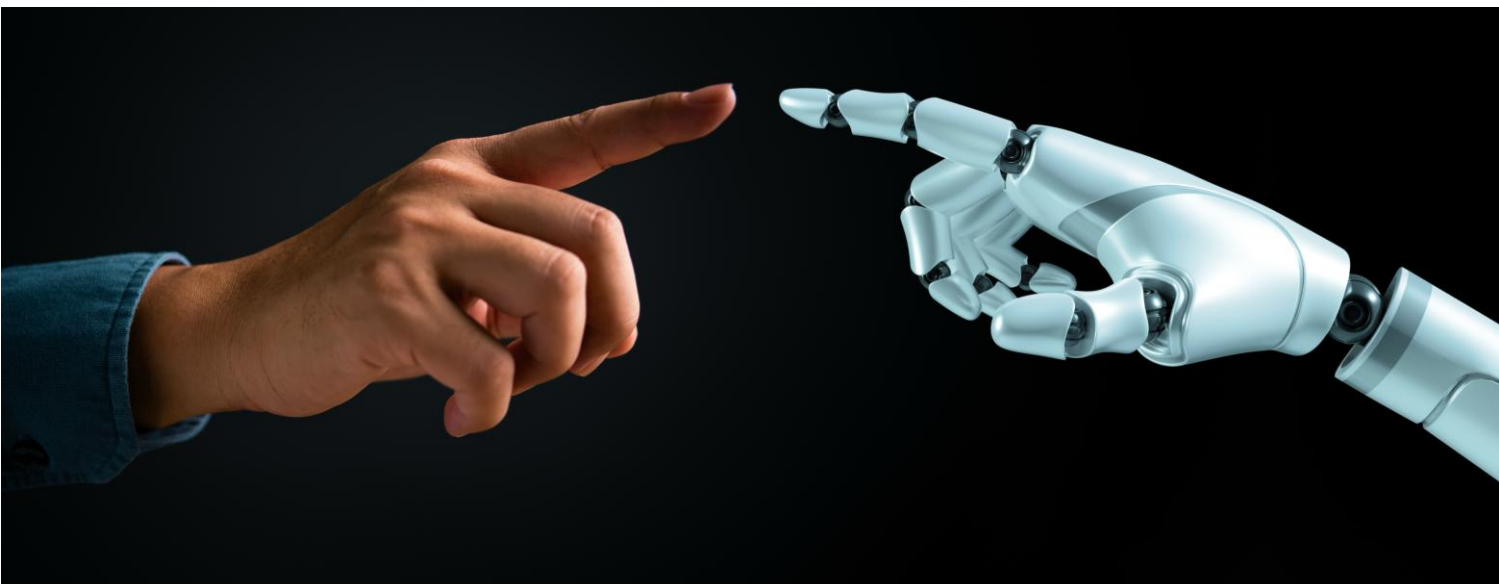
From AI pilots to agentic government

Generative AI introduces a new operating layer for government. Natural language can become the interface to systems, knowledge work can be partly automated, and AI agents can execute multi-step workflows across departments. This shifts government from systems of record to systems of intelligence, from manual workflows to human-AI collaboration, and from static services to adaptive, context-aware delivery.

Adoption is already widespread. In Malaysia, AI tools were provided to 445,000 public officers; early pilots reported that 97% of users saved an average of more than three hours a week on drafting, summarising and translating.²⁷ Across governments globally, AI use cases are being applied in governance settings across the world. However, the risk here is that AI mostly remains a productivity tool inside existing silos.²⁸

That makes each silo faster, but it does not close the loop between policy, funding, delivery and measurement. Pilots multiply, but learning does not. The governments that get this right treat AI as connective tissue: a system capability that connects decisions, delivery data and the next planning cycle.

The next frontier is bounded agentic government: observable and reversible AI agents operating within clearly defined permissions, with human approval for rights-affecting decisions, full logging, independent testing and incident-response mechanisms.



07

The need for a national AI authority

Scaling AI across the whole of government creates a clear need for a national AI authority: a single body accountable for how AI is built, procured, deployed and audited across the state. It works when it is built as a shared capability that equips every ministry with reusable tools, a model registry, vetted vendors and sandboxes, so the compliant path is the easiest path. It fails when it is built as a ministry of permission that owns nothing and only approves or refuses, because ministries route around it and shadow AI spreads.

Concretely, an effective authority sets binding standards and risk classifications, maintains a national model registry, runs continuous bias and performance audits, mandates human review for high-impact decisions and gives citizens a route to redress, so that scaling AI and protecting the public become the same programme rather than competing ones.





The future of government is digital, intelligent, adaptive and increasingly AI-native. At PwC Middle East, we have a robust understanding of the intricacies of public sector effectiveness. With more than 40 years of advising governments in the region, we know that the strategic positioning of reform matters as much as the architecture. This framework is designed for regional implementation and informed by proven global practices. While not intended as a one-size-fits-all blueprint, it provides a practical conceptual model to help governments navigate the transition towards more connected, intelligent and continuously learning systems. The focus is on helping governments close the loop: from strategy to execution, from data to decision-making and from measurement back into the next cycle of transformation.

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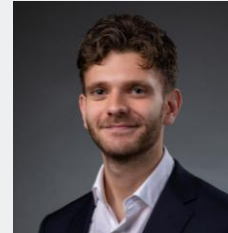
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This is the first in a two-part series on whole-of-government transformation. The second part will bring these lessons together to examine how they can be applied to realise national transformation goals, moving beyond dashboards towards AI-enabled vision delivery.

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