DIGITAL TRANSFORMATION

Reinventing the business of government
Contents

Introduction ........................................... 5
Prioritizing the citizen experience .............. 7
Addressing demands from elected officials ... 9
Empowering the digitally-native workforce ... 11
What’s possible in a digitally reinvented government? ... 13
Four critical factors for government leaders to succeed ... 14
Digital Reinvention™ methods .................. 17
Digital technologies and cloud infrastructure ...... 18-19
Where are you in the digital journey? .......... 21
Begin today ........................................... 22
The world has changed.
And governments struggle to keep up.

But the case for reinvention is inevitable. Citizens expect more from their government, and want the same convenient, personalized experience from government services as they do when planning a trip or ordering supplies online.

It’s no longer sufficient to bridge existing processes to the internet or new mobile devices. And operational demands require leaders to produce more citizen value within tight budgets, and protect against a growing spectrum of physical and cyber threats.

The time has come to fundamentally rethink the underlying operations, processes, and culture that make up the business of government. Rather than reengineering to a fixed view of today’s expectations, digital reinvention creates the capability to address the moving target of rising citizen expectations.

A true digital reinvention will:

• Improve citizen interactions and engagement for greater trust in government

• Improve the decision making of civil servants for maximum impact and leaner operations

• Attract and retain the workforce of the future

Think big. Start small. And innovate quickly.

Digital reinvention also means that you can get started today, with smaller, manageable projects that will deliver results in a matter of months—not years. Digital reinvention mitigates risks through a series of iterations.

IBM brings a new approach to transformation, with quicker ROI and lower risk, compared to traditional re-engineering. IBM uniquely brings innovative methods, a consistent architecture to access a breadth of digital technologies, and the most resilient and secure hybrid cloud platform for developing new services.
Prioritizing the CITIZEN EXPERIENCE
Technological advances have raised expectations for how citizens interact with government organizations.

**In the private sector, today’s citizens experience:**

- Immediate access to information through mobile devices
- Connections with like-minded peers online
- Personalization based on geography, identity, and preferences using customer profiles

Citizens no longer accept lengthy paperwork, complicated processes, and organizations centered on procedures and tradition as the norm. They’re not willing to be treated as a number or a transaction. They don’t have the patience to navigate multiple agencies and jurisdictions or read long forms to find their way. They don’t want to reenter the same information into multiple systems. Failure to meet these expectations leads to citizen frustration, lack of confidence in the effective functioning of government, and ultimately, trust in government.

Addressing these expectations requires governments to deliver services designed around the citizen's experience, rather than from an internal agency perspective. It means recognizing citizens as individuals by gaining a 360-degree view of their government interactions. It requires securely managing citizen data across agencies and deriving insights for proactive or predictive interventions.

**In their interactions with government, citizens want:**

- To be recognized as an individual by government services
- The same convenient, personalized user experience they get in the private sector
- A choice as to how to access services and a consistent experience across all channels
- Prior government interactions acknowledged and personal information protected
- Proactive communications from their government about items of interest
- Ways to engage with their fellow citizens and contribute to the community
- Greater transparency on government spending and actions
Addressing demands from **ELECTED OFFICIALS**
Elected officials are sensitive to time, social impact, and risk mitigation. They expect career government leaders to make demonstrable improvements in public services within short time frames, often dictated by the election cycle. Politicians are accountable to citizen demands for improved services, operational efficiency, greater transparency, and protection against growing physical and cyber threats.

What’s further possible with digital reinvention?

**Elected officials could:**

- Create and nurture innovative businesses for economic vitality
- Meet the needs of an aging population
- Coordinate across agencies and charitable organizations during natural disasters, with backup plans to address electrical, internet, and network outages

To support their elected officials, government leaders will need to be innovative problem solvers and to rapidly build, test, and refine new citizen services.
Empowering the DIGITALLY-NATIVE WORKFORCE
75% of the workforce will be digitally native by 2025. What does that mean?

As baby boomers retire over the next decade, their skills and expertise will need to be captured to inform new systems and new workers. To fill their place, a new generation with a desire to help others has flocked to government. Public-private partnerships have expanded the resources that contribute and run government functions across new ecosystems.

The workplace expectations of digital natives are shaped by entrepreneurial start-ups and new era work environments of private sector employers. They expect employers to create work environments that retain their interests and earn their loyalty.

This new wave of civil servants has limited patience for repetitive tasks, slow bureaucracies, siloed organizations, and inflexible processes. Rather than spending most of their day doing paperwork, for example, a caseworker would prefer to be in the field helping others.

To meet these expectations, governments will need to augment human efforts with digital insights that inform decision-making and automate repetitive tasks.

**What’s further possible with digital reinvention?**

- A city infrastructure engineer views transportation usage data to intervene in critical maintenance for roads and bridges
- A Health & Human Services claims officer applies fraud, waste, and abuse patterns to prioritize high risk claims for investigation
- A public safety officer leverages facial recognition analysis of vast video recordings to identify and locate a crime suspect

**What can you do with actionable digital insights?**

- Detect patterns in individual cases
- Identify trends of cause and effect across a population
- Predict and diagnose high risks for preventive intervention
- Simulate potential outcomes based on proposed program changes or intervention actions
What’s possible in a digitally reinvented government?

Imagine a world where government leaders reinvent how government operates while mitigating risk and accelerating ROI. What if that world were possible today? With IBM, it is.

Imagine a world where the citizen experience is individualized, personalized, and proactive.

In this world, government services recognize each citizen as a whole individual, with a personalized set of needs, interests, capabilities, and vulnerabilities. This view evolves through interactions and is enhanced by real-time data and events. Government plays an active role in reaching out to each citizen based on their needs. This ongoing relationship builds trust. Citizens know that their government has their interests at heart.

Imagine a world where civil servants apply digital insights to predict and intervene for better citizen outcomes.

In this world, civil servants receive digital insights on risk factors and trends to help them address their most vulnerable cases. These employees become more productive and spend more of their day making a difference. Their exposure to the cause-and-effect of citizen vulnerabilities allows them to effectively intervene and recommend program improvements. Participation on collaborative teams enables them to deploy their ideas. As insights become more powerful over time, these employees see improvement in their contribution and the capabilities of their program, which leads to professional pride and job satisfaction.

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Four critical factors for government leaders to succeed

Change requires a driving force to lead an organization out of its comfort zone. Active, visible engagement and commitment from senior government leaders is absolutely necessary to champion radical, long-term reinvention.

To achieve success, government leaders should:

1. **Create citizen-centric services**
   
   Focus efforts to reinvent underlying government operations using the citizens’ user experience as the design point. Question existing silos, workflows, and decision trees. Consider the whole individual and how they want to interface with their government. Use AI and other digital technologies to learn from citizen interactions and proactively engage. Rapidly build new citizen-centric services to prototype a concept, refine designs through iterations, pilot, and then scale. Engage citizen representatives throughout to remain on target with citizen expectations.

   **Examples of citizen-centric services at work:**
   
   - Create a single trusted identity verification, used online and in-person, spanning jurisdictions
   - Reach out to citizens affected by natural disaster, identifying social program eligibility and resources
   - Answer citizen questions on the implications of new tax laws, using a call service chatbot

2. **Embed digital insights within redesigned operations**

   While rethinking how work is accomplished, embed the use of digital insights within new processes, rather than conducting data analysis as a separate function.
Consider how patterns, trends, and predictive insights might improve citizen outcomes. Apply IoT technologies to tap into billions of data sources. Apply machine learning and AI to augment human reasoning. Use blockchain to create an authenticated record of transactions across multiple parties. Establish fact-based decision making and trend-based redesign as key tenants of workforce culture.

**Examples of digital insights at work:**

- Optimize preventive maintenance of defense equipment fleets by applying sensors to detect wear and tear
- Reduce Customs fraud and improve supply chain visibility by establishing a blockchain across manufacturers, shippers, ports, consumers, and Border Control
- Intervene early to protect vulnerable children by using AI to predict high risk cases based on historic patterns

**3. Lead culture change for restless reinvention**

Build new expertise across the government workforce and champion culture change within the organization, across jurisdictions, and in the ecosystem. Government workers need to understand the citizen perspective and apply techniques to adapt services and processes on an ongoing basis. They need to understand how to use data insights and digital technologies to improve their work product. This change affects how work is done, how teams are constructed, how information is shared, how priorities are set. It impacts how government employee performance is measured and recognized, and how talent and expertise are developed. This culture change must also support ecosystems of private entities and open networks, building teams of experts from outside government to co-create new services.

**Examples of culture change at work:**

- Rethink city transportation passes by establishing a multi-skilled team spanning subway, train, bus, parking, and bike authorities
- Host a fun summer event to collect citizen ideas on improving local Parks & Recreation services
4. Make IT architectural choices that ensure resiliency, security, and responsiveness

As government operations are reimagined, the supporting IT architecture must be adaptable to an evolving set of requirements for services delivery, data management, digital technologies, and compute-intensive workloads. Not all choices are open, flexible, scalable, and resilient to change. Proposal requests should recognize the evolution of IT requirements to avoid a dead-end path. Cybersecurity needs to be pervasive—from the edge to the core—to protect against threats. IT choices need to be responsive to operational demands, using AI and bots to automate repetitive tasks. During this transformation, established environments will evolve and modernize, shifting operational budgets and talent towards more transformational efforts.

Examples of resilient, secure, and responsive IT at work:

- Detect and respond to cyber threats
- Scale infrastructure to address peak loads during tax season
Digital Reinvention™
Methods

New solution development methodologies accelerate digital reinvention and reduce implementation risks by creating cloud-based services, rather than tailoring large, packaged applications. This approach allows reinvention to proceed in small, manageable projects, with a quick turnaround in results and ROI. Risk is reduced by the ability to learn from early experience and adjust accordingly.

Design Thinking method
Designs new services around the user experience, allowing governments to rethink social services around the needs and preferences of the citizen. Design Thinking focuses on users, their needs, and the ability to deliver what they need virtually anywhere, anytime and on any device. Creates new services with an initial prototype that’s refined through several iterative designs, then piloted and scaled.

Agile techniques
Helps with team collaboration and iterative development. Agile can be used to build initial citizen services and also drive ongoing reinvention. Team members bring individual skills and strengths, collaborating on project goals. Agile methods enable adaptable operations, rather than engineered to a single design.
Organizational boundaries, process flows, approval cycles, and service delivery models can be reimagined based on a burgeoning set of new digital technologies.

**AI, machine learning, and advanced analytics**

IBM provides a digital technology platform for building cloud-based micro-services that can tap into various data insights and predictions. Advanced analytics capabilities detect patterns, identify trends, and perform statistical analyses across data sets. Machine learning can be applied to vast unstructured data, such as video, social media sentiment, and paper-based records to diagnose problems and recommend solutions. Dozens of IBM Watson® AI capabilities augment human intelligence with the ability to learn and reason from data. For example, citizen inquiries to call centers or online chats can be addressed through the Watson natural language support feature. Video face recognition can be used to quickly identify a public safety threat or lost child. Watson can be used to capture the expertise of top agency experts.

**Blockchain**

Blockchain documents a distributed and authentic ledger of transactions across trade partners, enhancing the security of online records and guarding against corruption and tampering. Blockchain can add efficiency and trust to the reinvention of citizen identity, customs, visa processing, land records, and the food and drug supply chain. When a record is added to the blockchain, it’s permanent and protected.

**IoT**

IBM IoT capabilities apply Watson AI to public and private data from billions of sensors, devices and video, providing real-time insights and enabling predictive interventions. The IBM Government Industry Lab in Munich, Germany, showcases many IoT solutions. These offerings include predictive policing, managing city traffic congestion, addressing air pollution, monitoring road and bridge infrastructure, and providing a coordinated response to public safety threats. Governments use the lab to co-create alongside private sector peers and build IoT proof of concepts.
Robotic process automation
By using automation to deliver repetitive tasks with greater consistency and speed, many back-office processes can be reimagined. Instrumented by agents enabled by AI, flesh-and-blood experts will find more time to focus on activities where human judgment and experience have greater impact.

Resilient and secure cloud infrastructure
New citizen services must be accessible 24x7 across web and mobile devices, and secure out to the user. Large data volumes must be ingested, analyzed, compressed and stored, following data governance procedures, data privacy regulations and secure from the edge to the core. AI and real-time analytics create compute-intensive workloads requiring new levels of processing performance and scale.

Hybrid cloud
New citizen-centric services and AI digital analyses can be designed, developed, and deployed on IBM Cloud. These tools take advantage of the broadest range of data types while ensuring consistency, integrity and performance. Nearly 60 locally owned and operated data centers provide governments with options to host citizen data within country borders. IBM Cloud Private provides governments with further options to manage cloud applications on premises and behind the firewall.

Cybersecurity
IBM Security services define strategies to establish, identify and access management, and protect data from internal and external threats for your web and mobile applications. Watson for cybersecurity can draw intelligence from millions of security blogs, online forums, and white papers to see threats unseen by other systems.
Where are you in the digital journey?

E-government transformation has been underway for years. Agencies have revealed program information on the web, added user interfaces, conducted online transactions, released mobile applications, and piloted new technologies. Yet, the gap continues to widen between rising citizen expectations and inflexible operational capabilities.

Adapted from the 2014 UN e-Government survey
Government leaders need a partner that knows how to establish a digital vision and successfully implement continuous reinvention, based on experience. IBM has the roadmap to help government leaders achieve ambitious goals by dividing them into smaller, manageable projects that can be refined through iterative improvements. IBM builds imaginative new services by combining government industry knowledge with innovative digital technology. The experts at IBM understand the implications of new digital services on an underlying IT infrastructure and can work to prioritize resiliency and cybersecurity.
IBM can help define the transformational roadmap through a Digital Reinvention™ for Government workshop. This 1-2 day session brings your team together with IBM experts to evaluate your challenges and consider your priorities. The current position of your organization is diagnosed using IBM’s Digital Reinvention Maturity Model, adapted from the UN e-Government survey. IBM Design Thinking principles are applied to envision how several citizen use cases can be reinvented and delivered as cloud-based services. A roadmap identifies key milestones on the path from the current environment to the reinvention vision.

Contact your IBM client representative to learn more about this workshop, and visit:
ibm.biz/governmentreinvention