A new age of government service delivery

How government can use technology to create more citizen-centered services

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Contents

Introduction

CAN YOU IMAGINE mail delivered by a rocket? What about letter carriers bounding down the street with jetpacks?[1] These scenes may seem like they're out of lazy science fiction plots, but they are real concepts explored by the United States Postal Service (USPS). In fact, rocket mail was actually tested in 1959 with a submarine firing a modified Regulus cruise missile packed with 3,000 pieces of mail (figure 1).[2] The reason these ideas sound so absurd is exactly why many innovations fail: They seek to graft transformational new technology on to old ways of doing business.

The clash of new technologies and old business models is exactly the challenge facing many government leaders today. The confluence of technologies such as artificial intelligence (AI), cloud, blockchain, quantum computing, and more can open up new possibilities for government to deliver services to citizens in entirely new and more effective ways. But these transformative results may only be possible if government agencies can break free from traditional ways of doing business and explore new models of service delivery.

FIGURE 1

A piece of mail from the first—and thankfully only—test of rocket mail in 1959, a perfect example of grafting new technology onto unsuitable business models
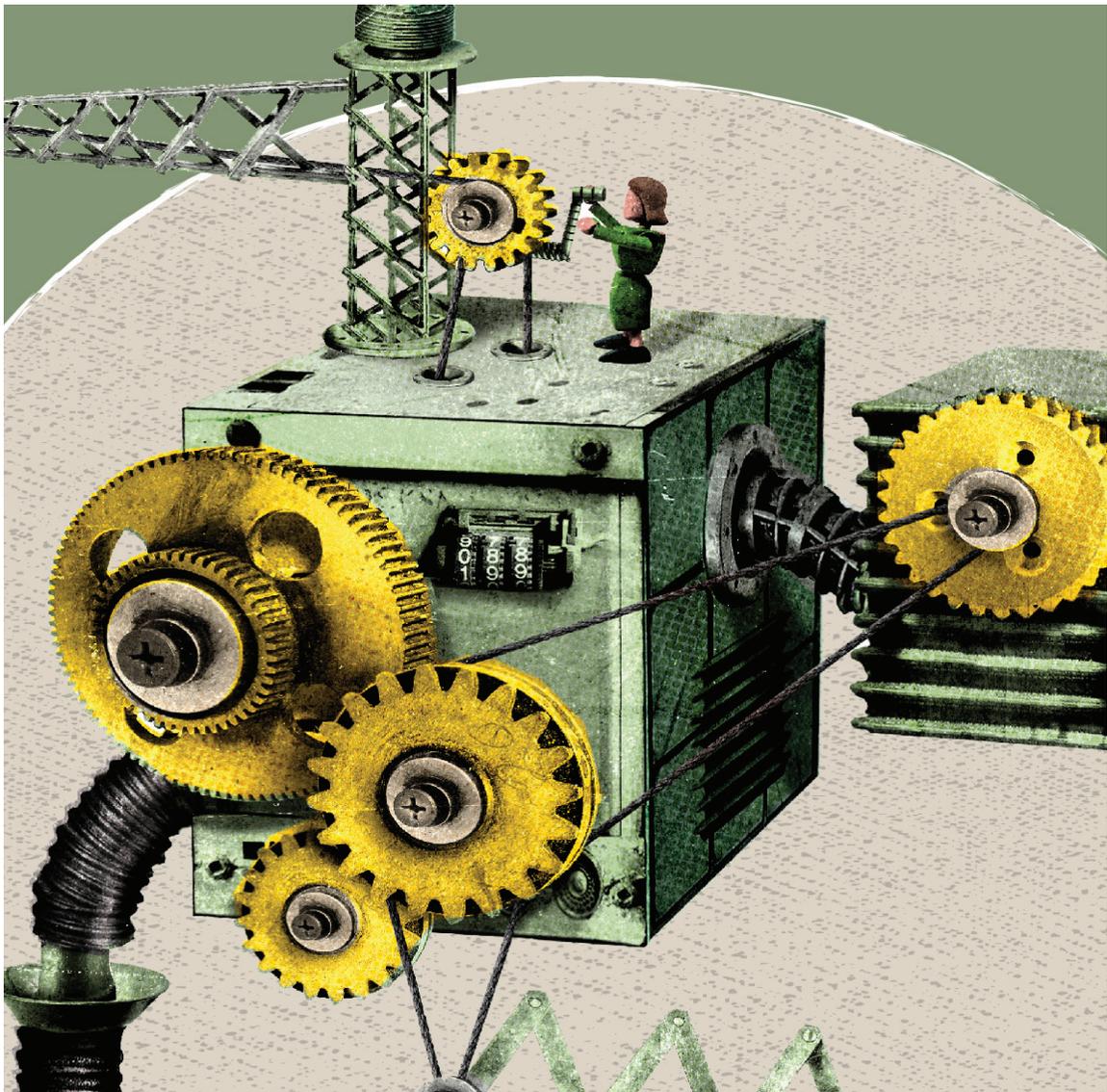

Source: National Postal Museum.

The best innovations generally not only make use of new technologies to enhance *how* a service is delivered, but also to rethink *what* service is being delivered. Government innovations, from TSA PreCheck to virtual learning, all integrated new technologies into new models of service delivery. Even turn-by-turn directions on your mobile phone can be thought of as a government service since the underlying GPS signals are made freely available to anyone wishing to use them—much like the interstate highway infrastructure of a half-century ago.

If government is truly going to tap into the possibilities of the current technological revolution, it should consider thinking differently about how it delivers services to citizens. That process can be hard, but our research shows some promising approaches that can help government leaders identify new delivery models that will hopefully succeed.
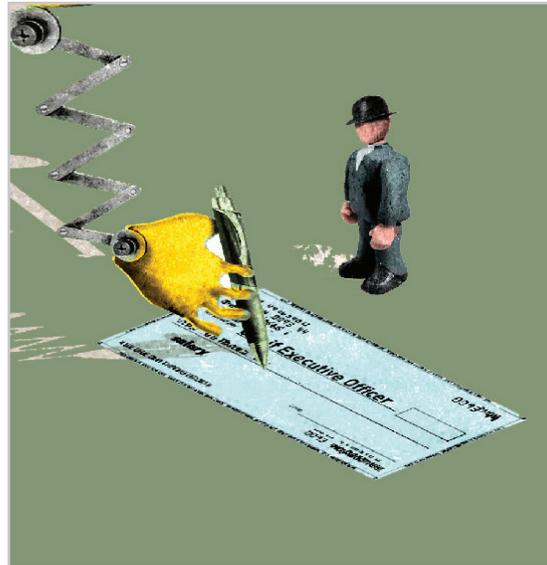
Getting government innovation right is not just an academic question; it is the difference between improving citizens' lives and ending up a curiosity for a museum display.

Transformative technology creates new possibilities

THERE CAN BE little doubt that technology is driving a wave of economic and social change. The statistics are literally astronomical: There are more bytes of data than stars in the observable universe, and government can apply AI to this data to save up to 1.2 billion hours of work.[3] These technological advances are changing how governments carry out everything from food safety to gambling inspections. Virtual inspections and licensure hearings are speeding up approvals and increasing the reach of individual inspectors.[4] Similarly, AI and big data analytics have been applied to problems ranging from building code violations to financial fraud investigations, resulting in both lives and dollars saved.[5]

But the story is more than just new technology in government—it is new technology enabling fundamentally new ideas about how government can deliver services. Take getting a birth certificate, for example. This would typically involve filling in a form and perhaps a trip to a government registrar. However, governments such as Australia and Estonia have begun to proactively issue birth certificates.[6] Rather than waiting on busy new parents to fill out forms, government systems know from health data when a couple has a new child and will need a birth certificate. The parent simply needs to click to confirm. No forms, no waiting in line.

The story is more than just new technology in government—it is new technology enabling new ideas about how government can deliver services.

New wine bursts old wineskins

TO TRULY TAKE advantage of these new technologies, government may need to fundamentally change how it delivers services to citizens. AI is today's version of the rocket: An exciting new technology, but one that can't simply be grafted onto existing business models. Take AI-enabled chatbots, for example. These can be an incredibly valuable tool to help people navigate complex processes or quickly find relevant information. But simply adding a chatbot to a traditional government webpage full of text information may not be very valuable. It might sound cutting-edge, but it doesn't really add anything of value. It makes little difference to users whether they read text in the website window or the chatbot window. Just adding AI to existing ways of doing business will often result in services as awkward as rocket mail.

To avoid this fate for its innovations, government should think creatively. Ways of delivering services that were once discounted as impossible may suddenly be possible as new technologies burst on to the scene.

Think about a bank or merchant asking for your driver's license. The merchant doesn't really want to know that you can drive a car or if you are an organ donor; they just want a government-backed way of verifying your identity or age. Previous innovations around identity mostly focused on improving the existing driver's license, making it plastic instead of paper, adding anti-fraud features, and so on.[7] But now, new technologies are opening the possibility for entirely new forms of identification. New temporary digital IDs, such as India's Aadhaar virtual ID, take advantage of advances in cloud, mobile computing, and cryptography to offer government-backed identity

verification that is temporary, revocable, and shareable.[8] It meets the needs of both citizens and merchants in a way that simply modifying old, plastic ID cards never could.
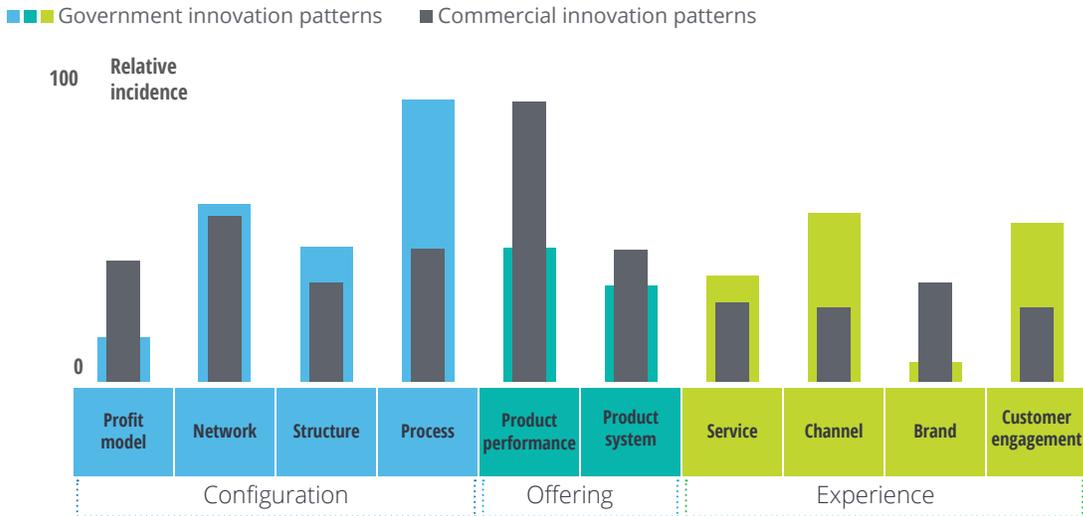
Government: Good at efficiency, poor at novelty

Creating new processes or interdepartmental relationships may seem simple when weighed against the great potential benefits they can bring to citizens, but such changes cut against the grain of innovation in government. Any organization can become set in one way of doing business, and it often takes a significant jolt to shock it into adopting new business models. In commercial industry, where innovation is focused on creating new and improved products, an innovative new product can be that spark. This is exactly what happened in commercial industry with the emergence of cloud. The ability of cloud to quickly scale up and down allowed software companies to adopt new pay-per-use business models for which their clients don't have to purchase copies or licenses.

But government does not tend to innovate that way (figure 2). Rather than innovating around its core product—the citizen service—government's innovations tend to refine the efficiency of current models (for more on our research methodology comparing government and commercial innovation, see "Appendix: Methodology"). The result is that one of the key motivators of adopting new service delivery models—delivering them differently through new business models—is lacking. Government is, therefore, more likely to try and graft new technologies onto old methods,

FIGURE 2

While commercial innovation tends to be product-led, governments are more likely to improve process

■■■ Government innovation patterns   ■ Commercial innovation patterns

100 Relative incidence

0

| Profit model | Network | Structure | Process | Product performance | Product system | Service | Channel | Brand | Customer engagement |

Configuration | Offering | Experience

Source: Deloitte analysis.

leading to the rocket mail problem. Improving only the process that delivers services can lead

governments to deliver the wrong service with exquisite efficiency.

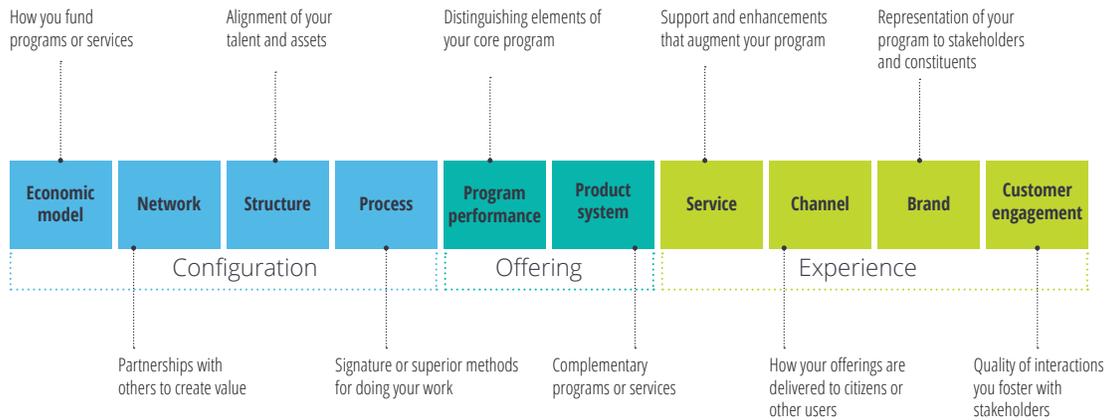## 10 TYPES OF INNOVATION: A HELPFUL TOOL FOR ASSESSING AN ORGANIZATION'S INNOVATION

Organizations tend to think of innovation narrowly. Government may be inclined to think of innovation as improving current processes while many commercial companies default it to just creating new products. But both of these are only one way to innovate. The 10 Types of Innovation framework developed by Doblin by Deloitte offers a way to quickly see the major categories of innovation. The 10 different types of innovation within the framework are grouped into three color-coded categories: configuration, offering, and experience. As you move from left to right through the 10 types, you move from innovations that are more invisible in back-office functions to those that have greater and greater visibility to customers.

This framework can help leaders see where they are innovating well and where they may have unexplored potential for doing more.

The most impactful innovations, whether in government or in industry, come about when multiple transformations work together.[9] Take the Transportation Security Administration's PreCheck® for example. It was not just a new service allowing precleared travelers to have a faster security experience. Its success relied on innovations elsewhere (figures 3 and 4). It needed an expanded network of airlines to reach travelers through new channels—having their "pre-check" status printed on their boarding pass, for example. It introduced a faster customer experience and a new brand to go with it in the form of the "Pre-✓" wordmark. It even gave government a new source of funding to reinvest in security as passengers paid US$85 for the new service. The success of PreCheck would not have been possible with only one of these innovations. It relied on *all* these innovations working together to deliver a new service to citizens.
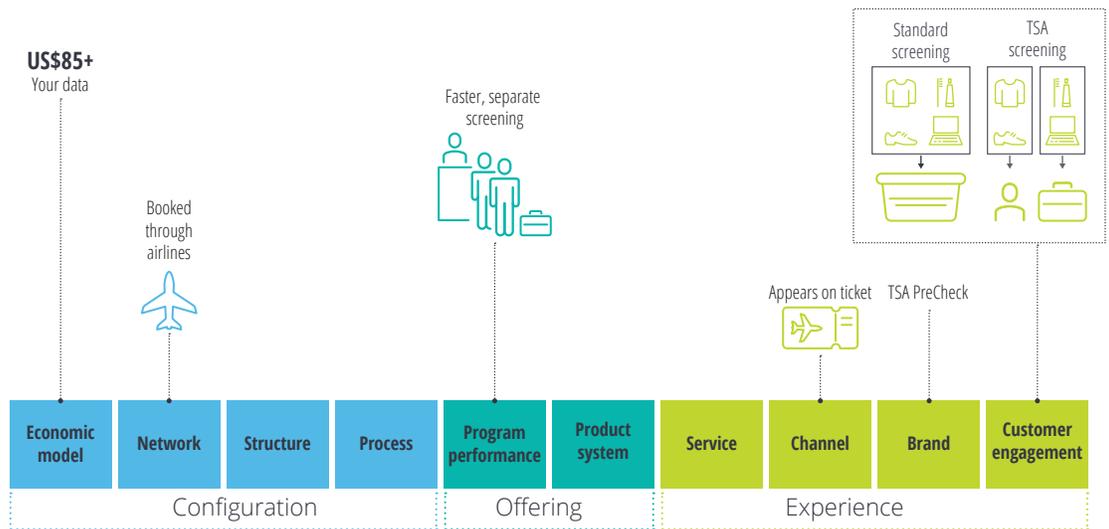
FIGURE 3

The 10 types of innovation can help to understand how innovations change organizations

How you fund programs or services

Alignment of your talent and assets

Distinguishing elements of your core program

Support and enhancements that augment your program

Representation of your program to stakeholders and constituents

| Economic model | Network | Structure | Process | Program performance | Product system | Service | Channel | Brand | Customer engagement |

Configuration · Offering · Experience

Partnerships with others to create value

Signature or superior methods for doing your work

Complementary programs or services

How your offerings are delivered to citizens or other users

Quality of interactions you foster with stakeholders

Source: Deloitte analysis.

FIGURE 4

TSA PreCheck, like most successful government and commercial innovations, relies on a number of innovations working together

US$85+
Your data

Booked through airlines

Faster, separate screening

Standard screening · TSA screening

Appears on ticket · TSA PreCheck

| Economic model | Network | Structure | Process | Program performance | Product system | Service | Channel | Brand | Customer engagement |

Configuration · Offering · Experience

Source: Deloitte analysis.

Take advantage of synergies in technology

FALLING VICTIM TO "the-way-it-has-always-been-done trap" is an age-old challenge. But, luckily for government, the current time may offer one of the best opportunities to break out and discover new ways of doing business. That's because all around us, technologies of the digital Fourth Industrial Revolution are coming together to transform everything about how we live. These technologies are the engine of transformation, and understanding how they work together can help government leaders innovate effectively.

A key point to note is that today's technologies do not exist in isolation—they almost always work in conjunction with each other. For example, it's rare to find AI working without cloud to provide the vast volumes of data it needs. In fact, 83% of enterprise AI runs in the cloud.[10] So while modern technologies can be valuable on their own, their real transformative power comes when they work together. Virtual reality (VR) by itself is just an interesting add-on for gamers. But in combination with AI and the digital twins of a city's transit system, VR can become a serious tool that can transform everything from city planning to defense wargaming.

Identifying the synergies in new technologies can be the first step to uncovering entirely new ways of delivering government services. For example, with the COVID-19 pandemic forcing so many in-person government services to close (at least temporarily), many agencies took advantage of the cloud to quickly pivot to a virtual footing. But the move to

the cloud didn't just allow work to be done remotely; it also allowed government to layer on new automation tools to deal with surges in volume for services such as unemployment insurance or health questions. Governments can even use these technologies to reach citizens in new ways as King County, Washington, is doing with chatbots that were integrated into digital assistants so that citizens can query government services in their own voice.[11]

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Adoption of one technology does not have to solve only one problem. One technology can work with other innovations to improve many aspects of government service at the same time.

Draw up some innovation "set plays"

Just like the right play in basketball or football can help uncover hidden seams in a defense, "set plays" in innovation can help uncover hidden synergies that can lead to new delivery models. Our examination of patterns of government innovation found three such "set plays," in which innovations in different parts of an organization can form natural complements (figure 5).

FIGURE 5

Innovation set plays can help spark thinking and make sure government innovation is doing more than just refining existing processes

Set plays	Definition	
The customer-experience play	**Core services remain the same, but the experience of those services is improved**	
	Elements	**Example**
	Channel + process + customer engagement	New South Wales' digital driver's license service not only adjusts government processes for functions such as updating an address or renewing a license but reaches citizens via the new channel of an app; it has resulted in significant citizen engagement with more than 36% of citizens adopting it in the first year alone.[a]
The open innovation play	**Government taps into wider networks to help government do something new**	
	Elements	**Example**
	Network + product performance + process	Boston HubHacks Permitting Challenge used a wide network of competitors to create new services for citizens, which were then adapted into government processes.[b]
The growing garden play	**Government taps into wider networks to enable the network to do something new**	
	Elements	**Example**
	Network + channel + process	NASA's commercial crew program used a network of commercial companies to create a new channel for space exploration using a variety of new contracting and management processes.[c]

Notes: a) Justin Hendry, "NSW digital driver's licence demand is triple first-year estimates," *IT News*, December 7, 2020.
b) City of Boston, "Mayor Walsh announces first HubHacks challenge, inviting tech community to improve permitting experience," April 6, 2017.
c) NASA, "Commercial Crew Program—Essentials," accessed January 18, 2021.
Source: Deloitte analysis.

1. **The customer-experience play.** In the customer-experience play, the core government services remain the same, but a series of innovations come together to revolutionize how citizens experience those services. Much like the ambiance of a restaurant can make good food more enjoyable, a better experience of government services can make good service even more effective. For example, in Spain, vulnerable populations such as the elderly faced some challenges in accessing health care during the pandemic. To improve engagement with these populations despite the pandemic, the Spanish National Health Service created Hispabot—a chatbot capable of answering basic health questions—and then placed that bot on WhatsApp to be able to reach people via a channel they already used extensively.[12] The

result was continued access to health care for vulnerable populations and reduced pressure on other areas of the health care system. The government of New South Wales in Australia applied a customer-focused play to a completely different area when it created digital driver's licenses. In just the first year, more than two million citizens have benefited from the ease of updating digital driver's licenses, which are available via the Service NSW app.[13]

2. **The open innovation play.** Open innovation calls on a wide network of providers—even those outside of government—to help improve the performance of key citizen services. However, the focus of open innovation is not just on getting the group together but on bringing these new partners' solutions to bear on citizen problems. This likely requires not just process shifts within government, but also a willingness to create or re-create basic services. For example, the city of Boston tapped into the tech community by opening its permitting process to a HubHacks Permitting Challenge.[14] Competitors used a custom API to redesign the city's permitting process, resulting in new services for citizens, such as filing for multiple permits at once, organizing permits by project, and adding additional contacts.

3. **The growing garden play.** Government does not need to solve every problem itself. Rather, just as a gardener creates space for plants to grow, by creating the right processes

and communication channels, government can provide the space for a wide network of players to deliver needed public services. NASA's commercial crew program is a good example. Rather than using contractors to create government-owned space vehicles, NASA offered varying increments of funding to spur development of commercial manned spaceflight.[15] Starting with small grants to five companies to develop key technologies, in less than 10 years, the program has resulted in two different commercial spaceflight options that have already flown six astronauts into space.

These set plays can be important tools in spurring government to think beyond a single technology while trying to uncover entirely new models of service delivery. But these plays are likely just the beginning. After all, even the best minds in the world cannot predict the future. Former US Secretary of Defense William Perry is widely credited with being the leader who drove the creation of GPS, stealth aircraft, and the internet. But despite his great foresight in creating these programs and saving them from budget cuts, even Perry did not foresee how a military innovation would create whole new commercial services such as mapping and turn-by-turn directions. "I was not thinking about the commercial applications at the time," he said.[16]

Recommendations: A new world demands new thinking from government

THE WORLD IS changing. New technologies are shifting the limits of what is possible. At the same time, social and economic trends are largely changing what citizens need. Innovation in service delivery is needed if government is to efficiently meet the needs of its citizens. But innovating takes more than just the latest technology. The future of government service delivery depends on leaders taking an active and structured approach to not only improve "*how*" services are delivered, but even "*what*" those services are. A few key considerations can help government leaders find new models of service delivery that can better serve the needs of their citizens:

Overcome mental challenges

UNCOVER THE "JOB TO BE DONE" THAT THE PUBLIC NEEDS

Perhaps the strongest challenges to finding new ways of doing business are the preconceived notions about how work needs to be done. Once government selects a service delivery model to meet a particular need, it can lead to a sort of mental "lock-in" where leaders assume that the need can only be met by that service in that particular form. For example, in the late 19th and early 20th centuries, public libraries began to spread around the world with the goal of promoting culture and education among citizens. The means of achieving this goal was housing and lending books. This led many libraries to consider lending books at

the core of their mission. Yet, shifting trends in where citizens find information mean that now, people are about as likely to use the library for Wi-Fi as for books.[17] As these trends continue to shift, the library's goals of education and cultural enrichment may be better met by meetings and classes, or by becoming a trusted verifier of information in today's environment of mis/disinformation.[18]

The story of libraries shifting services exemplifies how government needs to understand the "job" that citizens need done.[19] Citizens do not want a government service, they want a "job" done, and government service is just one way of accomplishing

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that. For example, citizens don't necessarily want a fire department, they want buildings not to burn down, and there can be many ways to accomplish that. In fact, when New York City used AI to improve building inspections, it resulted in the first month ever that saw no fire-related fatalities in the

city.[20] The challenge is that mental challenges (such as functional fixedness) can limit us to seeing familiar tools/services as the only way to do that particular job.[21] If government leaders are going to take advantage of new technologies to meet citizens' needs in new ways, they need tools to help them break those mental challenges and see the various ways of delivering services to citizens. Templates laying out goals and all the resources available can be valuable tools in helping government to view familiar problems from new angles and find a vision for service delivery unconstrained by "the way it's always been done."

Overcome technical challenges

TREAT TECHNOLOGIES TOGETHER, NOT AS DISCONNECTED TOOLS

Technologies have never existed in splendid isolation. A nail is more or less useless without a hammer. But the convergence of today's digital technologies has taken this to an extreme degree. As a result, government leaders should not think about purchasing just AI or only migrating to cloud, but must think about how those technologies interact and what opportunities—and what cyber vulnerabilities—they create for each other. For example, if city leaders were only to consider VR, they might discard it as a toy for gamers. But combine that same VR with a cloud-based digital twin of the city, and now you have an interactive tool for city planning or disaster response.[22] This is where the innovation "set plays" discussed earlier can be especially helpful. They can help visualize how certain technologies naturally fit together.

Overcome regulatory challenges

ADVOCATE FOR RELIEF WHERE NECESSARY

Government is not a private company; it must manage risk not just for employees and customers, but for all citizens. Moreover, unlike a private entity, government programs are often created by statute. As a result, government can face legal constraints on what services are delivered to citizens, which citizens are to receive those services, and in some cases, how services are delivered. While most government agencies still have a wide latitude in how to best serve citizens, in the event that regulation constrains new developments, leaders should advocate for relief that can enable innovation while still protecting citizens. For example, when the Defense Innovation Board found that budgetary limitations were impacting the US Department of Defense's ability to develop the best software for its money, it advocated a new appropriation category just for software, which Congress created at the end of 2020.[23]

Governments are always innovating, and the current time offers exciting new possibilities. But to make sure we make the most of these possibilities, we need to consider thinking differently and be open to entirely new models of government service delivery. Success in doing so could be the first step toward a truly digital government. Failure may look like rocket-delivered mail.

METHODOLOGY

Our research mined press, academia, and other publications to identify 89 government innovations from around the world. After ensuring we had adequate examples from every type of service governments tend to provide, we coded each example of innovation according to the type and number of the 10 types of innovation it used. The results were compared to previous research conducted on a sample of more than 120 leading commercial innovations using the same framework.

The "set plays" of innovation in government were derived using a correlation matrix that examined how often each of the 10 types occurred with others within our set of government innovations.

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5. New York City used analytics paired with expert human judgment to create a predictive analytics tool for targeting unsafe buildings for inspection, while both Denmark and the state of Georgia have used text analytics on business and campaign finance reports, respectively, to help identify potential cases of fraud.

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Acknowledgments

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