HARVARD Kennedy School
ASH CENTER
for Democratic Governance
and Innovation

2019 State of Digital Transformation

David Eaves and Georges Clement, Co-Editors

May 2020

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ABOUT THE CO-EDITORS

David Eaves is a lectured in public policy at Harvard Kennedy School, a public policy entrepreneur, and expert in information technology and government. In 2009, as an adviser to the Office of the Mayor of Vancouver, David proposed and helped draft the Open Motion which created one of the first open data portals in Canada and the world. He subsequently advised the Canadian government on its open data strategy where his parliamentary committee testimony laid out the core policy structure that has guided multiple governments approach to the issue. He has gone on to work with numerous local, state, and national governments advising on technology and policy issues, including sitting on Ontario's Open Government Engagement Team in 2014–2015.

In addition to working with government officials, David served as the first Director of Education for Code for America—training each cohort of fellows for their work with cities. David has also worked with 18F and the Presidential Innovation Fellows at the White House providing training and support.

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PART I: INTRODUCTION

INTRODUCTION: THE 2019 DIGITAL SERVICES CONVENING

Refining and Strengthening Approaches to Digital Transformation

By David Eaves

In June of 2019, the Harvard Kennedy School hosted digital service teams from around the world for our annual State of Digital Transformation convening. Over two days, practitioners and academics shared stories of success, discussed challenges, and debated strategy around the opportunities and risks digital technologies present to governments.

Teams that joined us for the summit used different approaches and methodologies in vastly different contexts. Some governments—such as those of Estonia and Bangladesh—were building on decade or more of experience refining already-advanced practices; others—such as the state of Colorado's—were still getting ready to formally launch. Some had deep connections across their entire executive branch; others were tightly focused within a single agency.

Reflecting on the event, three key thoughts emerged.

The first is that it remains very early days in the journey of digital government and that no single path forward exists. In 2017 Tom Loosemore, a cofounder of both Public Digital and the UK Government Digital Service, defined digital as "Applying the culture, practices, processes & technologies of the internet-era to respond to people's raised expectations." Few in the room felt that most governments had mastered these four capabilities. We are no longer at the beginning of the journey, but we remain in its early stages. As will be shared in a later chapter, the diversity of approaches was reaffirmed in an exercise using the maturity model that developed out of conversations from the 2018 convening, where teams focused on various capabilities as they sought to both have impact and build credibility with their public-sector peers and political masters. For example, Honey Dacanay, a founding member of the Ontario Digital Service, shared Ontario's work on passing the Simpler, Faster, Better Services Act, which attempts to codify some of the above-mentioned practices into law. In short, while we are mostly agreed on where we need to get to, we are still in a period of experimentation and learning, rather than convergence, around how to get there.

The second centered around platforms as a means to scale impact. At the 2018 convening, many participants agreed that public-sector digital platforms were a North Star objective and a key way to scale up transformation efforts. After the 2018 convening our program brought on Richard Pope, formerly of the UK Government Digital Service, as a senior research fellow to dig deep into the theory and practice of digital platforms around the world. This culminated in the publication of the Government as a Platform Playbook, in which Richard documents best practices and critical questions governments need to engage with as they start to build this critical 21st century infrastructure. In addition to a discussion with Richard, the group also benefited from amazing presentations by platform builders such as Pete Herlihy, product lead for GOV.UK Notify. The subsequent discussion led multiple other governments to fork Notify's code base on the spot and set up teams to launch localized versions. Recently the Canadian Digital Service announced it launched its own version of Notify.

Finally, there was a significant discussion on issues related to governance, the use of mandates, and ethics, particularly around platforms. If we think that government platform services are a key to scaling digital government, then it's critical to understand how the platforms can be misused, compromised, and put in service of values contrary to democracy and human rights. This is one reason the group debriefed a case study on Aadhaar—India's biometric identity platform—that is used here at Harvard to explore these questions. Technology—particularly platforms—have a tremendous ability to make governments smarter, faster, and better. And a large number of countries, particularly in emerging markets, will see government platforms as a way to create the public value their citizens demand at a much lower cost. The question will be, what values and practices will they use to manage this technology—one that maximizes the state's ability to surveille, suppress dissent, and maximize control, or one that voluntarily constrains that ability? Those of us at the intersection of government and technology have a profound responsibility to set norms and establish policies and rules that ensure the values we think matter are protected and not compromised by the capabilities we are building.

It may be the end of the beginning of digital transformation, but the hard work is just getting started. We hope you will find the reflections in this paper helpful as your

wrestle with your own journey and, if you are working on digital transformation at the national or regional level, that you might be able to join us at our next convening in June 2020.

GOVERNANCE RULES FOR PUBLIC-SECTOR PLATFORMS CAN'T WAIT

Advocates of Digital Identity Platforms Need to Address Questions about Power and Authority Now

By David Eaves and Ben McGuire

In March of 2017, the World Bank announced a $100 million grant to the government of Morocco for the Identity and Targeting for Social Protection Project, which would "expand coverage of a Unique Identifying Number (UIN) for the Moroccan population and foreign residents, and to improve targeting of Social Safety Nets (SSNs)... [which] will particularly benefit women by facilitating their access to social and financial services." Like myself and many others, the World Bank is enthusiastic about the potential benefits of identity-platform investments, which promise to increase sustainable development, boost savings and revenue, ameliorate forced displacements, benefit healthcare, end child marriage, and empower women and girls. Less clearly addressed—and increasingly worrying to those working at the forefront of technology and government—are the potential risks embedded in these tools and how we as a society will mobilize to address those risks. This is a challenge the public is awakening to: One need look only at the mass protests across India in late 2019 around fears that digital government tools could render some citizens stateless.

Consequently, governments and international agencies that are investing in these tools must ensure that rules establishing governance, authority, and accountability are at their core. This doesn't just mean some clearly defined policies stored in a library. We need institutions that are empowered to manage complex new tools and strong digital-rights frameworks—possibly like the EU's 2016 General Data Protection Regulation, or GDPR—that protect individuals. And these institutions and rights need to be enforced at every layer of the platform "stack," from databases to applications to the services delivered to citizens.

A decade ago, Tim O'Reilly threw down a gauntlet to policymakers: Governments in the digital age should think of themselves as operating systems and adopt a platform mindset. In this new world, learning from the example of private-sector leaders like Amazon, governments would become providers of a technical infrastructure of common database and application layers that could be used by agencies, subnational governments, and civil society to radically improve and streamline services. Since then, nations like Estonia and India have led the charge in building digital platforms for government, generating exciting headlines and hopeful advocates.

The World Bank's investment in identification for Morocco followed a series of reports on the state of identity ecosystems there and across Africa as part of a much larger World Bank project supporting foundational national identities platforms across the developing world. Better identity infrastructure may empower governments to be more efficient in the distribution of public services like education, healthcare, and insurance. Western news outlets recently recoiled at reports that Absher, a since-deprecated government-sponsored application in Saudi Arabia, allowed the government and male citizens to track and control women. Absher sits on top of a database of passports and is not a true identity platform. But the underlying questions about the use of this tool are similar, and indeed, are more important in the world of digital platforms, which can help to organize and make accessible the vast amounts of data governments collect about their citizens. How can we help ensure that the tools we are building will be used for empowerment and transformation rather than to permanently reify existing power arrangements?

It's urgent to address these questions now because the decisions made today will impact society for decades. Right now, dozens of emerging markets are looking at government platforms as a way to fundamentally reimagine how states deliver public services more cheaply and efficiently. Over the coming decade a new, 21st century core government infrastructure will be built. Will it be designed to serve citizens, or their governments?

The choice is not clear and the path of least resistance will not necessarily create the benefits we expect. In the worst-case scenario, big investments in platforms will allow powerful sectors of society to increase their locus of control, adding sophistication and precision to existing efforts aimed at surveillance and distribution of public

benefits to favored groups. As the UN has argued, data-enabled government demands new kinds of social protection. One reason to have confidence in the long-term potential of platforms in countries like India is that technocratic faith in platform efficiencies has been matched against a civil society and populace that can mobilize to push back against perceived government overreach. Jamaica's courts recently struck down a new national digital identity program based on privacy concerns. But not every national government is counterbalanced by the same kind of robust civil society; we should be careful about unilaterally empowering one sector in a way that can disempower others. This is not a technical problem to solve or a call to end platform investments. We need to define the governance of these platforms: who will build them, who will control them, and how they will fit into society.

The power of these tools demands a clear explanation of how platforms will be governed and controlled to ensure equity and accountability. It is critical for not only governments, but also the international development agencies funding these platforms, to tackle the following questions:

- Which agencies will own the construction and maintenance of the platforms? What agencies will devise policy for them, and who will enforce these rules? The agencies that build the platforms might not be the most appropriate home for them in the long run. Good governance suggests that responsibility for drafting policies, operations, and enforcement is best controlled by different entities. What models exist for this?
- Who will control access and what will be shared across agencies? Platform owners will assume enormous power in a more integrated public sector; how can governance models and ministerial oversight ensure fairness? Government service rules are already opaque to most citizens; what rules should exist to ensure not only transparency, but also accountability for decisions that are made far from the point of service delivery?
- What data will these platforms create, and what should we do with it? Citizens want their governments to be more adaptive and responsive. They are also concerned about what their government knows about them. Today, willingness to share data with various government agencies is based on the presumption that it can't or won't be shared. What happens when that informal understanding falls apart?

When national governments invest in platforms, they must think critically about where the platforms will live, what kinds of internal mandate authority their owners will have, and how those structures will impact the exercise of national power. They need to clarify precisely how the data that lives within and flows through the platform will be stored, protected, and controlled. They need to explain how citizen users will have robust input in design phases, as well as accessible accountability tools for maintenance and evaluation. Most important, we all must grapple with the capabilities of the state brought to scale and speed by the power of platforms. Nothing about the technical back-end of these tools inherently helps us answer these questions, and the recent history of platforms has been generally positive. But if—or when—national power flows to actors who are uninterested in preserving equity and accountability, the rules may matter very much.

To be clear, we aren't launching a salvo at national governments that are exploring platform tools, nor castigating the international development agencies and others that are supporting these investments. Platforms truly do have enormous potential to radically improve public services and the lives of human beings around the world. To date, the development of these tools for digital transformation has been inspiring to watch and document. But while we have seen plenty of excitement about upsides, we have yet to see adequate attention paid to the potential risks and dangers of the new powers these tools create. Scholars like Shoshana Zuboff are sounding the alarm about the ability of tech giants to conduct mass surveillance for ad sales and product research. But the consequences of this monitoring would pale in comparison to what similar tools could accomplish in the hands of a motivated state.

Platforms, particularly identity platforms, could generate a radical shift in a national government's power over and proximity to citizens, and in the power dynamics between various parts of government. We need to ensure that the scale and efficiency gains for government are met by a set of governance rules that protect privacy, preserve safety, and promote accountability. Governments and international institutions that are investing in these tools today need to act to define the new rules of governance and the control they will embed in platforms. Money has been spent, projects are underway, and platforms are coming, whether we are prepared to deal with their consequences or not. There is no time to wait.

PART II: MATURITY MODEL

MATURITY MODEL UPDATE: FACILITATING LEARNING ACROSS AND WITHIN TEAMS

By David Eaves with Lauren Lombardo

In 2018, working Ben McGuire, a student here at Harvard Kennedy School, we released a maturity model designed to contextualize the progress of public-sector digital service units. The model, based on feedback from participants at our annual digital services convening and conversations from practitioners from around the world, allows one to assess a government's capability to deliver digital services by looking at progress across six capacities: political environment, institutional capacity, delivery capability, skills and hiring, user centered design, and cross-government platforms.

Two exciting things have happened since the model was released. First, we've learned a lot about what makes the maturity model interesting and useful to practitioners and students. Our goal for creating the model was to help digital service teams talk and learn from one another. So we sought to spot patterns of capabilities that digital-services teams doing similar work have had to develop over time. This has been useful for several reasons. First, it provided an imperfect but helpful roadmap teams can use to see how their work will evolve. Second, it has proven to be helpful in getting teams to debate strategy and theory of change. Digital service teams around the world have different goals and divergent paths for achieving them. This tool can give us a window into their actions and infer strategy. Finally—and perhaps most important—it provides a shared vocabulary that helps spark helpful conversations within and across teams.

The second exciting outcome has been that individuals from digital-services teams around the world completed our online assessment tool, providing us with self-reported benchmark data. Throughout the year, when speaking about the model at conferences or using it in my degree program and executive education courses, I've been able to gather even more data from representatives of the digital-services teams in attendance. As a result we have a healthy amount of self-assessed benchmark data from digital service teams around the world.

In this chapter we share this data and some hypotheses we've generated about what it tells us, and also outline how the maturity model has been used to elicit conversation within and across digital-services teams in ways that they have found useful.

Understanding the Data

Self-Reported Strengths and Weaknesses of Digital-Services Teams, Reported on a Scale of o to 3, with 3 Being the Robust Development"

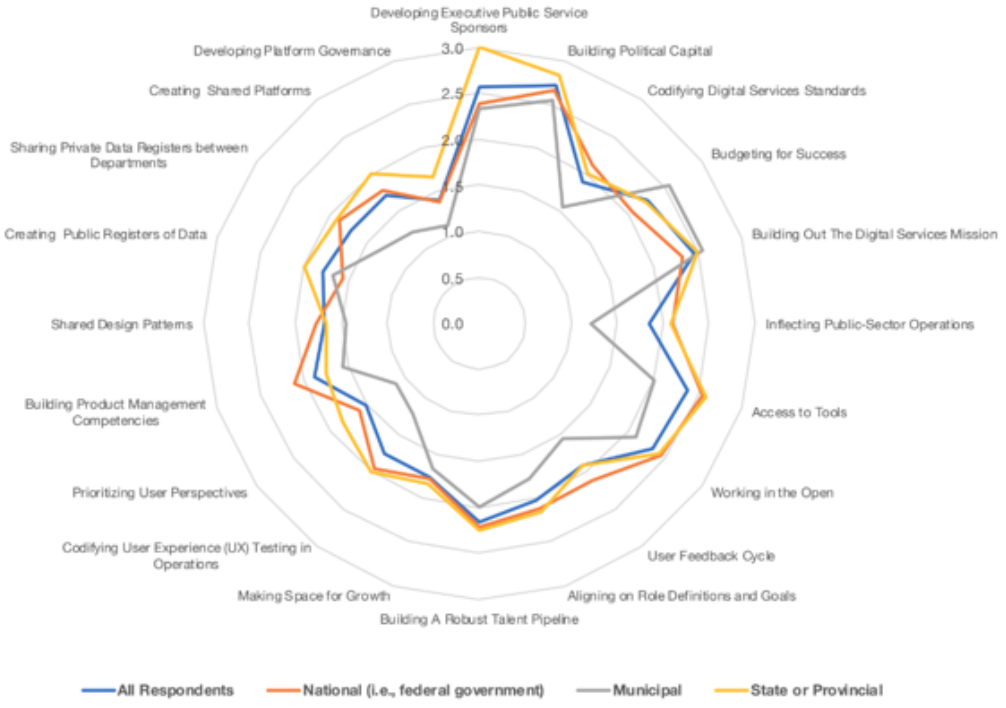


Image by Ben McGuire

The data show that on average, digital-services teams have spent most of their time building political capital, developing executive sponsors, and building out their mission statement. Strikingly, almost half of the teams reported a "high" or "future state" ability in these three areas.

This isn't to say that teams aren't focusing on other goals as well. Respondents reported progress across the board, and the individual data we collected suggest a

diversity of approaches. In eleven other areas, more than 20 percent of teams report "high" or "future state" abilities. These results span a wide range of topics and include creating public registrars of data and building product-management competencies.

While we see that teams have made progress elsewhere, their accomplishments in other categories don't compare to the levels reported for building political capital, developing executive sponsors, and building out a mission statement.

It is nice that divergent approaches are forming, but regardless of where else teams have prioritized, almost everyone has included these three areas in their action plan. This doesn't come as much of a surprise. As more and more digital-services teams are created, a plausible but somewhat optimistic hypothesis is that they are now growing the way normal government organizations do, by building out the fundamentals.

The data suggests that digital-services teams have prioritized creating a solid foundation for the work ahead. And by focusing on these three areas they have cultivated the political and structural capital they'll need to support future projects. This foundation is important, and it was undoubtedly very difficult to gather the support needed to report this level of success. By any measure, this work should be considered an accomplishment.

However, the emphasis on building capacity also shows that for many teams, what is far and away the most difficult work is yet to be done. Some of the most basic goals, such as prioritizing user needs and improving the user-feedback cycle, sit relatively low, with 14 percent in the "high" range and 17 percent in the "future state" range. This is to say nothing of more ambitious and demanding benchmarks, such as creating shared platforms (and their governance), which has the lowest amount of respondents—just 8 percent—showing significant progress.

It's clear from reviewing the categories with lower scores that the next battles will be hard won. There are also risks; for example, the teams with the strongest foundations and most robust political support may be pressured to show value quickly. The data shows that on the whole, teams have yet to spend the same amount of energy on figuring out how they will move digital-government initiatives forward. And so the next few years will be pivotal to gaining credibility and trust. Either way, political sponsors will expect to see high returns on their investment, such as tangibly improved online

services rather than simply better access to tools, and high-level guidelines for other departments to follow.

Theory of Change

Again, though the aggregated data shows this trend, it doesn't mean that teams aren't developing their own theories of change. We don't see the same number of teams reporting "future state" capabilities in some of the more challenging areas, but they are starting to make the investment. So while it might be concerning that every team seems to be focused on the same three areas even though it's unlikely they all need to be, these concerns are offset by the fact that they are also focusing on fourth or fifth areas outside of the general consensus.

This is encouraging. We are still early enough in the game of digital transformation in government to say that there is no clear and dominant strategy, so experimentation and divergence are probably our allies at the moment. And while political and structural capital *may* be a necessary precondition for all other activities, it is not an end in itself.

By focusing only on building capacity, teams would be forgoing approaches we have seen in other jurisdictions, including starting with existing platforms, as India and Bangladesh have done, and prioritizing user perspective and design patterns, as in the U.K. And while starting with the fundamentals might be the best approach for some teams (Italy), there are many ways to build a digital-services team, and each team's theory of change should be entirely based on its own government's needs and structure.

Many budding digital-services teams were inspired by the success of the U.K.'s Government Digital Service (GDS). And while many governments may be hoping to emulate the results the GDS has achieved, the goal must remain digital transformation and not building a team. Often these are confused. GDS's success was built on its ability to understand how to have an impact within its environment by assessing and developing an effective theory of change.

What's more, no team, no matter how mature , has built deep expertise across the board. Attempting to do so may be a trap in that every team has limited capacity and resources. Figuring out how to concentrate on and grow those in a way that will maximize impact within your environment—the way GDS did in its early days—is the

key. For example, when I teach the maturity model at the Harvard Kennedy School, I use a case study about GDS. Students are given a summary of key facts about where GDS was right after the release of GOV.UK and asked to both assess GDS against the maturity model and strategize about what GDS's next steps should be. They are frequently surprised by how low the U.K. team ranked in many of the maturity-model categories while they were working on GOV.UK. But the GDS team's success didn't come from scoring high across the board or laying the best foundation; it came from understanding where they could solve a real problem in a way that showed how valuable GDS would be.

As teams continue to grow, it's crucial that the lessons they take away from GDS aren't about how to build a team, but about how to reflect on their individual priorities and figure out how to make an impact within their organization's current state. Teams must take the time to figure out their own theory of change and resist the urge to pattern-match. And while we see that many more teams have focused on political capital, it's encouraging that a number of teams are attempting to chart their own path and figure out which of the many diverse approaches will be right for them.

Want to see where your team lands in the maturity model or do a team wide self-assessment exercise? Check out the exercises below or fill out the Maturity Diagnostic online.

The What and Why of the Digital-Services Maturity Model

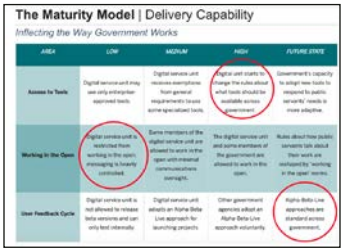
In 2018 we released a maturity model designed to help public-sector digital-services units benchmark their capabilities. The model is designed to help digital-services teams talk and learn from one another. Outlined below is a simple exercise I've used with dozens of digital service teams around the world. It has led to helpful and important conversations. I've designed the exercises so that you can do them independently, but I'd be glad to provide support if you need it. The exercises are meant to enable teams to:

- align on current capabilities. All too often, teams aren't aware of their own capabilities and resources. This can be caused by team growth and specialization, and teams that underestimate their capabilities can be overcautious, while those that overestimate them may overreach and put themselves at risk.

- align on strategy and theory of change. Another risk is that teams won't be aligned on their goals and thus on the capabilities they need to develop to make progress. Teams will confront myriad problems and it's tempting to engage on each one, but that can pull the team in multiple directions. Having the organization aligned around the goal, theory of change, and strategy is critical given how poorly resourced most digital-services teams are. It's crucial to make sure everyone is rowing in the same direction.
- facilitate the sharing of lessons learned. By providing a common language and framework, this exercise helps teams identify capabilities that they have not developed but other teams have, assess whether those capabilities are useful, and inquire about how to build those capabilities.

Exercises

Before getting started, print out the maturity model for everyone on your team. You can find a copy at http://bit.ly/DGMModel.



Exercise 1: Gaining Alignment around Capabilities

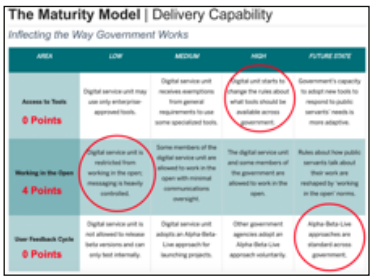
1. Determine where your team falls within each area by asking each member to circle one box in each row, as shown, corresponding to where they think the team is at.
2. Review everyone's responses as a group to help align your team. Later, you can aggregate this information to get a sense of where the majority of people think you are performing high or low.

Exercise 2: Gaining Alignment around Theory of Change

1. Tell participants that you are giving them 10 prioritization points. I sometimes refer to these points as "Mike Bracken points," in honor of the UK's former chief digital officer and co-convener of our event.
   a. These points represent where participants think the organization as a whole should concentrate its efforts in building new capabilities. They represent investment, or where team leaders should allocate their attention.

b. For the sake of clarity I sometimes ask that participants think about how they would prioritize their efforts over the next 6 months, 1 year, or 2 years. The time period is up to your discretion.

2. Ask participants to assign these points to where they believe the organization should invest more time building out the capabilities of that row.



   a. Points must be assigned to a row, as shown. Do not assign points to a specific box.
   b. Points can be assigned in increments of 1 to 10, and can be assigned in any configuration as long as the total number of points per row does not exceed 10. Thus, for example, one could assign 2 or 5 or all 10 points to any given row.
3. Review how everyone assigned their points and assess the areas the team thinks are most important to prioritize

Note for the facilitator: During the debriefing, many participants will spread their points across 7 to 10 rows with 1 or 2 points each. But we highly recommend that 3 or 4 points each be assigned instead to the 2 or 3 rows that will provide the most leverage. Assigning your points across more rows increases the likelihood you'll spread your energy too thin and do everything poorly.

PART III: GOVERNMENT AS A PLATFORM (OR PRACTITIONER REFLECTIONS)

A WORKING DEFINITION OF GOVERNMENT AS A PLATFORM

By Richard Pope, Formerly of GDS and Fellow at Harvard Kennedy School

"Government as a Platform" (GaaP) has come to mean many things to many people since the term was introduced by Tim O'Reilly in 2011. It has been called a route to better public services, a way to break down organizational silos, a toolkit for civil servants, an open platform to build upon, a new public infrastructure, a shorthand for coproduction of policy, and a harbinger of new institutions fit for the digital age.

In much the same way that the term "smart cities" is used to cover everything from parking apps to delivery robots and invasive digital advertising, there is a risk in using the ever-more important concept of GaaP to cover such a broad range of definitions that sometimes become too vague or may be seen as contradictory. In addition, important considerations, such as public safety and democratic accountability, often appear to be missing from today's debate.

With more governments around the world adopting a platform approach, the lack of a clear, actionable definition of GaaP could become a problem. An accepted "working definition" of GaaP could act as a useful decision-making tool for civil servants. This article presents such a definition by examining the ways the term has been used, emphasizing considerations of safety and democratic accountability and aiming to resolve some of the apparent contradictions in usage.

Seven Framings of GaaP

The seven framings of GaaP that follow are based on examples from the limited published literature on the subject from government programs around the world that have adopted a platform-like approach and from more general commentary on the subject. It is important to note that the quotes included almost certainly don't represent the totality of what the people quoted think about the subject. The aim here is to illustrate the variety of definitions that exist rather than present an exhaustive review of the literature.

Better Public Services

GaaP has been described by several governments as a route to better public services. The U.K.'s GDS, for example, adopted the GaaP label in early 2015 for the next phase of

digital transformation work that began after the launch of gov.uk. From the early days of the U.K. GaaP program, there was a clear articulation that it could provide a route to developing "brilliant, user-centric government services" that were "more closely targeted at user needs."

Writing more recently about U.K. government efforts around GaaP, technologist Jerry Fishenden has discussed the latent opportunity for technology platforms to have a "Researching in depth how and where technology could play a genuinely significant role in improving the quality of life for citizens and public employees alike—not focusing on websites but applying the best lessons learned from modern organizational structures and processes, particularly their ability to respond to real-time feedback and make continuous service improvements."

The Estonian government has talked about using its X-Road platform to provide "invisible services" for 15 significant life events like learning to drive, starting a business, and having a child, where the government proactively provides services—such as automatically sending pension checks when one hits retirement age—without a citizen needing to register for the benefit or service. Singapore's GovTech agency is following a similar approach and has developed a "Moments of Life" service, which is built on shared government platforms.

In the United States, Aneesh Chopra and Nick Sinai, chief technology officer and deputy chief technology officer, respectively, in the Obama administration, have written about the promise of application programming interfaces (APIs) to enable the federal government to "partner with local government, nonprofits, and businesses to better serve the American people—extending its reach and helping solve our nation's challenges."

Removing Silos, Making Things More Efficient

There is a lot of duplication in government. Generally, departments and agencies are vertically integrated, with each running its own version of a system (a public website, a payment gateway, a printing service, an address lookup, etc.) that's similar but not identical to all the others. Platforms have been cited as a way to remove that duplication and break down organizational silos.

"Siloed approaches to transformation don't work," Mike Bracken wrote in 2015. "Reinventing the wheel every single time we build a service has led to far too much duplication and waste. That's not good enough."

In the U.S., the Obama administration's digital government white paper Building a 21st Century Platform to Better Serve the American People makes a case for government to "build for multiple use cases at once." Similarly, the Australian Digital Transformation agency explicitly uses the term "whole-of-government digital platforms."

A Toolkit for Government

Another way to explain the potential for platforms to remove duplication is to view cross-government shared components, such as login.gov in the U.S., GOV.UK Pay in the UK and Il Cloud della Pubblica Amministrazione in Italy, as part of a toolkit for designing services.

For example, the Scottish government describes its payment platform project as "building something centrally that is easy for service teams to plug into and re-use, without additional procurement. That saves them time, money and hassle."

The U.K. GaaP team came to see their work in this light and the focus of their program became making tools for digital teams elsewhere in government. Today, its platforms are part of a "service toolkit" that, along with official guidance, standards, and a design system, help users to build and run government services. This has become a point of criticism. For example, Mark Thompson, Professor of Digital Economy at Exeter Business School, asked in 2015 if the GaaP team was developing "government as a platform, or a platform for government."

Open Platforms for Anyone to Build Upon

Similar to the "government toolkit" concept, but with an explicitly broader intent, is the idea of government platforms as a set of tools for government and nongovernment organizations alike.

The Indian government's IndiaStack is a set of components and APIs for, among other things, identity verification, digital payments, and storing official documents. These components are explained in terms that make it clear they are aimed at wider societal transformation rather than government transformation alone. IndiaStack is described as "a set of APIs that allows governments, businesses, startups and developers to utilise an unique digital Infrastructure to solve India's hard problems."

In the U.S. too, there is a strong narrative around building open APIs to allow the private sector and others to develop services that meet the "long-tail" of user needs. For example, the U.S. Veterans Administration has begun to build its services around APIs, which it discusses in terms of "Empowering our partners to build innovative, Veteran-centered solutions."

Digital Public Infrastructure

There is also a narrative of APIs, data, and cross-government components as infrastructure, analogous to government projects in the physical world.

According to the book *Rebooting India*, which details the development of Aadhaar and other platforms, the former Indian President Pranab Mukherjee made the following analogy: "See, it is just like a railway platform. Different trains pull up at a railway platform, each with a different destination, and people get on and off depending on where they are headed. In the same way, the technology platform is a central location where various state governments, institutions, and citizens can gather. All government services are offered on the same platform, and citizens can enrol for all eligible services in one place."

The Societal Platform project, also in India, imagines platforms for cities, healthcare, and education as "foundational infrastructure," and the Government of India's proposed National Health Stack uses similar terms. As part of its work to encourage better use of data, the Open Data Institute also spurs governments to think about "data infrastructure," comparing it with a country's road networks.

New Institutions for the Digital Age

Others have talked about GaaP as providing a route to new institutions fit for the digital age. This definition sees digital government entwined with institutional reform and requiring a reorganization of the very work of government.

"If you were to create government today, you would not build it around large, free standing Departments of State," writes former U.K. cabinet minister for the Cabinet Office Francis Maude in the foreword to a white paper from the think tank Policy Exchange. "Instead of a series of siloed hierarchies, you would structure it as a platform responding to the needs of the end user. . . . Government as a Platform will not happen without clear direction from the top."

In a blog post entitled "Making government as a platform real," Tom Loosemore, a consultant formerly with the U.K.'s GDS, writes,

> If you want a natively digital nation, or a state, or a city, or whatever, my message today is you actually need to be bold enough to create some new institutions; institutions that are of the internet, not on the internet.

In India, this narrative has become a reality, with new institutions set up to operate digital identity and taxation platforms. The Goods and Services Tax Network oversees APIs and other infrastructure needed to operate the national harmonized sales tax (which itself required a change to India's constitution). GSTN is a nonprofit company owned partly by the national and state-level governments. Aadhaar, the identity verification platform, is operated by the Unique Identification Authority of India.

Coproduction of Policy and Services

Some descriptions of GaaP are less focused on the mechanics of government, or the component pieces of platform government. These tend to relate to a general aspiration or opportunity to use digital to engage more citizens in the running of their government through "coproducing" policies or services by having citizens write applications or manage services that leverage underlying government services.

The international Organisation for Economic Co-operation and Development's 2018 review of Sweden's digital government defines GaaP as using data to harness people's creativity and jointly address policy challenges. David Bartlett, the former Premier of Tasmania, has used similar terms. "[W]hile there is a role for experts in government as a platform," he writes in an essay in *Opening Government: Transparency and Engagement in the Information Age*, "there is a much more significant role for the non-expert population in co-creating solutions."

In their comparison of private- and public-sector platforms, academics Lydia Ottlewski and Johanna Gollnhofer define public-sector platforms in terms of of systems that help citizens to connect and to exchange services to solve societal problems.

What's Missing?

The framings above show a lot of breadth. That should not be a surprise. Tim O'Reilly's original 2011 article was itself a broad call for government to make the most of the opportunities digitization provides, and we can see the germ of many of the examples above in that article.

However, a key concept that O'Reilly covered is missing from many of today's conversations about GaaP, and that is how to make sure these new systems are accountable and safe. O'Reilly talked about the importance of "rules of the road" to ensure governments operate in a way that generates the best outcomes without creating unintended harm. He also notes that choices about how platforms operate must be revisited periodically to ensure that this remains the case.

With all we have learned about the impact of commercial digital platforms on society in the past decade, trust, accountability, and safety issues demand more space in the debate around digital government. Though platform government creates new opportunities for better public services and saving money, it also raises questions about the risks of data centralization and the privacy rights of citizens. And platforms bring questions of accountability and democracy: Which government agency should be held accountable when a shared platform fails? If a central and a local government both rely on the same platform, what does it mean for local democracy and devolved power?

The debate around the Aadhaar identity platform in India—whether it was created via legitimate vehicles and whether it violated Indians' right to privacy—provides insight into these types of issues, which other countries will likely face as they adopt a platform approach to government. These are fundamental questions about how the mechanics of government should operate and be held accountable in the digital age. Until they are answered, aspirations for "coproducing" policies and services feel like a distraction when it comes to examining the role of citizens in these systems. Instead, it is important to focus on ensuring positive outcomes and providing clear routes for accountability.

Why Create a "Working" Definition of Platform Government?

As the above examples show, there are many ways in which the term "Government as a Platform" and the more general concept of digital platforms in government have been deployed since 2011. The question is, is there a working definition that encompasses

some of the above, while remaining useful? To answer, we first ask more questions: "Useful to whom?" and "Useful how?"

The intended audience here is digital-services units; that is, organizations set up within governments to design, build, and operate digital services. Such groups are being created in governments around the world, and increasingly, they are developing shared platforms.

A good working definition of GaaP should give such units a framework for their work, helping them to present it as a whole—including the aspects that may be politically difficult or superficially less important. It should name the constituent parts of GaaP that digital-services units will need to consider, while avoiding generalities and vague language. It should also aim to resolve any apparent (but false) contradictions, such as to what degree GaaP is for use inside or outside government, is primarily about technology or institutional reform, or is meeting the goal of efficiency or accountability. It is all of these things and all are necessary.

Ultimately, the working definition should help teams to make decisions about which work to prioritize by guiding them in asking and answering questions like, "Does this project we're starting fit as part of government as a platform?" and "Is that smart-city-blockchain-widget Consultancy X is trying to sell going to help?"

Proposing a Working Definition

With all this in mind I propose the following definition:

> *GaaP should reorganize the work of government around a network of shared APIs and components, open-standards and canonical datasets, so that civil servants, businesses, and others can deliver radically better services to the public more safely, efficiently, and accountably.*

This definition aims to clarify several things:

1. That the goal of platform government must be to enable radically better services for the public and that everything else is subservient to that aim.
2. That services for the public can be delivered by a range of different actors—government, charities, businesses, etc.—all built on common foundations.

3. That these common foundations are made up of canonical datasets (definitive lists of things like tax rates, licenses, or addresses), open-standards (common ways of modelling data), shared APIs that expose the business logic of government, such as tracking the status of an application, and shared components (things like shared hosting or common design systems).
4. That considerations of safety, accountability, and democracy must at all times be viewed as equal to considerations of efficiency.
5. Finally, that the adoption of platform approaches in government will result in changes to how the work of government is organized. Platform government is, in part, about institutional reform, not just making the way things are done today more efficient.

ITALY'S DIGITAL TRANSFORMATION TEAM

By Emma Gawen, Public Digital

Context: "Digital Innovation for Citizens and for the Development of the Country"

In 2012 a presidential decree created the Agency for Digital Italy (AgID) to lead the country's digital transformation. It reports directly to the prime minister and was the only public agency in charge of the digital agenda until 2016, when Prime Minister Matteo Renzi, who viewed AgID as underperforming, appointed Diego Piacentini as extraordinary commissioner for the digital agenda. The position was established by decree, and Piacentini was charged with creating a supporting team made of highly qualified technical specialists including computer scientists, engineers, designers, developers, and project managers. This team was named "Team per la Trasformazione Digitale": Digital Transformation Team (DTT) and had an initial two-year mandate.

DTT did not replace AgID, which still exists and now deals with the more bureaucratic and managerial side of the digital agenda. Rather, DTT works as the country's "operating system" and has a mandate to:

1. Coordinate government and public-administration stakeholders in the management of existing and future digital programs in an integrated manner, with an agile methodology and an open data approach.
2. Identify new digital and technology transformation initiatives.

3. Become an authoritative center of digital and innovation competence for stakeholders.
4. Create a community of developers and designers to deal with technological challenges; provide information and training on digital innovation; and create a shared wealth of tools and services.
5. Lay a foundation for an evolving architecture.

DTT's creation was motivated by an acknowledgement that there was a need for more digital talent within the public administration. The state of public digital infrastructure at the time demonstrated a lack of central coordination; programs and funding not aligned and many systems and websites were built with outdated technology, insufficient attention to user experience, poor integration, and a lack of interoperability.

The idea was that hiring qualified people with prior work experience would help to fix these issues by bringing private-sector best practices to the public administration to manage costs and accountability, be more user-centric, and so forth.

After its establishment, DTT took the lead on AgID's main digital transformation initiatives, which would lead to major improvements. For example, the ANPR (National Resident Population Register) is a single database meant to contain the personal data of Italy's resident population and of Italian citizens living abroad—but four years after its 2012 launch only one municipality out of 8,000 was using it. DTT reviewed the process and developed a strategic plan that included helping municipalities to fund their migration onto the platform. Today more than 2,300 municipalities (approximately 24 million people's data) are using the platform and 2,200 more are in the premigration phase.

DTT was legally allowed to continue operating even after its initial mandate had expired. After the 2018 election the new Coalition government appointed Luca Attias as Piacentini's successor and extended DTT's mandate until the end of 2019. Legislation passed in February 2019 restructured the mandate and transferred responsibility for the unit to the recently appointed minister of technology innovation and digitization, Paola Pisano.

Furthermore, two new institutions have been established with the objective of replacing the temporary structure of DTT with permanent bodies. The existing DTT will transition to the new Department for Digital Transformation under the Presidency of the Council of Ministers, and pagoPA, a new state-owned enterprise controlled by the minister

of economics and finance, will manage a digital payment project also called pagoPA, a public-services app called IO, and the National Digital Platform for Data (PDND). This new company will help Italy achieve universal adoption of digital payments, boost the digitization of public services and further the country's economic development.

Italy provides a good example of achieving fast results by setting up a temporary digital unit to address current issues while creating the base for a future long-term strategy. The way that DTT was set up meant that at the end of its mandate the administration had flexibility in how to move forward: It could be replaced by a department that would allow Italy to transition to a more permanent solution, the mandate could be extended, or the unit could be closed.

Attraction and Recruitment

To build the Digital Transformation Team, the Italian government launched an open call for talent through public-service job boards. Within the announcement of the creation of DTT is a link for each position with the job's description, an explanation of duties and responsibilities, a list of key qualifications and skills, and education requirements. Future DTT members were selected through public calls for applications followed by competency-based interviews and assessments of both soft and specialist skills.

They were then hired as full-time external experts within the public administration with short-term contracts of approximately three years, tied to the length of the commissioner's mandate. The external experts constituting 70 percent of the team.

The commissioner has the authority for to personally recruit and appoint additional specialists. This allows DTT to circumvent the public sector's formal human-resources processes, which are highly problematic and inadequate for the management of digital teams since they are done through national contests that mostly focus on competency in economic theory and law. In addition the process is inflexible, and test results can take up to five years to be released.

Such an exceptional recruitment process, on the other hand, helps the team to find highly qualified and experienced experts who can have specific duties and responsibilities and/or conduct or participate in specific projects only.

At the moment, the public sector is not able to compete with the private one in terms of salary, which is one of the major challenges in recruiting. For this reason

the Digital Transformation Team's attraction strategy focuses more on ideology than practicality. The call for talent was written by Diego Piacentini himself and specifically addresses potential candidates "who either live in Italy or abroad and have the desire to come back—even if only for a limited period of time and at a compensation level which is most likely much lower than what you are currently making."

The emphasis is on the prestige of working for government, the complexity and social impact of the work, and the opportunity inherent in its challenging technical problems. The description of the future team members is written in an enthusiastic, motivating and empowering tone to try to strike a chord with potential applicants. The announcement calls for people who "have a desire to make a difference, are used to thinking out of the box, and have the courage to change the status quo." They should also "know how to work patiently under pressure, be determined, and manage complex situations with enthusiasm," since their mission will be to "drive Italy into the future."

Digital Competences and Capabilities

While the general description for team members is written in a relatively informal way, specific roles demand a high level of technical expertise so their descriptions are very detailed. The list of key qualifications required for each role is long and includes the names of specific programs, software, and networks with which candidates should be familiar have experience. In terms of education almost all positions require a degree in computer science or a related quantitative field such as engineering, along with several years of work experience. Potential candidates who do not have a degree can make up for that with more years of work experience.

Such private sector-style requirements, with pay that does not match that of the private sector, could be why DTT has identified too few qualified applicants for technical roles as one of the main challenges in setting up the team. The roles DTT is seeking to fill include:

- government commissioner for the digital agenda
- executive assistant to the government commissioner
- six technical project managers
- international relations expert
- mobile developer

- chief data product manager
- UX designer
- UX/UI development
- cybersecurity expert
- metrics, analytics, and data visualization expert
- data protection officer
- communication, content management, and social media team
- communication and institutional affairs team
- chief product and design officer
- cloud and data-center expert
- big-data engineer
- content designer
- open-source project leader
- software architect
- chief information officer
- technical assistant and coordinator of operations
- chief technology officer for technology and architecture
- full stack developer
- site reliability engineer/DevOps engineer
- developer relations expert
- Italian and EU regulatory affairs expert
- software developer
- service designer
- digital-payments expert

Learning and development

DTT does not have any kind of training, policies, or activities in place to develop and maintain in-house talent or manage careers or to recruit and train young people, since the unit has a time-limited mandate and its team members are already experts, have plenty of prior work experience, and will likely leave the public sector once the mandate ends. It does, however, have two main initiatives to develop digital skills for all public-administration employees.

The first is a course on digital skills for the public administrator run by the Department of Public Administration together with Formez, the department's agency for public-employee training. The first phase defines the core digital competencies, knowledge, and skills required to actively participate in the digital transformation and engage with the new tools available.

Competencies are grouped as follows:

1. **Data, information and electronic documents:** how to manage data, information, and IT documents and recognize the potential of open data for administrations, businesses, and citizens.
2. **Communication and sharing:** how to communicate and share data, information and documents with colleagues, businesses, citizens, and other administrations.
3. **Safety:** how to protect devices from possible cyber attacks and also protect personal data and privacy in data processing processes.
4. **Online Services:** how to guarantee the right to use online services by citizens and businesses.
5. **Digital transformation:** the strategies and emerging technologies for the digital transformation of public administration.

The second phase of this initiative will create an online platform—currently a pilot with a limited number of public administrations—for skills self-assessment to identify specific training needs and recommend customized online training programs to fill competency gaps.

The other initiative is SNA—the Sculoa Nazionale dell'Amministrazione, or Public Administration School for Public Sector Managers. Primarily for directors and middle managers, the school offers eight courses in 17 sessions, of which six are webinars. The courses, offered online as well through moodleNet, an online collaboration platform for educators, are meant to improve digital competencies and innovation policies.

The courses offered by SNA are:

- Basic and advanced Digital Transformation Plan for Public Administration; Enabling Platforms for Digital Transformation in Public Administration; CAD Usability for Public Administration; and Cybersecurity provide context regarding where public administration is heading.

- Digital Skills; System Engineering for Public Administration; basic and advanced Processes Digitalization, Design of Efficient and Inclusive Services; Items of Digital Security for Final Users provide tools for understanding and action.
- Enabling Technologies for Digital Transformation; Cloud Computing: Rules, Models, and Conditions for Use; and APNR (National Resident Population Register) for Registration Offices Staff teach new technologies.
- Computer Emergency Response Team teaches the role, tools, and activities for a specific project, as does Performance and Digital Competitiveness Check.

Pay and Reward

There is no specific salary policy for the digital team's members, again due to the short-term contracts and DTT's temporary nature. However, the prime minister's decree that created DTT also established special rates of pay for each position, which appear in the job description presented in the open call for talent. For example, a cybersecurity expert can be paid up to €200,000, and a mobile developer up to €150,000. The salary of the team members is overall higher than the average in other parts of public administration.

Culture, Tools, and Physical Workplaces

DTT is based in Rome and has an office that is structured with open and collaboration spaces to stimulate workers and facilitate interactions and teamwork. It operates following the technological and operating principles set up in its manifesto, which prioritizes security, simplification, a data-driven and mobile-first approach, and transparency: "We will be open and vocal about our technical innovations, publishing papers that detail what we built, the decisions we took, the mistakes we made, and the benefits we saw."

DTT's members use cloud collaboration tools and platforms such as Slack, Google Suite and GitHub. Team members also access specific software for design and software development. Furthermore, DTT has created Forum and Docs, platforms that allow for open access and consultation of public documents, as well as for comments, discussions, and suggestions on a range of topics regarding digital transformation.

Cutting-edge technologies are not part of the DTT mandate, so there are no projects or initiatives in this area: DTT focuses instead on providing simpler and more efficient services for citizens, businesses, and the public administration.

BANGLADESH'S A2I PROGRAM

By Anir Chowdhury, Policy Advisor and Leader of a2i, Bangladesh, with Melissa-Ann Gillies, Harvard Kennedy School

While a great deal of attention has concentrated on places like the United Kingdom and the United States and the narrative of drawing on talent from Silicon Valley, some of the most interesting and exciting work is being done in emerging economies. Some of these governments have advantages—fewer legacy processes and less existing technology makes it easier to design services—but many have made incredible strides while overcoming resource and talent constraints. More important, these places may be a clearer window into what the future of government looks like as they move ahead quickly.

Indeed, Bangladesh's a2i program is a shining example of how governments with fewer resources can leverage a lack of existing infrastructure to their advantage to pursue a bold vision and show that digital transformation and a platform-government strategy is available to everyone.

Lessons Learned

This article draws on lessons from Bangladesh to help peers in both emerging and mature markets in relation to:

1. Concentrating resources and prioritizing key infrastructure;
2. Shifting the culture with some minor refocusing of public servants;
3. Building service delivery infrastructure tailored to your citizens;
4. Integrating service delivery and wholesale government; and
5. Scaling and adapting for the future.

It will also explore the conditions that allowed Bangladesh's model, which involved both kiosks and GaaP, to succeed, though those conditions may not be universal.

Lesson 1: Concentrating Resources and Prioritizing Key Infrastructure

During her 2009 campaign, Bangladesh's prime minister, Sheikh Hasina Wazed, called for a digital transformation of the nation by 2021. After her reelection, she instituted a national ICT policy with a view to achieving middle-income status for Bangladesh by that year, with a special emphasis on the application of digital technologies to realize this vision.

Prior to this, Bangladesh had a limited vision for digital government. As recently as 2007 only 10 percent of civil servants had computers on their desks and most were treated as sacred objects rarely to be used.

As part of the Digital Bangladesh agenda, the government set up its flagship program, a2i, which focuses on the development of digital services, policy reform, supply-side capacity building, and demand-side awareness-generation and incentives for change. It established a whole-of-government partnership across the prime minister's office, her cabinet, the central Information and Communication Technology Division, and local governments, and was supported by private-sector and NGO development partners. This structure allowed a relatively small team, headed by the government's chief information officer with strong political support directly from the prime minister's office, to run programs that touch 43,000 government offices, 70,000 civil servants, and more than 400 government services.

a2i's mission is twofold. First, to find ways to shift culture and the mindset of political leaders and civil servants from business-as-usual to "leapfrogging" in relation to our digital government agenda. And second, to focus on key leverage points. From 2007 to 2019:

1. The a2i team established a centralized national ID platform for Bangladeshi citizens.
2. With the ID platform as a foundation, the team built out additional platform services such as payments.
3. Leveraging these platform services, it expanded the number of digital services from fewer than 10 to 600 (with a target of 2,874 by 2021).
4. In order to reach citizens, the team opened more than 5,000 one-stop centers for government services (up from one in 2007)
5. Finally, the team consolidated 100 government websites into a single portal.

Alongside the Bangladeshi government's digital agenda, the economic development, basic literacy, and digital literacy of the Bangladeshi people also leapfrogged from 2007 to 2019.

	2007	2019
Poverty	40%	21%
Average annual income	$550	$1,900
Literacy	47%	73%
Electricity	27%	90%+
Internet	0.4%	60%
Mobile	20 million	160 million
Digital services	<10	600 (2,874 target)
One-stop centers	2	5,000+
Government websites	100	1
Chief information officer positions nationwide	56 e-gov focal points	1,000 CIOs leading innovation teams

Demographic data on Bangladesh provided by a2i

Lesson 2: Shifting Culture with Some Minor Refocusing of Public Servants

An important part of Bangladesh's digital journey is how language was used to reframe, develop buy-in, and set up metrics to drive the transformation.

First, the a2i program was about reframing the common goal of digital transformation from "e-governance," with a strong emphasis on technology, to a narrative around taking government services to citizens' doorsteps. The concern was that the language of e-governance obscured the core objective of getting services into homes; technology in itself isn't going to unlock value unless the users want it. Prior to 2009, there was a paradigm in the government that was implicitly, if not explicitly, accepted that citizens could be expected to travel hundreds of miles to the capital to access services. And once there they faced lines of up to 300 people, high transport and meal costs, and expensive overnight stays. Shifting the language away from technology to a common goal of better services for citizens was critical to elevating the importance of the digital transformation.

Second, a2i sought to use language not only to change culture but as a mechanism to build trust and gain the confidence of political leaders and public servants. For example, early in the program, Ani Chowdhury, an a2i policy adviser, ran a day-long workshop for 120 civil servants dedicated to simplifying service delivery. It became clear that attendees were focused primarily on their part of the process (e.g., completing their paper file and sending it to the next person) and were not taking a bird's eye view. Chowdhury introduced the concept of a "process map" to explore the end-to-end process of filing a land application, and the group brainstormed opportunities for process simplification by removing unnecessary steps and delays and consolidating steps. This helped public servants to see the totality of the process as well as to understand the language of process engineering, which was critical to starting them on a journey of reworking processes to make digitization possible.

When the a2i team tried to scale up Chowdhury's approach, they received feedback that civil servants do not identify with being called a "business." As a result, the language of "service process simplification" was used to replace "business process engineering." These shifts in language both allowed new processes and ideas to embed more easily into the public-service context, and gave public servants a greater sense of ownership over the ideas.

Finally, one of the core metrics for the digital transformation was reducing corruption and increasing transparency. However, the language around this problem was not without controversy and created pushback. Some of the resistance came from stakeholders who may have been partaking in corrupt practices; but some also came from stakeholders who were both concerned about being held accountable to metrics over which they may have limited control, but that might depict them as corrupt. In addition, they were also concerned that emphasizing corruption reinforced a negative narrative about the public service. As a result, rather than emphasize corruption explicitly, a2i focused on determining a baseline of "time, cost, visit" (TCV), which measures government services at the citizen's doorstep, is tied to service process simplification, and has the side benefit of indirectly tackling corruption since shady practices might negatively impact the TCV.

Lesson 3: Building Service-Delivery Infrastructure Tailored to Citizens

One challenge in Bangladesh around digital transformation is that a large number of citizens have either limited or no access to the internet, or are not literate. In 2017, there was no infrastructure for service delivery, and mobile ownership 2G coverage, and digital literacy were limited. Digitizing government at services at scale simply cannot be citizen-centric if citizens have no way of accessing those services.

To solve this problem the a2i team realized its digital services could still help the program achieve scale and impact, not by serving citizens directly, but by lowering the cost of intermediaries. In Bangladesh, this involved setting up more than 5,000 franchised kiosks to support 5 to 6 million citizens a month to receive more than 150 digital services.

The a2i program began to roll out one-stop shops to reduce corruption as well as the distance citizens must travel to receive government services. It applied three principles:

1. Digital centers should be established in rural areas first and, if possible, located in government offices. The most marginalized citizens and the most corruption were in rural areas, where infrastructure was historically weakest.
2. Digital centers should be run not by government officers but by private entrepreneurs who would sell government services to citizens for a fee. This faced a lot of opposition, but encouraged innovation in service delivery and allowed citizens to access more services by quickly scaling service desks within thousands of private stores across Bangladesh.
3. Digital centers should achieve gender parity in their hiring for customer service roles, because female customers are more comfortable with female sales representatives.

These centers were a bridge between citizens and government services while digital literacy remained low in Bangladesh. They provide one-stop shopping for 150 digital services, including 70 public services and 80 private services, including banking, e-commerce, and online ticket sales. This would not be possible without the public-private-partnerships.

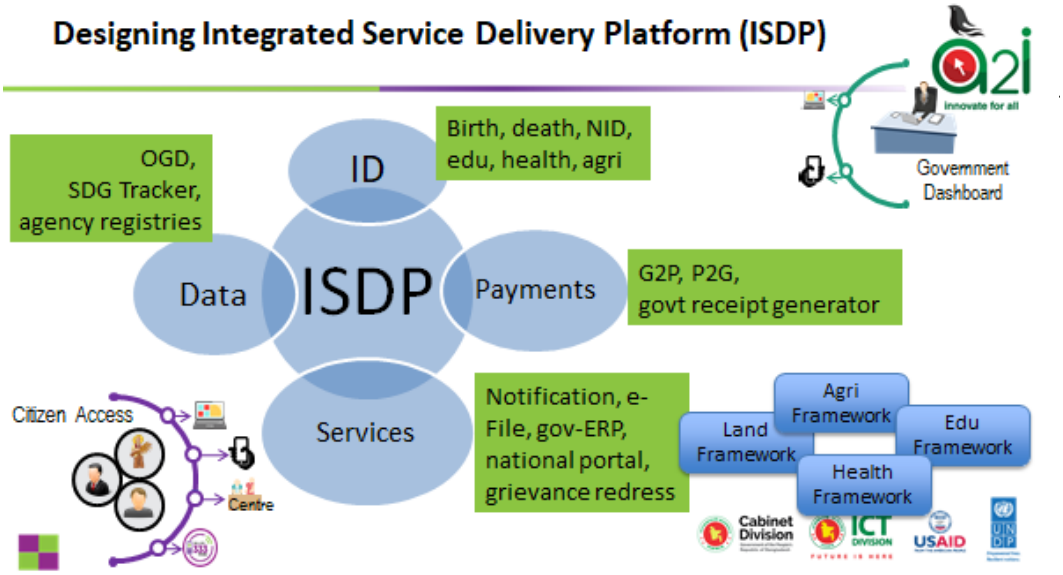
Lesson 4: Integrating Service Delivery and Wholesale Government

The a2i team designed and built an integrated service delivery platform for shared services, including the capability for individual government departments to build additional services themselves. The core infrastructure includes:

1. ID—birth certificates, death certificates, national ID, education, health and agriculture
2. Services—notifications, e-File, government enterprise resource planning, national portal, grievant redress
3. Data—open government data, Sustainable Development Goals tracker, agency registries
4. Payments—government to person (G2P), person to government (P2G), government receipt generator

Establishing a core infrastructure has made it a lot cheaper and easier for entrepreneurs to add new services—both government and nongovernment—to the platform, which is consistent and inoperable. The platform also means that there is more competition among entrepreneurs to provide government services more efficiently and to provide additional services.

A lot of hard work went into establishing these canonical data sources and building a few shared components, such as the single login and payments system, but it has set up the foundations for better integrated service delivery in the future.



ISDP Visualization Provided by a2i

Lesson 5: Scaling and Adapting for the Future

By combining a digital platform infrastructure with a kiosk network, Bangladesh has created a hyper-efficient way to deliver and scale services to it citizens. This approach has several advantages.

First, by building out a set of core government-platform services, a2i can:

- Dramatically lower the cost of deploying new services or digitizing existing current services,
- Build out digital services well before citizens are able to consume them directly themselves, and
- Iterate and adapt these services over time.

In short, the platform approach lowers the cost of developing and enhancing the kiosk network, and the franchise kiosk network approach then has complementary advantages. Specifically, as literacy rates and internet access improve, the kiosks:

- Give a2i access to a group of "advanced" users—the private-sector kiosk operators—who can test services for usability today in preparation for tomorrow's end users;

- Allow a2i to move services from being kiosk-only to online generally as they become simpler to use and internet access improves; and
- Allow a2i to avoid "lock-in" risks from potentially eliminating kiosks in the future if mobile online services become sufficiently available.

Special Conditions

Bangladesh's success story did not happen overnight. It is the culmination of more than a decade of hard work. That said, there are real lessons other governments, both in emerging and mature markets, can draw from its challenges and successes. A few special conditions that may not be universal allowed Bangladesh's dual kiosk and GaaP to succeed, including:

1. A strong political vision for "digital leapfrogging" from the prime minister following her 2009 announcement of Digital Bangladesh.
2. Almost zero traditional legacy systems to protect—a benefit for the really new kids on the digital block.
3. Unfettered opportunity to leapfrog other economies by learning from international GaaP best practices and guidance from global experts.
4. And finally, access to risk capital from an innovation fund committed to the belief that Bangladesh has nowhere to go but up.

Conclusion

The story of Bangladesh's a2i program is a shining light for both mature and less mature economies. It is an example of how the government and public sector can turn their perceived weaknesses—such as fewer legacy processes and existing technology—into advantages and become an example for advanced developed economies. Its focus on shifting culture and language to emphasize bringing government services to citizens has allowed it to progress quickly. The Bangladeshi model involves building service-delivery infrastructure tailored to citizens' burgeoning levels of digital maturity, integrating service delivery and wholesale government to expand both government and private services, and focusing on scalable and adaptable platforms for the future. While it is almost too easy to look toward the Bangladesh story as a playbook for the future, it is also important to consider the special conditions that made it possible for Bangladesh's system to succeed.

THE SIMPLE, FASTER, BETTER SERVICES ACT: SOLIDIFYING ONTARIO'S DIGITAL GOVERNMENT STANDARDS

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The Ontario Digital Service team. Standing, left to right: Jeroen Amin, Lester deLuna, Michael Kehinde, Darren Chartier, Allyna Sagun, Honey Dacanay, Rachel Barton, Ebony Sager, Pooja Narang, Dawn Edmonds, Christine Hagyard, Paul Vet. Seated, left to right: Dalia Hashim, Amy Bihari, Kelsey Merkley, Laura Nelson-Hamilton, Jen Snyder, Melvin Christopher. Not pictured: Daphnée Nostrome, Namita Sharma, Kim Monastyryj, Nikki Alabi

Background

In 2017 the Ontario Digital Service released its Digital Service Standard—14 guiding principles that help governments work more effectively, including establishing the right team, testing the end-to-end service, being agile and user-centered, making it accessible, and embedding privacy and security by design. Each principle is based on

a global best practice and is accompanied by an outline that specifies how to use the principle to improve access to government services.

We employed a three-pronged change-management approach to help Ontario's government adopt this standard:

- provide support,
- remove barriers, and
- show, don't tell.

To this end, our team of bureaucracy hackers provided self-help guides and toolkits, designed and delivered trainings, and addressed institutional obstacles to help teams embrace these principles.

Path to Legislation

In 2018, while this work was being done, the accounting firm Ernst & Young released a report that recommended Ontario adopt a whole-of-government digital approach, citing that, "while investment in digital and data is required, it cannot be viewed as a cost centre—it is at the heart of what the Government must become."

Ernst & Young's challenge gave us the firepower we needed to ask how much we could change to make government work better. To answer this question we proposed legislation that would put the principles of the Digital Service Standard into statute and introduce coherent leadership for data and digital services, signaling signaled the government's intent to work differently in the digital era.

To bring our legislation to life we relied on agile policy-development processes, effectively working the way we want the government to work. We empowered our teams to own pieces of the development process and adapted our proposal based on consistent feedback. We also pushed our team to have an empathy-first mindset, meaning that we listened to the users of this policy and worked hard to move the needle while respecting the speed of the organizational and human capacity for change.

Furthermore, we all believed in a common narrative, that service transformation will allow Ontario to make government work better for its citizens. Our narrative was our North Star. As we navigated the path to legislation we sometimes needed to pivot and explore other avenues to deliver our mission. When things got messy, our narrative united our team back to this common goal and allowed us to push forward.

Most important, we wrote this legislation as a technology-agnostic framework. We want this act to be a longstanding tool that fundamentally changes how the Ontario government delivers services, irrespective of what technology is most popular at the time.

Here's what the Simpler, Faster Better Services Act did:

Barriers to Success

Getting the Simple, Faster, Better Services Act passed was a huge accomplishment. The act gives our team the legal power, authorization, and leadership we need to be more effective and efficient. But admittedly, we still have a long road ahead of us.

Our team's biggest fear is that the act won't live up to its full potential—that we will lose an opportunity to make a difference and won't bring about the real change this legislation could accomplish. We're afraid that the act will become symbolic, rather than transformative, and that even with this legislation, we won't be able to enact the meaningful change we envisioned.

To combat this, we must keep in mind that this act was only designed as scaffolding: We've made a law, and it's great, but it simply sets up a high-level framework for

digital and user-centered government. We now need to fill in that framework with tools that will empower and enable ministries to actually work in the way we've legislated.

We must continue to create and implement standards, guidance, practices, and rules that teams across government can apply in their daily work. Further, we have to help public servants understand the full scope of what a service is or could be. Enabling practitioners to think creatively to apply the act to the full gamut of their work will give us more opportunities to engage users and showcase success.

What's Next?

Over the next few years, we'll need to put in a lot of work to bring this framework to life. One of our first priorities is to showcase the value of the act. Our team is proactively looking for ways to use this legislation, and the intent behind it, to transform services in a way that makes a measurable difference in people's lives. Showing value in this way will help other government teams and the public see how the legislation will benefit them. We're working to show that this law isn't about compliance and regulation, but rather is an exciting change that will create better services.

Another focus of ours is people. To be effective, we need a strong team to enforce and implement this law—a team that is willing to strive to change organizational and individual behavior, whose members see it as their responsibility to bring this legislation to life. For this act to be successful, public servants need to buy into the mission of this work at the central and ministry level. We also need to build a talent pool of digital leaders and practitioners and deploy this workforce in flexible and innovative ways across the government. This cross-functional team will break silos, foster knowledge-sharing, and support talent retention.

We need to carry out these people-oriented goals in a way that brings everyone, with their institutional knowledge and policy expertise, along on the journey. We can do this by removing technical barriers, providing targeted growth paths, and hosting detailed trainings, creating a new baseline for digital knowledge across government agencies.

In accordance with the above points, if legislation is the right path then let's make it the easy path as well, for both process and people. We need to update the internal policies that dictate how teams and departments operate, receive funding, and produce

a technology. These standards are inherently waterfall, and they disincentivize iterative and incremental approaches to technology-product development. This issue exists for procurement practices as well. We need to open up procurement to a greater diversity of suppliers. This includes offering terms that are tailored to the concerns of smaller suppliers and understandable to vendors without full-time legal staff.

Along the lines of prioritizing people, we need to focus on our hiring policies. Ontario should proactively engage its labor representatives to enable faster and more dynamic practices for job classification, talent recruitment, and employee retention. With these reforms in place, the government will be hiring more represented employees and relying less on large contractors to deliver technology-enabled products and programs.

Government transformation is measured through incremental gains against insurmountable obstacles. To maximize the impact of this legislation, we're focused over the next few years on achieving incremental gains across these focus areas.

U.K. GDS: GOV.UK NOTIFY

By Pete Herlihy, Lead Product Manager, UK Government Digital Service, with Georges Clement, Harvard Kennedy School

In the summer of 2015 GDS started work on the delivery of cross-government platforms. We ran discoveries and alphas for things like taking payments, hosting, and sign-on.

Our minister wanted to provide a status-tracking platform—a simple way for citizens to track and trace an application (for benefits or a student loan, for example), a request, a purchase, or a payment in a few clicks—that would:

- Make it easier for people to find out what was happening with their application.
- Reduce the massive cost to the taxpayer of running contact centers all over the country.

So, in August 2015 I put together a team of three and we started a discovery into status tracking.

The Discovery Phase

The government receives hundreds of millions of calls every year, and our research showed that one in four of these calls were from people simply asking for an update on their application.

We toured the country to learn as much as we could about how various UK Government teams process these applications, following them around their buildings—from the mail room, through various back-office teams, and back to the mail room again.

We also worked with teams to map their services, and after we tried it a few different ways, a powerful pattern emerged. We divided the services into three layers: end-user interactions, system interactions, and back-office staff interactions. We also mapped things horizontally according to how long they took. This gave us a pretty good visual representation of the process and the timing.

We then folded up the bottom two slices, so all you could see was the end users' experience of that service. We found we could predict with astonishing accuracy when the phone calls would come in. The maps also showed us the events or systems we could use to trigger updates so users wouldn't feel the need to call in the first place.

By now the team was starting to confirm a reckon that we'd had early on—that status-tracking tools are often just a channel-shift for anxiety. They save some phone calls, but you're still forcing people to sign in to your website for an update. And for every person who does, there are many more who won't, instead just anxiously waiting for a letter to arrive in the mail a week later.

The Pivot and the Bad News

The team determined it would be better just to tell people what we know when we know it, so that seconds after a case worker clicks 'approve' on your benefit application or your student loan, you get a text message letting you know.

So we pivoted. We decided that the best way to meet those very real needs—of making it easier for citizens to know their status while saving truckloads of taxpayers' money—was a not a status-tracking platform but a notifications platform.

We then had to tell the minister that we weren't going to build the thing he'd asked for. We were going to build something completely different. At first this didn't go down particularly well. But we were able to meet with the minister, share what we'd

learned, and sell the idea that this would be a much simpler and more effective way to meet the same needs. We now had an advocate for a U.K. government notifications platform, and GOV.UK Notify was born.

Lessons from Delivery

We sent our first message for the Digital Marketplace service team in May of 2016. It was an email to 2,316 vendors about the opening of a new procurement framework. A little over three years later we're sending up to 3 million messages a day, for more than 1,250 service teams and 393 organizations across every corner of the U.K.'s public sector.

We've learned a huge amount while developing and scaling the technical and business operations of Notify. But there are a handful of things that we got right, or got wrong, that can provide guidance for teams looking to successfully deliver a platform at scale.

Find the Simplest Solution to the Problem

Moving to notifications over status tracking was clearly going to provide a simpler solution to most of the problems we were trying to solve. And in truth it wasn't really a pivot—we were seasoned enough to recognize that we were being handed a solution rather than a problem. We were always going to explore various ways to solve that problem through discovery and alpha phases.

We often assume politicians are attached to their ideas, but they're more interested in solutions that work. Don't be afraid to push back, but work hard to meet with them directly. You'll often find they are open to persuasion and they can give you a powerful mandate.

You Don't Need as Many Platforms as You Think You Do

While we were working hard starting to deliver Notify, platform teams were also doing great work delivering GOV.UK Pay and Platform as a Service (GOV.UK PaaS). We were also thinking about other platform opportunities. We had lots of ideas about what would be most useful to focus on next, but they were largely derived from our own experiences working on digital services and products. What we'd failed to do was thoroughly research what teams really needed, or even validate that our ideas were good.

So GDS undertook one of the most exhaustive user research exercises I've ever seen, interviewing more than 150 service teams of all shapes and sizes from all over the country. The output was a comprehensive list of things that services do. The most common things on the list, and the proportion of services with that need, were:

Publishing information	90%	(GOV.UK)
Sending notifications	85%	(GOV.UK Notify)
Collecting information	80%	
Having a two-way conversation	65%	
Collecting files/evidence	45%	
Confirming a user's identity	30%	(GOV.UK Verify)
Taking payments	30%	(GOV.UK Pay)

Looking at this list we could then map our existing government platforms against those needs, highlighting where the greatest opportunities were for additional common platforms.

That gave us a good idea of what we should be exploring next: two-way conversations (potentially supplementing face to face meetings or telephone calls with something like web chat) and collecting information and evidence (something like a forms platform).

Delivering a small number of platform solutions would probably let us meet 80 percent of the common needs that exist across government websites.

Do Less, Better

Platforms don't need to be all things to all people; in fact they'll suffer if you try to do that. You'll end up with software "bloat," where a product has so many features that it becomes almost unusable.

Make simplicity your unique selling point.

With Notify, we were able to establish strong demand for the common needs we were planning to deliver before we started. This gave us a lot more confidence to say no to things we knew weren't common and avoid building the wrong things just to chase the early adopters.

I was interviewed by the BBC's technology correspondent back in 2016 about our aspirations for Notify. When the article came out, the headline was "Making government a bit more digital," and the sole quote from me was, "It's not sexy, it's boring stuff done well."

I wasn't quite sure what to make of that at the time, but in hindsight it's the perfect summary of what platforms should do.

Because we're making something once, for everyone, it allows us to invest in quality in a way that might not be justifiable for a single service team or organization building their own platform. A good example of that with Notify is having multiple concurrently integrated connections to the mobile phone networks, with real-time switching based on performance and price. This provides significant resilience and performance enhancements to all users of Notify—and saves them money too.

Build for Self-Service

One of our first principles for Notify was that whatever we delivered had to be as self-service as possible. Getting started with Notify needed to be just like trying out any other product on the web. We joked that Jeff Bezos doesn't come round to your house for a chat when you're thinking about buying something from Amazon. We wanted to break the learned helplessness of teams in government, who often feel they'll need a meeting or a series of workshops to get started with a new service.

So we encouraged people to try it first. Then, if they got stuck, to get back in touch so we could work together to make that bit of the process better for the next team. Without exception people were happy to do that and the insight we gained from this approach was invaluable.

We called this "permission to play." We needed people to feel it was okay to just get in there try this thing out. It was incredibly useful in blog posts and presentations, and even in conversations, to be able to leave a call to action to go to the website and create yourself an account.

There were a number of other smaller and easier things we did to build on that permission to play. To make it as easy as possible for people to kick the tires of Notify and make their own decisions about whether it would work for them. In short, it's just a list of things that make openness and ease of access a massive asset for a platform:

1. Give your platform a useful name to make it easier for people to talk about.
2. Get a good URL for your product. Make it short and snappy, so it's easy to say and remember.
3. Learn the common questions people have and answer them on your product pages.
4. Publish your developer documentation openly. Don't force people to create accounts before you provide access.
5. Publish your performance. People trust actual performance data over service-level agreements (SLAs).
6. Tell people who's using your platform. Early on, teams will often note that one or more of the big departments (or indeed their own department) is using it and feel instantly reassured.
7. Publish your roadmap. This helps with teams that have needs you can't meet on day one.
8. Open source your code. This is important for re-use but also for transparency and trust.

Look After the Long Tail

We knew not all service teams would have access to software developers in order to integrate with Notify. Others would have legacy systems that just weren't possible to integrate with, and some wouldn't have a system to integrate with at all.

It's this long tail of medium and smaller service teams that are so often left behind when it comes to any kind of service transformation. They just never quite make it to the top of the prioritization list.

We didn't want them to be left behind this time. It was really important to us that they could benefit from using Notify just like the bigger, better-funded service teams.

For that reason, everything you can do with the Notify API, you can do using our web interface.

Around half the services using Notify use the web interface to send their notifications. Without this option, many of these teams just couldn't send notifications—and their users and their budgets would continue to suffer.

Easy to Use Isn't Enough—We Need to Remove Barriers to Entry

The biggest blocks to adopting Notify for service teams—and, I suspect, most platforms—are budget and procurement. We wanted to make these things easier or, better still, remove the blocks completely.

So we worked with our treasury and legal departments to establish our organization as a "central purchasing body." This meant we could buy email and text messages in bulk. By aggregating demand we could get a great price for everyone. It also meant that we could procure these items once so that all our service teams could use Notify without any additional procurement activity.

We managed to set aside some funds to provide a modest free allowance of messages for all teams. We did this for two reasons. First, so that they could get started immediately without worrying about getting a business case signed off for their spend. And second, because moving public money between departments is inefficient and expensive. It's much better to not invoice at all than to spend something like £80 in costs to raise and process an invoice to recover a £12 text-message bill.

With the modeling we did and the funds we were able to provision within our budget, around 80 percent of teams using Notify don't pay anything at all.

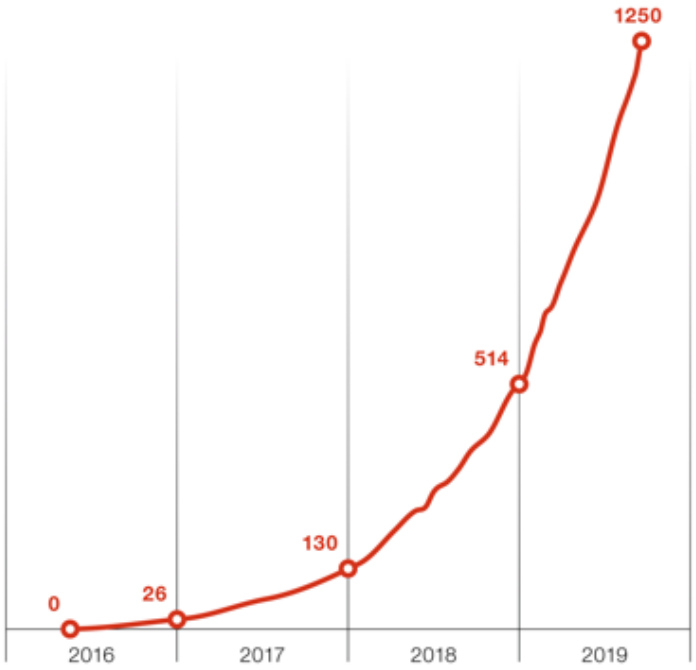
Be Patient

There's an old saying that everyone in government wants to be second, no one wants to be first. And we definitely saw a bit of that when we were starting out on Notify.

We worked closely with a number of teams right from the start of our discovery, so we knew we had a good number of early adopters. Even so it was another team in GDS that was first to go live, and it took another three months for Notify to reach five live services.

Three-and-a-bit years on and we're now seeing five new live services every single day.

GOV.UK Notify Live Service Adoption



Two-thirds of service teams using Notify say they heard about the platform through word of mouth. And we've seen that once the first service team in an organization starts using it, it's not long before the others follow suit.

So we've always focused on the number of organizations using Notify as on the number of services, because one leads to the other. Both lead to an increase in the number of notifications being sent, which is ultimately where the benefits are unlocked.

So far, we've helped our service teams send more than half a billion messages.

A Platform Is a Business—Run It Like One

The proportion of our team's effort it takes to run GOV.UK Notify.

Cross-government platforms share every aspect of running a normal business. They're classic start-ups, really, from finding seed money from the investor (in our case the treasury) to developing the product, selling it, setting pricing models, contracts, supporting users, collecting payments, etc.

It's very easy to focus on the technical operations of a platform and neglect the investment in the business operations required to make the platform sustainable. With Notify, as much as we focus on ensuring we don't accumulate a mountain of technical debt, we quickly learned that we need to regularly spend time making sure we don't end up with a massive business-operations mortgage.

Having a good understanding of what it really takes to run a platform business is vital. But we've learned that it's crucial that those funding and providing oversight to the platform appreciate this too. That way we make sure we have the money we need, the right people on the team, and access to other specialists like lawyers and economists when required.

What's Next for GOV.UK Notify?

Notify isn't "done." Good products never are. We've still got a number of important features to add. And we need to iterate what we've already released as we continue to learn from our users and their evolving needs.

While we have terrific adoption of the platform, we're still only a fraction into the markets and benefits that Notify has the potential to reach or the benefits it has the potential to confer.

As usage grows we have to continue to scale our technical and business operations. We also need to remove as much friction and support effort as possible, making Notify even easier for us and our users. This will allow us to continue to run the platform at scale with a small multidisciplinary team of 10 to 12 people.

Running a platform also puts you in a unique position to see what good patterns of use are emerging and creates a responsibility to share those things. So we'll also be increasing our focus on the quality of the notifications that are being sent and looking to help teams with guidance and content-design support. If we're going to make it so easy to send messages to people, it's important to us that they're as effective as they can be.

Going Global

One of the most tangible benefits of being so open about what we are doing with Notify and how we're doing it is the potential for reusing code, patterns, and guidance

internationally. We are rapidly seeing a global community forming around platforms, which we're excited and proud to be a part of. It turns out that all governments largely have the same challenges and opportunities in the platform space.

The federal governments in both Australia and Canada have taken the Notify codebase and operating model and are now running their own tailored versions of the platform. We catch up regularly with them to share what we're both working on and what we are learning.

We're also in conversations about the reuse of Notify and what we've learned with the governments of Brazil, Ontario, and Nova Scotia, as well as the team at Code for America.

These are exciting times for platforms like Notify.

ARGENTINA: BUILDING A CIVIC TECH STARTUP WITHIN GOVERNMENT

By Daniel Abadie, Former Undersecretary of Digital Government, Argentina, with Luis Valles, Harvard Business School

When President Mauricio Macri took office on December 10, 2015, Argentina's national digital-government strategy was fragmented., with more than 1,000 websites, all built in different technologies from different vendors, and most of its content was institutional information that was not relevant for citizens. We had three websites, each with its own how-to guide to explain the same government service—and all three explanations were wrong. We are one of many countries fighting to transition from an e-gov strategy to a digital one. President Macri created the Ministry of Modernization and appointed me the undersecretary of digital government to define Argentina's digital strategy and how it would interact with citizens. Our one central ambition was to build a personalized government experience for Argentinians. But as the ensuing years would show us, progress wasn't easy.

Building a civic tech startup within government is hard, messy, and lean. We faced the struggles all startups have: budget limitations (2019 budget: 1.4 million USD), recruiting, egos, learning the way, gaining support, scaling up, growing through the crisis of success. Below are some of the challenges we faced and what we did to navigate them.

Design Services Centered on User Needs to Repair Trust in Government

When governments don't have a digital strategy centered on citizens, their search engines are not relevant, information is not useful, and services are hard to understand. When this happens citizens create their own content to explain how hard it is to navigate government services. Citizens begin to lose hope in services and they stop expecting a good experience from the government. This can start a public narrative where people believe doing things with the government is bureaucratic and always will be. To avoid this we created a UX team to collaborate with government departments to design content that is user-focused, easy to understand, and useful. Since then our 600 content editors have created more than 50,000 content pages for our citizens. Designing government services with a deep understanding of user needs is essential to building trust in government.

Find the Hidden Talent within Your Organization to Build Your Team

In our first month we discovered that attracting talent from the private sector was nearly impossible because of the significant salary gap between the private and public sector, a lack of structured incentives, and an old-fashioned human-resources culture. With no other alternatives we turned our attention inside the administration. We found that despite little progress in Argentina's digital government strategy from 2011 to 2015, there were still many public servants with enthusiasm, talent, and the desire to join our digital team. In the end we recruited the bulk of our team internally, including designers, content editors, and developers. External hires included leadership roles and our UX team. We uncovered the hidden talent within our organization by promoting our mission to do things that simplify the lives of our citizens and make interactions with government easy.

Focus on Product Delivery to Mitigate Internal Political Competition

The Ministry of Modernization also included secretaries in charge of transforming other parts of the core operations of government. As happens in large organizations with siloed structures, it didn't take long for internal rivals to rise up from the administration's existing IT/tech offices. We found ourselves caught in a competition of platforms, services, and power. One thing I've learned during my journey through the

public sector is that the "space race," or the friction around someone else building the same thing you are, is unavoidable for any digital service team. The only way to overcome this is by building trust through useful products; this works not only with citizens but also with political leaders who are the ones that enable you to take more risk. The ultimate source of our political power is product delivery.

Scope Projects Down to Essentials to Avoid Being Spread Too Thin

In my first year and a half as undersecretary I learned that the inertia of my eight years of government experience for the City of Buenos Aires had clouded my judgment. Moving from a local to a national government is like jumping from the NCAA to the NBA, and at some point this adjustment hits you in the face. We took more projects than we should have, and this cost us time, energy, and effort. Our team was being worn down while we were still looking for our identity. We had to adapt to the new national context and focus our projects with the sole objective of discovering our path while staying true to our strategy of gaining political power through product delivery.

Kickstart Momentum with Top-Down Support

To focus on product delivery, we realized we needed some room for experimentation. We achieved this in our second year by playing our highest card: a presidential decree. How did we get this card? By leveraging the political support built over years of putting in the work in public office. I worked with the president during his two terms as mayor of Buenos Aires. Our shared history gave me the credibility to seek support. The president, chief of staff, and secretary of modernization were the first believers in our team's mission. So instead of starting bottom-up, we went top-down. Sometimes we feel like the exception in the way digital government initiatives are born.

On February 2, 2017, Macri created the Public Sector Digital Platform through Executive Order No. 87/17. It formally established a single domain strategy (argentina.gob.ar), created the citizen digital profile My Argentina, and ordered the integration of existing citizen profiles and platforms within it. The Ministry of Modernization received formal authority over the newly created digital platform. After various resolutions, the undersecretariat of digital government was entrusted with organizing, developing, executing, and following up on the public-sector digital platform. In the

following months, our control was expanded to cover virtual assistants and AI services. This official top-down support gave us the power we needed to shut down sites and initiatives to avoid fragmentation of our digital strategy.

How Do You Build a 21st-Century Government? By Making Things Work Simpler

In three and a half years we built a government platform from scratch. We integrated more than 1,000 websites into a single domain (Argentina.gob.ar) and have served more than 128 million users since launching in 2016. The goal was crystal clear: creating services that are useful for our citizens. Although the path to get there was not as obvious, we ultimately focused on three initiatives we needed to accomplish: gain credibility, develop new capabilities, and scale up through a blockbuster service project.

Gain Credibility

Building My Argentina, a citizen dashboard that would become the single starting point of any interaction with our government, wasn't easy. We discovered the features of our platform during the journey, often changing directions and shifting from one priority to another. My Argentina was built from scratch because we didn't have a preexisting one-stop-shop service-delivery platform. From a technical perspective, the process of designing, developing, and implementing the platform was a major challenge for a team with little resources. While we had experience building the digital platform for Buenos Aires City Government, operating at the federal level wasn't so simple. Other agencies and ministries did not initially support or trust our products. We found that "if you build it, they won't come" unless you put in the work to gain your reputation. That is a battle on two fronts. The first front is with other agencies and ministries, to encourage them to add their services onto the new centralized platform. The second front is with citizens: Government apps are the first to be uninstalled by users when they lack space on their phones, and the only way to avoid it is to be useful. We started to increase the number of My Argentina user accounts by building small services that met specific user needs no one else was tackling. A great example of those quick delivered services was the development of a basic notification system. Our user research team realized that users were searching across various websites for important government information that was not always easy to find. The notification system became a new service to remind citizens by

email or push notifications about important dates like national holidays and when their tax was due or benefits could be collected.

We leveraged our success with the notification system to improve internal collaboration. Agencies and ministries were more interested in working with us when they could see our ability to deliver on new services quickly and reliably.

Go Slow to Develop Capabilities

Our slow buildup of services in our initial stage began a profound transformation in the government services we provided and how citizens experienced them. We developed the capabilities to integrate services with My Argentina, created administrative procedures to support this work, and nurtured the cultural transformation needed to absorb this new way of operating. In addition, after four years of working at the national level, we developed the capacity to be deeply empathetic to the needs of citizens. We categorized our services as either "services that hurt" or "services that help" the citizens. One example of a service that hurt was the disabilities journey in our country. It is a painful moment when any citizen needs to obtain a disability certificate for himself or a child. At the time, our government service failed to easily inform people what documentation was necessary to request a certificate. This forced them to visit the offices at least four times to verify their documentation before starting the administrative process of obtaining the certificate. In an already painful moment in people's lives, our government did nothing to reduce the complexity of process. With this empathetic lens, we focused on creating a feature on the My Argentina platform to help citizens understand the overall process to obtain this certificate, including an interactive form that walked through each requirement based on the specific conditions of a citizen. It also allowed citizens to complete the documentation required for their evaluation online. Since we launched the service, more than 190,000 people avoided going into an office to check their documentation requirements.

While this was significant progress for our team, these improvements did not gain the attention of the government departments that looked at us as competition. Government transformation is made harder by having to fight the egos that are afraid to give up any control or responsibility, even if it would improve operations. My Argentina needed a blockbuster service to get ahead of the curve.

Scale Up to a Blockbuster Service

On October 29, 2018, we made the decision to digitize our national driving license and host it on My Argentina. We needed to move fast. The transport agency had 65 days to build a new mobile app for traffic agents and a web service for integration with My Argentina, and inform all traffic agents in the country of the new tool. We saved the legal discussions for last.

Adding the driving license to My Argentina was strategic for two reasons. First, it is a mainstream service that 11 million citizens use every day. This made it easy to explain that the license would be available on your phone and would still have legal status. Second, adding the license was the stepping stone to adding larger services to My Argentina. We strongly believe that the source of our power is doing the things that are most useful for citizens. Incorporating a service used by 11 million people would give us the reputation and leverage needed to negotiate with government departments that resisted the migration of their services to My Argentina.

We knew our citizens had low expectations for digital service solutions provided by the government. We saw this as an opportunity to launch a massive service knowing that we were not ready yet. It was chaotic. We receive more than 200,000 requests per second and we hit a wall. Everything we had prepared for wasn't even remotely close to the incredible demand we got in the first 48 hours. The service was jammed with so many users trying to get their driving license on their phones that it often crashed during the day. But when the president showed his own license on his phone we realized we had become too big to fail. The image of the Macri using our platform gave us the political capital necessary to move forward, but while our increased credibility made the government agencies more open to collaboration, they were also cautious because of the instability of the platform.

We started questioning everything we'd done and decided to rebuild 90 percent of the My Argentina platform in the next two months. Sometimes launching a product to learn is more important than being 100 percent ready. The decision to rebuild was ambitious, bold, and painful, but it was the right decision for the sustainability of our project. If we wanted to grow, the only way was to go back and correct the loose ends we left open for the sake of launching early to learn how best to move forward. The lean methodology has an associated risk and it was time to confront that

risk by building a stronger architecture, so our next goal became platform stability. If My Argentina remained reliably up and accessible for 99.98 percent of the day, users would continue using us and we would avoid app uninstalls.

Impact of Work

All this struggle for success is linked to the single thing no one in government has: time. We had many internal discussions about "the good, the bad, and the perfect." We debated how a product, platform, or service should be built with the limitations of our team and time frame. Often there is a closing window of opportunity to deliver a product. Cultivating a sense of urgency helped push our team to deliver things simpler and sometimes "more alpha than beta." Successful products and fast delivery times built our reputation the point where the government departments that used to play hard-to-get started coming to us to join My Argentina.

In February 2019 the digital driving license was launched, becoming the first digital citizen ID integrated with My Argentina. It can be used independently and is as valid as its physical version. Since March 2019 we have added new services including car insurance (20 million users), car documentation (23 million users), labor insurance card, organ donor credential, organ transplant credential, vaccines certificate, and a tool to walk citizens through obtaining a disability certificate. By September 2019, we had launched our first legal digital national ID card in My Argentina for our entire population of 44 million citizens, along with the nautical and aeronautical licenses, cargo transport inspection records, and more. Today, 3.2 million citizens use My Argentina on a daily basis and the numbers grow every day.

Conclusion

Government as a platform means understanding that the real platform is not government but the citizen. Government must learn like the rest of the internet industry that what users want is what users need. Citizens want to have a unique experience with government. Their needs can't be parameterized; we must build a platform that gives access to the personal information and services that are relevant to each individual. This is government entering the last age of the internet: "internet of me."

The central struggle for public leaders trying to walk the path of digital transformation is the mental transition from being the authority over citizens to becoming a commodity service provider for citizens. This is why governments should invest in digital-services teams that help navigate this transition. We understood this from the beginning. The undersecretary of digital government is a civic-tech startup founded in the heart of government that built products for citizens with the mantra that delivering beats everything.

RETHINKING GOVERNMENT: HOW TECHNOLOGY CAN MOVE US FORWARD

By Chris Lynch, Founding Director, Defense Digital Service, USA, with Lauren Lombardo, Harvard Kennedy School

The U.S. Department of Defense (DoD) is the largest bureaucracy on earth, employing more than 3 million civilians and members of the military. It has a global operating budget of $690 billion, and it manages the most technical and complex missions across the globe. It does all of this while being held captive to outdated products and services and relying on technology that lags behind U.S. private-sector standards.

In 2015, I co-founded the Defense Digital Service (DDS), an agency team of the U.S. Digital Service, to create an insurgency of technologists within the heart of the Pentagon. Our aim was to bring the best engineers, product managers, designers, and strategists to hack through the bureaucracy and help the DoD fundamentally transform its approach to technology. We found people who want to work on problems that matter and empowered them to work at a department that is filled with extraordinary problems of impact.

One of the first projects we worked on was the Air Force Operational Control System (OCX), the system that operates the Global Positioning System (GPS) used by civilians and military across the globe. We discovered that OCX, a $5 billion program, was running on engineering practices that dated back to the ’90s. By introducing some simple cloud computing and DevOps best practices we were able to help the Air Force bring the development time for a unit of software down from 80 hours to three.

Our collective experience at the DoD proved to me why it's incredibly important for technologists to have a seat at the table, and to help create a better approach to how the government buys, builds, and implements technology for our citizens and national security. In just under four years, we have made progress toward this goal on multiple fronts.

Some examples include:

- We rewrote code to unblock the transfer of medical records from the DoD to the Department of Veteran's Affairs. This 45-day project ensured that tens of thousands of veterans can access proper care after being incorrectly denied due to lack of interoperability between two legacy systems.
- We launched Hack the Pentagon, the federal government's first bug bounty program, which enlists the help of the "white hat" hacker community to discover and disclose thousands of vulnerabilities in select DoD systems.
- We founded Jyn Erso, a partnership between Army Cyber Command and the Defense Digital Service to leverage and support the DoD's internal tech talent alongside the private-sector talent recruited through the U.S. Digital Service.

With each of these achievements, it became increasingly apparent that despite our broad impact, we were only skimming the surface of a deeper institutional problem. Frankly, the work we did wasn't particularly innovative; our efforts were not focused on propelling the DoD to the cutting edge of futuristic technology, but rather on helping it transition out of the past and into modern-day standards. It's easy to become distracted by new advances in science and technology, but we will never be able to leverage those capabilities to their fullest extent without a strong, reliable infrastructure.

The DoD contains entire industries, from healthcare and logistics to education, humanitarian aid, and intelligence. Technology is the undercurrent of all of these operations, but the foundations upon which these industries were built are sometimes severely outdated, leading to inefficiency, exorbitant costs, wasted time, and frustrated users.

We live in a world where a teenager can get access to nearly unlimited computing power and services with a simple swipe of a credit card. At the DoD, most people don't have anything that resembles such power or simplicity. Cloud computing, which

was designed to be simple and easy to access, is a frustrating, bureaucratic struggle within the federal government. Many departments simply don't have access to the infrastructure required to transform their operations to match technological advancements, due to outdated policy restrictions, limited funding, and lack of empowerment for highly technical civil servants to make procurement decisions.

It became increasingly clear to me and others at the Pentagon that in order to best carry out the department's mission we would need to fundamentally shift the DoD's approach to technology. That's where JEDI comes in.

JEDI (Joint Enterprise Defense Infrastructure) is a unified vision to provide everyone across the DoD enterprise with the same cloud-computing capability. The JEDI contract will enable a single platform to deploy a capability across all classification levels to every place where the mission of national defense lives—all the way to the front lines of battle. It was built to provide the DoD with the same computing advantage that the rest of the world has easy access to.

This singular vision is the core value that JEDI brings to the department. The DoD already lives in a multi-cloud environment (both commercial and custom-built), yet an ongoing issue is interoperability and data sharing between several siloed solutions purchased by separate programs and running different systems that do not communicate with one another. Simply having access to cloud capabilities isn't the answer; the DoD needs a unified approach to enable modern capabilities across all operations.

JEDI aims to create a cohesive operational environment that will reduce much of the complexity that currently exists between DoD systems today. This, in turn, will allow the department to transform internal operations into faster and more efficient processes to better serve the DoD's mission. Sharing information will be far faster than the sometimes year-long integration projects that are underway to tie together a patchwork of disconnected systems. Newly deployed algorithms and machine learning models that advance the department's use of artificial intelligence will be able to take advantage of the latest hardware platforms. The DoD will grow its intelligence and decision-making power by enabling users to further understand the enormous swaths of data at their fingertips. And importantly, the department will greatly benefit from the innovation that millions of commercial cloud customers demand in this highly competitive space.

JEDI is not only a revolutionary way to think about how to do the work of defense, but it also calls for a fundamental shift in how the DoD carries out the technology procurement process. The length of a typical DoD contract procurement is measured in years. The process is driven by acquisition teams who are far removed from the mission, the technical experts, and the core users that the contract is expected to support. Programs rarely bring in users or subject-matter experts to understand what a successful product or platform would look like or how it would perform, which often leads to user dissatisfaction and decreased relevance to the mission.

For JEDI to work at the necessary scale, it had to be different. We empowered a world-class team of DDS technologists; leveraged the expertise of exceptional contract specialists, lawyers, security experts, and policymakers; and listened to civilian and military feedback.

At the end of the day, the JEDI contract is aimed at procuring commercial best practices and standards. It did this in several ways:

Procurement requirement	Reasoning
Request for proposal was a phase-based approach based on a series of technical requirements.	This ruled out unqualified applicants with increasingly demanding technical requirements.
Allowed all applicants to propose the best in class available today.	We allowed commercial cloud providers to partner and provide innovative solutions that could make the JEDI platform a reality. We wanted the best possible proposal for our requirements, which could have included capabilities from two or more providers. We found that competitive companies operate a suite of services that (mostly) run in parallel with one another. While no viable proposals took advantage of this ability, it allowed for new approaches in the proposals.
Included a provision that required the revenue from the DoD to be less than 50 percent of the vendor's cloud computing revenue.	This requirement ensured that the company's motivation to improve its platform come mostly from its commercial customers, preventing the DoD from being the largest revenue and feature driver and ensuring the highest level of innovation over time for the DoD.

The final contract will be reviewed every two or three years to let the DoD decide if it should be extended.	This stipulation avoids vendor lock-in and allows for a review of the provider's capabilities compared with those of their competitors over time.
Included carefully thought-out pricing provisions	Pricing for cloud computing services will be driven by the market and consumer demand instead of by the DoD. This ensures that the DoD will always have access to the best possible services at competitive rates.

Creating JEDI has been a monumental team effort. JEDI has the ability to fundamentally transform technology at the DoD, and provide a platform to maintain technological superiority on the world stage. In doing so, it also demonstrates what can be done when technologists have a seat at the decision-making table.

QUICK-RESPONSE QUESTIONS

What is one thing you would do differently in creating/growing your digital services team?

Pete Herlihy, Lead Product Manager, UK Government Digital Service: Make the time and never stop working in the open, blogging, tweeting, etc. Once you get out of the habit, it's hard to find the time to get back into it.

Josh Lee, director of digital transformation, government of Nova Scotia: Build a more balanced team that is able to solve challenges and sustain products and services over a longer duration. We pivoted heavily on one digital discipline, which can cause an imbalance when assembling multidisciplinary teams to solve complex challenges and perpetually serve citizens well.

Eddie Tejeda, director of Cloud.gov, 18F: Ensuring that good processes were in place to attract people from a range of diverse backgrounds and experiences. Once a team hits a critical mass, it becomes increasingly difficult to branch out from well-trodden networks.

Daniela Battisti, Digital Transformation Team, government of Italy: It's not all about recruiting technical staff. It's about getting the right mix of technical expertise and civil servants who may not be coming from a technical background.

What is the most critical element of a successful platform build-out?
Lee: Self-service. To build something that is consumable at scale, partnering programs and teams must be able to serve themselves when consuming platform services.

Tejeda: Make sure you have a sustainable funding model early in the development of your platform. I've seen too many platforms fail because teams expected continuous executive buy-in while figuring out their success metrics. Changes in leadership happen quickly and often, and if you are not prepared to demonstrate a clear path to sustainability, it does not take much to cut a program.

Tom Loosemore, partner, Public Digital: Platforms should be designed to remove as much bureaucratic and contractual friction as they do technical complexity.

What is the biggest impediment to building out a platform service in government?
Herlihy: Maintaining investment when the savings and benefits you produce are realized by different departments and agencies.

Lee: A lack of investment-thinking. If platforms are things that others can build on, then more often than not, the platform itself is not likely to resolve a crisis directly. Rather, it will offer better conditions for others to address crises or improve services. What's required to build out a platform in government is willing investors, not firefighters.

Daniel Abadie, Undersecretary of Digital Governance, Republic of Argentina: Time is our most precious resource; the more we delay building out a platform, the further away we are from the possibility of success.

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