

A Digital Government Technology Platform Is Essential to Government Transformation

Published: 23 January 2018 **ID:** G00344044

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Governments must address their decaying technology infrastructure and become productive members of the digital ecosystem. Government CIOs can make the case for sustained IT modernization funding by showing how digital platforms are vital to lowering risk and achieving business transformation goals.

Key Challenges

- Siloed, legacy government systems and business processes increase risk and exacerbate challenges in data sharing and service delivery across the ecosystem.
- Government CIOs recognize that their agencies want to be agile and innovative, but they struggle to be responsive in developing digital initiatives.
- Funding innovation budgets is increasingly difficult while keeping services running. Consequently, governments are left with few resources to dedicate to innovation and the building of sustainable business models, while legacy systems consume increasing portions of available funds.

Recommendations

For government CIOs leading their organizations in transitioning to digital government:

- Inspire the organization's leadership to invest in a platform approach to digital government by showing them the benefits realized by other governments that successfully implemented a digital government technology platform.
- Provide incentives to business units for participation in a digital government technology platform, or disincentives for those that chose not to participate, by securing strong executive sponsorship for a platform approach that leads to digital government transformation.
- Reorganize the IT organization to ensure it delivers the value of a digital government technology platform by structuring the IT organization around business capabilities and addressing existing IT skills gaps.

Table of Contents

Strategic Planning Assumption..... 2

Introduction..... 2

Analysis..... 6

 Inspire the Organization's Leadership to Invest in a Platform Approach to Digital Government..... 6

 Provide Incentives to Business Units for Participation in a DGTP by Securing Executive Sponsorship
 7

 Reorganize IT Around Business Capabilities, and Address IT Skills Gaps to Ensure the IT
 Organization Delivers the Value of a Platform..... 8

Gartner Recommended Reading..... 10

List of Tables

Table 1. DGTP Areas..... 3

List of Figures

Figure 1. Components of a DGTP.....5

Strategic Planning Assumption

By 2023, more than 80% of the government's digital implementations that do not build on a technology platform will fail to meet objectives.

Introduction

Government as delivered today is not sustainable in much of the world; the costs frequently outweigh tax collections and revenue,¹ citizen trust in government² wanes, and policy and programs frequently fail to provide the outcomes that society wants. In response, government leaders have implemented innovation plans, applied performance management and cut budgets to spark transformative change. However, most of these initiatives have failed to turn the tide on delivering sustainable government, and budget cuts have led to short-term cost savings at the neglect of infrastructure and system maintenance and life cycles.³ Many of the transformative efforts have continued to be made within the siloed departments, and they are rarely part of an overall digital government strategy. Instead, they remain tactical fixes to pressing problems. Gartner advocates a break from this cycle, as well as calls on governments to adopt a digital government technology platform (DGTP) approach (see Note 1), building layers of capability that can be used by all.

Platform business models are not new, but advances in technologies have made them a staple in the digital era (see "Winning in the Platform Game, Part 1: Understand the Game and Determine Your Role"). The diverse nature of government operations and services will dictate some business units to:

- Leverage a DGTP to lead an ecosystem
- Participate in adjacent digital platforms
- Choose not to leverage a digital platform and only interact with the ecosystem through digital integration

The enterprise view of these strategic choices will guide government CIOs in developing the whole-of-government DGTP.

Government CIOs leading the architecture of a DGTP must find the right balance of the five primary areas on which their organization can innovate and derive value. The purpose of each area is explained in Table 1. Focusing on reusable components of each area that meet the organization's technical needs will provide the basis for developing a mesh app and service architecture (MASA) for legacy modernization and new applications. (For more information, see "Creating Digital Value at Scale: Key Insights From the 2017 Gartner Symposium/ITxpo Keynote.")

Table 1. DGTP Areas

Platform Areas	Purpose
Citizen Experience Platform	It provides interfaces and technologies, as well as implements the policies and procedures for citizen and business engagement. It also measures the experience of these users.
Ecosystems Platform	It provides digital interfaces and implements the related policies and procedures for governments and ecosystem partners to exchange data and services.
IT Systems Platform	This is the heart of what government IT does today. It provides the technologies, policies and procedures for back-office systems.
Internet of Things (IoT) Platform	It provides the interfaces, data governance and context, as well as implements the policies and procedures for collecting and processing data from IoT sensors.
Data and Analytics Platform	It provides advanced analytics, geospatial and location analytics, and artificial intelligence capabilities for the processing data collected or stored in any area of the platform. This is the core of the DGTP.

Source: Gartner (January 2018)

Government CIOs have the insight into how a platform approach to government can transform the way that government operates and interacts with citizens, things and ecosystem partners. They also understand the value of business flexibility afforded by platform service models and extending the ecosystem to include digital transactions. This awareness should position government CIOs to

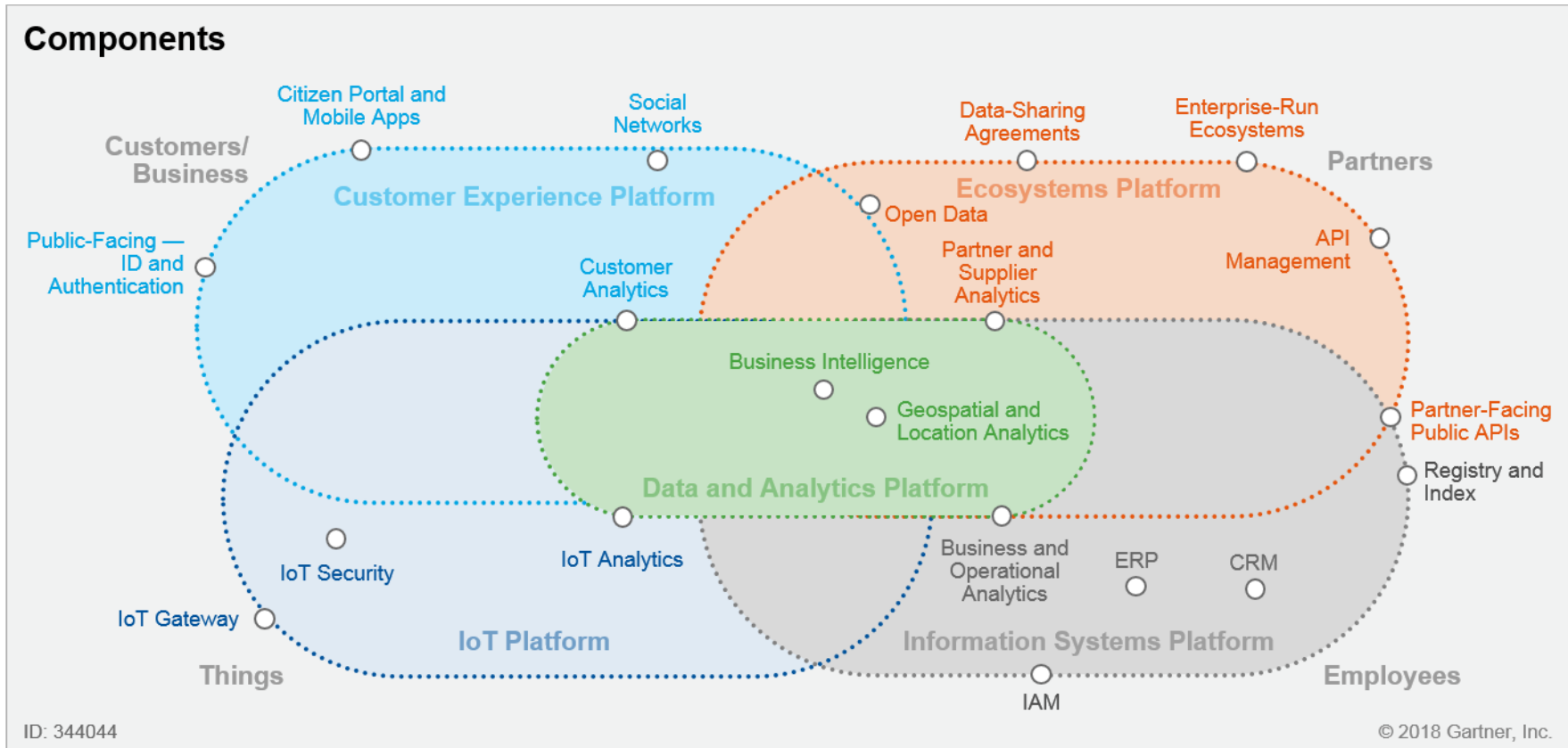
support their executive and program area leaders in transforming government, which will necessitate leveraging a DGTP approach for delivering better mission outcomes.

Government's top business priority is digital transformation.⁴ A DGTP provides a means for CIOs to lead their organization in digital transformation by providing the technical capabilities for bimodal teams to:

- Innovate
- Reduce cost through reuse of common components
- Deliver new capabilities with speed and agility

Figure 1 illustrates a basic set of components that a government would deploy to create a whole-of-government DGTP. Government CIOs must develop a roadmap for implementing the key components needed to meet their organizational goals.

Figure 1. Components of a DGTP



IAM = identity and access management

Source: Gartner (January 2018)

Analysis

Inspire the Organization's Leadership to Invest in a Platform Approach to Digital Government

Government leaders, particularly political leaders, want quick wins that fit into budget or election cycles. However, a DGTP is part of a long-term digital government strategy that puts the value of data and intelligence at the core of new service delivery models. Educating your organization's leadership on the business and technical benefits of a DGTP is critical in getting their buy-in. However, CIOs need to avoid losing government leaders' attention by using "tech speak" and instead discuss the DGTP in terms of business and mission value.

For CIOs supporting an economic development agency, the benefits of DGTP must be presented in terms of how analytics can assist the agency in more effectively measuring the potential impact and success of projects they fund through grants.

To deliver new solutions at the pace expected by the business leaders, government CIOs can leverage a DGTP by shifting to a MASA (see "Adopt a Multigrained Mesh App and Service Architecture to Enable Your Digital Business Technology Platform."). The reuse of components of a DGTP through a MASA approach, such as a citizen electronic identification (eID), provides advantages for both developers and users when used for multiple systems:

- Developers are able to reuse code to connect to APIs for these services, allowing for increased velocity in delivering new solutions.
- Users benefit from only having to learn how to use that component or setting up the component for their use once.

When fourth-generation development tools are deployed that create GUI interfaces for configuring new solutions, citizen developers are empowered to use these components to develop proofs of concept in support of innovation efforts. (For more information, see "Citizen Development Is Fundamental to Digital Transformation.") In both cases, users are familiar with the interface and functionality.

The reuse of components also provides a financial benefit when developing new digital government solutions. The staff hours needed to create a new solution when using reusable components are less, as is the maintenance of these components.

Governments have been working in ecosystems for many decades. Digitalization of the ecosystem allows the business to be agile and responsive by engaging more partners and being able to switch between them to optimize costs and maximize citizen satisfaction. Governments need to add and switch between business partners more easily to be more responsive to citizen and business

expectations. APIs are the digital interfaces that provide this flexibility (For more information, see "Add Full Life Cycle API Management to Your Digital Government Platform."). Additionally, these APIs, along with open data efforts, provide the base tools and data needed for civic tech organizations and hackathon participants to develop new solutions, allowing the government to develop bimodal capabilities in meeting citizen needs. (For more information, see "Government CIOs Need to Prepare Their Organizations to Take Advantage of Civic Tech.")

The risk-averse nature of many government leaders causes them to be early followers, rather than cutting-edge leaders when considering new business approaches and technology solutions. Providing examples (see Note 2) of other governments that have successfully implemented DGTPs can build their confidence in adopting this new approach.

Government CIOs educating leadership on the benefits of a DGTP must:

- Establish the time savings in staff hours for developing new solutions from DGTP components, and use this information to show both the speed and agility that can be gained through the use of DGTP.
- Establish the savings from maintenance of a minimal set of components and from limited development needed for new solutions for a DGTP to show the cost benefits of a DGTP.
- Demonstrate the value of "soft benefits" from transformative change — enabled by the DGTP — by providing examples in areas such as citizen satisfaction, organizational responsiveness and improved insight for decision making.

Provide Incentives to Business Units for Participation in a DGTP by Securing Executive Sponsorship

Executive-level sponsorship for a DGTP goes beyond the level of sponsorship garnered for other solutions, as its impact on innovation and transformation of service delivery models is dramatic. A DGTP needs to be managed as a product, not a project (see "How to Establish a Product Management Practice to Drive Digital Business Success."). Communicating a DGTP approach has to be in business terms, which will have the most impact with the executive office and finance.

Government IT departments are faced with significant backlogs of projects: Demand frequently outstrips capacity. Implementing a DGTP through reuse of components, using common interfaces and reorganizing IT to be focused on capabilities instead of solutions provide governments with the ability to deliver solutions with speed. Government CIOs implementing a DGTP can also leverage citizen developers (nontechnical staff within business units) to develop proof-of-concept solutions that address the critical business unit needs.

For a government research division with a department head driving innovation through process re-engineering, a CIO might work with governance to prioritize the research staff receiving

Lean Six Sigma training as part of the agreement to leverage the DGTP.

Legacy systems consume a disproportionate part of IT budgets and can prevent government IT from being agile in response to changes requested by the business unit. A frequent conversation that Gartner government analysts have with clients focuses on the differences in the amount of time and effort needed to implement policy changes in systems versus the expectations of elected leadership.⁵ Through the use of APIs for integration and automated testing tools available as part of a DGTP, government IT can deliver changes with agility by adding new components to a solution with ease.

Budget cuts and austerity measures force governments to delay IT investments. A DGTP, through reuse of components, reduces the investments in software licensing and the need for IT staff to support multiple systems that deliver similar solutions.

Once executive sponsorship is gained, then it needs to be leveraged to ensure that program areas change their stovepiped mindsets and embrace the DGTP as an enterprise solution. Executive sponsorship must establish both incentives for programs to participate in a DGTP and disincentives for those that chose not to participate.

Government CIOs securing executive sponsorship for a DGTP need to:

- Establish incentives for program areas to participate in a DGTP by working with executives to:
 - Leverage innovation funds to offset costs of early adoption
 - Develop professional development opportunities for those that engage in the platform
 - Provide public recognition for those program areas that use a DGTP to implement new solutions
- Establish disincentives for program areas that chose not to participate in a DGTP, when the reasons are not aligned with the digital strategy. Disincentives could include lower prioritization of these projects, budget reductions or removing leaders from key committee appointments.

Reorganize IT Around Business Capabilities, and Address IT Skills Gaps to Ensure the IT Organization Delivers the Value of a Platform

To deliver on the value of a DGTP, government CIOs must prepare their organization for a seismic shift in the organization, approach and architecture. According to the 2018 CIO Survey, 37% of government respondents identified talent and resources, and 47% identified culture, as the biggest barrier to move from the initial phases of digital business.⁶ A CIO's leadership as a visionary and change agent is required to guide the organization through this transformation.

A DGTP is not an off-the-shelf technology solution: It is a set of tools used by the organization to facilitate its involvement in ecosystems and develop new service delivery models. The

organization's choices to lead ecosystems, participate in ecosystems or do both, along with the program areas' development of new platform service models, will guide decisions about DGTP governance, policies and technologies.

Enterprise architecture (EA) plays a crucial role in development and enhancement of a DGTP (see "Architect Digital Platforms to Deliver Business Value and Outcomes"). CIOs need to elevate the prominence of the EA organization and use it to drive a shift to organize around business services. Business capability modeling provides guidance in investments and developing policies and procedures that assist the organization in keeping the DGTP agile. IT organizations need to focus primarily on the technical capabilities, such as IAM or API management, which will support the needed business capabilities. IT organizations focused on system administration (for example, multiple personnel supporting a mental health case management system) must shift to a technical capability approach that can support solutions being managed as a product to deliver business and citizen outcomes. A technical capability approach could include staff being responsible for business process management or geospatial analytics.

Product management skills are necessary, as IT organizations need to deal with modular solutions that extend management from projects to programs. Product managers will focus on business value, citizen experience and business outcomes that a product provides. IT skills with a demonstrable business acumen are required to support a DGTP.

The CIO must lead the business and IT away from custom-developed systems and to understand the benefits of the speed and agility that will be realized through the DGTP. The shift to MASA, the development of a strong set of integration capabilities and the implementation of a DevOps approach will provide the basis for IT to support an iterative approach to implementing the DGTP. (For more information, see "DevOps — Eight Simple Steps to Get It Right.")

The CIO of a regulatory agency could lead the establishment of a citizen developer program focused on decision support for both research and operations by using business and geospatial analytics. To enable this Mode 2 capability, the IT organization needs to establish the intelligence core of its emerging DGTP, focusing on developing the skills, establishing policies and procedures, and acquiring the relevant technologies.

To support the agility of a DGTP, IT organizations need to establish bimodal capabilities. Both IT department staff and business unit employees deliver IT services and solutions, and the shift to a DGTP will affect both groups. It is important that leaders avoid bifurcating the IT organization into a group that does all of the innovative projects and one that works only on legacy solutions. Allowing this to happen has a significant impact on employee morale. Those who are continuously asked to pick up the new and innovative technologies can lose touch with the daily workings of the organization and face burnout. Those asked to maintain existing systems, without opportunities to

be part of new solutions, can feel left behind or even threatened by new solutions with which they are not involved.

Government CIOs preparing the IT organization for a DGTP need to:

- Develop a digital platform strategy, as part of the overall digital government strategy, which defines how a DGTP will enable the organization to lead a digital ecosystem, to participate in adjacent ecosystems and to establish new platform service delivery models.
- Focus the EA program on modeling the future business and technical capabilities of the organization by creating a team that has both business and technical acumen.
- Develop policies and procedures for their organization's bimodal capabilities that address bifurcation through job sharing and rotation.
- Direct the solution architecture and other technical teams in switching from a service-oriented architecture (SOA) to a MASA architecture by providing training opportunities in modular system architecture, APIs, microservices, integration and DevOps.
- Create a professional development plan for themselves to develop their skills as a visionary and change agent by studying and attending conferences on leadership, change management, strategic planning and leading-edge technology.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Building a Digital Business Technology Platform"

"Winning in the Platform Game, Part 1: Understand the Game and Determine Your Role"

"Winning in the Platform Game, Part 2: Create a Foundation for Platform Business Success"

"Winning in the Platform Game, Part 3: Build the Platform Business Operating Model"

"Three Styles of Digital Business Platforms"

"Every Organization Needs a Digital Platform Strategy"

"Add Full Life Cycle API Management to Your Digital Government Platform"

Evidence

¹ ["5 Facts About Government Debt Around the World,"](#) Pew Research Center.

² ["Government at a Glance 2017,"](#) OECD Publishing.

³ ["Causes of Delays to FAA's NEXTGEN Program,"](#) U.S. Department of Transportation; ["Budget Cuts Hit Coast Guard IT Modernization Hard,"](#) FedScoop; ["2013 Sequestration: Agencies Reduced](#)

[Some Services and Investments, While Taking Certain Actions to Mitigate Effects,](#) U.S. Government Accountability Office (GAO); ["Rerun, Free Education Eats Into Budgets of Key Ministries,"](#) Daily Nation.

⁴ According to Gartner's 2018 CIO Survey, digital transformation was the most common response from government CIOs who were asked what their organization's top business priority would be over the next two years. A record number of 3,160 CIOs from 96 countries responded to the 2018 Gartner CIO Survey. Their organizations represent a cross-section of industries, ranging from manufacturing, government, education and financial services to retail, media and telecommunications. The surveyed enterprises represent \$13 trillion in revenue/public-sector budgets and \$277 billion in IT spending. And 461 respondents identified themselves as government entities.

The survey question referenced is:

- Thinking about your organization as a whole, what would you say are its top business objectives for the next two years (2017/2018)?
- Digital business/digital transformation was mentioned by 18% of government respondents (n = 379), making it the most common term, although still below a majority.

⁵ An analysis of Gartner public-sector team interactions with clients in 2016 and 2017 shows the topics of modernization or legacy were discussed 230 times.

⁶ The 2018 Gartner CIO Survey asked respondents whose organizations' digital initiative is in the desire/ambition, designing or delivering stage:

- What do you think is your organization's biggest barrier to move from the initial phases of digital business transformation to scale?

The top government responses (n = 321) were as follows.

- Talent: 10%
- Culture: 47%
- Resources: 27%

⁷ "Smart Nation Platform Industry Briefing." IDA Singapore. 10 October 2014.

⁸ ["Smart Nation,"](#) Smart Nation Singapore.

⁹ ["What Is Altinn?"](#) Altinn.

¹⁰ ["X-Road,"](#) e-Estonia.

¹¹ ["X-Road Between Finland and Estonia,"](#) e-Estonia.

¹² ["DTA Ramps Up Work on Next Govt-Wide Platforms,"](#) iNews.

¹³ "Data Functions Transfer to the DTA," Australian Government, Department of the Prime Minister and Cabinet.

Note 1 Digital Government Technology Platform

A DGTP is a set of cross-cutting, integrated, horizontal capabilities that coordinate government services across multiple domains by integrating five platforms: citizen experience, ecosystem, IoT, IT systems and analytics. Governments, globally, need to architect a DGTP approach that enables digital government, simplifies processes, improves citizen interactions and reduces expenditure.

Note 2 Examples of DGTPs

Singapore — Singapore's Smart Nation Platform (SNP) was discussed in an industry briefing in October 2014.⁷ As a key component to Singapore's Smart Nation strategy, the SNP includes citizen-facing portals and apps, open data and APIs, the Smart Nation Sensor Platform, and analytics to "improve living, create economic opportunity and build a closer community."⁸

Altinn — The Altinn platform provides services to 43 collaborating agencies. The original portal was launched in 2002 by a group consisting of the Norwegian Tax Administration, Statistics Norway and the Brønnøysund Register Centre, and it is now used by over 4 million private individuals.⁹ Functionality provided by the platform includes portals, collaboration tools, service development solutions, messaging, training and integration.

Estonia — Estonia's X-Road is the integration platform that connects the components of e-Estonia. These components range from eID to block chain to e-health records to e-banking, and it is used by over 900 organizations and enterprises in the country.¹⁰ As a collective toolset, the e-Estonia services provide the government of Estonia and its partners, including Finland,¹¹ with a platform on which to innovate and use digital transformation to deliver new services across the globe.

Australia Digital Transformation Agency (DTA) — The DTA is focused on creating a governmentwide platform. Efforts include developing a "tell us once" tool that allows citizens to only create or update information once and share it across all government agencies and a notification tool that can be used by agencies to implement multichannel communications.¹² On 14 September 2017, the Department of the Prime Minister and Cabinet announced that DTA would take over open data, Geographic Information System (GIS) and the APS Data Skills and Capability Framework to add data-related elements to the platform.¹³

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