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WHITE PAPER

What Analysts Say About How CIOs Drive Digital Transformation

Today's public sector leaders characterize their experiences of the last 12 months as anything but normal. The work of government shifted overnight to remote operations. Service delivery transformed into virtual offerings and self-service portals. The accelerated technology investments behind these responses certainly solved for urgent needs. They also hold the promise of much stronger government positioning as we emerge from the pandemic. With the acceleration of vaccine distribution and reopening of buildings, businesses, and public events, governments are using a changing, challenging context as a springboard for future stability.

A foundational element in transforming and stabilizing operations to weather current as well as future crises is an organization-wide data-driven strategy. "The most innovative public leaders recognize data-driven strategies provide the clearest method to navigate 21st century government," Franklin Williams, president of Tyler Technologies' Data & Insights Division, stated.

Gartner analysts support this notion, particularly in the role of the public sector Chief Information Officer (CIO).

> " Moving forward requires that government CIOs move rapidly, because digital government service delivery is the only sustainable way forward, given the increased demand for services and constrained resources. To harness that momentum and halt the slowdown takes effective leadership."[i]

In the following sections, we examine how CIOs can drive successful progress through human-centered design, digital platforms, and purposeful data.

The Role of the CIO

CIOs are uniquely positioned to drive digital transformation. In fact, their roles in government agencies have increased in visibility and scope in the past year.
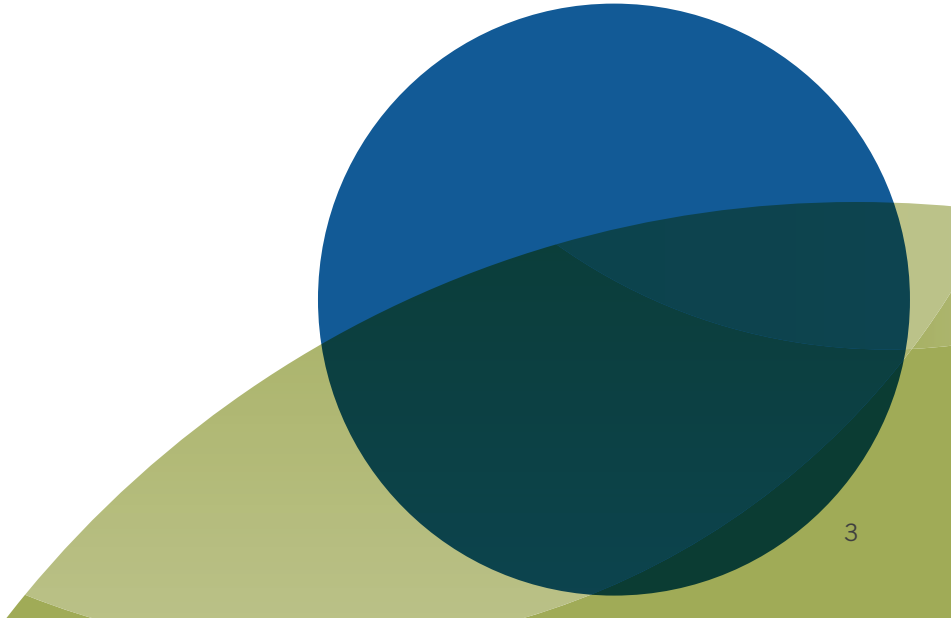
According to Gartner, **"The COVID-19 pandemic has increased government executives' understanding of the positive role technology can play in achieving their public purpose. In conversations with our analysts, government CIOs have indicated that the role technology has played throughout the crisis has elevated their leadership profile within their organizations."** [ii]

This holds true in all areas of government. As explained in the same research, challenges and opportunities in workforce and service delivery persist. **"Social programs and human services organizations are experiencing a peak in demand that is not expected to reduce any time soon"** Similarly, **"public safety and law enforcement CIOs face challenges of high business risk caused by legacy systems, overextended workforces, and reduced budgets."** [iii] In K-12 education, districts continue to grapple with remote learning challenges, hybrid models, lockdown periods, and in-person instruction with new constraints and approaches.

While elected officials may be focused on external issues and responding directly to resident concerns, now is the perfect moment for CIOs to leverage their skills and elevated roles to facilitate the data-driven strategies that meet the challenges in these diverse service areas while also informing and supporting smart policy.

CIOs already acknowledge this opportunity. In the State CIO Top 10 Priorities from the National Association of State Chief Information Officers (NASCIO), priority number two, only behind cybersecurity, is "Digital Government/Digital Services." This includes a framework for digital services, data portals, improving and digitizing citizen experience, and increased accessibility. Number six on the list is "Data Management and Analytics," including data governance, data architecture, data strategy and predictive analytics.

CIOs can drive data-centric organizations in the following specific, achievable ways. These proven approaches prioritize user experience and promote proactive innovation and collaboration.

Human-Centered Design

In many respects, it is most useful to think of human-centered design as user-centered design. User-centered design, in practice, eliminates barriers to adoption and is outcome-focused. It entails working with citizens, not just for them.

In fact, the Partnership for Public Service cites human-centered design as one of eight core technical competencies of a 21st-century workforce. "The fundamental principles of design — placing users at the center and building empathy to understand their needs — are proving to be uniquely suited for identifying and tackling some of the most complex problems in government and building trust and confidence in our institutions," said Kyla Fullenwider, U.S. Census Bureau's first chief innovation officer.

This is already happening in practice around the country, as CIOs lead the charge in solving emerging issues. For example, in the Commonwealth of Virginia, the Chief Data Officer Carlos Rivero understood that addressing the opioid crisis would require departments and the data that traditionally worked in silos, such as homelessness, workforce transportation, health, and more, to come together.

Virginia leveraged Tyler's centralized Socrata data platform to aggregate and surface disparate data relevant to the problem's solution. In a truly human-centered approach, the platform makes verified, actionable information accessible to myriad stakeholders including community-based organizations, medical professionals, social services professionals,

law enforcement, and research institutions, along with six government agencies. The platform features a centralized administration of the portal to enable data governance and granular access permissions to foster collaboration in a secure environment.

Collaborative, evidence-based solutions hold the promise of eradicating the opioid crisis, but ad-hoc data sharing agreements are typically ineffective due to lack of trust among different parties involved. "People have historically said no as default when it comes to sharing data," Rivero said. "This is one of those situations where you can't say no. You need to look for a reason to say yes." Centralized data governance and centrally controlled and secure access to the data for different users helps to overcome hesitation around data sharing, making the case for user-centered, outcome-focused strategies.

In addition, an intuitive navigation for users to discover and access the data they need, rich metadata documentation and search capability, and visualization tools seamlessly enable a data-driven culture to address the problem at hand.

Pierce County, Washington, uses Tyler's enterprise Socrata data platform to work with its residents, as opposed to just for them, in many ways. One such example is relevant to all agencies managing pandemic relief funds. After receiving $158 million in CARES Act funding, Pierce County had to ensure that the dollars were spent effectively and equitably. By quickly customizing the county's existing Socrata data platform, leaders consolidated datasets from finance, public health, emergency management, economic

development, and human services into one centralized location that allowed decision-makers to quickly see financial standings in relation to operations and programs. In essence, the visualizations, performance measures, and charts that update automatically help officials monitor how fast relief dollars are put to use as well as the outcomes of those allocations.

Beyond this essential internal data sharing, the county publishes the data publicly to give council members, residents, business owners, and others the ability to see progress on recovery efforts for themselves. Because the platform enables administrators to customize the depth and frequency of updates, county leaders chose to provide weekly updates to meet high demand for current information. This frequency allows stakeholders and public partners access to critical insight to inform their own decisions for the overall good of their community, strengthening successful recovery efforts.

APIs and Data Reuse

API-enabled platforms effectively engage ecosystem partners and reuse data in a way that drives innovation. APIs and platforms also promote innovation and collaboration, nurturing new partnerships and improving outcomes.

Gartner analysts note, **"A platform approach to government can transform the way that government operates and interacts with citizens, things and ecosystem partners."** [v]

Additional Gartner research states, **"Greater value will be driven from sharing specific data that is actionable — ideally, in real time, by APIs."** [vi]

A key aspect of APIs is that they enable infinite reuse of data. This is driving innovation even now. In the Netherlands, the Dutch Transit Authority, Dienst Wegverkeer (RDW), uses the Socrata open data portal to power some of the most interesting apps in Europe and drive government innovation in a cost-effective, secure way. Just some of the datasets on the portal include millions of registered vehicles with descriptors such as year, make, or model, as well as thousands of approved "vehicle types," with information on safety check results, recalls, and more. These high-use datasets are automatically updated and available 24 hours a day.

The data has empowered the mobility industry supply chain to unleash a new stream of innovative applications for car owners and drivers, parts suppliers, engaged community members, cities, and more.

For example, users can quickly find competitive insurance rates based on precise technical details of their vehicle. Users can also use the portal to compare tax amounts based on specific car types. At present, over 10,000 registered websites and apps use the data. Since these apps have been shared and developed by third-party industry organizations, the continued benefits of the data come at zero incremental cost to the RDW.

In an interesting use case, the City of Rotterdam used the available data to develop an app to quickly check if a car could be driven in the newly established "green zone" with strict emission standards. An innovative app called AutoAlert prevents fuel theft and fraud by capturing license plate and registration information, deactivating pumps for cars with false plates or of known offenders who have previously driven away without paying. The API possibilities seem endless; Socrata powered over 100 million average monthly API calls in 2019 alone.

Closer to home, New York City is leading the way on data reuse with its 2,000 datasets that, combined, amount to billions of rows of data — all informative, and all potentially actionable to the portal's more than 1 million unique visitors. Certainly, city employees and government benefit from the widely available and accessible data. Access to data also empowers entrepreneurs to innovate and build new tools that can benefit all New Yorkers. Projects created by civic advocates, for example, unveiled information on the city's sewers and visualized Stop-and-Frisk incidents.

A CIO's Moment of Opportunity

As Gartner analysts note, **"For many years government CIOs have faced a litany of challenges – transient and inconsistent political leadership, financial austerity and advancing citizen expectations, to name a few. The disruptive start to 2020 has amplified these existing challenges and brought with it new ones. Even so, the opportunity has never been greater for government CIOs to help lead their organizations through this period of uncertainty, and in the process becoming a world-class government."**[vii]

When CIOs drive human-centered design, digital platforms, and purposeful data use, more efficient, collaborative, and resourceful governments emerge. In recognizing the continued challenges facing governments in 2021, it is important to note that successful policies are nearly impossible to execute without the technology to inform and enable them. Now is the time for CIOs to use their elevated platforms to transform operations to solve problems and enhance performance, service, and growth.

[i] Gartner, Digital Government Transformation Is at an Inflection Point and CIOs Must Lead Into the Momentum, 2021 (G00721016) Published January 6, 2021; Analyst: Alia Mendonsa

[ii] Gartner, A Master CIO in Government, 2020 (G00730356); Published August 5, 2020; Analysts: Alia Mendonsa, Alvaro Mello

[iii] Ibid., 2

[iv] The Partnership for Public Service, Tech Talent for 21st Century Government, April 2020, Tech Talent Project

[v] Gartner, Drive Adoption of a Digital Government Technology Platform for Government Transformation, 2020 (G00721194), Published December 16, 2020;Analyst: Bill Finnerty

[vi] Gartner, 4 Steps to Drive Sustainable Value for Government Shared Data Initiatives, Ben Kaner, 7 February 2020

[vii] Gartner, A Master CIO in Government, 2020 (G00730356); Published August 5, 2020; Analysts: Alia Mendonsa, Alvaro Mello

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Tyler Technologies, Inc.

Tyler Technologies (NYSE: TYL) provides integrated software and technology services to the public sector. Tyler's end-to-end solutions empower local, state, and federal government entities to operate more efficiently and connect more transparently with their constituents and with each other.

By connecting data and processes across disparate systems, Tyler's solutions are transforming how clients gain actionable insights that solve problems in their communities. Tyler has more than 27,000 successful installations across more than 11,000 sites, with clients in all 50 states, Canada, the Caribbean, Australia, and other international locations.

Tyler was named to Government Technology's GovTech 100 list five times and has been recognized three times on Forbes' "Most Innovative Growth Companies" list. More information about Tyler Technologies, an S&P 500 company headquartered in Plano, Texas, can be found at **tylertech.com**.