

A Blueprint for Agency Modernization

Innovation at Cloud Speed

ORACLE GOVERNMENT 360



INTRODUCTION

It wasn't long ago that interacting with government could be a frustrating and disjointed experience characterized by long lines, interminable wait times on the phone or a fruitless search for information. Seeking answers or finding needed services was a time-consuming, tedious and sometimes inaccessible journey for many citizens.

In 2020, the COVID-19 pandemic changed everything. State and local governments had to quickly figure out the best ways to respond to an unprecedented situation impacting huge numbers of citizens in need of urgent assistance. It became widely recognized that technology, especially a cloud-based infrastructure, was the key to business continuity. At the same time, many government organizations were forced to allow telework for the first time. Now, almost a year later, state and local governments are being called upon to coordinate vaccine distribution, another area where technology will come into play. While the ability to be nimble and react quickly wasn't necessarily a hallmark of state and local government in the past, today it's no longer an option. Government leaders know they can no longer rely on traditional methods

of conducting business. The challenges they face have been amplified, and the ability to react quickly to those challenges is critical.

In response, public sector organizations are reframing the way they implement technological solutions for both internal and external processes — from standing up chatbots to meet surging demands from a remote public workforce to creating touchless kiosks for the public to pay utility bills.

Becoming more nimble requires IT systems and solutions that are responsive and positioned to turn on a dime when situations change. Use of cloud-based technologies can help government organizations achieve that. Cloud enables agencies to establish a more modern, secure platform that connects everything; allows employees to better serve constituents; and provides insights that lead to more consistent, rapid and transparent decisions.

Of course most government agencies can't shut down to build a modern, cloud infrastructure. They must work toward modernization and look for ways to increase capabilities in the cloud gradually. That's where a hybrid approach comes

GOVERNMENT 360 IS BUILT ON FOUR PILLARS

Modern, Secure Architecture Rooted in the Cloud

The innovation journey often starts with moving workloads to a secure cloud platform supported by autonomous services. IT staff can eliminate rote maintenance and manual monitoring tasks in favor of mission-focused work.

A Cloud-Enabled and Mobile Back Office

The modern back office is a springboard for enhanced connectivity and business automation, and can help ensure government employees have the right tools to serve constituents anywhere, anytime. Cloud enables seamless back-office processes and enhances mobility.

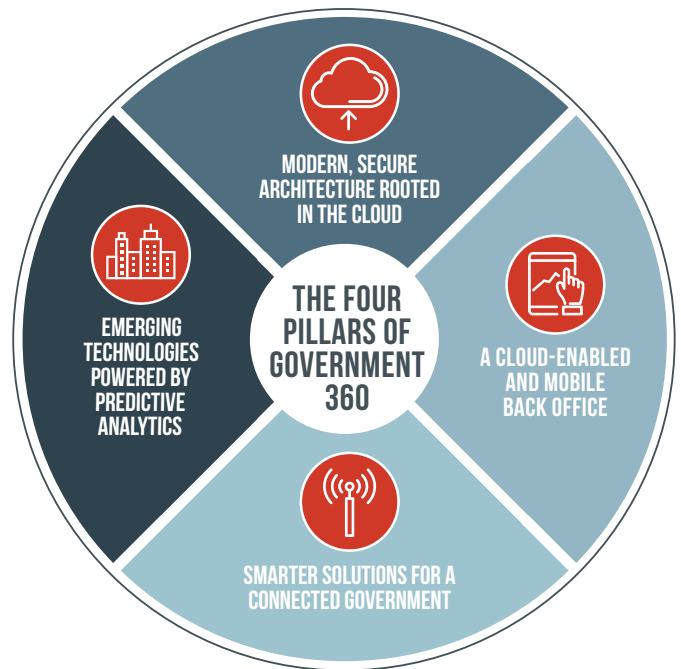


into play. A hybrid approach to cloud, which combines both on-premises and cloud systems, allows agencies to reap the benefits of IT modernization while ensuring existing applications — even those that are heavily customized — can still be used. This provides agencies a commonsense approach to cloud and sets the stage for a series of incremental, bite-sized steps toward modernization.

This is the vision behind Government 360, a strategy for ongoing government modernization. As an approach, it encompasses a modern, flexible infrastructure and widespread automation and mobility. It means always-on availability through multiple channels and data-driven insights gathered via machine learning and predictive analytics. These digital touchpoints can create a circle of citizen engagement, constituent service, private business productivity and civic mission.

Read to find out more about how the perfect storm of challenges that converged in 2020 is pushing government organizations to think outside the box and challenge the norm of how they serve citizens.

Get the expanded Oracle Government 360 digital content at www.governing.com/oracle360.



Smarter Solutions for a Connected Government

By integrating evolving technologies like the Internet of Things (IoT) and artificial intelligence (AI), government can become increasingly smarter and citizen-centric, fostering a vibrant and streamlined business climate. Agencies can reduce repetitive and menial tasks, while helping boost economic development through an always-open digital front door to city hall.

Emerging Technologies Powered by Predictive Analytics

Government 360 is not just about being smart today; it's about being predictive for tomorrow. Technologies like AI and blockchain can unlock the value of agency data, igniting innovation across every level of government.

PILLAR ONE:

A MODERN, SECURE INFRASTRUCTURE ROOTED IN THE CLOUD

Government IT leaders struggle with a common challenge: how to innovate when approximately 75 percent of time and budget are dedicated to simply maintaining existing systems.

Many government IT leaders are turning to the cloud for answers. Cloud-based platforms give agencies the opportunity to drastically reduce spend and free resources to develop, deploy and securely manage applications. Regular upgrades that come with cloud services often improve overall performance and software security, and add new features and functionalities that would take agencies months or more to test and implement using an on-premises system.

Former Kansas Department of Labor CIO William Sanders, now Director of Cloud Platform Strategy for Oracle Public Sector, has witnessed firsthand how rigid on-premises systems can hinder agency progress.

“In December, many companies would need to lay off employees to meet their budgets. Our traditional unemployment systems couldn’t keep up with the demand for benefits, especially right before Christmas. The governor’s phone would ring off the hook with unhappy citizens trying to submit claims,” Sanders said.

Today, with a cloud-based infrastructure, agencies can easily scale capacity to meet the deluge of seasonal transactions.

The Bottom Line

Cloud enables agencies to establish a more modern, secure platform that connects everything; allows employees to better serve constituents; and provides insights that lead to more consistent, rapid and transparent decisions.

While there are numerous advantages to adopting cloud, there’s not a single “right choice” for every situation. For most agencies, the best option is to choose the most cloud-worthy applications, services and processes, and then select the cloud “as-a-service” model that makes the most sense.

SaaS: The software-as-a-service (SaaS) model enables immediate access to applications; however, it can also limit an agency’s ability to tailor processes to its specific requirements. Core business functions are ideal for SaaS, but ad-hoc or agency-specific requirements may need a more customized approach.

PaaS: The answer for many agencies is platform-as-a-service (PaaS), which can seamlessly integrate legacy applications with the cloud while providing many of the cloud’s best features, such as mobility, enhanced security and advanced analytics. Agencies can retain full responsibility for applications, but defer management of the underlying stack (including the supporting technology components) to their service providers. In other words, PaaS allows an agency to pick the building blocks it needs to solve different business problems, then give those blocks to someone else to integrate and service. PaaS also enables agencies to “lift-and-shift” custom in-house applications to the cloud without requiring complex rework to underlying systems.

Agencies that are prevented from putting data in the cloud by regulation can still reap the advantages of cloud by adding cloud services to their data centers — an approach Oracle calls Cloud@Customer. This strategy provides all the advantages of cloud — including lower costs, higher



performance and autonomous operations — yet allows an agency to maintain complete control of its data so it can address data sovereignty, security and connectivity concerns.

IaaS: Agencies today already have tremendous investments in their on-premises infrastructures. This includes capabilities for storage, compute, database and networking requirements. But all these capabilities are available in the cloud, combining the benefits of public cloud (on-demand, self-service, scalability, pay-for-use) with those benefits usually associated with on-premises environments (governance, predictability, control) into a single offering.

These offerings provide agencies choice and the operational agility they need to manage a hybrid environment of on- and off-premises applications and storage. For example, an agency might keep critical, custom-written legacy applications on-premises while it moves enterprise resource planning (ERP) or other core business applications to the cloud. The ability to choose what makes the most financial and practical sense gives agencies the greatest possible flexibility. The best way to accomplish this is to work with a vendor that offers a broad set of cloud services. Many cloud vendors are specialized firms that offer highly targeted SaaS components with limited knowledge of how to integrate them with existing systems. Ideally, a cloud vendor will offer services that can be fully integrated at every level: SaaS, PaaS and IaaS. With an integrated cloud

ecosystem, agencies can reap the full benefits of the cloud while avoiding the perpetual upgrade cycle that occurs when they work with multiple cloud vendors. And with the right cloud-based tools, agencies can manage everything through a single console.

Oracle's Approach — A Complete Cloud

Oracle offers public cloud, managed cloud, private cloud and traditional on-premises deployment models to support agency choice regarding when, where and how they go to the cloud while maintaining the interoperability of platform and infrastructure components. Agencies can optimize their IT organizations by running workloads where they run best — on-premises or in the cloud — then integrate business processes across these environments and easily migrate workloads between them. In short, agencies can tailor the service and deployment model to match their unique workloads — thereby driving better performance, security and value. With Oracle Cloud, agencies can create modern services, streamline back-office processes, improve employee effectiveness and create new levels of citizen engagement.

“A comprehensive cloud platform is foundational to innovation,” Sanders said. “Our modern-day CIOs are no longer focused on ‘speeds and feeds;’ they must be able to lead the transformation of government and become the linchpin of progress.”

HOW TO BUILD A FOUNDATION FOR CLOUD-BASED DISASTER RECOVERY

1. Consolidate and standardize:

Standardize database platforms, development languages and hardware to enable the flexibility required to move back and forth from on-premises to cloud environments. Agencies can spin workloads up and down from the cloud and integrate data more easily once they've standardized.

2. Determine workloads:

Determine which workloads — or aspects of workloads — to keep on-premises, which to move to a private cloud and which to move to the public cloud.

3. Make a move:

Whether it's a test/development environment; a production environment; a disaster recovery environment; or a new, innovative, cloud-based venture, moving at least one workload to the cloud can start an agency down the path toward modernization.



KANSAS CHOOSES CLOUD TO PUT CITIZEN SERVICES FIRST

The state's new integrated eligibility cloud environment ensures its most vulnerable get the help they need.

When the COVID-19 pandemic sparked an economic crisis, it generated an extraordinary demand for social services like food assistance, childcare assistance and Medicaid. In response, the federal government passed the emergency Families First Coronavirus Response Act, which gave states authority to expand Supplemental Nutrition Assistance Program (SNAP) benefits to eligible citizens and be more creative in how they support family and childcare provider needs. While the increased assistance was welcomed by families in need, adjusting to the change created challenges for many states. From a technology perspective, it meant reconfiguring the legacy IT systems many states rely on to manage SNAP, Temporary Assistance for Needy Families (TANF), the Low Income Home Energy Assistance Program (LIHEAP) and childcare assistance.

For Kansas IT decision-makers, making the adjustment was simple. The state recently migrated its integrated eligibility system to a cloud-based architecture. Because the new architecture provides the flexibility and scalability the state needs to react to new federal mandates, Kansas health and human services (HHS) leaders issued an additional \$11 million in SNAP benefits to approximately 60,000 citizens over the course of one night. Kansas was also able to reopen the LIHEAP season and issue mass supplemental childcare assistance benefits to families impacted by changes to school structure.

The Road to Modernization

In Kansas, health and human services are managed by two agencies: the Kansas Department of Health and

Environment, which handles medical-related benefits such as Medicaid and the Children's Health Insurance Program (CHIP), and the Department for Children and Families, which handles food, cash, energy and childcare assistance.

Years ago, Kansas leaders realized the legacy infrastructure supporting both agencies was failing. The physical IT infrastructure was no longer supported by its respective manufacturers. Upgrading operating systems to support constantly changing security requirements was becoming more difficult. Scaling to support a growing number of citizens in need was nearly impossible. State leaders needed a new infrastructure solution to help them meet federal and state requirements aligned to citizen services and benefits such as health care, food assistance, childcare assistance and employment services. They also needed a system that was scalable and would allow them to integrate HHS to better serve citizens.

To address these challenges, Kansas leaders engaged Accenture, which was already supporting its integrated eligibility system called the Kansas Eligibility Enforcement System (KEES). As part of a process to modernize and improve operations, the state moved away from private cloud and shifted operations to the public cloud.

"We knew the infrastructure we were running KEES on needed to be replaced so we embarked on identifying a solution before it became a problem," says Glen Yancey, chief information officer for the Kansas Department of Health and Environment. "Working with Accenture, we tested a technology solution leveraging cloud and proved that the Oracle Cloud could be a long-term solution for us."

The state eventually settled on a hybrid approach leveraging Oracle Government Cloud, Oracle Cloud Infrastructure (OCI) and Oracle Exadata to support KEES.

Meeting Government Standards

As the state began to transition KEES, it became clear the three-way partnership between Accenture, Oracle and the state would be critical to success.

“There are always challenges with a big HHS IT implementation. It’s how the team pulls together to resolve them that makes a difference,” says Elizabeth Wolff, enterprise systems director for the Kansas Department of Health and Environment. “I’m incredibly proud of the team — especially the state workers — and the endless hours they put into the project to learn new technologies and make it successful.”

Use of Oracle Government Cloud allowed Accenture to refresh and improve the security posture of KEES by running in a Minimum Acceptable Risk Standards for Exchanges (MARS-E) 2.0 environment and leveraging Oracle’s FedRAMP-ready infrastructure and third-party solutions like Fortinet and MegaPort.

“States can’t just ask a cloud provider to be FedRAMP ready, they also need to ensure their application is appropriately certified and protected through application design, access controls and separation of duties,” says Raymond Han, managing director at Accenture. “States need a vendor that can help them do that, because it’s not just FedRAMP, it’s a combination of things that drives success. The rules and the threats change every day. You have to have a flexible infrastructure so you can constantly adjust your security posture.”

A Three-Day Cloud Migration

KEES on Oracle Cloud went live over a three-day holiday weekend in January 2020. A quick migration was critical to ensure as little disruption as possible.

“Life goes on for citizens — they need emergency food assistance, medical coverage, health care,” says Han. “It was important to keep that in mind as we shifted to the new cloud architecture.”

A fast migration was also critical for state HHS employees, because the longer the system was down the bigger their backlogs would grow.

“By keeping the system implementation and transition time low, we reduced the snowball effect of workload for the state employees,” says Han.

Yancey notes, “This was the smoothest technology transition that I have seen in my career.”

As the new KEES cloud architecture rolled out, the state saw immediate performance improvements. Going forward, the state also expects to see substantial annual cost savings due to the elimination or reduction of licensing fees, patching costs and hardware expenditures.

Perhaps most importantly, the new cloud architecture provides the state with more dynamic and responsive services, and it didn’t take long for those benefits to be put to the test. When the COVID-19 pandemic prompted a state lockdown and high numbers of job losses shortly after the new infrastructure launched, the state saw a dramatic rise in food, cash and medical assistance applications.

“The ability of cloud to scale to support the needs of citizens is critically important,” says Han. “When COVID-19 hit and activity on the state’s website spiked, the new system didn’t skip a beat. The state now has the flexibility, scalability and computing power it needs to adjust to unexpected circumstances and serve citizens faster.”

“Program managers have high expectations for their IT departments and vendors,” says Sandra Kimmons, director of Economic and Employment Services, Kansas Department for Children and Families. “They expect changes to occur quickly and accurately to respond to public needs. As changes and new program requirements came from FNS (Food and Nutrition Services) around Pandemic EBT and other programs, KEES allowed the state to react and respond to those changes very quickly.”

That flexibility and scalability will continue to be critical as COVID-19 prompts additional changes and new federal mandates.

“Implementation of KEES on Oracle Cloud means the state can manage increased volumes and new programs that weren’t even on the horizon four weeks ago,” says Han.

Balancing Risk and Reward

Today, KEES serves more than 400,000 Kansans annually, and that number is likely to rise in the wake of COVID-19. For Kansas, the timing was fortuitous. KEES will allow the state to adjust and scale as citizen needs change and enable citizens to benefit from a more integrated HHS system.

KEES was also a lesson in balancing risk and reward.

“Risk is the ultimate decider for a lot of state agencies,” says Han. “Kansas had a variety of options when this all started. The simplest and least risky solution would have been to go back to a converged infrastructure solution and buy more hardware.”

But because Kansas HHS leaders took a long-range view, the state is now benefitting from a new infrastructure faster than anticipated.

“State leaders thought they would see the rewards of the new cloud-based integrated eligibility system in a year,” says Han. “They ended up seeing rewards in two or three months.”

Meanwhile, the three-way partnership between the state, Accenture and Oracle continues to flourish post-implementation.

“We continue to collaborate and adopt new technologies to improve KEES,” says Lee A. Norman, MD, secretary of the Kansas Department of Health and Environment. “The partnership with Accenture has been critical to helping us find a sweet spot of technology implementation, business improvement and improved outcomes we’re all striving for.”

PILLAR TWO:

A CLOUD-ENABLED AND MOBILE BACK OFFICE

Blame it on the iPhone. The iPhone, and every smart device that's followed, has redefined how people communicate, research, learn, buy and share. These devices have also changed people's expectations of the products, brands and services they interact with and has forced business systems to evolve.

Government is not immune. The status quo is no longer acceptable when a government worker is asked why it takes months to create a purchase order and only 30 seconds to hail a Lyft. Employees are often overextended and working with antiquated tools and technologies to perform business functions. They still operate in a largely transactional manner, making it difficult to predict or anticipate change. Government staff, as well as constituents, want government services to be intuitive, consistent, modern, insightful and mobile-enabled.

The back office can be a springboard for modernization. Better back-office systems — from human capital to finance to procurement and supply chain — allow employees to deliver timely and accurate front-office services to the constituents they serve. With modern, digital solutions, employees spend less time on redundant tasks and more time helping customers or pursuing strategic endeavors. Simply put, back-office modernization lets government agencies work faster, more accurately and more efficiently.

For example, a cloud-hosted finance system can enable agencies to procure the tools and materials they need, ensure they have the right suppliers, negotiate contracts, track funds

and the allocation of those funds, follow how employee time is charged against projects tied to grants and more. A companion human capital management (HCM) system, meanwhile, can help governments attract the best and brightest employees and engage talent more effectively.

Migrating finance and HR systems to the cloud also allows public sector entities to take advantage of evolving technologies like chatbots and predictive analytics, powered by the transformational potential of AI.

For example, experts predict the escalating growth of AI technologies embedded directly into human resource and financial management processes to automate even complex, non-routine activities. Meanwhile, blockchain and distributed ledger technology will transform the delivery of public and private services; redefine the relationship between government and the citizen in terms of data sharing, transparency and trust; and fundamentally improve government service delivery. And robotic process automation tools can remove the drudgery of repeatable work, allowing employees to focus on more substantive activities.

Modernize in Four Months, Not 40

Nazer Uddin is the finance manager for the Fox River Water Reclamation District in Elgin, Ill. Previously, he and his team had to create and distribute seven paper copies of a purchase order each time they ordered supplies. Fox River adopted Oracle Enterprise Resource Planning (ERP) for financials,

purchasing, project accounting and grants along with a planning and budgeting solution. It took only four months to convert the on-premises system to the nimble and cost-effective Oracle ERP Cloud. The solution massively reduced Fox River's ongoing costs and internal resource pressure and delivered reporting, ease of use and world class functionality. By leveraging the embedded social networking tool, conversations and notes about any issue can be documented and attached to an individual transaction, providing a clear record of due diligence and detailed information for auditors.

Fox River Water Reclamation District serves 200,000 people and treats an average of 38 million gallons of wastewater daily. To meet this commitment, field service workers require an instant connection to the district's headquarters. A broken wastewater pipe may need an emergency requisition to order a required part. Extra chemicals for wastewater treatment might be required in the event of an environmental disaster. Today, using the Oracle ERP Procurement Cloud, Fox River can approve, release and issue a purchase order to a vendor in less than a minute.

TACTICS FOR BACK-OFFICE MODERNIZATION SUCCESS

1. Commit to change:

The modus operandi for many government organizations implementing back-office solutions in the 1990s and 2000s was to purchase and customize off-the-shelf software to fit their processes, even if those processes were inefficient or ineffective. Today's cloud-based software solutions include industry best practices, and adopting those best practices enables an agency to take advantage of the latest technology and updates.

For example, the city of Atlanta struggled with a legacy financial system that made managing day-to-day financial functions complex and time consuming. Today, the city is transitioning to a cloud-based finance, procurement and HR solution. As a result, Atlanta is seeing the perks of cloud and back-office modernization, including enhanced data security, improved controls, fewer manual processes, streamlined operations, simplified procurement practices and a lower cost of ownership.

Getting there requires a top-down commitment to evolving processes. Agencies that don't set themselves up to adapt to change are more likely to revert to old business processes.

2. Prepare and train staff for what's coming:

Beyond leadership commitment, agencies must institutionalize their business modernization plans. That idea needs to permeate throughout the organization, from executives to frontline workers. If staff aren't on board, modernization efforts may stall. Leaders should set expectations ahead of time and be consistent throughout the project to ensure they deliver on their promise and commitment to change. Change management and communication are critical throughout the project.

3. Ensure data quality and retention:

The more digital data an agency produces, the more business intelligence it can gather, and the more predictive analytics can inform and improve government services. But data is often spread across disparate and disconnected systems. Make sure you have a plan for managing legacy data.

The Oracle Approach – an Integrated, Cloud-Based Back Office

Back-office modernization requires two primary components: integrated technology systems that cover all facets of business operations and skilled personnel who find purpose and mission in working for a modern government entity.

Modern systems: Oracle Enterprise Resource Planning Cloud, Human Capital Management Cloud and Enterprise Performance Management Cloud give government agencies a single, integrated solution. Oracle's Cloud delivers embedded best practices that cross lines of business between HR and finance, providing process efficiencies and transparency. Workflows and approvals are available and configurable, so agencies can take advantage of best practices while maintaining compliance. A single solution on a single platform sharing a single data model allows data to flow seamlessly between departments. Meanwhile, automation, analytics and reporting features ensure an agency is smarter and better prepared — game changers that are key to market competitiveness.

“Because they are often constrained by civil service rules and regulations, public sector agencies might only have data relevant to the job function or functions a person has performed over their career. But that person might have other skills the agency is not aware of.”

— Celeste O'Dea, Senior Manager, Public Sector Application Strategy, Oracle

Government employees do their work in and around the community. Through the seamless connection of mobile devices and applications, they can make instant assessments and impactful decisions. Oracle back-office solutions are device-agnostic and include an embedded social platform to help agencies track activities and adhere to compliance requirements.

Oracle also gives public sector agencies the flexibility they need to either adopt a complete back-office transformation or to incrementally move some functions to the cloud while leaving others on-premises. According to Celeste O'Dea, senior manager for public sector application strategy at Oracle, agencies often transition planning and budgeting to the cloud first, followed by HR and finance.

THE POWER OF INTEGRATED HR AND FINANCE

Maintaining human resources and financial data in a single system has five major benefits:

1. Security and governance:

Because HR data is an essential part of the business infrastructure, integration can impact security. Single sign-on (SSO) security is straightforward to implement in a unified platform environment and avoids the complexities of workaround fixes in a multivendor environment.

2. Workflow and business process:

A single, unified cloud platform cuts across processes and domains to ensure consistent workflows. For instance, when a purchase requisition is requested, the process can determine the approval routing by pulling from both ERP and HCM data.

3. Reporting and analysis:

A unified platform provides a single data source and reporting environment across the enterprise. Agencies can drive transactional reporting needs or run predictive analyses knowing the security and access approvals are the same in both HR and financial systems.

4. Common self-service access:

A manager is also an employee. A unified cloud platform provides a common entry point for everyone to have a consistent user experience across multiple domains. The degree of system access is tied to each user's log-on, no matter what level.

5. Single data entry point:

A single user experience eliminates redundancy and provides one system of record and information that is accurate, rich in content and current.



“Many agencies use workbooks and Excel spreadsheets to manage their budgets, so it’s easy to start making changes there because they don’t have an existing legacy solution like they commonly do for finance and HR,” says O’Dea. “Budgeting is easiest to start with because the rest of the finance functions really have to transition en masse.”

Empowered personnel: Agencies also need the right staff to deliver on their commitment to the public. When the private sector is competing for the same talent, government agencies must be able to quickly source candidates and offer the kind of digital back-office experience that suits today’s workers. Technology can help here, too. New machine learning capabilities in Oracle HCM Cloud reduce the time it takes to fill open positions by automatically highlighting qualified individuals. Adaptive intelligence can identify best-fit candidates, not only according to how they line up against a requisition, but also based on how well-suited they might be to succeed other people in the organization.

“Because they are often constrained by civil service rules and regulations, public sector agencies might only have data relevant to the job function or functions a person

has performed over their career,” says O’Dea. “But that person might have other skills the agency is not aware of. Therefore, an agency may not have a good picture of its existing talent pool.”

By simplifying the means for collecting and analyzing a comprehensive picture of the workforce, senior leaders and frontline managers can align staff skills with evolving mission needs.

Finally, machine learning in Oracle HCM Cloud applies algorithmic analytical models to preprocessed data to uncover hidden patterns or trends. Those patterns or trends can then be used to identify existing employees to consider grooming for advancement, predict the correct response to inquiries or identify the best candidates for talent sourcing.

Smaller entities may find it easier to move to the cloud because they may have less complex systems or less digital data. Larger entities will need to retain some of their legacy systems or data for a certain number of years due to regulatory requirements. In those cases, the availability of PaaS and SaaS solutions ensures an agency can easily manage both cloud-based and on-premises systems in the same operational ecosystem.



LUCAS COUNTY REACHES NEW HEIGHTS WITH ORACLE CLOUD

Migrating to Oracle's Financial and HR SaaS improved security and reduced paper-based processes — and the county accomplished it all in the midst of a pandemic.

Lucas County, Ohio, is located on the northern border between Ohio and Michigan, on the western edge of Lake Erie. The county employs 3,200 people and is home to more than 428,000 residents.

Until recently, Lucas County used a heavily modified version of PeopleSoft 8.9 to manage its financial and human resources operations. The outdated software was no longer supported, which created security concerns and required the county to purchase costly extended support services from a third-party vendor. Using the legacy software also prevented the county from taking advantage of newer functionality that could help it reduce manual processes and improve efficiencies.

In November 2018, county IT leaders concluded they needed to either upgrade the PeopleSoft application or find a new solution. They also wanted to ensure whichever option they selected would enable them to lower costs, reduce paper-based processes and be modern enough to prevent users from seeking out shadow systems — another issue creating security concerns in the county.

After a thorough analysis of its options, the county determined the best solution was to move to Oracle's Financial and HR Cloud Applications, which is a Software as a Service (SaaS).

"Moving to SaaS would reduce our server and maintenance costs," says Steve Costanzo, project manager

for Lucas County. "Moving into the cloud would also decrease potential break points in the system by getting everyone on one county-wide platform that could be supported by one team instead of by various teams across various departments."

The county also discovered the state of Ohio had a Master Services Agreement in place with Oracle that would make it easier and faster for the county to implement the cloud applications.

Streamlining Financial Operations

Once the county decided to move forward with SaaS, it teamed with implementation experts at Sierra-Cedar to design and deploy all aspects of the project. Phase one included migrating Financials, Budgeting, Procurement, Supplier Portal, Expense Management, Cash Management and Accounts Receivable to SaaS. The project launched in January 2019 with 25 county staff members assigned to the team.

As the project progressed, a change management program was executed to support the adoption of the new processes by the organization.

"Getting an understanding of all the things SaaS could enable for the county versus how things had been done since the PeopleSoft system was implemented 15 years ago was a challenge. It took people a while to get used

to the change,” says Costanzo. “From the process side, as we redesigned some of our chart fields and business unit structures we had to take into account how certain departments process data through the system and what the ramifications would be for them.”

Tackling those challenges paid off as reorganizing its processes resulted in the county rolling five disparate business units into one cohesive unit.

The county also ran into human resource bandwidth challenges, but was fortunate to receive help from its partners.

“Our county project team wasn’t 100 percent dedicated to this project, so we ran into bandwidth issues on some occasions when they would get pulled into other areas,” says Costanzo. “Fortunately, Sierra-Cedar and Oracle helped by taking on additional work or prioritizing our support needs so we could solve problems quickly and keep moving forward.”

The Financials phase went live on time and on budget for 3,200 county users in January 2020. The county immediately benefitted from automated workflow approvals and a fully paperless procure-to-pay process. The county is now using online requisitions and receipts; some departments use Docusign for electronic signatures and electronic attachments for vendor invoices, which suppliers can complete using a self-service portal. In addition, billing across departments and funds is no longer necessary since online documentation can accompany simple journal entries, which streamlines the process, is timelier and reduces staff effort.

The county is also benefitting from improved reporting. “During the PeopleSoft days, the reporting was cumbersome, so departments would resort to offline spreadsheets and third-party reporting tools,” says Costanzo. “With Oracle Cloud, the reports are easy to create and use, can be accessed from anywhere and on any device, are accurate and reflect real-time information. The increased reporting has made it easier for end users to do their work as opposed to having to reach out to various people to get more information.”

The county also quickly realized return on investment (ROI). By switching all its vendors to Automated Clearing House (ACH) processes, it reduced expenses associated with printing and mailing as well as the cost of a third-party company previously tasked with stuffing envelopes for the county.

In addition, employees now get reimbursed for expenses faster, and more controls put in place in purchasing allow the county to better negotiate with vendors based on the quality and quantity of the items they purchase.

The county also benefits from Oracle support, which eliminated the cost of the third-party support for its outdated PeopleSoft systems and ensures the county now gets

“Since the Oracle Cloud Application is available anytime from anywhere on any device, it provided us with the ultimate flexibility to collaborate on design, configuration and training during the project and after go-live.”

— Steve Costanzo, Project Manager, Lucas County

seamless updates at regular intervals and the highest levels of security.

Flexibility During a Crisis

Soon after Lucas County went live with the Financials phase and was preparing to start phase two of the project, the COVID-19 pandemic struck. But because the county was using SaaS, it continued doing business undeterred. County employees working remotely could access the system from anywhere, perform transactions and run reports with lightning-fast speed.

“Oracle Cloud enables us to work efficiently and timely from any location,” says Tony Stechschulte, director of Accounting and Internal Controls for Lucas County. “Decision-makers are able to receive real-time, accurate data to make the best decisions possible during this crisis, which has been a blessing.”

The flexibility and dedication of Sierra-Cedar was critical to ensuring the county received the help it needed as it completed the transition of its financial systems to SaaS.

“Because of COVID-19, there were weeks where the consultants were working remotely,” says Costanzo. “Yet they didn’t miss a beat. Sierra-Cedar was available 24/7 regardless of where they were on any given week. Since the Oracle Cloud Application is available anytime from anywhere on any device, it provided us with the ultimate flexibility to collaborate on design, configuration and training during the project and after go-live.”

Costanzo says Oracle has also been instrumental in helping the county move forward despite the new challenges it faces due to the pandemic. Phase two of the project, which includes Human Resources and Payroll functionality, is expected to go live in June 2021.

“Like lots of areas, public sector is taking a big hit financially this year due to reduced revenues,” says Costanzo. “Oracle was sensitive to that fact and they worked with us to reduce our overall costs. So even though we had a set price when we started this project, Oracle was able to assist us so we could continue this important project.”

PILLAR THREE:

SMARTER SOLUTIONS FOR A CONNECTED GOVERNMENT

A citizen sits stranded at a bus stop late at night. Unsure whether she missed the bus or the bus is simply running late, she eventually resorts to calling a friend to pick her up.

Given the data and technology available today, citizens in any city should be able to access up-to-date transit schedules or other government information via smartphone. But that's not always the case. While many private sector companies have leveraged technology to improve customer service, government information and services often remain difficult to locate and navigate.

Granted, when it comes to improving the customer experience, government agencies often face challenges the private sector does not, including a dearth of funding, longer procurement cycles that complicate IT modernization, or rigid policies and regulations. But that doesn't have to stop government from connecting with citizens in new ways.

State and local government agencies can improve the citizen experience and address their challenges, but one-off solutions won't work. Instead, agencies must address their business problems holistically, develop solutions that enable the integration of platform services to create connected citizen experiences and automate connections among systems. A cloud-based approach is key. Cloud can enable an agency to:

- Improve the customer experience in a coordinated way
- Move away from legacy technology and innovate
- Integrate mobility, IoT, AI and machine learning to increase efficiency and reduce costs
- Create an omnichannel experience that allows citizens to interact with government in the ways — and at the times — most convenient for them
- Add new capabilities as needed in the future

To better understand how it all works, let's examine a few areas where this approach is taking root in state and local government agencies across several verticals.

Improving the Citizen Experience in San Jose

As a community based in the heart of Silicon Valley, San Jose city leaders recognized residents had high expectations for innovation and participation. Passed by the mayor and city council in 2016, the San Jose Smart City Vision sought to help citizens engage city government in safer, more inclusive and

user-friendly ways. As part of this vision, city leaders launched Project ACE (Amazing Citizen Experience) at the end of 2016 to transform how the city provides services and information, break down information silos and improve operations.

ACE includes advanced customer engagement features prioritized by the community: removing abandoned vehicles, addressing illegal dumping, fixing potholes, repairing street lights and cleaning up graffiti. Citizens report these issues via whatever channel they choose — phone, website, chat or mobile app. The solution uses a platform-based approach and integrates the city's back-office systems, automatically routing citizen service requests to the work crews in charge of responding.

Today, the city can make decisions based on real-time data and analysis. Lessons learned regarding communications, process engineering and user-centric design have helped reshape the city's customer relationship management system into a true digital services transformation affecting 170,000+ citizen requests per year.

Using Digital Assistants to Help Government Telework In Oklahoma

When the COVID-19 pandemic hit, Oklahoma, like every other state, had to figure out a way for its mostly office-based government employees to work from home. Before COVID-19, the Oklahoma Office of Management and Enterprise IT desk fielded about 500 support calls a month. Overnight, that number spiked to more than 1,500 calls per day, says Jerry Moore, CIO, State of Oklahoma.

To eliminate the resulting backlog of IT support calls, Oracle Cloud Hub engineers built a chatbot that lets users ask basic questions, such as how to reset a password, how to set up a VPN, or how to download workplace applications.

The chatbot was instrumental in reducing the volume of calls to the IT helpdesk and getting approximately 30,000

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state employees up and running from home so they could keep providing vital constituent services.

Responding to the Opioid Crisis in Massachusetts and Illinois

Every day in the United States, 91 citizens die from an opioid overdose — a rate of one person every 16 minutes, according to the Centers for Disease Control and Prevention. Looking for a better way to provide citizens information and referrals on substance abuse prevention and treatment resources, Massachusetts and Illinois moved to a cloud-based solution. The new solution helps individuals with opioid use disorder and their families, caseworkers and treatment providers better access information and resources.

For example:

- Individuals suffering from opioid use disorder, their family members and their caseworkers can access a portal, answer a few short questions and receive real-time detailed information on the most appropriate resources and/or treatment facilities based on their location, health insurance coverage and the substance(s) they are using.
- Treatment providers can update the information about their services in real time — including an up-to-the-minute reflection of current waitlists.

Both the Illinois portal and the Massachusetts portal were implemented to assist call centers operated by Boston-based Health Resources in Action (HRiA). The underlying software is cloud-based, which means it can be set up and configured quickly at a fraction of the cost and time of traditional portal implementations. The portals don't replace the call centers, but rather work in tandem with them to provide citizens additional channels to receive assistance.

The solution allowed Massachusetts to handle more than 23,000 calls and 147,000 website visits in 2017.

Safeguarding Environmental Compliance in Ohio

The Ohio Environmental Protection Agency (EPA) uses an environmental permit, license and registration information one-stop “wizard” to offer citizens an easy-to-use, online permitting experience. Every business, from a manufacturer to a body shop, restaurant or dry cleaner, has specific regulations with which they must comply. Using Ohio EPA's online wizard,

businesses can determine which permits, registrations, licenses or notifications are required by either the federal or state EPA. The wizard directs the user through a series of questions and uses the answers and embedded logic to determine if a permit is required.

The wizard contains paths for common business/industry types as well as a separate path for individuals who may be using the tool to find occupational licensing requirements or environmental health issues that may overlap with federal agencies such as the U.S. Department of Agriculture or the Occupational Safety and Health Administration. Most references to EPA regulations and jargon have been purposely omitted wherever possible. The tool is based on Oracle Policy Automation, which helps organizations in all industries effectively deliver services and consistently determine policy obligations while maintaining full compliance with laws and regulations. The solution aims to increase compliance, reduce call-ins and promote consistency in customer-facing guidance.

The Oracle Approach: An Integrated, Citizen-Centric Experience

Today, many state and local government agencies make customer service a key part of their IT solutions. But improving the citizen experience requires a holistic, business-focused approach. The Oracle Customer Experience (CX) platform — services, social, mobile and marketing — offers a complete solution that enables integration across platforms. And because Oracle solutions integrate evolving technologies like IoT and AI, they help government become smarter and citizen-centric. Agencies can reduce repetitive and menial tasks, improve transparency, remove barriers to interaction and help boost economic development across an array of industries throughout state and local government. For example, Wi-Fi-enabled street lights can monitor and control traffic flow; trash cans can signal for pickup; the HVAC unit in the county courthouse can alert maintenance about a needed filter change to prevent costly repairs; and a transit system once on the brink of bankruptcy can generate new revenue streams by serving up geo-located digital ads to riders.

Perhaps most importantly, such solutions help citizens like the woman stuck at the bus stop late at night. Instead of waiting and wondering, she can now use her smartphone to see exactly where the bus is, its estimated arrival time and even how many passengers are on the bus so she can predict whether she's likely to have a seat or not once it arrives.



CITY OF VALLEJO ADOPTS CLOUD TO IMPROVE CUSTOMER SERVICE AND PROMOTE ECONOMIC DEVELOPMENT

The new platform will allow residents, inspectors, contractors and others to conduct business with the city online.

For most cities, the fees associated with permits and licenses are vital revenue generators. Given growing fiscal uncertainty in the wake of the COVID-19 pandemic, it's more important than ever for cities to have solid systems in place to promote economic development. At the same time, office closures in response to COVID-19 have made it more critical for governments to collect fees virtually. The Planning and Development Services Department in Vallejo, Calif., is currently implementing a cloud-based online solution to address both these challenges.

Vallejo, located in the northern part of the Bay Area, is known as an affordable alternative to San Francisco. As such, the area has experienced steady construction growth over the last several years, which has put pressure on its Planning and Development Services Department to deliver more with less. Until recently, the city relied on a legacy computer system that couldn't accommodate online services or payments.

"The legacy system created customer service challenges," says Leslie Trybull, administrative analyst in the Vallejo Planning and Development Services Department. "We wanted something that was more modern and could enable online permit services, help us promote economic development by making it easier to conduct business with the city and deliver a better user experience overall."

A One-Stop Shop

In late 2018, department leaders began looking to modernize compliance and regulatory processes for land-use and building infrastructure, permits and inspections.

"We were very excited about the idea but concerned about our capacity to do it while maintaining day-to-day operations," says Anne Cardwell, assistant city manager for the city of Vallejo. "But we knew we needed to make a change. We had to bite the bullet and get it done."

City leaders considered several options but ultimately landed on Oracle Community Development, a platform designed to help cities manage planning entitlement, building permits and code enforcement processes. The platform, which was built specifically for government, offers citizens an exceptional user experience on any device, including simple, guided interactions. It also includes omni-channel engagement capabilities that allow cities to connect with citizens via their channel of choice: social media, phone, email, web self-service or virtual assistant.

"We chose Oracle Community Development because it would allow us to become a one-stop shop for citizens looking to get business done in the city," says Cardwell. "It was also user friendly and responsive. It checked a lot of the boxes in terms of what we were looking for and what we were missing in our existing systems and processes."

Because the Oracle Community Development platform is built on a cloud-based infrastructure, it would also give the department an opportunity to leverage innovative technologies like chatbots, AI and machine learning to offer a next-generation user experience. And the fact that the solution came from Oracle helped put leadership unease about the migration to rest.

“There are a lot of other products on the market, and while they may look awesome, we wanted to be cutting edge, but not bleeding edge,” says Cardwell. “We were reassured by Oracle’s track record, experience and reputation.”

Working with Oracle would also provide the city additional resources it needed to complete the implementation.

“We have smart, motivated people, but as a city we don’t have a lot of bandwidth,” says Cardwell. “We wanted to partner with somebody that would support us. Oracle fit that bill.”

Modernization, Interrupted

Department leaders decided on a two-phased approach to implementation, with each phase expected to take approximately 12 months. The first phase would focus on enabling online building and public works permits.

But just as the city dove into the project, the COVID-19 crisis closed city offices and city employees shifted to remote work. Department leaders realized the pandemic brought an added incentive to make self-service permits available online. The new cloud platform would allow residents, inspectors, contractors and others to continue to conduct their business with the city. Department leaders adjusted rapidly and analyzed the permit types in highest demand during the crisis.

“The original plan was to release all three of our trade permits at the same time,” says Trybull. “But because of the pandemic and the challenges it created for us and our customers, we decided to release the electrical permit early.”

The electrical permit process went live in June 2020, allowing residents to apply and pay for electrical permits online. They can also follow the progress of those permits and request inspections online.

Trybull says the Oracle team was instrumental in helping the city get the electrical permit online ahead of schedule.

“The Oracle team has been very responsive and helpful all along. They explained things thoroughly from day one,” says Trybull. “They were there step-by-step as we transitioned from concept to production.”

“When we run into issues, the Oracle team is all over it,” adds Cardwell. “They get it done. Their team feels like an extension of our team.”

Reducing Backlogs

Three months after the Planning and Development Services Department moved its electrical permit processes

online, the number of permits applied for and processed grew by 11 percent.

“It’s definitely had a streamlining effect,” says Trybull. “Our staff has fewer calls to make and we are able to process permits faster and reduce backlogs. That also frees up staff to focus on the permits and the people that are not yet online.”

The department has since made plumbing permits available online and plans to make engineering permits available soon.

“We’ll release several other permits over the next couple of months,” says Trybull. “We plan to be done with phase one in early fall.”

Once phase one is complete, phase two — which includes fire prevention, planning and zoning, and code enforcement permits — will commence. Planning and Development Services staff are already working closely with Oracle’s product development team to iterate on the design elements of those services.

“It’s exciting for our staff to know they have an impact on software that we’re going to use, and that other jurisdictions will use as well,” says Trybull. “That’s pretty powerful. And it’s a great way to get staff excited about it, too.”

Moving the City Forward

The new online services will make it easier for residents to do business with Vallejo’s Planning and Development Services Department, while also allowing projects to be completed and code cases to be resolved faster and more accurately. In addition, the online self-service portal will result in improved financial and operational efficiencies because it will allow staff to focus on processing applications rather than assisting customers with routine requests.

Planning and Development Services leaders also expect the project to encourage other city departments to adopt cloud-based solutions. In September 2019, the city created the position of chief innovation officer and hired Naveed Ashraf, an executive with more than 20 years of public- and private-sector experience, as its inaugural chief innovation officer. Ashraf’s plans include adopting cloud-based platforms to modernize the city.

“This solution is consistent with where our new chief innovation officer sees the rest of the city heading,” says Cardwell. “Having this experience in our department will be helpful to other departments in the city looking to modernize.”

Most importantly, the new solution will enhance the customer experience, offering tools that make the journey through the permitting or service request process predictable and intuitive, while also providing the city better flexibility.

“Ultimately it’s all about that user experience and making it very welcoming, friendly and responsive,” says Cardwell. “This solution will be helpful on the front end for the users, but it will also help our staff that assist residents in making it all happen.”

PILLAR FOUR:

EMERGING TECHNOLOGIES POWERED BY PREDICTIVE ANALYTICS

Government 360 is not just about being smart today; it's also about preparing for tomorrow. The three pillars we've examined so far enable government agencies to lift and shift to the cloud, automate and mobilize the back office, and provide a better customer experience. The fourth pillar focuses on analytics, business intelligence and machine learning — tools that equip agencies to gain data-driven insights that position them for a more effective, efficient and innovative future.

The Evolution of Data and Analytics

The amount of data available to agencies today is growing at a phenomenal pace. According to IDC Research, data volume will increase at a compound annual growth rate of 42 percent through 2020. In the 2010-2020 decade, IDC predicts the world's data will grow by 50 times, or from about 1 zettabyte in 2010 to about 50 zettabytes in 2020.

Data comes in one of two forms: structured, which is organized data produced by business systems, and unstructured, which is essentially everything else — social media posts, images, video, audio tracks and signals from sensors. The more data of either type an agency produces and collects, the more business intelligence it can gather, and the more predictive analytics can inform and improve

government services. On the commercial side, IDC estimates there is a \$430 billion economic advantage to organizations that analyze data and deliver actionable insights. For government agencies facing fiscal pressure, analytics can help them make more informed, impactful decisions that maximize limited resources.

But agencies are often overwhelmed with data and unsure of what to do with it. How do they turn data into intelligence that can show them which programs are working and which aren't? How can they gain visibility into their data so they can refocus resources and drive transformation to solve problems?

Some early analytics tools promised a lot and delivered little. But analytics tools have evolved. Today's tools are more sophisticated and easier to use, allowing agencies to address a range of challenges without requiring them to build expensive data warehouses. These tools let government agencies pull both structured and unstructured data together to answer questions they've never been able to ask before, find hidden patterns in data using intelligent visualizations and machine learning, and detect anomalies and predict outcomes.

To better understand how it works, let's examine some areas where analytics is being used in state, local and nonprofit agencies.



Creating a Data-Driven Culture in Las Vegas

Al Pitts is on a mission to create the future of data and analytics for the city of Las Vegas. As the manager of enterprise data and analytics, Pitts leads an effort to use data to run a smarter, more effective and more efficient city.

“We want to move our city toward a data-driven culture, giving our C-suite the ability to make decisions based on data, not just their gut or whim,” says Pitts.

Las Vegas has been an Oracle business intelligence (BI) customer for more than a decade. But more recently, Pitts began using geographic information system (GIS) data, operational data and more to create executive dashboards for the city manager, chief operations officer, chief community services officer, chief public safety officer and chief financial officer.

“These five different chiefs are now able to, at a glance, look at a dashboard that gives them insights into their respective areas and allows them to perform their jobs more effectively,” says Pitts.

For example, the chief public safety officer is combining public safety information, fire and police data, and IoT sensor data to more quickly respond to emergencies.

“If there is an emergency, someone typically dials 911 and relays the situation to an operator who dispatches first responders,” says Pitts. “But using IoT, BI and analytics we can get an automatic alert when an airbag is deployed, for example. An information packet is then sent to a dashboard and we can dispatch fire and rescue immediately without any human intervention whatsoever, cutting down on the turnaround time and potentially saving lives in the process.”

On the back end, analytics are used to examine trends over time.

“We can look at a particular intersection, for example. Maybe there’s something wrong with the timing of the signal,” says Pitts. “We can analyze that data, realize there is an uptick

Today’s tools are more sophisticated and easier to use, allowing agencies to address a broad range of challenges without requiring them to build expensive data warehouses.

in the number of accidents happening in that intersection, and then proactively check the lighting and make sure the signal is actually operating the way it’s supposed to.”

Turning Data into Insights in San Joaquin County

Like most counties, San Joaquin County, Calif., collects a vast amount of data about its operations and the community it serves. But until recently, the county couldn’t put that data to use.

In 2018, San Joaquin County agreed to work with Graviton Consulting Services and Oracle on an Oracle Analytics Cloud (OAC) proof of concept. Leveraging a data lake and OAC would give the county a low-cost way to apply analytics across its vast troves of data — whether that data resided in cloud-based systems or legacy systems.

The county focused the proof of concept on its biggest expense — personnel. Leveraging OAC, the county analyzed sick leave for 7,200 county employees. It then built dashboards and heat maps to display a variety of information, including which days employees were most likely to call in sick and how much sick leave each employee used.

The county identified several unexpected trends, including the fact that some personnel did not account for sick leave used, waived sick leave benefits in exchange for cash payouts or did not use any sick leave at all for multiple years. Unused sick leave creates a future expense for the county because employees can cash that leave out at retirement. The county





didn't want to needlessly drive up that balance and create a large future liability.

The county also used OAC to evaluate whether it could negotiate better healthcare plans or add additional healthcare benefits to help keep employees healthy. It also looked at how it could use the tool for succession planning to be better prepared for future workforce shifts.

Based on findings from the proof of concept, the county made several changes that will ultimately reduce its risks and expenses.

"Performing some quick, easy analytics on its data helped the county think about how to improve productivity and increase efficiencies," says Vineet Srivastava, president and CEO at Graviton Consulting Services. "Just by bringing data into OAC and animating it, the county pulled out insights it wouldn't normally be able to see."

The original proof of concept created an appetite for additional analytics projects among San Joaquin County's executive staff. Another OAC project underway uses analytics to examine the county's homeless population and evaluate each person's fit for rehabilitation programs.

The county is also currently expanding the volume and types of data it's feeding into OAC to create other types of insights and examine other areas where it can apply OAC's analytics and machine learning capabilities.

The Oracle Approach: Machine Learning Advances Analytics

Most state and local government agencies see the potential in data. But transforming that data into actionable intelligence is challenging. OAC provides comprehensive cloud-based analytics in a single platform, so agencies don't have to stitch multiple systems together. The integrated analytics platform has the horsepower to analyze any type of data from any source — on-premises data warehouses, streaming data from IoT, data managed by Hadoop, video and text data, and more. And because Oracle Analytics leverages cloud, agencies need less manpower to manage infrastructure and applications.

OAC equips government agencies to get more value from their data. For example, a growing number of agencies use the solution for predictive maintenance,



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— Vineet Srivastava, President and CEO, Graviton Consulting Services

allowing them to anticipate which machines or systems are most likely to break down so they can perform maintenance before expensive problems occur, improve labor planning and leverage warranty claims. By combining analytics with machine learning, it is now possible for agencies to enter into a new realm of predictive analytics, from calculating the probability that an underserved student will complete high school to predicting when electricity or water are at their peak usage.

OAC’s embedded machine learning helps take the human bias out of data analysis and lets agency leaders

see anomalies, make predictions and model scenarios to ascertain answers to important “what if?” questions. It helps leaders ask questions they did not previously know to ask. Always on, and always working in the background, machine learning is continuously learning from the data it takes in, making it smarter and more accurate as time goes by.

Most critically, advanced analytics platforms let government agencies use data to inform the way they operate, providing insights that help them deliver on their missions both today and in the future.



MAINE'S JOURNEY TO CLOUD-BASED DATA ANALYTICS

Maine's use of technology is evolving to improve data access, analytics and decision-making throughout the state.

Maine's Department of Administrative and Financial Services has always had high aspirations for its data. In 1995, the state built an ad hoc data warehouse for business intelligence (BI) — a progressive step at the time. The tool contained administrative and financial information that could be shared with program administrators around the state. The problem was only a small percentage of users had the skills to use it, and the system was slow.

“One of our employees told me, ‘When my customer asks me a question, they’ve lost interest by the time I can provide an answer.’ That really stuck with me,” says Jeff Jordan, director of Enterprise Data Services for the state of Maine.

As years went by, it became clear that unless the state modernized the solution, Jordan's team would not be able to accomplish its goal of promoting and enhancing data sharing across state government.

“The data was being extracted and duplicated repeatedly. People didn't know where to find what they were looking for,” says Jordan. “It created an unmanageable level of complexity for end users.”

The Roadmap to a Modern Solution

In November 2018, Jordan and his team received the green light to upgrade the existing BI solution and move it to the cloud.

“We wanted to allow employees to build out the reports they use to manage the day-to-day operations of state government in one place. We wanted to increase the visual nature of the data. We also wanted to enable some modern aspects of data and analytics and business intelligence that the 1995 implementation — which only allowed us to extract row sets of data — lacked.”

Jordan and his team evaluated several solutions and ultimately chose Oracle Analytics Cloud.

“Oracle Analytics Cloud provides a single point of entry and would allow us to accomplish all our objectives with one product,” says Jordan.

But moving from a legacy BI system to a cloud-based analytics platform was not without challenges.

“We had 25 years of historical reporting in the legacy system that people were counting on being able to access and use,” says Jordan.

Jordan's team needed to create a roadmap that would take them from the legacy BI solution to a modern, cloud-based analytics solution in a gradual but timely manner. The team focused on building a data model first. But building the data model took time and ultimately delayed the new platform's rollout.

“My advice to others is to start from a place where you can show value early, because that makes the rest of the project much easier,” says Jordan.

Once the data model was complete and the project was moving forward again, Jordan's team focused on building strong communications among the parties that would use the new tool.

"Our IT staff needed to understand how to use it and the business staff needed to understand the data," he says. "To be successful, we had to ensure partnership and mentorship between those two groups."

Jordan's team then created a user group to share best practices such as how to utilize data in different ways or how to display it to provide the most value to end users.

"The value of data goes way up when you transition from tabular reports and extracted spreadsheets to charts and graphs and other types of visualizations," he says.

As the project progressed, strong executive support helped keep it moving forward.

"We were fortunate that leadership was very supportive of this project," says Jordan. "They helped us through some hard times, and they stuck to it because they saw the value that was being delivered."

Once planning processes were complete, Jordan's team decided to build the new cloud-based analytics platform around a three-tier service model. The first tier is a data analytics workbench that allows the agency's data analysts to perform ad hoc analyses. The second tier is an information portal that allows users to get the data they need using a self-service model and simple navigation.

"Most folks aren't interested in writing a query. They just want to know the answer to a question. We wanted to make it quick and easy for our employees to get to the data they need to do their jobs," says Jordan.

The third tier is a Data Science Lab that includes technologies such as machine learning and artificial intelligence to enable users to further evaluate data and support better decision-making throughout the state.

"There's so much new data every day. Oracle Analytics Cloud allows our data consumers to get that data into the warehouse quickly for analysis with other data sets and then use the latest technologies to analyze it and get value from it," says Jordan.

Getting More Out of Data

Today, Maine's cloud-based analytics platform allows state employees to access data and build customized reports using dashboards and other features. The new solution also provides a single point of entry to the department's data and allows users to combine both structured and unstructured data sources.

"Users tell me this is so much easier and faster," says Jordan. "We're also bringing in a broader data set. Every piece of data in our various systems is now made available to every data analysis user in state government. There are now more than 8,000 data elements available to end users, which is a massive increase."

"Most folks aren't interested in writing a query. They just want to know the answer to a question. We wanted to make it quick and easy for our employees to get to the data they need to do their jobs."

— Jeff Jordan, Director of Enterprise Data Services, State of Maine

The tool also enables self-service for the hundreds of people that use it each week.

"The result is reduced reliance on IT. Data consumers can work with data without having to wait in the queue for us to help them," says Jordan. "That also means we have more time to make changes or get new features into the system sooner."

If an end user comes up with an enterprising use of data, Jordan's team can share that application within the broader system so other departments or users can take advantage of it as well.

The new system also enables automation. End users can turn what used to be one-off processes they performed manually into tasks the system performs for them.

"They set it and forget it, and they get the data they need into either their hands or their consumer's hands on a regular basis," says Jordan. "They are seeing a lot of efficiency gains as a result."

Finally, because the system is cloud-based, users were able to continue using it when the pandemic struck and government employees moved to remote work environments.

"The system has been used to provide information to the governor's office around what the modern state government workforce should look like in 2025," says Jordan. "That data is being used for some potentially interesting long-term workforce strategies."

Despite its success with the new analytics system, Jordan's team doesn't plan to stop there. The next step in Maine's analytics journey is adoption of Oracle's Autonomous Data Warehouse, a cloud service that will make it easier for the Department of Administrative and Financial Services to operate its data warehouse, secure data and develop data-driven applications. The state expects to complete implementation in the fourth quarter of 2020.

"The team is hard at work on that, and I'm hopeful it will further enhance our ability to perform data science work throughout the state," says Jordan. "We're maximizing the value of our data now, and most importantly, our data is more readily available than it has ever been before."

CONCLUSION



Throughout this white paper, we've provided government leaders with a framework for agency modernization, included examples of where these concepts are becoming a reality and shared stories that illustrate what can happen when IT leaders perceive government through the eyes of the people they serve.

In exploring these Government 360 concepts, it's clear that government agencies can no longer rely on traditional methods of conducting business. They must move away from monolithic systems that are costly to run and maintain, take too long to deploy and prevent IT teams from moving beyond activities that simply "keep the lights on" to more innovative ventures. Moving to cloud-based solutions positions agencies to make incremental and affordable changes in their systems and processes.

The COVID-19 pandemic taught us that failing to evolve is not an option. Government organizations that had moved some workloads to the cloud were better positioned to offer employee telework options and maintain citizen services during a time of strict stay-at-home activities. Government organizations that neglect to modernize also face long-term sustainability issues. An agency that is not forward

thinking or that utilizes antiquated technology will perpetuate an image of government as out of step with its citizens, and may struggle to attract new talent. Cities that rely on outdated technologies and processes can also fail to attract new businesses and industry, leading to lower tax revenues that impact the organization's ability to provide citizen services.

We hope we have helped you build a vision for how to adopt modern processes that enable you to deliver the digital services citizens demand, and you can move forward with a strategy for ongoing government modernization.

No matter where you are with any of the four core concepts in the modernization process — moving workloads to the cloud, mobilizing and modernizing the back office, creating a smarter connected government, or implementing predictive analytics and other future-ready technologies — the key is to get started. Modernizing government services is a journey, not a destination. It won't always be easy. But the effort put forth to create a circle of citizen engagement, constituent service, private business productivity and civic mission will certainly be worth it.

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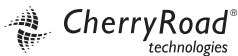
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Today, the pace of change is accelerating, and governments must grapple with disruptions that wouldn't have even been thought of only a few years ago. **KPMG** is one of the largest providers of professional services to state and local governments. We help government organizations adapt to this rapidly changing environment. Our innovative solutions can help transform business and operating models so our government clients can better meet the evolving challenges they face.



Metaformers is your trusted transformation partner. We leverage our unique experience with Public Sector Best Practices and advanced Enterprise-wide technologies to deliver modern, best-in-class, cloud, and on-premise solutions to increase efficiencies, optimize processes, and generate real returns on your organization's technology investment.



Mythics is an award-winning Oracle Systems Integrator, consulting firm, managed services provider and an elite Oracle Platinum Resale Partner representing the entire Oracle product line of cloud, software, hardware, engineered systems, appliances and support products. Mythics delivers end-to-end Oracle solutions in support of our customer's business goals and mission success.



Navigator Management Partners is a management and information technology consulting firm. With nearly 20 years in business, we help organizations achieve their strategic business outcomes through a comprehensive service offering, including program/project management, organizational change management, business intelligence, business analysis and process design, IT strategy, testing and deployment, and solution architecture. We maintain strategic partnerships with market-leading cloud applications, including Oracle.



TruePenny People is an Oracle technology solutions provider and consultancy, known for our long track record delivering Oracle Policy Automation implementations. Backed by our industry-leading expertise and commitment to being a long-term strategic business partner, we implement projects based on a four-pronged approach: Business Rules, Analysis, Integration and Training.

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