



DATA-DRIVEN GOVERNMENT

Elected Leaders can Empower Innovation and Enhance Citizen Service

FORRESTER[®]

Our Data-driven Government White paper Includes the 'Now Tech: Big Data Fabric, Q2 2018, Forrester'

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1. EXECUTIVE SUMMARY

The role of government continues to change as the technological revolution drives constant innovation and the expectations of citizens. The volume, velocity, and variety may vary in the public versus the private sector, but the complexity is heightened exponentially as government agencies are pushed to innovate while maintaining compliance and transparency and always seeking to do more with less.

Digital transformation of public sector organizations unfortunately has lagged due to a risk-averse culture, reluctance to adopt the latest IT innovations, and tight budgets that leave insufficient funds for development. But Digital Transformation in the public sector is about being responsive to citizens and while remaining cognizant of compliance and security. A huge component of this transformation for the public sector is harnessing and managing data speedily and adequately.

Most public sector organizations have large amounts of accumulated data, but only in recent years have digital transformation projects geared to deriving value from this data appeared. Some of the top initiatives focus on improving communications and relationships with citizens, while optimizing by leveraging cloud, infrastructure optimization, and legacy modernization.

This paper covers several specific public-sector initiatives to leverage data-driven technologies to foster a win-win between the citizens, the agency, and the elected leaders. It presents the ideas behind efforts by federal, state, and local governments to harness digital transformation to meet organizational imperatives and citizen demands.

2. Public Sector Laggards to Leaders in Digital Transformation

Has the Public Sector been a laggard in actively considering, embracing, and adopting private sector technology? Well rightfully so!



Obviously, the operating framework of public sector projects differs from the private sector. The public agency does not have the business pressure to realize competitive advantage. Rather, it needs to offer citizen-centric services and make them easily accessible so that citizens can go about their lives. Public sector organizations are naturally cautious about digital innovation as a lot is at stake. Public sector CIOs must balance the demands of elected officials, risk, security, transparency, innovation, and compliance mandates as they consider cloud initiatives, legacy upgrades, and social media citizen interaction tools. How critical is it for governments to explore commercially available options to optimize shrinking resources and provide stellar citizen service? Very! Every government agency is now playing catch-up, aspiring to become the next-gen government offering cutting-edge service.

The “Modernizing Government Technology Act” was signed into law in 2017. Initiatives such as this will uncover a plethora of potential initiatives, but success requires projects that impact the largest number of citizens while optimizing expenditures. Handicaps include legacy systems, poor data quality, and a culture that makes it difficult to embrace open data.

How can the Public Sector overcome the handicap of perception and compete with the private sector for talent? How does it resolve the tension where innovation is expected but caution and risk aversion is the motto and the electability of leaders at the helm is a key driving factor. Elected leaders must bless innovation when business-as-usual is perceived as less risky: “If it ain’t broken then why fix it?” Meanwhile, citizens used to the plethora of well-designed digital services offered in the private sector become increasingly impatient with long lines at the DMV and similar antiquated government services.

The public agency CIO can be the catalyst for change but to a certain extent has to take the cue from elected leaders. Wrapping initiatives with the cloak of electability may be the key to accelerate the innovative agenda. The opportunities are immense!

3. What is Data-driven Government?

Data can be a goldmine that can enhance the quality of life, build a vibrant community, and create a thriving economy. Policy decisions are more effective when based on underlying data. These policies can set goals, measure performance, and increase citizen confidence in effectiveness of government through transparency.

The Data Economy Is Upon Us

“A whopping 80% of global data and analytics decision makers want to expand their use of external data, while 48% report that they are sharing or selling their data externally. All hail the data economy. Design Data Governance For The Data Economy, May 2018, Forrester.”¹



Data-driven government is all about leveraging data, minimizing risk, innovating to create hitherto unknown efficiency in the operation of public sector, and delivering services faster, better, and at reduced cost. It is about finding the most effective way to make data accessible while preserving compliance and privacy. It is about making decisions based on data, evaluating options, creating optimizations, and optimizing spend and project prioritization to deliver the most impact

¹ <https://www.forrester.com/report/Design+Data+Governance+For+The+Data+Economy/-/E-RES138595>

Data-driven government is about addressing the problems of an ever-evolving sophisticated populace with access to cutting-edge technology, tools, and endless data

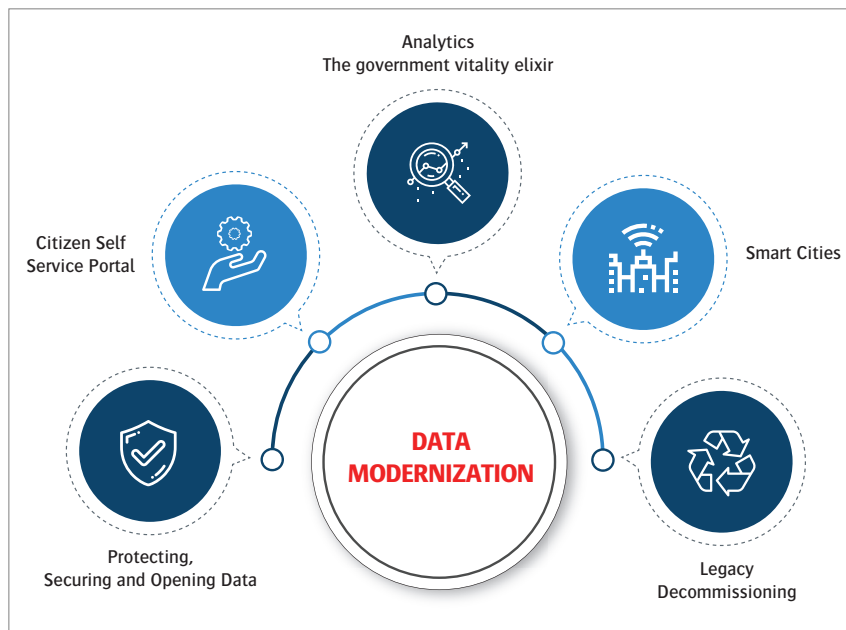
Impacts of data-driven examples:

- The Department of Health Service (DHS) can improve detection of public health patterns and trends.
- School districts can track student growth, drilling down to school, grade, subject, teacher, class, student, standard, programs, and demographics, and track at-risk student populations
- Water utilities can improve ranking of the risk of pipe failure with advanced analytics.
- Governments can eliminate data silos to make information more available while improving data quality to increase citizen trust and confidence in elected leaders.
- The Department of Human Services (DHS) can transform unstructured service data into actionable information to enable caseworkers, supervisors, and service providers to serve clients better through deeper understanding of clients’ concerns, needs, and service experiences.
- Health and Human Services can leverage data to respond better to the opioid epidemic, focusing upon treatments that work and preventing relapses, leading to long-term recoveries.
- A child welfare agency can justify its funding needs by measuring indicators such as number of case workers, reunifications, homes visited, cases resolved, and families reunited.
- Government agencies can populate a Freedom of Information Request data repository of public information, allowing citizens to conduct searches to answer their own questions.

Government agencies can build models using advanced analytics to justify funding requests based on the impact delivered, building confidence among stakeholders and citizens while doing more with limited resources.

Benefits of Data-driven Government
<ul style="list-style-type: none"> • Improved Governance & Government Perception • Improved Citizen Services & Citizen Satisfaction • Improved Operational Efficiency • Improved Elected Leadership Ratings

4. Forging ahead to Modernize Government



Public Sector CIOs are finding it imperative to power their firm’s transition into the digital business age. Connected devices are ubiquitous, generating volumes of data while accessing more and more information. The plethora of assets and the data they generate is an opportunity to better serve citizens and communities with a shared economic, social and environmental objective.

Where do we start? How do we get this going? Here are five core new technology initiatives to modernize public sector operations that can provide inspiration for Public Sector CIOs:

Shrinking budgets and a demanding constituency

“Local governments often find themselves between a rock and a hard place as they try to balance shrinking budgets with the growing demands of their constituents. When asked about priorities, 70% of local government business and technology decision-makers and influencers cite cost reduction, but 59% cite addressing customer expectations.”²

– Case Study: How Buenos Aires Became Insights Driven, January 2017, Forrester

4.1 Open Data is a Public Sector Imperative

Public agencies generate huge quantities of data. The Public Sector Open Government Data (OGD) initiative promotes access to anonymized public sector data that can be combined with other data and used to create transformative programs.

Providing access to public data such as traffic, energy use, and public safety statistics for any use, including transforming, combining, and sharing it, can create significant value for a public sector agency and the citizens it serves at minimal cost. Cities that do so can tap into communities of civic-minded developers and entrepreneurs who can create useful applications for citizens and make government-citizen interactions more efficient. But there is sensitivity to the kind of data that can be released, and how this data is connected to a broader ecosystem.

Open data is information that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and share alike. The data must be non-personal to avoid violating personal privacy, and these systems need a strong governance foundation.

Open data systems strengthen public-private collaboration while increasing transparency and accountability, building public trust along with citizen participation. This helps governments work with citizens to develop innovative services that meet tax payers’ needs. For instance, providing non-personal information on traffic fines and cameras can reduce public confusion and misinformation.

4.2 Every one should worry about Cybersecurity

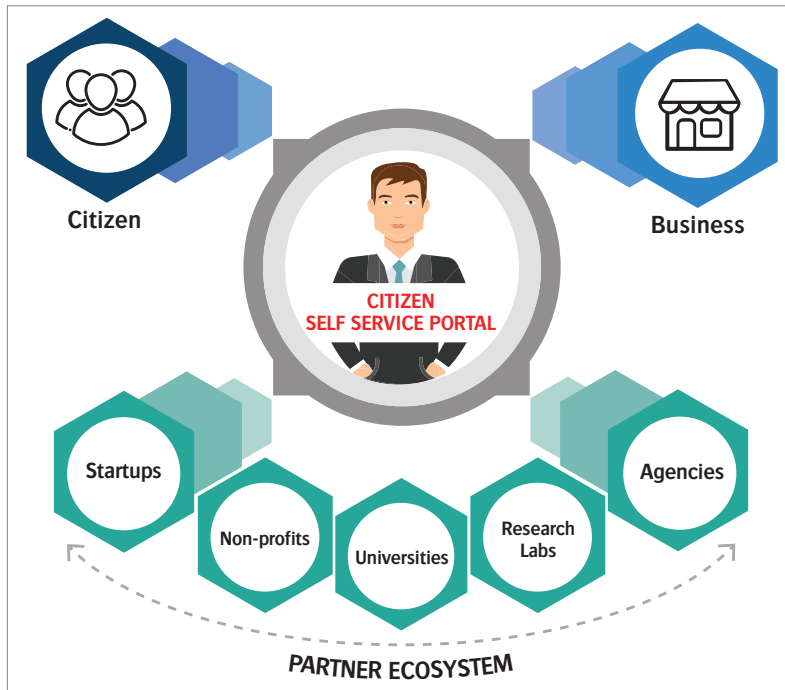
Most public sector organizations feel increasingly at risk today. Given the need for Open Data, data transparency, and digital transformation, along with the reliance on Internet, the explosion of digital tools and IOT, create cybersecurity challenges and new vulnerabilities for attackers to exploit. Every public sector organization is not only cognizant of the risk involved, but deals with them daily, actively developing a collaborative, coherent strategy and response to the increasingly sophisticated nature of cybersecurity threats. Be prepared is the driving motto!

A cybersecurity strategy is an imperative of every public sector agency. Public sector agencies are fighting a daily battle with security at every level – federal, state and local - via a security strategy that is built on the best security tools of the day with a desire of real-time threat analytics and intrusion detection. Cyber-attackers do not discriminate and target organizations at all levels. If there is a vulnerability, it will probably be exposed.

It is not an option but a mission-critical task for a public sector CIO and the technology stack deployed to deliver the security layer that is needed to keep citizen data and transactions secure, ultimately meeting the unique data protection requirements of a public sector organization and its citizens. It may not be possible to anticipate every threat, but a process to react, detect, protect, repel and remediate is key to success.

² <https://www.forrester.com/report/Case+Study+How+Buenos+Aires+Became+Insights+Driven/-/E-RES121454?objectid=res121454>

4.3 Citizen Self Service Portal



A citizen self-service portal enables public sector agencies to provide 24x7 access to citizens to information on program eligibility and provide access to forms, documentation, video, audio files, and other public records without any staff intervention. When data is stored in a single repository, the centralized location reduces errors and becomes the single source of the truth.

The new data management technologies of Big Data provide ways to unify all customer and operational data from all sources into a single centralized repository to eliminate data silos. Big Data technology is designed to ingest multiple data types in their original formats without the expensive and time-consuming extract, transform, and load (ETL) required by relational

databases. This allows near real-time ingestion of all the data without disturbing systems already in place. Over time, the organization can replace obsolescent databases that the new system makes redundant and move operations to the new platform.

A Big Data technology platform such as Apache Hadoop provides in-built advantages towards realizing the data-driven government vision by ingesting a wide variety of data, whether structured, semi-structured, or unstructured, in a single repository in low cost bulk storage or lowering the cost by using Object Storage. Such a portal, aided by Big Data technology, can be a huge leap forward for public sector agencies to better meet the needs of sophisticated time-sensitive citizens with minimal staff time and increased satisfaction.

A data retention policy when actively enforced pays for itself with the following:

- It preserves digital collections of historical value.
- It consolidates the vast amount of information stored throughout city departments, preventing information loss.
- It eliminates preservation of items beyond their useful life, based on the city's data retention policy and compliance requirements, reducing risk and cost.
- It ensures data availability based on records retention schedule for public records requests and litigation discovery.

Customer Obsession Requires A Big-Picture

“Citizens feel the pain of uncoordinated public works. Sewer repair, street paving, and fiber-to-the-home installation all mean neighborhood disruption. Better coordination and operational efficiency improve citizen experience.”³

– Case Study: How Buenos Aires Became Insights Driven, January 2017, Forrester

³ <https://www.forrester.com/report/Case+Study+How+Buenos+Aires+Became+Insights+Driven/-/E-RES121454?objectid=res121454>

4.4 Analytics is Government's modern day elixir

Once all the data is in one logical place, data analytics, modern machine learning, and cognitive analytics can be applied for dramatic outcomes. Intelligent analytics can generate reports, forecasts, and insights into citizen behavior to better serve citizen needs. Public sector agencies can use analytics to resolve the conflict between heightened citizen expectations, demand for personalized public service, and the pressures of reduced budgets.



- Fraud prevented via analytics is money saved and increases government revenue. Analytics can lead to real-time auditing and prevention of fraud and errors, ensuring that benefits are provided only to those who legitimately qualify for them.
- Analytics can provide complete citizen profiles combining data from sources including click traffic, online behavior, and social media. This can provide insights to enhance service models for better citizen satisfaction. Analysis of voting behavior can reach the point of predicting whether a specific ballot measure is likely to be passed.
- Analytics can allow law enforcement to identify trends in crime patterns and better allocate resources.
- Analytics can predict community health trends and diagnose issues such as water impurities. Analytics can also track epidemics, supporting optimization of vaccine distribution.
- Analytics can allow health inspectors to identify food establishments likely to have critical violations supporting optimized allocation of inspectors.

Public sector agencies can anticipate and respond to citizens by using analytics that harness massive volumes of internal and external data. Public service will continue to be re-defined by insight-driven analytics for intelligent decision making and service improvements.

Smart Cities Establish Systems Of Insights

“An insights-driven city brings together data from upgraded systems of record, enhanced citizen engagement, and new investments in connected infrastructure.”⁴

– Case Study: How Buenos Aires Became Insights Driven, January 2017, Forrester

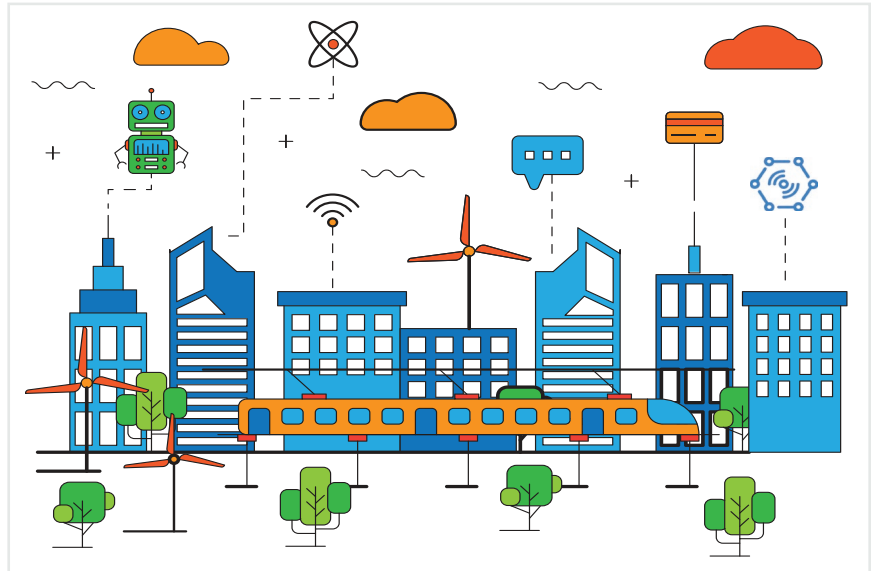
4.5 Smart Cities – An opportunity to address urban challenges

The population explosion can create an urban management nightmare involving transportation, energy, communication, pollution, health, and crime. Smart Cities are ideally geared to solve this matrix, overcome the problem of mistrust between government and people, and simultaneously provide services cheaper, faster, and better, enhancing quality of life for citizens.

⁴ <https://www.forrester.com/report/Case+Study+How+Buenos+Aires+Became+Insights+Driven/-/E-RES121454?objectid=res121454>

Predicting parking spots, traffic jams, the sunnier locations of the city ripe for solar or urban agriculture, and deploying an efficient, safe fleet of autonomous vehicles are some of the examples of what we can expect.

A Smart City includes geospatial technology, data capture from millions of IOT devices -- wearables, video cameras, audio listening devices, and other sensors -- improving decision making. It is focused on providing citizen-centric service while consuming the least amount of resources, in the fastest possible time.



4.6 Legacy Decommissioning is Advantageous

Mission-critical federal systems are more than 50 years old. Such legacy systems entrench inefficiencies and complexity and make it difficult to integrate newer technologies. They make digital government impossible and cannot meet citizen demands. A modernization plan provides numerous advantages including:

- It dramatically improves data and system security, increases performance, and eliminates mission-critical system failures.
- It optimizes operational costs, freeing operational resources including valuable tax dollars. Modern IT systems are cost optimal with inherent technology advances such as virtualization, process automation, cloud, and Big Data.
- Legacy retirement is a viable strategy for application portfolio rationalization, data center consolidation, improved operational efficiency, data cost reduction, and compliance.
- Modern systems are built on standard interfaces, supporting automate data consolidation and eliminating isolated data silos, reducing the cost and risks of manual consolidation.

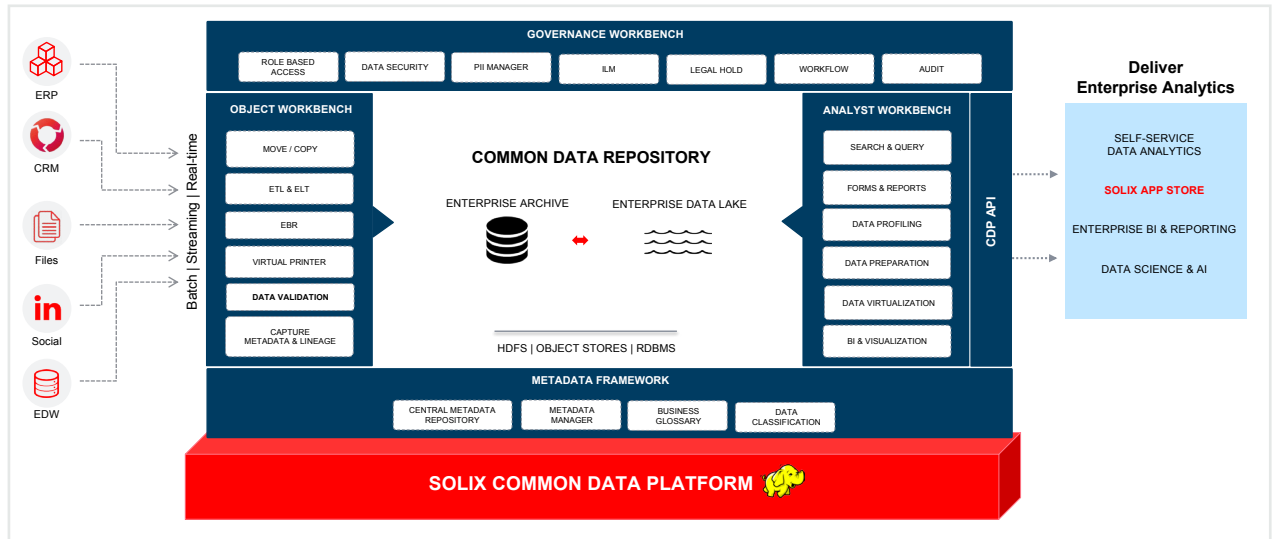
The first step in a legacy replacement project is understanding the transaction data it holds and how that data can be moved or archived. Multiple regulations require that data be retained from a minimum of seven years for financial records to unlimited periods for some other kinds of data. Archiving to a modern system provides a better solution for managing retention while eliminating dependency on obsolescent, increasingly undependable technology.

SOLIX CDP HELPS DIGITAL TRANSFORMATION

Organizations need an industry-grade 'public sector ready' data management system, with a Big Data engine and built-in security, governance capabilities. Solix Common Data Platform (CDP) for Government enables exactly that.

5. Solix Common Data Platform for Government

Introducing the Solix Common Data Platform (CDP) for Government



The Solix Common Data Platform (CDP) is a highly scalable, robust next-generation Big Data management platform that features uniform data collection, metadata management, data governance, ILM, data security, data discovery, and a full set of interfaces to support plug-and-play stack creation and modernization. It leverages the high-performance and low-cost characteristics of the open source Apache Hadoop framework for economical storage and real-time processing of petabytes of structured and unstructured financial data.

The Solix CDP stores data “as-is” to eliminate costly ETL operations during data ingestion and provides an ability to transform data post-ingestion to feed the unique needs of downstream NoSQL and analytic applications. It includes modern Big Data processing engines like Apache Spark Impala, and Hive, to meet the machine learning and advanced analytic needs of today’s real-time data-driven organizations.

The Solix CDP is certified to operate with both the Cloudera and Hortonworks Hadoop distributions. Additionally, it can be deployed on-prem or in the cloud. (It supports AWS, Azure, Oracle and Google cloud.)

End-End Solution Framework

With a built-in data lake, enterprise information archiving, application retirement, and eDiscovery solutions, Solix CDP provides public sector organizations with an unparalleled data management and analytic tools and framework. This makes it possible for organizations to leverage data for critical business insights, while saving on storage costs and complying with complex regulations.

Solix CDP provides an end-to-end solutions framework

All Data – The Solix CDP brings the ability to join to structured, unstructured and semi-structured data sources within a single application with full security including encryption in transit for data been ingested.

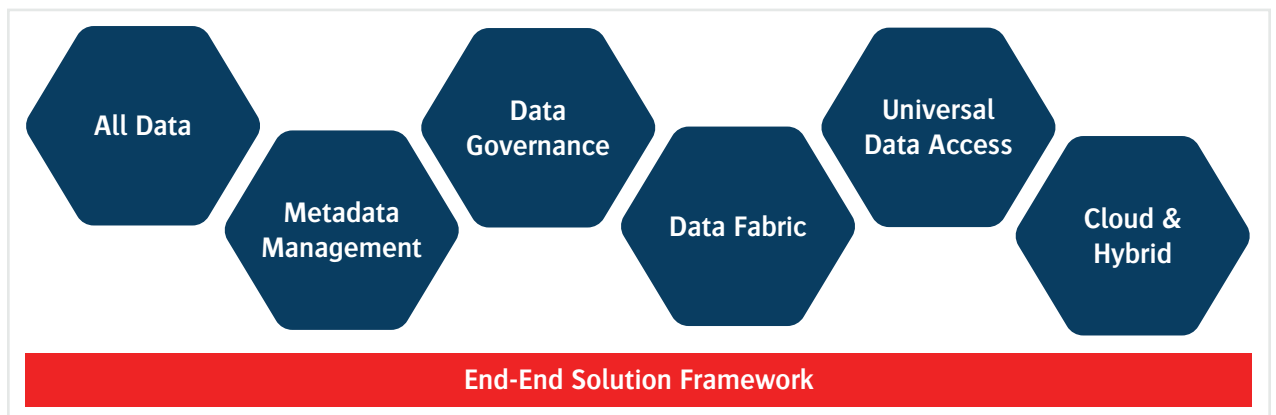
Metadata Management – The ability of the CDP to track the meta-data used within an Enterprise Data Lake, including ingestion, validation, usage, lineage and more, enables confidence in the integrity of the data and in the accuracy of the analytics and insights.

Data Governance – The CDP provides insights on how the data been sourced, used and finally disposed off a the end of its natural life.

Data Fabric – The CDP simplifies and integrates data management across cloud and on-premises to accelerate digital transformation for data visibility and insights, data access and control and data protection and security.

Universal Data Access – The CDP provides the means for high performance client/server and Web-based applications to interoperate with all systems from desktops to departmental servers to mainframes, across the enterprise on private networks or across the world via the Internet.

Cloud & Hybrid – The CDP can be installed in a mixed computing, storage, and services environment made up of on-premise infrastructure, private cloud services, and public cloud.



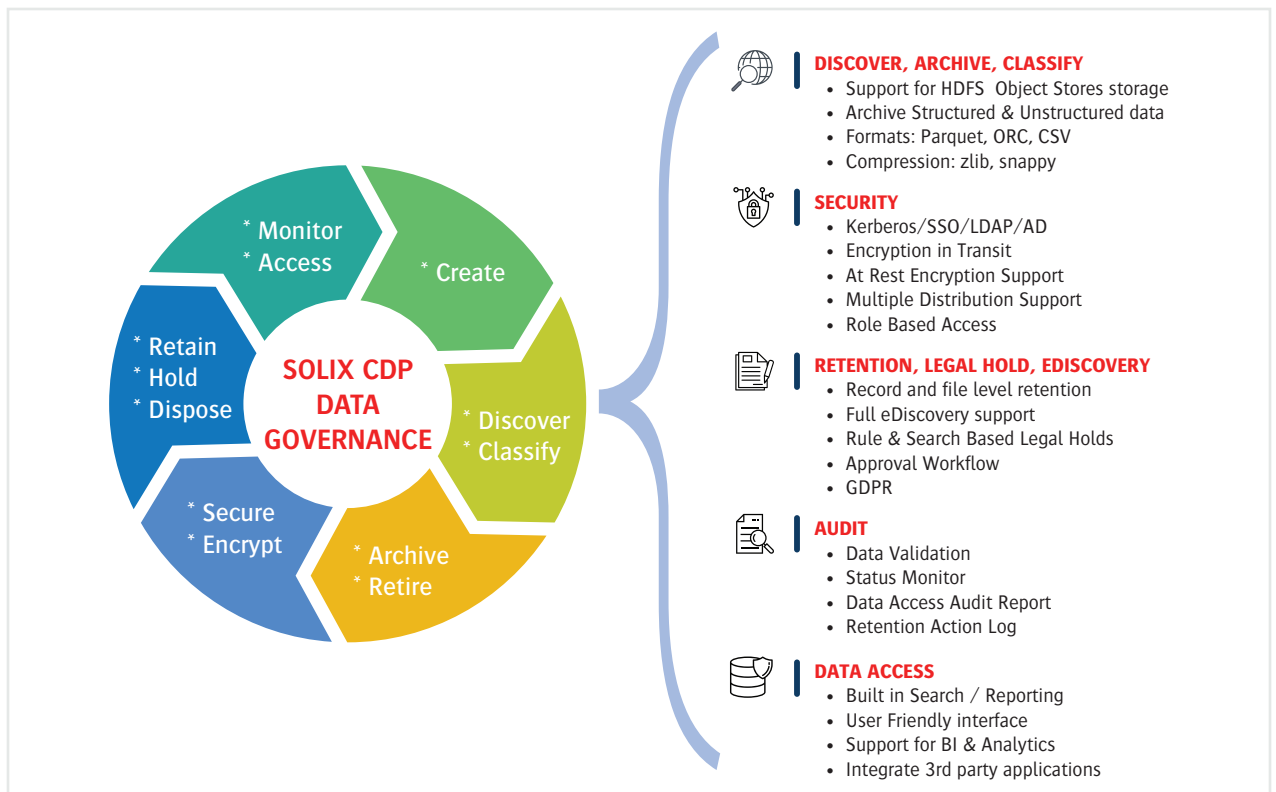
5.1 Data Governance, Security and Compliance

Proper data governance requires that compliance and security measures be in place, and nowhere is data governance more vital than in the public sector. One key question in any privacy audit is who has the access to sensitive information. Each time someone on the public sector agency staff needs to access a citizen record, proper authentication must occur to ensure that only those with permission to access records can do so.

The Solix CDP imposes business rules on who can access data and for what purposes and maintains the metadata to support compliance audits. The Solix CDP provides a robust, multi-layered security model:

- **Perimeter:** Kerberos and AD/LDAP protect the Hadoop cluster with authentication and network isolation.
- **Access Control:** Data users and applications can access roles-based permissions and authorizations via security configuration schemas such as Sentry.
- **Encryption/Masking:** End-to-end encryption for data when in motion and at rest, and data masking to restrict unauthorized usage, are all supported.
- **Audit:** Audit trail and reporting on the complete data lifecycle including security classification, lineage, access, retention, legal hold, etc. is provided.

Additionally, the Information Lifecycle Management (ILM) capability discovers and classifies public sector data and then establishes rules and retention policies to manage the data throughout its lifecycle. Comprehensive retention policies with exception handling such as legal hold and data access help further in meeting complex regulatory and compliance requirements.

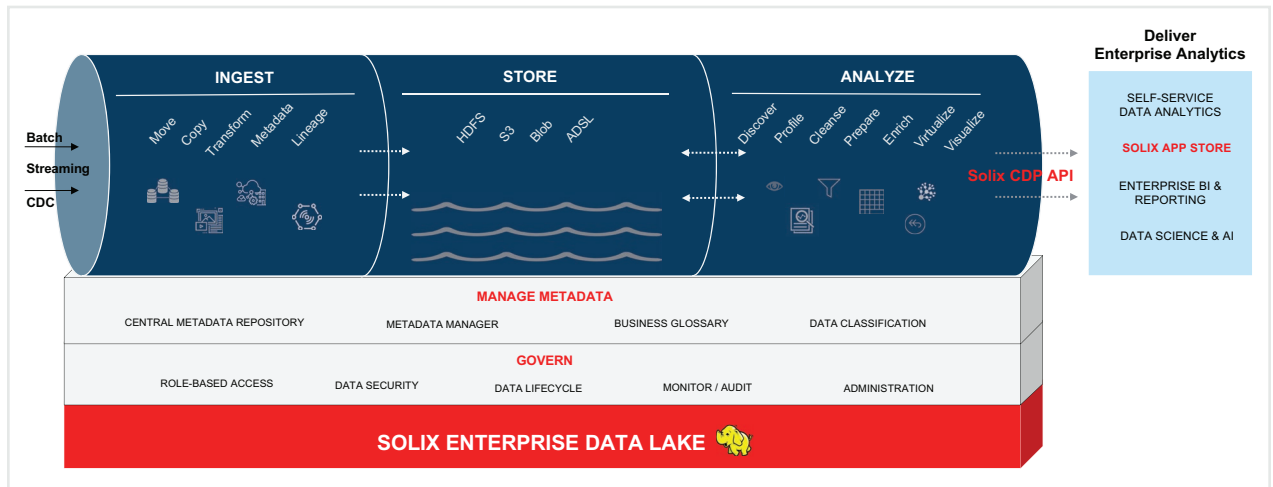


With the increasing number of data breaches and the growing sophistication of these cyber-attacks, a technology stack to react, detect, protect, repel, and remediate is key to every public organization's success in protecting citizen data. Such a technology gives the public sector organization an ability to detect a cyber-attack faster, and reduce and remediate the impact of the attack via cutting edge correlation and analytics tools. Solix Log Analytics keeps pace with the high velocity of data, and the sophistication of cyber attacks, providing the government organization an upper hand, protecting citizen data and avoiding public embarrassment.

5.2 Solix Enterprise Data Lake

Organizations are dealing with large volumes of structured and unstructured data including streaming data that when brought together in real-time allows them to make informed data-driven decisions. Additionally, organizations are moving from pre-defined EDW styled analytics to an investigative approach that seeks further clarity based on the insights discovered. The Solix Enterprise data lake addresses all of these requirements and more. It provides organizations with a big data platform capable of capturing data from both structured and unstructured sources via batch, real-time and streaming modes. It brings all data into a common repository 'as is' to avoid costly ETL and allows organizations to define schema on read based on their specific use case.

Further, the Analyst Workbench helps discover, cleanse and transform data to make it analytics ready. With the end-end governance framework and Governance Workbench, Solix offers a secure and semantic data lake. Solix CDP's ability to utilize low cost bulk storage and open source Hadoop for processing makes it a low cost and highly efficient solution. The fully governed API allows organizations to get their data ready for analytics and for consumption by tools such as Tableau, QlikSense, while allowing engineers to run data modelling, analysis and towards building their custom applications.



A central challenge for enterprise data warehouse (EDW) platforms is delivering highly specific data views that meet the needs of business users rather than canonical top-down enterprise views which may or may not satisfy end-user requirements. The Solix Enterprise Data Lake reduces the complexity and processing burden to stage EDW and analytics applications, and it provides highly efficient, bulk storage of enterprise data for later use.

The Solix Enterprise Data Lake provides a copy of production data and stores it “as is” in bulk to be better described and distilled later. This simple COPY process eliminates the need for heavy extract transform load (ETL) processing during ingestion. Once resident within the Hadoop file system (HDFS), enterprise data may better described or transformed later for use with business analytics applications such as those available from the Solix App Store.

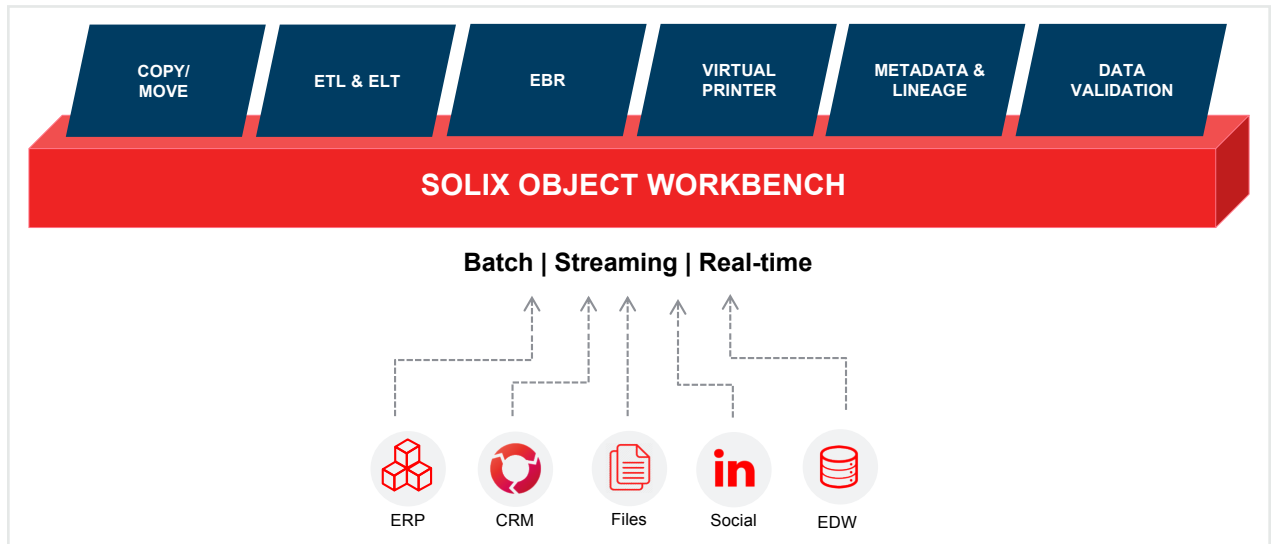
The Solix Enterprise Data Lake employs an Information Lifecycle Management (ILM) framework to meet governance, risk, and compliance objectives and ensure that best practices for data retention and classification are deployed. ILM policies and business rules may be pre-configured to meet industry standard compliance objectives such as COBIT or custom designed to meet more specific requirements.

5.3 Solix Archiving & Application Decommissioning

Archiving and application decommissioning is a high impact public sector project that supports OpEx optimization and positions the public sector agency for modernization and increased ability to roll out cutting edge technology solutions.

An archiving strategy that protects data integrity in all instances enables compliance, eliminating the risk of data loss while ensuring your ability to meet data retention requirements.

Addressing the growing need of public sector agency application networks to migrate data across applications, protocols, and proprietary data structures, Solix delivers an intelligent public-sector agency data migration solution that enables seamless data migration across all agency applications. Solix Application Sunsetting and Migration helps customers identify the right road map and strategy to migrate legacy systems at lower costs and consolidate IT infrastructure securely without the risk of data loss. It leverages the benefits of years of migration experience on multiple platforms to reduce time-to-market and maximize productivity, enabling the public sector agency to switch from existing ERP applications and business processes to other applications seamlessly.



5.4 Solix Database Archiving

Solix provides advanced database archiving for public sector agency applications tightly integrated with solutions from Oracle, Baan, SAP, and others running custom applications. Customers benefit from pre-packaged archiving solutions through reduced implementation time, reduced risk with certified integrated solutions, and lower maintenance overhead because archive data is in sync and completely available through native application user interfaces. With Solix Database Archiving for public sector, agencies have the tools to:

- Classify data based on its business value and regulatory impact for tiered storage and information security.
- Leverage Oracle certified trigger and non-trigger archiving methods or transaction-based or table-based archiving.
- Enable compliance with an archiving strategy that protects data integrity in all instances, eliminating the risk of data loss while ensuring your ability to meet data retention requirements.
- Implement active archiving to ensure simultaneous access to data from the native application for more frequently accessed data and XML archiving for long-term data retention needs.
- Maintain seamless data access to archived data through native Oracle Applications interfaces.
- Leverage a metadata-driven approach for defining data management policies, reducing overhead costs associated with data management solutions.
- Recover storage space with complete integrated de-archive, space re-claimer and patch synchronization utilities to assist in data management processes.

6. Solix Advanced Finance Analytics

Public Sector agencies that are responsible for tax collection and that provide social services are interested in fraud and flagging errors and flagging audits. An analytics solution makes these processes more effective and efficient, replaces the manual fraud detection and ensures successful internal audits.

Solix Solix Advanced Finance Analytics, built upon the Solix Common Data Platform, maximizes Public Sector financial performance by driving efficiency and machine intelligence into financial operations. It gives the Public Sector agencies visibility into cost, revenue control, and compliance. Solix Analytics can support the finance director's visibility via simple-to-use dashboards.

With the recent demand for Public Sector agility, it is imperative that answers be delivered at lightning speed during interaction with citizens. The ability to sift through large volumes of data quickly, leverage advanced analytics and Artificial Intelligence delivers this agility, while avoiding the slow people-dependent information hunting workflow of the past. Cognitive assistants can assist in compliance activities by detecting and reporting on anomalies; improve operational efficiency in public sector operational functions, and offer advice on improving workflows and maximizing citizen satisfaction. A Digital Citizen Help Desk, does exactly that by providing real-time accurate information quickly, based upon the foundation of a comprehensive data repository including rich analytics and insights.

7. Digital Help Desk for Government

Solix's Digital Help Desk for Government is a comprehensive and secure AI platform for citizens. With cognitive and human-like conversational capabilities, along with continuously evolving job skills to perform specific tasks such as providing citizen insights, Solix delivers next-generation digital transformation to scale operations. It understands and communicates in natural language and learns continually from context.



Your Digital Finance Assistant

Assistant: Hello this is Gia, how may I help

User: Gia, I want to pay my electric bill

Assistant: Sure, I can help you with that. Can you give me your last four digits of your social

User: 9999

Assistant: Thank you. I have your account open for your address on 18911 Circle Drive. How would you like to pay?

User: PayPal

Assistant: Enter your id please

User: Rsmith288

Assistant: What is the payment amount?

User: \$128.32

Assistant: Thank you. I have authenticated you and processed payment for

User: Gia how does my utility bill compare to similar bills

Assistant: I have analyzed your bill with your neighbors with a similar property size and households. YOU are 20% below. You are doing a good job

It brings together the power of AI, advanced analytics, and robotic process automation to the public sector to provide quick reporting, smart answers, and predictive analytics and performs skilled tasks — reducing operational costs, improving productivity and decision making, and increasing process efficiency to unprecedented levels. Capabilities and skills can be broken down into three areas:

- **Citizens:** Provides quick answers and smart predictions related to citizen query. Can retrieve or send information from systems such as SAP, Oracle, PeopleSoft, Teradata, Solix, and others.
- **Staff:** Provides quick information and performs repetitive tasks specific to each function. For example, it can assist business licensing staff with business license validations, billing staff with invoices to customers, collections staff by automatically sending letters.
- **Vendors, Suppliers, Citizens, and Customer Facing Teams:** It provides conversational capabilities to assist citizens, vendors, and internal operational teams to help with information and forms processing for citizen and vendor services.

This can be a huge asset to the public sector agencies public relation efforts by providing a citizen interface — 24/7/365 — helping them to amplify their strategic value to their organizational management and elected leaders.

8. Call to Action

A responsive government leads to happy citizens and excellent polling numbers for elected leaders, along with optimized spend of dollars. Data-driven government is designed to modernize government organization and address the challenges with citizen, cost, compliance, and cash. This is enabled with strategic digital transformation and modernization projects geared to harness and apply data to solve challenges. Solix Technologies enables exactly that with the following:

- **Solix Common Data Platform (CDP):** A big data management platform for unifying structured and unstructured data from disparate sources in public agencies, featuring a modern data lake and data archive based on low cost, bulk storage Apache Hadoop.
- **Solix Advanced Finance Analytics:** This out of the box finance analytics delivers analytic, insights and generates operational efficiency leading to true data-driven governance.
- **Digital Help Desk for Government:** An artificial intelligence and advanced analytics platform featuring pre-packaged descriptive, predictive and prescriptive analytics applications enables cognitive automation of citizen queries, swift “discovery” of information.

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