

Data Drives Government



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Introduction

The evolution of technology continually influences how education and government organizations interact with citizens, businesses, and other constituents. Operations are directly influenced by technical and cultural changes that enable new ways to engage constituents and deliver information and services. Drivers currently impacting this transformation include the rapid expansion of cloud computing, big data analytics, mobile applications, and perhaps most importantly, increasing concerns about cybersecurity. Cloudera has developed tools to provide public sector professionals with secure, fast, and easy methods to understand, defend, and apply the information assets they manage.

The immediate result of the digitization of everything, particularly the widespread use of mobile and sensor data, has been a significant increase in user expectations and an unprecedented expansion of the digital threat landscape. At the heart of this unstoppable digital transformation is the need to define how public sector organizations, including colleges and universities, can use the data they collect, generate, protect, and share, to inform better decision-making and drive mission success.

Analyzing data and taking action on it can improve operations and service delivery. The ability to access, process, and derive actionable information from data impacts several key areas: reducing operational risk, deriving anticipatory intelligence, enabling constituent insights, and supporting more data-driven decision making. This paper discusses each of these areas and how the intelligent application of data drives the business of education and government.

A new approach for using data

Digital transformation is disrupting traditional citizen and student service delivery models. What's more, this transformation is happening faster than most organizations anticipated. Managers of legacy systems feel the pressure to adapt to new devices and omni-channel interaction models with their stakeholders, constituents, partners, and suppliers..

New operational models are displacing the way government organizations traditionally have considered data for decision-support. Constituents are interacting in multiple ways, and through a variety of platforms—consequently providing a rich set of information to be collected, analyzed, and used to improve service delivery and better align public sector spending to constituent priorities.

In the commercial sector, innovative organizations have transformed the way they use rich information and data for effective planning and decision-making. These organizations looked beyond the traditional methods for storing, processing in batch mode, and conducting simple analytics on data in a reactive fashion. Now they use real-time data processing, being prescriptive as well as predictive, and apply advanced analytics and machine learning techniques. These same capabilities can be applied to public sector operations to improve efficiency and drive mission success in a cost-effective and secure manner.

Data drives mission success

The data collected during routine operations is an invaluable source of actionable information when properly accessed and analyzed by an organization. It can inform leadership on performance, help predict trends, aid decision-making, and provide forensics when problems occur. Apache Hadoop™ offers a cost-effective and secure approach that enables this transformation, using enterprise data as an operational resource. With maturity of the platform and technology ecosystem, as well as the flexibility to deploy both on premise and in the cloud, data now can help drive insights in support of agency missions in three key areas:

Lower operational risk

Data silos that limit risk-based analytics with slow, reactive, or late-to-recognize trends and events result in delayed identification and mitigation actions. The inability to access and compile diverse data sets and types limits agency capabilities to detect and prevent fraud, and to meet external and internal compliance requirements.

Cloudera tools enable access to relevant enterprise data in a virtual central location—providing visibility across all data at scale to identify anomalous behavior in real-time. The Apache Hadoop suite of products offers an integrated solution that is highly extensible, configurable, and adheres to enterprise-grade security and governance requirements.

Virtually all public sector organizations focus on finding the best ways to reduce costs, optimize existing IT infrastructures, and meet evolving mission objectives. Trusted methods that provide a broader understanding of operations by looking at all of the available data can undeniably support operational improvement, as well as regulatory and cybersecurity compliance. With cost-effective unlimited storage, combined with real-time and historical data, departments within education and government organizations have significantly expanded capabilities to identify previously unseen threats much earlier—including subtle changes in user or system behavior that may otherwise go undetected.

Develop anticipatory intelligence

Public Sector organizations are inundated with data they collect, generate, and store, most importantly student and citizen data. This reality makes it increasingly challenging to complete missions in a timely and efficient way given the often limited resources, aging IT infrastructures, and dynamic program requirements that most government professionals face. Disparate data silos, created by legacy systems and point solutions, make information access and comprehensive analytical capabilities daunting, if not impossible.

Aggregation of pertinent data from diverse systems and partners can lead to timely and valuable insights, or anticipatory intelligence, to help public sector professionals understand situations, make most-informed decisions, and apply resources where they are needed most. Whether the focus is on benefits fraud detection, law enforcement, or student success and enrollment, data-driven decisions support more responsive and accurate mission outcomes. Using Cloudera solutions, combined with real-time and historical data, public sector organizations have the ability to understand operations and anticipate eventualities for timely and accurate decision making.

Make data-driven decisions

Every day, public sector organizations manage volumes of historical and new information, and then make thousands of decisions based on this growing information universe. The already significant annual growth in government data volume only promises to expand at a faster pace as more devices and sensors are connected through the emerging Internet of Things (IoT). Without tools and methods to better manage and understand this data, the volume, variety, and velocity will increasingly challenge agencies to make informed choices about resource use and appropriate responses to the diverse situations they routinely must address.

Imagine what your organization could achieve if all of its data were collected in one centralized, secure, fully-governed place that any department could access anytime, anywhere. Cloudera makes it possible—with the modern platform for data management and analytics.

By providing a unified view of data, public sector analysts have the ability to navigate around the data silos—allowing new and real-time insights that deliver more data-driven and responsive government information and services. Additionally, leaders within education and government will be empowered to take more timely actions and determine the most efficient means to provide the support needed as indicated by trusted, advanced data analytics.

How to get started

Cloudera is here to help. Let our experienced team collaborate with yours to understand your organizational priorities and determine how to support your requirements (with a focus on identification of business-relevant use cases). Most customers opt to undertake an initial proof-of-concept project to “test-drive” the technology, and to gain a greater understanding of the potential power of unleashing their enterprise data.



Cloudera has a professional services team and a carefully-vetted network of systems integrators to assist with initial project development. Whether you want to deploy on premise or in the cloud, we can support your agency demands 100%. Many customers can implement an initial solution quickly and a full proof-of-concept project often can be live in a few months.

To help ensure the likelihood of success, we recommend you provide your team with training. In fact, Cloudera trains more people on Hadoop than any other company in the world. In addition to making sure you get the most out of your Cloudera deployment, our training will help you with recruiting and retention of the Dev/Ops people essential to reaping the extensive benefits of using Hadoop..

Summary—Driving Insights for a Connected Government

Digital transformation is happening rapidly and it is having an impact on public sector operations. Adoption of mobile devices and use of sensor data from the IoT is creating new and rich data that needs to be harnessed for business results—especially the business of government. Successful organizations are updating their operations and using data as a strategic asset for making more defensible and informed decisions. Organizations are modernizing their architectures to realize the value of enterprise data, while taking proactive steps to ensure their information assets are protected and continuously monitored for availability and integrity.

Cloudera is ready to help your organization find and apply insights to be discovered in its untapped data. We look forward to helping you successfully use data to drive the business of government operations and outcomes.

About Cloudera

Cloudera delivers the modern platform for data management and analytics. Public sector organizations trust Cloudera to help them apply data to the center of their missions with Cloudera Enterprise—the fastest, easiest, and most secure platform built on Apache Hadoop and the latest open source technologies. Agencies can efficiently capture, store, process, and analyze vast amounts of data—empowering them to use advanced analytics to drive business decisions quickly, flexibly, and at lower cost than has been possible before. Focused on customer success, Cloudera offers comprehensive support, training, and professional services. Learn more at cloudera.com.

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