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Data-Driven Decision Making: 4 Stages to Confidence
Gain organization-wide visibility to make fast, confident decisions with Splunk.

Table of Contents

Introduction: A Challenging New World of Citizen Expectations

It's a challenging time to be responsible for public sector information technology.

For any government, the core mission is to protect public well-being and deliver services to citizens and stakeholders, while carefully stewarding taxpayers' dollars. This increasingly requires making a set of decisions. Whether a government employee works in public safety or transportation, in educating our youth or delivering services to citizens, the ability to meet objectives depends on a rapidly increasing rate of informed decision-making.

The decisions your employees make have to be right. A mistake can potentially defeat the mission. So agency personnel rely on information to make decisions, but that, too, is becoming more challenging with the exponential rise in data quantity and complexity.

The technologies driving that surge, such as cloud, mobile and the Internet of Things (IoT), are also the key to the solution. They hold out the opportunity for organizations to become masters of the data that pertains to their mission – whether providing services to citizens, enhancing the educational experience for students, or keeping the country safe - rather than being overwhelmed by it. But that depends on how well they leverage all that data.

Digital transformation is forever changing the way we work and live, driving new standards for the level of service citizens expect from their governments. Agencies that can't deliver to that standard will quickly lose the public confidence and trust that ultimately determine the success of the entire government enterprise.

The Impetus for Government Data Systems

There is a digital transformation under way today that is changing every aspect of every industry and every business. It is shifting the way we work, live, and interact and communicate with each other. Government and educational institutions are no exception. Rising citizen and student expectations, shrinking budgets and tight delivery time frames are forcing IT leaders to seek new approaches.

If you think of a public sector employee's work today—whether it is to protect the nation or community, educate our youth or deliver citizen services—success in that mission is based on a rapidly increasing rate of informed decision-making.

Public service today requires you to make critical decisions to accomplish your mission. Yet the number of decisions you must make daily is rapidly accelerating. Getting every decision right can make or break your mission. The unfortunate reality is that you have to make faster decisions, but at the same time, you cannot afford for them to be wrong.

To avoid adverse impacts, a process of analysis and deliberation that might once have taken a couple of weeks is now compressed to a couple of hours or less, because the mission demands it. Regardless of your role, whether you are a system admin or CIO, data leverage is the solution that enables decision-making with confidence, at the speeds the mission requires.

Your Data Is the Answer

Thanks to new technologies—such as cloud, mobile and IoT—the data landscape is exploding. There is an exponential increase in data being created, with the volume tripling and even quadrupling at an accelerating pace.

In its most basic form, this data is messy. It comes from an array of different sources, and the process of collecting it is often difficult and time-consuming. It comes in multiple different forms and formats, making it hard to combine and integrate. It may be unstructured, as it is in a server log file, or structured, as in a relational database. But either way, it doesn't arrive in a ready-to-use form. The data almost inevitably needs to be refined, massaged or manipulated before your agency can make sense of it.

But the innovators in government and education are adapting. They are deploying new solutions that incorporate innovative technologies to embrace this data chaos, harnessing it to gain real-time visibility and unprecedented insights. We refer to this as reaching a state of data leverage, where your agency opens up a whole new world by optimizing the real value it extracts from the data in its inventory.

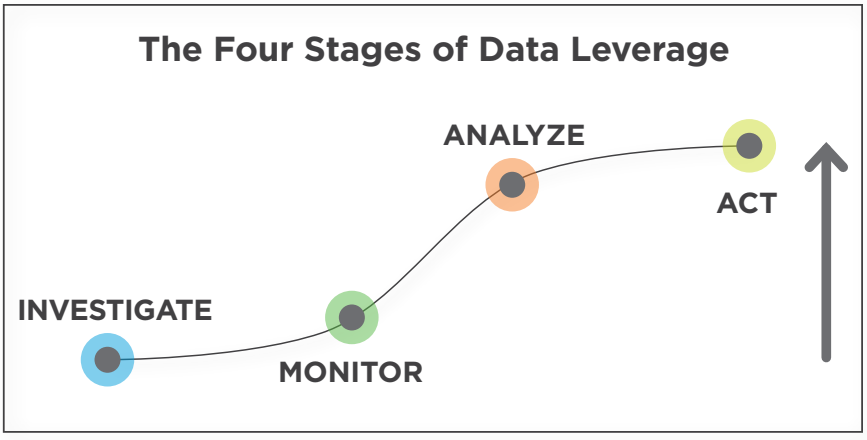
Instead of a day filled with fire drills, security teams can manage threats more proactively. Instead of spending days finding the cause of an outage, IT staff can predict interruptions and get ahead of issues. And instead of scrambling or guessing to meet citizen expectations, a data-driven organization can understand user interactions at every level and deliver the highest level of service proactively.

But data leverage is not a binary state. You don't get there by checking a box that says, "I am now data-driven." Achieving data leverage is a progressive journey based on an organization's digital maturity and desired outcomes that depends on four critical and distinct stages.

The Four Stages of Data Leverage: Investigate, Monitor, Analyze, Act

The acronym IMAA—investigate, monitor, analyze, act—holds the key to transforming your organization's use of data analytics.

- **Investigate:**
  - Collect and correlate
  - Frame and refine questions
  - Create visibility
- **Monitor:**
  - Automate recurring questions
  - Monitor continuously
  - Produce real-time situational awareness
  - Generate pro-active insights
- **Analyze:**
  - Leverage machine learning, artificial intelligence (AI)
  - Analyze massive datasets
  - Discover outliers, anomalies
  - Deliver predictive capabilities
- **Act:**
  - Understand your operating environment
  - Automate tasks and orchestrate workflows
  - Respond at speeds the mission demands



Investigate

The crucial first step to true data leverage is to collect and correlate the data your organization already holds, almost always across multiple sources and organizational siloes. That knowledge gives you the foundation of data leverage—the ability to frame questions and refine them in real time.

Everyone across the organization has the need to investigate, whether they are responsible for security incidents, application performance, data center outages or other critical functions that require information workers to discover "what happened and why." Those investigations begin with collecting and correlating data across hundreds of sources, bringing them together to create the visibility that allows you to ask questions with confidence.

Monitor

This is the stage in the data-driven journey where the right data analytics platform takes your agency far beyond a mere readout of information. Automating your standard, recurring questions through continuous monitoring creates real-time situational awareness. Over time, these insights form a baseline that provides a more complete understanding of the organization and its operating environment. Soon reactive becomes predictive, as investigations leads to proactive alerts and notifications.

Analyze

Deeper analytics go beyond basic investigations and provide predictive capabilities. Technologies like machine learning and artificial intelligence can be leveraged to analyze massive datasets, discover outliers and anomalies, and spot hidden patterns and future trends that may not be quickly obvious. That's when petabytes of data become an essential asset for the agency or program, rather than a relentless roadblock, giving an organization the real-time insights necessary to succeed.

Act

For any organization, taking smart, timely, cost-effective action is what the whole process is all about. The data-driven journey you've just gone through has given you the clear, complete understanding of your operating environment to optimize your day-to-day work and gain confidence. With a clear understanding of your environment, its patterns and trends, you can now optimize your work.

The monitoring and analytics stages have increased confidence in your decision-making, but corresponding actions are still manual and ad-hoc. With the ability to automate tasks and orchestrate work flows, you can begin to respond at machine speed. With repetitive and lower-tier work eliminated, your people can focus on more strategic efforts.

Putting It All Together

This proven approach—investigate, monitor, analyze and act—helps you put your data to work regardless of format, leveraging it to make informed decisions and act at the speed the mission requires. And to ensure optimal use, it is important that these capabilities be extended through a single platform that can scale to meet the demands of any organization.

Splunk - The Analytics Platform for Your Data Leverage Needs

Splunk is the integrated platform that supports a complex mission in a demanding operating environment, assembling up-to-the-minute data from multiple sources at mission speed and giving you a far richer, more nuanced understanding of your environment in the context of the issues you face. With built-in machine learning and AI capabilities, the Splunk platform delivers sophisticated insights and capabilities that enable you to respond to any adverse impact to keep the mission on track.

A key capability of Splunk software is its ability to collect data once and use it across many use cases that support diverse initiatives, such as security and risk management, compliance, IT consolidation and optimization, service delivery, and constituent experience, and more. This ability to derive value from the same data across disparate initiatives extends return on investment and lowers overall cost.

Splunk offers organizations the critical ability to harness data from almost any source and gain organization-wide visibility to make fast, confident decisions. Using the Splunk platform, organizations strengthen their future and ensure success by extending constituent and cyber safety, delivering service excellence, and embracing innovations responsibly. The platform can ingest large amounts of data from any source and is available in on-premise, in the cloud, and in hybrid configurations.

Organizations Making Data-Driven Decisions With Splunk

Here are four public sector institutions that have established themselves as leaders in leveraging data for fast, confident decision-making. The point they have in common is that they all rely on Splunk, a massively scalable data analytics platform, to meet their data acquisition and management needs and overcome a diverse set of challenges.

For the **United States Postal Service (USPS)**, the core mission is to deliver a superior citizen experience while effectively managing risk. With agency-wide visibility, the post office has successfully met a variety of essential compliance standards, including Sarbanes-Oxley (SOX), the Payment Card Industry Data Security Standard (PCI), and the requirements of the Federal Information Security Management Act (FISMA). With Splunk, they have been able to reduce manual compliance and audit efforts, saving $3 million annually. Additionally they have been able to ensure customer satisfaction while eliminating fraud and saving $1 million a month in the process.

Northwestern University in Chicago maintains its standing as a premier education institution by leveraging data to deliver a superior student experience. Splunk helps Northwestern optimize the performance of its campus applications and maintain the highest service levels across a geographically diverse infrastructure, while driving down the cost of services like video streaming by 66%.

With a 994-square-mile service territory in northern California, the **Sacramento County Sherriff's Department** was determined to boost efficiencies and accelerate its adoption of intelligence-led policing techniques. Splunk enables the county to optimize deployment of police resources by harnessing and aggregating information from multiple, diverse data sets, from real-time crime statistics to insights on the communities most in need of help. The department cut reporting backlogs by 50%, enabling officers to focus on the field duties that are the most important part of their jobs.

The **U.S. Department of Homeland Security** leverages data to monitor and troubleshoot its critical applications and infrastructure. Application monitoring naturally progressed into DevOps—where development teams were able to spot errors in new code as it was introduced, gain insights on what went wrong, and take corrective action. With development teams that are small and operate independently, a system for sharing metrics through integrated dashboards became an essential tool for communication and improved collaboration. The agency reduced troubleshooting times by an estimated 40%, saving more than $750,000 per year and accelerating time-to-market for applications by 25%.

To learn more about leveraging your data for fast, confident decisions and how Splunk can help, go to splunk.com/publicsector.

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