

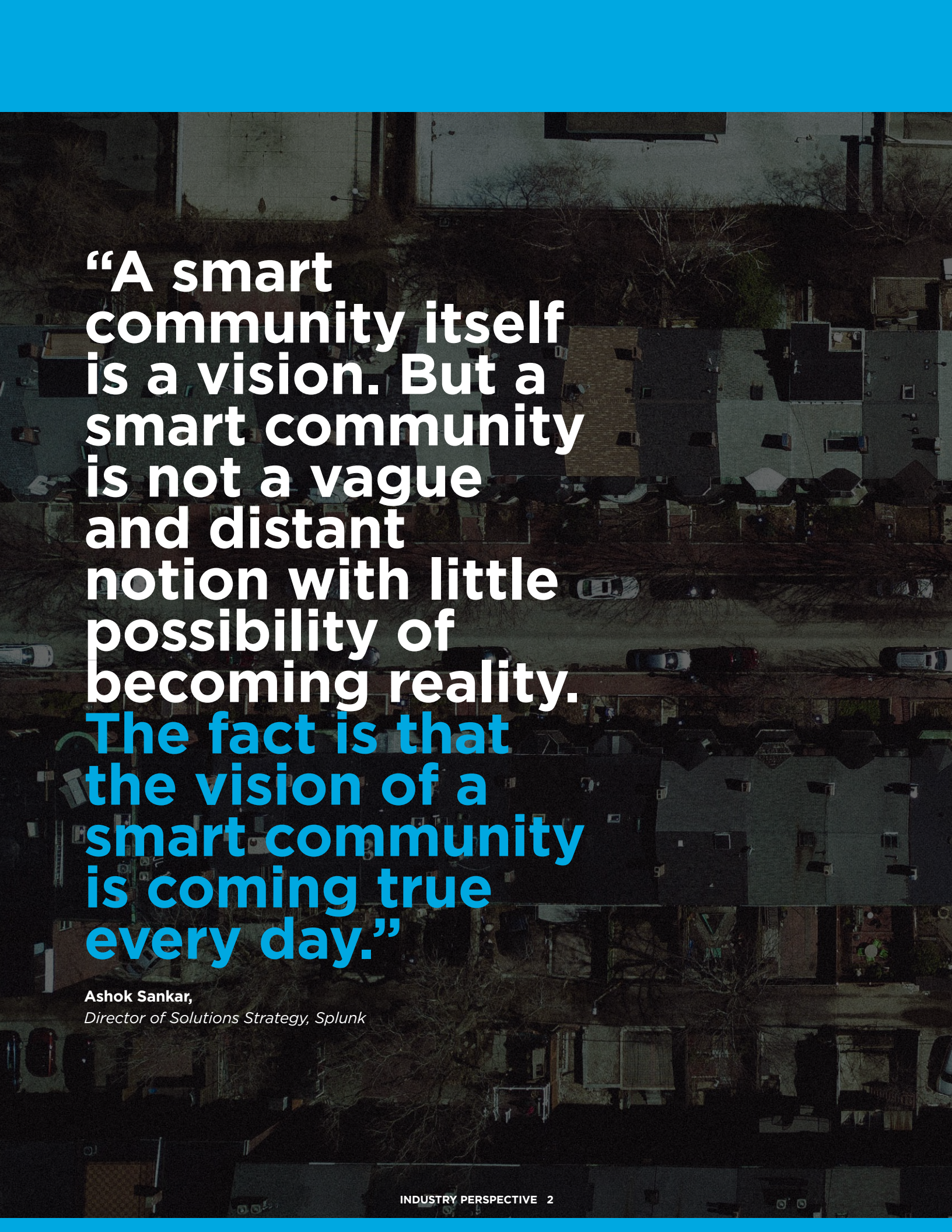
An aerial, top-down view of a city street intersection. The image shows a multi-lane road with a central median, a roundabout on the left, and a cross street on the right. There are green trees, sidewalks, and a few cars. A large black rectangular box is overlaid on the upper half of the image, containing white text.

From Aspirational to Operational:

*How State & Local Governments Can Harness
Data to Become a Smart Community*

Industry Perspective

splunk>



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Ashok Sankar,
Director of Solutions Strategy, Splunk

Introduction

In this day and age, it's not uncommon to be nostalgic for what seems like simpler times – particularly for those working in government. There was an era when state and local governments needed to simply provide basic services, like maintaining roads, sanitation, communicating information reliably to their constituents, and keeping these services running.

Fast forward to the 21st century, and state and local governments are dealing with a vastly different scenario. In addition to the duties of the past – keeping basic services running and citizens informed – state and local governments must now also attempt to:

- Build digital platforms that rival the capabilities and experiences of their commercial counterparts;
- Keep citizens' growing information safe from cyberattacks;
- Deliver digital experiences to meet their rising expectations;
- Maintain and rebuild a crumbling physical infrastructure.

All the while, they are faced with the challenges presented by a banner of declining budgets, a retiring workforce, and waning overall trust in government from citizens.

This is clearly a substantial challenge, but government agencies are up to the task. They are realizing that embracing data and innovation can help them succeed in this new era. Driven by citizen expectations and the need to do more with less, governments are working to transform their communities into digital ones. This transformation is powering the concept of smart communities.

This concept involves harnessing data from across government and using it to improve citizen services and overall quality of life in a community. A smart community can improve safety, keep sensitive information protected, enable efficient resource allocation, control costs, enhance citizen engagement, trust and experience and address issues before they have an adverse impact on citizens.

But many state and local agencies lack the ability to truly instantiate their vision of a smart community across their jurisdictions, as promising as it is. Why? After years of building special-purpose applications in silos, governments find themselves managing portfolios crammed with redundant systems that can't share data holistically or integrate business functions.

That's why GovLoop and Splunk, a leader in real-time data analytics and Operational Intelligence, have partnered to offer this industry perspective. In the following pages, we'll take a look at what a smart community means, and how data, a secure infrastructure and network, and a holistic approach are critical to this vision. We'll also share insights from Ashok Sankar, Director of Solutions Strategy, and Daniel Brady, Industry Program Lead, both from Splunk.

The Vision & Challenges of a Smart Community

The backbone of a smart community is data. Successful service delivery, performance insights and efficiency improvements at scale are obtained by collecting data across various relevant sources and deriving intelligence through real-time analytics. The result is unprecedented insights and situational awareness that can be used to meet community-wide priorities, including citizen engagement, business growth, disaster response, public safety and more.

A truly smart community is one that can avail the right technologies to manage its assets more effectively and efficiently. In this type of environment, government employees are able to move from tactical and repetitive tasks to strategic and value-added roles. Additionally, community residents benefit in a variety of ways, whether through safer, quicker and more productive commutes or higher levels of constituent services.

Many agencies are already making strides toward using data and analytics to drive various initiatives. But the reality is that most state and local governments are still hampered in these efforts by legacy infrastructures, reduced budgets, increased cyberthreats, and short-term planning. And silos of operations and disconnected initiatives have led to investments in myopic solutions instead of strategic planning and a holistic approach. So when change does happen, it's only in siloed areas and benefits are limited, making community or agency wide impacts both difficult and expensive.

"A smart community itself is a vision," said Sankar. "But a smart community is not a vague and distant notion with little possibility of becoming reality. The fact is that the vision of a smart community is coming true every day – but only in pockets which fall short of the real benefits and promises."

To make this vision a reality, state and local governments need to embrace modern technologies that guarantee efficiencies, automate tedious and time-consuming tasks, cut across silos to harness the power of the collective and scale across their

infrastructures. They need reliable and secure networks and infrastructure to collect, store and analyze data from across their infrastructure in all their types and formats.

But there are serious obstacles. The data being generated today across a community, especially with smart sensors and IoT devices, is voluminous, fast and non-standard. Traditional analytics solutions often either require a pre-defined data model, which is expensive, difficult to generate and requires iteration, or only collect data focused on specific initiatives – and by doing so miss the bigger picture. More importantly, many solutions don't scale to meet real-time demands.

"In a smart community, data needs to be collected in real-time and aggregated and correlated for use right away," Brady explained. "The insights derived during analysis play a big part in unearthing hidden patterns and potential insights that were not imagined before. That's why when data is collected in silos or different departments, it presents a large hurdle on the path to becoming a smart community."

What is required is an approach that is holistic and allows agencies to cut across these silos while delivering insights to drive specific challenges and initiatives without an overwhelming cost and resource burden. For example, in transportation, a driver with geofenced information would be able to make decisions on how to navigate and make adjustments to travel. Or in civic services, a citizen should be able to see wait times regarding when a pothole or a

broken street light may be fixed. And data on diseases or illnesses in the community can help a citizen be more prepared or take precautions.

While data collection and analysis is important, a secure infrastructure that is high-performing and available is critical to achieving this vision. If a secure infrastructure isn't in place and available, the services cannot be provided. A connected community is only as good as the network that supports it.

"Though the services being delivered may be the most visible part to citizens, the infrastructures that support these services [and] are critical are just as important," Sankar said.

"Every new technology increases the attack surface," he added. "With smart devices and IoT increasingly employed and agencies collecting personal and other sensitive information about citizens, safeguarding data and ensuring access integrity have become critical to the vision of a smart community."

Therefore, the building blocks of a smart community is clear: collect, harness and analyze data for insights that drive superior citizen experiences via a robust and secure infrastructure. But facing the challenges of budget, siloed data, and more, how can the vision be achieved without breaking the bank?

The answer lies in a secure, powerful platform that gives you real-time access to data, as well as the ability to ingest data once and have it available for use across multiple departments.

How Splunk Can Help Realize the True Promise of a Smart Community

It's clear that state and local governments cannot achieve the vision of a smart community while still dealing with legacy IT and disparate data. Realizing the full value of intelligence locked in massive amounts of open and unstructured data means looking beyond traditional data management and database technologies.

Unlike legacy data platforms and siloed monitoring tools, the Splunk platform offers scalable analytics that deliver holistic visibility through a single interface and enables the discovery of powerful insights. It allows state and local governments to overcome their biggest hurdle in becoming smart communities: automating the collection, correlation and analysis of siloed and disparate data.

The Splunk Enterprise platform for government offers the following:

- Real-time access to data regardless of source, format or type
- Ability to ingest data once and have it available for use across multiple departments
- Proven system availability and performance monitoring
- Analytics in real-time without the need for pre-defined data models
- A platform that can cut across silos, ingest data at scale, then correlate and make the data available for analysis through a single pane of glass
- Machine learning to eliminate manual analysis and focus valuable cognitive efforts on unearthing hidden patterns and insights and higher-level decision making

A key capability of the Splunk platform is the ability to collect data once and use it across many use cases that support diverse government initiatives: security and risk management, compliance, IT consolidation and optimization efforts, citizen services delivery, crime and fraud prevention, compliance and smart infrastructure initiatives, are a few. This ability to derive value from the same data across disparate initiatives extends returns on investments and lowers overall costs.

Splunk offers state and local governments the critical ability to harness valuable machine data from any source to gain organization-wide visibility so they can make fast and confident decisions. Using the Splunk platform, agencies strengthen their future and ensure success by extending citizen 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, cloud and hybrid models.

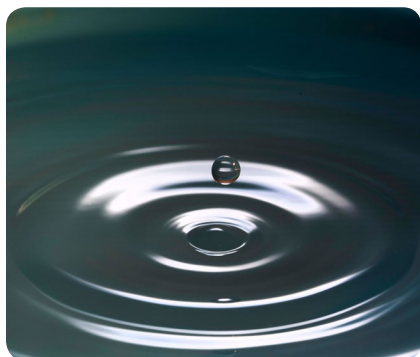
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Daniel Brady

Industry Program Lead, Splunk



Case Studies: Data Driving the Promise of Smart Communities



Denver Water

More than 1 million people, 2.5 million acres of watershed and 25 percent of the population are served with 2 percent of the state's water. These are just some of the figures behind Denver Water in the state of Colorado.

With such a critical role serving so many people, the department struggled to identify problems, structural issues and other challenges before they might arise and impact water service to its customers. Its IT department was overwhelmed by the volume of data logs and help desk requests from users. Considering the amount of data, a water utility collects – everything from data on treatment plants, to distribution pipes, to security of assets, to information on reservoirs and other water sources – it was a significant challenge.

By turning to Splunk's Operational Intelligence platform, Denver Water found the solution it was looking for. Instead of reviewing unstructured data displayed in a jumble of text and code, their log data is now displayed in various graphical formats, enabling IT leaders to quickly see failure trends and address them ahead of time. As an added bonus, these easy visualizations of data allow them to be shared with and understood by nontechnical colleagues.

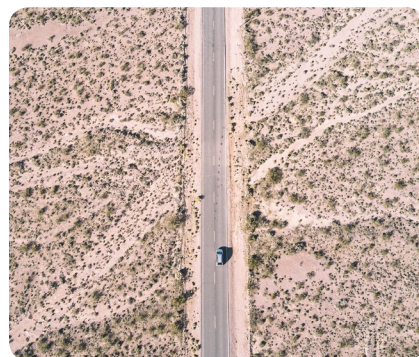


Sacramento County Sheriff's Department

Sacramento County encompasses 994 square miles in the northern portion of California's Central Valley. While much of the county is unincorporated, it is surprisingly urban, with a population density of more than 1,400 residents per square mile. Each year, more than 20,000 crimes are reported in the county.

The Sheriff's Department has jurisdiction over many of the facilities operated by Sacramento County, including the Sacramento County Jail and the Rio Cosumnes Correctional Center. In 2015, the department announced that it was transitioning to a new law enforcement practice known as intelligence-led policing, which provides actionable intelligence that can be used by team-based community patrols to identify and proactively address potential high-risk areas. To achieve the vision of insight and data-driven decision-making, the department turned to Splunk Enterprise.

Collecting its data into one holistic dashboard had significant benefits for the department. The visualizations and real-time access to crime statistics and operational insight helped identify trends and improve public service, saved hundreds of hours per year in ad hoc report generation and helped cut a reporting backlog by up to 50 percent.



Nevada Department of Transportation

The Nevada Department of Transportation (NDOT), a division of Nevada's state government, aims to enhance public safety and commerce by planning, constructing, operating and maintaining the state's highways. NDOT oversees Nevada's 511 system, which enables citizens to determine road conditions and delays, as well as a statewide video network that allows motorists to view traffic levels prior to traveling.

NDOT's information security officer (ISO) was concerned about hacking attempts targeting NDOT due to its responsibility for transportation infrastructure. Unfortunately, NDOT's manual processes for system log reviews were tedious, unreliable and often too late to mitigate time-critical issues.

When it turned to Splunk Enterprise, NDOT gained the ability to send log event data across its infrastructure into the platform. By doing so, the department immediately gained operational visibility into security and IT operations issues that had previously taken numerous man hours to resolve, giving staff the ability to work on more mission-critical projects.

Conclusion

By using a single and massively scalable data analytics platform such as Splunk, state and local governments can finally have the real-time insights and intelligence needed to take the fast, decisive actions necessary to achieve the vision of a smart community. With the Splunk platform, organizations can collect data once and use it often to drive decisions across multiple use cases, saving money and providing greater ROI under tight budgets.

For state and local governments that truly want to transform, modernize and innovate their communities, it can become reality sooner than they might think. But any strategy for future government service delivery must include harnessing and applying the vast trove of data generated each minute of every day in order to fully leverage these opportunities and address challenges that will inevitably arise. By taking a holistic approach, moving data out of silos and creating a secure, robust infrastructure, state and local governments can truly make positive impacts on their communities.



About Splunk

Splunk Inc. (NASDAQ: SPLK) is the market leader in analyzing machine data to deliver Operational Intelligence for security, IT and the business. Splunk® software provides the enterprise machine data fabric that drives digital transformation. More than 14,000 customers in over 110 countries use Splunk solutions in the cloud and on-premises. Join millions of passionate users by trying Splunk software for free: <http://www.splunk.com/free-trials>.

To learn more visit: <https://www.splunk.com/publicsector>.



About GovLoop

GovLoop's mission is to "connect government to improve government." We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 250,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

For more information about this report, please reach out to info@govloop.com.



1152 15th St. NW Suite 800
Washington, DC 20005

P: (202) 407-7421 | F: (202) 407-7501

www.govloop.com
@GovLoop