In Defense of Data: How Real-time Insights Drive DOD Missions Forward

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Data has the power to help warfighters and operators make confident decisions in real-time. But the sheer volume of data is nearly impossible for humans to process all on their own. Here's how the Defense Department can leverage data in a way that better informs the mission.

Former Naval Officer Juliana Vida was flying a mission to protect USS Nimitz — a supercarrier of the U.S. Navy — when she learned the true value of data. Vida's co-pilot had accidentally fired chaff, creating a loud bang and a plume of smoke. As it turns out, this accident happened because a routine maintenance check found a faulty chaff launch switch on the helicopter. However, Vida and her co-pilot didn't know about the failure because it wasn't properly logged into the system used for maintenance checks.

"The information existed," she explained. "It just didn't exist in the cockpit when and where we needed it."

Over a decade later, data has become somewhat of a double-edged sword: It has the power to produce valuable insights and help warfighters and operators make real-time decisions with confidence that directly impact U.S. national defense. But the sheer volume is nearly impossible for humans to process all on their own. So what steps can the Defense Department take to leverage data in a way that better informs the mission?

Vida, who now serves as the Chief Technical Advisor for public sector at Splunk, joined other defense leaders at GovExec's recent webcast, "Data and the Future of Defense," to help answer that question.

The Defense Industry Suffers from Digital Exhaust
Data is everywhere — it's being processed, structured and consumed in various environments where warfighters operate.

When managed effectively, this data can be a strategic asset: Vida calls it the "fuel for innovation" because it has the power to inform high-level decisions and drive results. But that same data can

bring about dire consequences when mismanaged or structured incorrectly.

Col. Christopher Ardent, director of data services for the Office of the Secretary of the Air Force, has experienced some of these data challenges firsthand.

"The amount of data, the different sources of that data, it's a Herculean effort to get your arms around that, just to get access to that data, let alone process it and derive insight from it," Ardent said at the event. "A lot of it is unstructured data. Some of it is noisy or messy data."

Of course, structuring that data into a usable format is a difficult and labor-intensive feat. Employees are better off spending their time and energy on more strategic initiatives. Data should be an asset — not a hurdle — to their missions.

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That's where artificial intelligence-driven tools and technology come in. Solutions like Splunk's data-to-everything platform take data — however unstructured or disorganized — and transform

it into actionable insights. That means IT leaders spend less time rummaging through and analyzing data and more time leveraging it to find solutions. And more importantly, warfighters can trust their data and use it to make real-time decisions and take decisive actions.

DOD is already beginning to leverage the power of data with new initiatives like Joint All-Domain Command and Control, orJADC2, which connects distributed sensors, shooters and data across all domains. Although still in the early stages of development, JADC2 could optimize warfighting operations on a global scale. Data platforms, which structure and deliver critical information in real-time, could serve as a key component of the mission.

When Artificial and Human Intelligence Join Forces

For Jennifer Zbozny, director of the Software Engineering Center for the U.S. Army Communications-Electronics Command, the problem isn't the quality of the data, but the velocity.

"We were getting really great information," she said at the event. "The problem is, what do you do with it? It was a tremendous amount [of data] to go through."

Overwhelmed with more data they could possibly keep track of, Zbozny's team developed a plan: With the help of machine learning, data analysis that used to take multiple months for a human to complete now takes just minutes.

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True strategic insights emerge when humans are armed with data that allows them to make effective decisions. But this can only happen when there is a marriage of human intelligence and artificial intelligence.

"Being able to process all of that data is not something you can do with human insight alone," Ardent said. "You really need to integrate human insight and AI or machine learning to be able to tackle that and direct people to the right place."

It's Time for DOD to Embrace Secure Cloud-Based Solutions

If data is the fuel for innovation, cloud is the platform that will make that innovation possible. For that to happen, Vida said, DOD must shift from on-premise, legacy systems to cloud-enabled environments.

"People want to buy software and own it forever," she said. "But as the software begins to age, [it becomes] really, really hard to maintain. And we still see that today in the legacy environments, across the federal government and the DOD, where people are responsible for managing all of this stuff."

To successfully leverage the cloud, organizations must invest in security. Partnering with vendors who are Federal Risk and Authorization Management Program (FedRAMP) authorized is one way to embrace a secure cloud infrastructure. Vida also recommends agencies invest in platforms with data anonymization and access capabilities "that keep truly personal data only in the hands of the people that need it."

Today, with more government and DOD employees teleworking than perhaps ever before, organizations must ensure their

workers access remote environments securely. Some agencies have adopted a zero-trust security architecture, a framework that aims to prevent security breaches by eliminating the concept of implicit trust at an organization. This approach requires employees, partners and anyone else who wishes to gain access to an organization's resources to confirm their identity when they sign on and be continuously verified.

But for organizations developing IT tools and platforms, cloud security must be a key consideration from the very beginning. Taking a DevSecOps approach, where security specialists collaborate with developers and operations teams early on in the software development process, is one way to ensure secure solutions' delivery to market.

The Army's Communications-Electronics Command is one office within DOD that has seen this approach pay off.

"It allows us, frankly, to do more with less," Zbozny said. "It allows us to be faster, more agile, to get a lot more done in a more automated fashion. And so, we can solve more problems."

For DOD, data is more than just a nice-to-have. Access to the right data can make or break a mission.

"If you make one wrong decision along the kill chain, disaster can happen," she said. "The margin of error is shrinking because the decision cycle is getting faster and faster. We need to modernize as if our lives depend on it — because they do."

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Learn more about how Splunk's Data-to-Everything platform can help your organization achieve mission success.