

Q&A

Executive Viewpoint

A conversation with **Carlene Iletto**



Deputy Chief Data Officer, Department of Homeland Security

This conversation is adapted from a presentation at an FCW event.

How DHS is implementing the Federal Data Strategy

It is more important than ever to understand that data is needed for making evidence-based decisions every single day. Sharing data is crucial for all of us to meet our respective goals.

Let me start with what DHS has done to demonstrate the importance of data, specifically focusing on its quality, reliability and accuracy through the Federal Data Strategy. We have developed mission data domains such as immigration data, which focuses now on family reunification. We have the law enforcement mission data domain, which is focusing on child trafficking. We also have the cybersecurity mission data domain, which is focusing on the many breaches that we've had across the federal government. We have many more domains, but those three are working on areas right now that are critical to the mission of DHS.

In addition to that, we're generating policies for data interoperability and data sharing, and we're looking at the data governance structure to ensure that we have a process in place that will help our components and our mission data domains communicate the data necessary to impact the country and the country's security in a positive way.

The Federal Data Strategy is a guide to improve the collection, maintenance, application, and security of internal and

external data, with carefully considered approaches for the utilization and sharing of data for the necessary applied functions. The chief data officer leads that process and more importantly implements those data policies.

The 4 types of data analysis

One way to reduce waste, fraud and abuse, for example, is by conducting data analytics, assessing the quality of the data, raising the quality of the information that influences decisions in the workplace and making lasting process improvements.

Now don't get me wrong. None of this is easy. Actionable data analytics requires the user to understand a whole range of things, such as what the data will be used for, the consistency of the data interoperability and what actions will be taken based on the data.

Another complicating factor is the multiple types of data analytics to choose from. My advice is to choose the type of analytics that will help answer the questions you need to ask, and those two questions are "what?" and "why?"

The four main types of data analysis are descriptive analysis, which tells you what happened; diagnostic analysis, which helps you to determine why stuff happens; predictive analysis, which helps anticipate what could possibly happen next; and prescriptive analysis, which helps organizations improve workplace processes.



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Descriptive analysis tells you what has happened and that it may possibly have consequential impact. Diagnostic analysis helps determine why stuff happens. If you need to learn how to repeat a successful process or assess a flawed process, then diagnostic analysis can help you uncover the reasons the process works or doesn't work. This is where you start to drill down and implement data discovery, data mining and data correlation.

The third kind of analysis is predictive analysis, which helps anticipate what's next. You can accurately guess the future outcomes of a decision or process by using information already generated by descriptive and diagnostic analysis to identify trends. Then employees can use predictive research to determine what's just around the corner.

It's also critical to gather the views and priorities of stakeholders and get them on board for the actions you're planning to do. Doing this will help you focus on the right parts of the process to measure and improve. In addition, you should let the process and the data-gathering exercise run as long as possible because you will get more high-quality data, and more insights will be also provided.

The fourth kind of data analysis is prescriptive analysis, which helps organizations decide how to improve their workplace processes. Artificial intelligence is a very effective way to conduct prescriptive analysis because it allows organizations to sift through an extreme amount of data and then use all that data to make informed decisions.

Minimizing noise and bias in data

In analyzing data, it's important to consider two different types of errors: noise and bias. A bathroom scale is biased if its readings are consistently higher or lower than the true weight. If, on the other hand, the weight reading seems to depend on where you step on the scale, then the data is considered to be noisy. A scale that chronically underestimates weight by 3 pounds is seriously biased but free of noise, and a scale that gives two different readings when you step on it twice is noisy.

Eliminating the effects of noise and bias is tricky. One reason for noise or lack of agreement in organizations is that people don't consider reasonable alternatives to their every judgment.

At DHS, we have several components that collect similar data. Then we can look at the holistic picture and align that data to ensure that it makes sense and it's logical. For example, three components make up the mission data domain of immigration. Immigration and Customs Enforcement may have data brought in that is focused on one specific thing but have information from other areas that supports it. Then we look at data from Customs and Border Protection and from U.S. Citizenship and Immigration Services. If we have a consolidated, diverse set of data, we can pull it together to really understand the story that data is telling us, and then we're able to remove the bias as much as possible.

I'm not saying that it's perfect. We need to have analysts who really understand what they're looking at and are able to pull out the bias and look at the facts only.

Ensuring that improvement is continuous

I've mentioned just a few kinds of data analysis, but there are hundreds. You should choose a method based on the process you want to improve or what's best for you. Another approach is to try a few different methods and see what provides the best insight. Generally, the analysis that gives you the most surprising and interesting results is the one that works best for you. Once you have found the analysis method that works, you should dig into the data to uncover any anomalies or any issues that may be there.

If you are truly interested in improving your processes, you should ask the people who use the processes how the processes can be improved. Look at handoffs and bottlenecks to understand what's causing problems, and learn about quality issues and what causes them. For example, identify unnecessary delays in the process to figure out how you can speed things up. Above all, you should be able to act using the data you have obtained.

Improving processes is and should be a continuing process. One expert says continuous improvement is not about the things you do well. It is about removing the things that get in the way of your work. That's what continuous improvement is all about. Once you know what to measure, what to track, what to analyze, and what to remove or improve, you have the right processes in place to ensure that continuous improvement really is continuous. ■



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