

Importance of Data Analytics in Public and Private Sectors... Including Basketball

James M. Bishop (jbishop@ida.org), Kristen M. Guerrero (kguerrer@ida.org), David E. Hunter (dhunter@ida.org), and Brian Q. Rieksts (brieksts@ida.org)

The IDA Applying Data Analytics Forum strives to improve collaboration in data analytics across the Federal Government, Federally Funded Research and Development Centers (FFRDCs), industry, and academia. IDA hosted the second event of this forum on April 24, 2019 with a focus on people analytics. IDA President David S.C. Chu opened the session. Highlights from the government, industry, FFRDCs, and academic presentations follow.



Government perspective: Acting Deputy Assistant Secretary of Defense for Military Personnel Policy Lernes Hebert and then-Assistant Secretary of the Army John E. Whitley participated in a government panel with discussion moderated by David Nicholls, Director of IDA’s Cost Analysis and Research Division. The panelists discussed their respective thoughts on questions such as: What are some examples of how data analytics is important in your role and how do you use data analytics to inform decisions? Do you see any key differences between industry and government that allow industry to use data analytics more extensively than the Department of Defense (DoD)? Both panelists made observations about the very different approaches to personally identifiable information taken by industry versus the heavily regulated environment of the DoD.

“The number of controls on data within the DoD is much higher than in industry. . . . Industry has a culture and practice of data sharing, whereas the DoD is significantly more compartmentalized.”

—Lernes Hebert

“How the Army obligates and disburses money from its budget is an important question with several analytical dimensions. . . .The Army is creating a new analytic environment that will allow forecasting and the discovery of root causes related to obligation and deobligation rates.”

—John Whitley

The government perspective was supplemented in a presentation by Greg Capella, Deputy Director, Department of Commerce, National Technical Information Service (NTIS), who spoke on “Accelerating Results: Applied American Data Science Ingenuity—Delivering Value to the American Public.” He spoke about the role and joint venture authority of NTIS to help facilitate partnerships between government organizations undergoing data-driven transformation or modernization and private companies that can help facilitate this change. The process has five phases: ideate, conceptualize, propose, partner, and implement. A unique feature of the NTIS implementation of its authority is an early conversation with the sponsoring agency and the private sector about the problem statement. The timely and early input by the private sector in formulating the problem statement is how NTIS delivers value through design thinking.

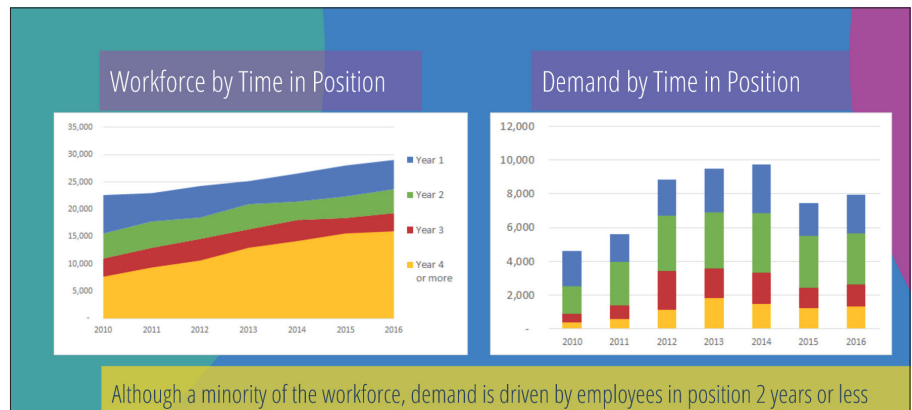
(continued)

NS D-10721



Industry perspective: Cal Zemelman, Director, Customer Value Partners (CVP), presented “Predicting Hospital Readmissions Using Machine Learning.” He described how individual patient data can be used to flag people at higher risk of readmission in order to help reduce the expensive readmissions. He also identified methods for increasing model transparency and discussed how these machine learning models can be applied to applications beyond hospital readmissions.

FFRDC perspective: IDA Research Staff Member Kristen Guerrero (below) spoke about the application of data analytics in a recent IDA project where she used machine learning to construct a much improved forecast of demand for Defense Acquisition University training courses. She introduced some of the latest techniques in supervised machine learning for structured data and showed how they improved upon previous predictions.



Academic perspective: “The Intersection of Vision and Execution in Sports—a Peek” was the title of a presentation by Gen. Ronald Johnson (U.S. Army, retired), Professor of the Practice, Georgia Institute of Technology and former Senior Vice President of Referee Operations for the National Basketball Association (NBA). In his position with the NBA, Gen. Johnson was responsible for using and analyzing data to improve the officiating performance. He discussed the way his background in operations research and the use of data analytics helped him accomplish this goal. He noted that proactively making data available to analysts is central to growing a fruitful analytic community.



“After thousands of games of collecting . . . data, the NBA has a detailed picture of every aspect of the typical game—how many travels to expect, how many shooting fouls to take place, how many correct/incorrect calls made by each referee. A leadership challenge is to decide on the best way to use this data to maximize the long term growth of the organization, once it has been collected. The best way to use it for example, would not be to just give it to every referee, as referees may overcorrect for certain mistakes they see themselves making.”

—Ronald Johnson