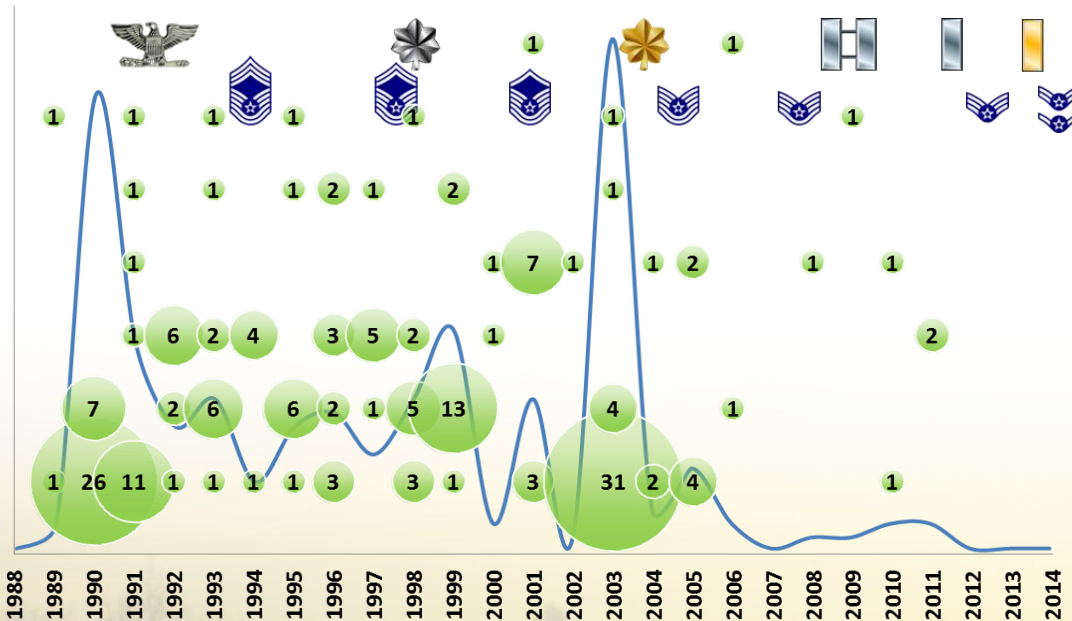*capability paper*
DATA SCIENCE & VISUALIZATION

The challenges of the 21st century operating environment require leaders and their organizations to make the right decisions, faster. Silicon Valley calls it disruptive technologies. U.S. Air Force fighter pilot John Boyd called it the OODA loop. The intent is the same: employ science to more rapidly glean insights from data and gain decisive advantage over the competition.

Data-driven solutions must be simple and visual. Leaders and their teams need to see and understand the data's meaning, or they won't act on it. The common problem is too much unconnected data and too few insights. Even though data science is a natural plug-in to any management initiative, leaders rarely exploit its full potential. Such gaps can delay or diminish performance.

CASE STUDY*

Challenge: Before revamping a flag-level expeditionary combat support exercise, U.S. Air Force leaders needed to understand and articulate why it was urgent to adjust the training exercise.

Solution: After a series of senior leader strategy workshops on the exercise, the research still lacked a bulletproof justification. The team turned to data science. A data scientist compiled and correlated 25 years of data on 196 airbase openings for military operations across 6 continents. He built a weighted graph and cross-walked the data by year groups of USAF personnel who had likely participated in an airfield operation. It became clear: as airbase openings slowed over time, the junior ranks had few chances for hands-on experience. More training was critical.

Result: The data visualization conveyed to a group of Air Force four-star generals, in a single chart, that updating the exercise was needed to preserve and regrow crucial force capabilities.

The office in this case study is not a client of Outpost LLC, which did not work on the project described above. However, an Outpost principal was on the project team while employed at a different firm. This case study contains no proprietary data or methods.

Outpost has deep experience quantitatively compiling, distilling, and translating complex data sets into a succinct, meaningful takeaway. Our data scientists have built million-line data sets and run empirical log-linear regression analysis using the latest software tools. Simply put, we can find and quantify the important patterns in the noise. **Contact us** to help you make sense of your data, visually.