

5 Ways Big Data and Artificial Intelligence Could Change the Landscape of Government Contracting

October 2020

In recent years, big data and artificial intelligence (AI) have received significant attention, mainly in the commercial sector, but increasingly so in the federal government. AI and big data work together to help organizations gain useful business insights, maximize efficiencies, make better decisions, and advance their missions. Government procurement organizations are no exception. This article explores how some federal agencies are incorporating big data and AI into their procurement processes, and some of the capabilities being eyed for potential future use. Big data and AI could fundamentally transform the way government agencies conduct procurements, from source selection planning to contract closeout, and just about anything in between. But these technologies are not error-proof, which could present problems for contractors as errors in AI processes are often hard to detect and resolve. Companies doing business with the government should be aware of these trends and understand how they could change the federal government contracting landscape.

What is big data, what is AI, and what's the difference? Big data and AI are different, but related, concepts. In the context of federal procurement, big data consists of a contracting agency's raw data inputs such as solicitations, contracts, spending data, contractor performance reports, procurement policies and regulations, contract specifications, correspondence, and presentations. These inputs become "big data" when they are combined into very large, often complex data sets and placed in a dedicated data environment where they are structured, integrated, and leveraged to deliver useful

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data analytics. AI, on the other hand, is a computing method that enables machines to analyze and interpret big data to answer questions, solve problems and address issues. An AI-enabled machine does this by performing cognitive functions in a manner comparable to humans, but much faster and usually with fewer errors. There is a reciprocal relationship between big data and AI: The latter depends heavily on the former to be effective. In other words, AI depends on big data to fuel its intelligence.

This article discusses five trends that should be on every federal contractor's radar screen as the use of big data and AI in federal procurements proliferates.

1. **Using automation to enhance efficiency.** Automation can speed up manual tasks across the entire government contract lifecycle. Many agency procurement offices already rely on AI to maximize efficiencies. For example, the U.S. Department of Health and Human Services (HHS) uses AI to consolidate contract vehicles, and both the U.S. General Services Administration (GSA) and the National Aeronautics and Space Administration (NASA) deploy robotic process automation bots – essentially, software-based “robots” that can learn, mimic, and then execute rules-based business procedures – to assist with their procurement processes. The U.S. Navy also relies on AI to provide real-time supply chain data, and many other agencies are using AI to reduce or eliminate procurement workload backlogs. Through automation, some manual contract administration activities could eventually be phased out altogether, including market research, contract modifications, invoicing, and award fee determinations. That possibility increases for high-volume contracts, such as GSA multiple award schedules, blanket purchase agreements, indefinite delivery contracts, and governmentwide acquisition contracts (GWACS). But automating those tasks could have significant adverse financial impacts for contractors, if errors occur without detection or effective resolution.

AI also has the potential to help agencies conduct procurements more quickly, specifically by enabling contracting personnel to better navigate the applicable regulations. For example, the U.S. Air Force plans to use AI to help acquisition professionals speed up the procurement process by uploading thousands of pages of regulations, contract cases, acquisition training materials and U.S. Department of Defense (DOD) policies, which AI technology will use to answer questions often raised by procurement personnel, such as *“which acquisition rules and regulations should be applied?”*, *“how should this contract be structured?”*, *“what contract type should be used?”*, or *“should this contract be set aside for small businesses?”* While potentially helpful to agency personnel, overreliance on AI-generated responses to questions like these could have adverse consequences. For example, if regulations are misinterpreted or misapplied, this could mean overly-restrictive solicitations, impractical contract types for the work involved, or set-asides for which there are no small businesses able to perform the contract requirements. Rather than improving efficiency in the procurement process, these risks would have the opposite effect without appropriate human quality assurance.

2. **Assessing and allocating risk.** AI may also be used to help agencies allocate and manage risk in federal procurements. Risk allocation within the business relationship between government agencies and contractors is usually addressed by selecting a certain contract type, or requiring bonds and insurance, and in some instances, through contracts that the government finances. But agencies can

leverage big data and AI to forecast demand with greater ease and accuracy, as well as identify potential cost savings, and determine which suppliers pose the greatest risk. Additionally, AI can be critical to the schedule risk assessments (SRAs) agencies often use to determine the probability of a project being completed according to schedule. While this sort of AI-based data analysis can be useful for contract management and decision-making, it cannot eliminate the risks inherent in any government acquisition. The government's overreliance on such analyses could lead to unrealistic expectations for a project's completion that are then passed along to contractors unable to meet them.

- 3. Increased competition.** Big data combined with AI could make entry into the government contracts marketplace much easier for small and emerging businesses, as well as first-time contractors. These technologies could be used to generate lists of recommended contract opportunities that companies are eligible to bid on, together with the exact contract requirements, applicable regulations and any useful metrics to inform their decisions to pursue certain opportunities. They could also help match up vendors with potential government customers. This would lower barriers to entry for companies that traditionally avoid working with the government because of the complicated acquisitions process and a regulatory regime that may be too difficult or burdensome to navigate. For well-established contractors, however, increased competition could make it much harder for them to win new contracts or retain the ones they currently hold.
- 4. New legal frameworks.** AI could create a new legal framework for government contracts that requires increased transparency and accountability from contracting agencies. Procurement officials may have to explain – and perhaps defend – the AI tools they are relying on, including how the underlying algorithms inform their decision-making. Big data and AI can also be leveraged to help government procurement personnel automatically create contract documents with previously-used terms that are known to benefit the government. Similar technologies can be used to instantly map third-party contracts to an agency's internal legal playbook to identify any objectionable terms. A new body of law could possibly develop around data protection, security, and privacy for big data that was produced by or otherwise pertains to contractors. Data analytics involving this often-sensitive information may require more sophisticated data disclosure and management regimes to avoid inadvertent disclosure or unintended use.
- 5. Tracking contractor performance.** Big data and AI have the potential to help agencies track vendor performance, pricing, and overall program performance. AI automation tools could help manage and monitor a contract's delivery and reporting deadlines, enforce other vendor obligations, trace the government's investments back to contractor performance, and determine award fees more objectively than humans by eliminating bias. Although these applications could benefit contractors through more data-driven performance evaluations and award fees, assuming accurate algorithms, they could also mean heightened scrutiny and increased accountability.

Conclusion. Using big data and AI in government contracting holds the promise of fundamentally transforming the federal procurement system. Contractors should consider how these technologies may impact their business models and adapt them as needed to remain competitive in the government contracts

marketplace of the future.