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DOD Blockchain Use Could Benefit Contractors If Expanded

By **Daniel Wilson**

Law360 (September 25, 2019, 7:31 PM EDT) -- The U.S. Department of Defense has begun experimenting with blockchain for cybersecurity purposes, and its venture could open up possibilities for the technology to alleviate paperwork burdens and reduce counterfeits in the defense supply chain.

The decentralized nature of blockchain — a ledger of blocks of transactional data — makes data tampering very difficult, if not impossible, and the DOD's early efforts have been focused on creating secure platforms for transmitting messages and other cybersecurity programs.

Blockchain also offers the advantage of being easily accessible, and if the DOD were to consider expanding its use of the technology, observers say defense contractors could greatly benefit by being able to secure their supply chain.

"I think the focus of the Department of Defense has really been on cybersecurity, and understandably so — that is more critical," Crowell & Moring LLP attorney Gail Zirkelbach, who closely tracks the use of emerging technologies in federal contracting, said.

"But in terms of efficiency, the [DOD] could do more to incentivize, or strongly encourage, contractors in the manufacturing process to do away with" — for example — "paper travelers and replace them with sophisticated blockchain technology," she added, referring to documents that record details of an item being manufactured and moving along the supply chain to the end customer.

By adopting a blockchain-based process, the DOD and defense contractors would eliminate the need to fill out physical paperwork, as well as creating a secure digital record that is "less susceptible to tampering or falsification," Zirkelbach said.

Blockchain data is verified by a network of computer nodes, and incorrect data fed in by a rogue node gets rejected by the entire network. Attempts to tamper with the data are also obvious when they occur, Michael Hsieh, the executive director of the Transformative Cyber Innovation Lab within the think tank Foundation for Defense of Democracies, said.

Blockchain is mostly known for its association with the cryptocurrency bitcoin, and its use in tracking bitcoin transactions provides a strong example of the "robustness" of the technology, according to Hsieh.

"The beauty of this is that anybody can download blockchain software today and get on the [bitcoin] system ... so there's a very open quality to this network, but not so open such that I can just horn in there and start destroying things, and stealing and sabotaging," he said.

So far, the bitcoin blockchain is "working as promised," yet to be hacked after 11 years, according to Hsieh, who co-authored a 2017 analysis on the use of blockchain to protect the national security supply chain. He is also a former program manager within the DOD's Defense Advanced Research Projects Agency, which studies emerging technologies for the military's use.

"What are bitcoins worth, $10,000 these days?" he said. "And if you want to be a 21st century bank robber, that's where you really want to go. But nobody has done it yet. To me, that's a pretty powerful indication that there's something there."

The technology is now being increasingly adopted both in industry and in government, and the DOD praised blockchain as a technology that "inverts the cybersecurity paradigm" in its July Digital Modernization Strategy.

DARPA is currently experimenting with blockchain to facilitate the development of "unhackable" code, and other DOD agencies are also exploring its use in programs such as tracking disaster-relief efforts, according to the DOD.

But there is more the DOD could do to help encourage its industrial base to use blockchain, particularly by paying more attention to how contractors want to use it, or are using it already — in logistics and other aspects of their supply chains — and not just as a cybersecurity aid, experts said.

"I think a lot of contractors see it as a supply-chain issue as well, and it's certainly being used that way by contractors," Holland & Knight LLP attorney Mary Beth Bosco, who follows government efforts to implement blockchain, said. "But I don't think DOD has made a huge use of it in that capacity."

The use of blockchain in the defense supply chain, for example in software validation and anti-counterfeiting programs, can help build the level of trust from customers that industry executives strongly believe is necessary to secure business, according to Craig Gottlieb, the innovation lead for aerospace and defense at professional services firm Accenture.

But blockchain is also a "technology of scale" that needs broad participation to work best, he noted.

"It requires an ecosystem of assets, partners, sustainment providers, and support services to buy in and participate," Gottlieb said. "The 'minimum viable ecosystem' secures the volume and diversity of data that makes blockchain truly impactful."

Hsieh said that by offering an efficient and economical way to use digital tracking in defense supply chains, blockchain could be useful for tracking and verifying the work of small suppliers that — unlike large, prime defense contractors — currently lack the capacity to do so.

"Where I think blockchain has the biggest capacity to shine is being able to reach really far down — when you are maybe 20 or 30 steps removed from the big defense primes and you're getting to a very micro level of who's touching what and who's adding value to what," he said.

Zirkelbach, alongside her example of potentially eliminating paper tracking, also pointed to the benefits of possibly combining blockchain with other emerging technologies, like artificial intelligence.

Such a move could be used to create a secure record of flight times and conditions for military aircraft, and then determine and schedule appropriate maintenance, she said.

Holland & Knight's Bosco noted that artificial intelligence and machine learning technologies are already being used to draft contracts and manage inventory, and said blockchain could help secure these efforts.

Ultimately, it may be a natural move for both the DOD and contractors to adopt blockchain as the department shifts from a more centralized approach to "command and control" and becomes more reliant on technology, according to Gottlieb.

"As the capabilities of platforms, from the venerable B-52 to the in-design B-21, become more defined by their onboard software than their physical hardware, operators must have total trust in the data flowing through those systems," he said.

--Editing by Breda Lund.