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Former CEO of Google: Building the Perfect AI War-Fighting Machine

The former Google CEO is on a mission to rewire the US military with cutting-edge artificial intelligence to take on China. Will it make the world safer?

By Will Knight
Global Research, February 17, 2023
WIRED 13 February 2023

Region: USA
Theme: Intelligence

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Expensive military hardware like a new tank undergoes rigorous testing before heading to the battlefield. A startup called Istari, backed by Eric Schmidt, the former CEO of Google and chair of Alphabet, reckons some of that work can be done more effectively in the metaverse.

Ishtari uses machine learning to virtually assemble and test war machines from computer models of individual components, such as the chassis and engines, that are usually marooned on separate digital drawing boards. It may sound dull, but Schmidt says it can bring a dose of tech industry innovation to US military engineering. "The Istari team is bringing internet-type usability to models and simulations," he says. "This unlocks the possibility of software-like agility for future physical systems—it is very exciting."

The company reflects Schmidt's unique position as a link between the tech industry and the Pentagon. Virtual replicas known as digital twins are common in manufacturing and could help the Pentagon develop hardware more quickly. And Istari is a building block in a wider project in which Schmidt is attempting to bring Silicon Valley technology and thinking to the US military.

That quest has roots in the shock Schmidt experienced in 2016 when he first glimpsed the state of Pentagon technology up close. He was still chair of Alphabet but accepted an invitation from President Obama's defense secretary Ashton Carter to chair a new Defense Innovation Board trying to modernize the DOD. Schmidt's new post began with an eye-opening tour of US labs and bases.

"I got to run around with Eric and look at how the department was engaging on commercial technology," says Will Roper, who was then an assistant secretary of the Air Force focused on technology and is the founder and CEO of Istari. "It was evident that the entire Department of Defense was developing software the same way it was done in the 1970s

and ’80s,” Roper says. He was one of many Pentagon leaders who were impressed by Schmidt‘s diagnosis of the department’s problems and willingness to try to solve them.

Schmidt became CEO of Google in 2001, when the search engine had a few hundred employees and was barely making money. He stepped away from Alphabet in 2017 after building a sprawling, highly profitable company with a stacked portfolio of projects, including cutting-edge artificial intelligence, self-driving cars, and quantum computers.

Schmidt now sees another opportunity for technological reinvention to lead to domination, this time for the US government in competition with other world powers. He may be uniquely well positioned to understand what the Pentagon needs to reach its technological goals and to help the agency obtain it. But his ties to industry raise questions about how the US should aim to align the government and the private sector. And while US military power has long depended on advances in technology, some fear that military AI can create new risks.

Good People, Bad System

Speaking over Zoom from his office in New York, Schmidt lays out a grand vision for a more advanced DOD that can nimbly harness technology from companies like Istari. In a cheery orange sweater that looks like it’s made of exquisite wool, he casually imagines a wholesale reboot of the US armed forces.

> “Let’s imagine we’re going to build a better war-fighting system,” Schmidt says, outlining what would amount to an enormous overhaul of the most powerful military operation on earth. “We would just create a tech company.” He goes on to sketch out a vision of the internet of things with a deadly twist. “It would build a large number of inexpensive devices that were highly mobile, that were attritable, and those devices—or drones—would have sensors or weapons, and they would be networked together.”

The problem with today’s Pentagon is hardly money, talent, or determination, in Schmidt’s opinion. He describes the US military as “great human beings inside a bad system”—one that evolved to serve a previous era dominated by large, slow, expensive projects like aircraft carriers and a bureaucratic system that prevents people from moving too quickly. Independent studies and congressional hearings have found that it can take years for the DOD to select and buy software, which may be outdated by the time it is installed. Schmidt says this is a huge problem for the US, because computerization, software, and networking are poised to revolutionize warfare.

Ukraine’s response to Russia’s invasion, Schmidt believes, offers pointers for how the Pentagon might improve. The Ukrainian military has managed to resist a much larger power in part by moving quickly and adapting technology from the private sector—hacking commercial drones into weapons, repurposing defunct battlefield connectivity systems, 3D printing spare parts, and developing useful new software for tasks like military payroll management in months, not years.

Schmidt offers another thought experiment to illustrate the bind he’s trying to get the US military out of. “Imagine you and I decide to solve the Ukrainian problem, and the DOD gives us $100 million, and we have a six-month contest,” he says. “And after six months somebody actually comes up with some new device or new tool or new method that lets the Ukrainians win.” Problem solved? Not so fast. “Everything I just said is illegal,” Schmidt says,

because of procurement rules that forbid the Pentagon from handing out money without going through careful but overly lengthy review processes.

A New Weapon

The Pentagon's tech problem is most pressing, Schmidt says, when it comes to AI. "Every once in a while, a new weapon, a new technology comes along that changes things," he says. "Einstein wrote a letter to Roosevelt in the 1930s saying that there is this new technology—nuclear weapons—that could change war, which it clearly did. I would argue that [AI-powered] autonomy and decentralized, distributed systems are that powerful."

With Schmidt's help, a similar view has taken root inside the DOD over the past decade, where leaders believe AI will revolutionize military hardware, intelligence gathering, and backend software. In the early 2010s the Pentagon began assessing technology that could help it maintain an edge over an ascendant Chinese military. The Defense Science Board, the agency's top technical advisory body, concluded that AI-powered autonomy would shape the future of military competition and conflict.

But AI technology is mostly being invented in the private sector. The best tools that could prove critical to the military, such as algorithms capable of identifying enemy hardware or specific individuals in video, or that can learn superhuman strategies, are built at companies like Google, Amazon, and Apple or inside startups.

"The big challenge that the US military faces going forward is how to rapidly adapt commercial technologies for military use faster than competitors," says Paul Scharre, a vice president at the Center for a New American Security, a think tank, and the author of *Four Battlegrounds: Power in the Age of Artificial Intelligence*, a forthcoming book about AI and geopolitics. Scharre notes in his book that the Pentagon's share of global R&D spending has declined from 36 percent in 1960 to 4 percent today.

The US DOD primarily works with the private sector through large defense contractors specialized in building expensive hardware over years, not nimble software development. Pentagon contracts with large tech companies, including Amazon, Apple, and Microsoft, have become more common but have sometimes been controversial. Google's work analyzing drone footage using AI under an initiative called Project Maven caused staff to protest, and the company let the contract lapse. Google has since increased its defense work, under rules that place certain projects—such as weapons systems—off limits.

Scharre says it is valuable to have people like Schmidt, with serious private sector clout, looking to bridge the gap. Big tech companies threatened by technological change have sometimes successfully reinvented themselves. And tech ambassadors can help the Pentagon understand how to slash bureaucracy to become a more attractive partner to startups, a crucial source of new ideas. "We're still trying to build a 21st century military with a 20th century bureaucracy," he says.

Pivot to China

Schmidt has come to believe that while the tech industry must help the Pentagon, the government must also help Silicon Valley. In 2019, he became chair of the US National Security Commission on Artificial Intelligence, created by Congress to examine the technology's impact on US security and competitiveness. The NSCAI's final report, released

in 2021, focuses on AI rivalry between the US and China, warning that the technology could spread authoritarian values. To keep the wellspring of US AI healthy, it calls on the US government to work more with the private sector, and provide funding, data, and computing power to both public and private AI projects.

At an event last fall, Schmidt credited the NSCAI with changing his life by making him more aware of China's threat to the US. "We're facing a very significant challenge from a very, very focused competitor that knows what they're doing," he said. The commission has since disbanded, although Schmidt now serves on a similar body examining the implications of advances in biotechnology. And he funded a new, independent think tank called the Special Competitive Studies Project to see the NSCAI's recommendations through. The project is looking at technologies beyond just AI and is modeled on an anti-Russia cold war initiative created by Nelson Rockefeller and led by Henry Kissinger.

The SCSP released a series of reports last year, calling for the government to fund areas critical to US growth and competitiveness, including nuclear fusion, quantum computing and communications, and gene editing. They came amidst a wave of political support for more government intervention in technology. The CHIPS act passed last year, with bipartisan support, and motivated by concerns over China, will provide $280 billion for research and manufacturing of semiconductor devices in the US.

Closer collaboration between government and industry is hardly straightforward, however. In 2017, while Schmidt was serving on the Defense Innovation Board, an official raised concerns, which were later dropped, over potential conflicts of interest involving him and other board members who were also Silicon Valley executives. Schmidt still owns about $5 billion of Alphabet stock, is an investor in startup military contractor Rebellion Defense, and has ties, through different investment firms, to other companies that work with the government.

"It's difficult to point to any other CEO with the same level of influence in the national security tech sector," says Jack Poulson, who tracks relationships between individuals, corporations, nonprofits, and governments through Tech Inquiry, a nonprofit. He says that Schmidt is involved in several companies developing technologies in areas that organizations like the SCSP say should receive more government funding.

Schmidt's work perhaps shows not only the value of government and private collaboration but the need for greater transparency and new accountability as that collaboration grows. Melissa Stavenhagen, a spokesperson for Schmidt, says he has always made any disclosures necessary in full. "Having served across multiple Democratic and Republican administrations, he recognizes how critical these issues are," Stavenhagen says.

Discussing his work over Zoom, Schmidt often seems frustrated by the dysfunction he sees in the US government's approach to technology. When he entered the Pentagon back in 2016, he didn't expect to find a new calling. "I figured I would do it for like a year to help out," he says. Instead it has become a second career. Whatever progress the Pentagon makes toward its AI dreams—and the effect of that on the world—Schmidt will likely be at the heart of it.

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Will Knight *is a senior writer for WIRED, covering artificial intelligence. He was previously a senior editor at MIT Technology Review, where he wrote about fundamental advances in AI and China's AI boom.*

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Articles by: **Will Knight**