Quantum Computing Goes Mainstream: What Two Executive Orders Mean for Investors

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Key Takeaways

- President Trump's June 2026 quantum executive orders and recent CHIPS Act funding have elevated quantum computing to a national priority, strengthening the investment case for diversified exposure through the WisdomTree Quantum Computing Fund (WQTM).
- Although key engineering challenges remain, recent advances from Quantinuum, IonQ and others suggest the science is progressing in step with growing government support.
- New federal post-quantum cryptography deadlines create a multi-year opportunity for cybersecurity firms, while forthcoming Department of Energy specifications could help identify the next quantum industry leaders.

On June 22, 2026, President Trump sat in the Oval Office surrounded by the presidents of Google and IBM and signed two executive orders on quantum computing.1 That image—tech's biggest names flanking a president at one of the most symbolically loaded desks in the world—tells investors something important before they read a single word of the policy text.

Quantum computing has arrived as a matter of national priority, not just scientific curiosity.

For investors who have been tracking this space, the signing is a continuation of a policy architecture that has been assembling with surprising speed. Last month, the Commerce Department announced $2 billion in CHIPS Act funding for quantum companies, taking equity stakes in nine firms in exchange.2 Now come two executive orders that define what the government wants built and how fast it expects the broader ecosystem to respond. The pieces are snapping into place.

Two Orders, One Strategic Logic

The first order, formally titled "Ushering in the Next Frontier of Quantum Innovation," creates the Quantum Computer for Application Development and Discovery Science effort (QC-ADDS), a national mission to build a quantum computer powerful enough to perform genuinely transformative scientific calculations, with at least one such machine delivered to a Department of Energy national laboratory. The White House

has indicated this could happen by 2028. The Department of Energy has 90 days to publish the technical specifications, which could include:

- The required qubit counts
- Fidelity thresholds
- Target application classes

Those specifications matter because they will effectively set the procurement roadmap for the companies the government just invested in.

The second order, "Securing the Nation Against Advanced Cryptographic Attacks," starts from the uncomfortable recognition that quantum computers, once sufficiently powerful, will be able to break the encryption algorithms that protect virtually everything in the digital economy. I often think of the scene in the movie *The Imitation Game* where the machine breaks the German Enigma code as a parallel.3

The order sets binding deadlines, for example:

- Federal high-value systems must transition to post-quantum cryptography for key establishment by the end of 2030 and for digital signatures by 2031.
- A pilot migration must be completed by the end of 2027.
- Federal contractors face the same 2030 deadline under proposed procurement rule changes.

The paired logic is deliberate. The first order bets that quantum capability will arrive. The second accepts that this success creates an obligation to harden everything the technology could eventually break. One funds the offense; the other prepares the defense. As National Cyber Director Sean Cairncross put it at the signing ceremony, innovation and security have to be balanced as quantum computing moves forward.

What Executive Orders Can and Cannot Do

Policy has limits in what it can accomplish here. No executive order repeals the laws of physics. The engineering challenges that make fault-tolerant quantum computing difficult and that we have written about before, which include managing error rates, maintaining qubit coherence, and scaling without degrading performance, remain exactly as hard the day after signing as the day before.

What executive orders can do is different and, for investors, potentially more important. They reduce friction. They create procurement pipelines. They signal to the private sector that the government is a serious long-term buyer. They bring talent, funding, and attention to a field that might otherwise develop more slowly in the shadows of other technology priorities. The 2018 National Quantum Initiative Act,4 which Trump also signed, provides an instructive comparison.

At that time, it established the first whole-of-government quantum strategy, doubled federal R&D investment in the field, and helped catalyze the ecosystem that companies across the sector now operate within. These new orders build on that foundation with more ambition and more urgency.

The mainstreaming effect is real. When a field becomes a stated national priority, with budget commitments, equity stakes, and the president at a signing ceremony, it becomes easier for companies to hire, easier for universities to justify graduate programs, easier for startups to raise capital, and easier for institutional investors to establish positions. The policy signals change the probability distribution of outcomes even when they cannot guarantee any particular one.

The Science Is Moving in Parallel

Crucially, the government's ambition is not running ahead of the science. Two recent results from the private sector illustrate exactly why the administration believes the 2028 timeline is worth pursuing.

In June 2026, Quantinuum published in Nature its Helios system, a 98-qubit trapped-ion quantum processor featuring all-to-all connectivity, a novel rotatable ion storage ring architecture, and two-qubit gate fidelities averaging 99.92%. The paper, produced in collaboration with Sandia National Laboratories, demonstrates that Helios operates well beyond the classical simulation boundary.5 This is not a speculative claim; the benchmarking data shows that classically simulating what Helios can run would require exascale computing resources sustained over astronomical timescales. The system represents a meaningful step forward in combining scale with the fidelity that distinguishes trapped-ion approaches from competing hardware modalities.

Separately, researchers at the Duke Quantum Center and IonQ published a preprint in June 2026 reporting the first fully distributed three-node GHZ (Greenberger-Horne-Zeilinger) state of individual atomic qubits connected by photonic links. In practical terms, this means that three physically separated quantum processors, each containing a single trapped-ion qubit, were entangled across all three nodes simultaneously using only photons as the interconnect. The team achieved a GHZ state fidelity above 0.84 and, for the first time in a fully distributed system, closed the detection loophole in a violation of Mermin's inequality, which is a stringent test of genuine quantum correlation.6 This matters because distributed quantum networks are the architecture through which a future quantum internet would function, and through which modular quantum computers could be linked into systems far larger than any single processor.

These are not the only results worth watching. The broader community—including neutral atom platforms from QuEra, Infleqtion and Pasqual, photonic approaches from Xanadu and PsiQuantum, superconducting systems from IBM, Rigetti and Google, continues to advance on multiple fronts simultaneously. Even Microsoft has announced recent progress with its approach to topological qubits.7 The hardware ecosystem is genuinely diverse, which is both a challenge for picking winners and a reason for confidence that the field overall will make progress.

What It Means for the Investment Thesis

The policy architecture appears to be in place and gaining momentum. Equity stakes, an innovation mandate and a cryptographic migration deadline together create an unusual alignment of incentives between public and private actors. The government has a financial stake in quantum success, a national

security interest in quantum progress, and now a statutory obligation to migrate its own systems before the threat materializes. That combination is structurally supportive of the entire sector.

The post-quantum cryptography side of the equation deserves particular attention from investors who may be focused primarily on the computing story. The 2030-2031 federal migration deadlines, combined with the contractor compliance requirements, represent a significant, time-bounded procurement cycle for cybersecurity firms offering NIST-standardized PQC implementations. The algorithms in question, ML-KEM, ML-DSA, and SLH-DSA, are already finalized standards.8 Companies positioned to help the federal government and critical infrastructure operators execute this migration are looking at a multi-year demand signal that the executive order has now formalized.

For the quantum computing hardware and software layer, the QC-ADDS effort and the Department of Energy technical specifications process will be worth watching closely over the next 90 days. The qubit counts and fidelity thresholds the Energy Department publishes will help define which companies can credibly respond to government demand over the next two years to government demand over the next two years.

The race is intensifying. Washington is no longer content to let the private sector set the pace alone. And the science, as the Helios paper and the Duke/IonQ network experiment both demonstrate, is keeping up with the ambition. For investors who have been patient with quantum's long timeline, the policy moment now unfolding suggests that patience is beginning to be rewarded.

The WisdomTree Quantum Computing Fund (WQTM) represents a strategy that respects the need for a diverse set of technologies and developments to combine and ultimately contribute to a robust quantum computing ecosystem.9 For investors considering the implications of these policy announcements, this approach deserves consideration.

1 Sources for this piece, unless otherwise stated: Trump, D. J. (2026, June 22). *Ushering in the next frontier of quantum innovation*, Exec. Order No. 14411, 91 Fed. Reg. [pending]. The White House; Trump, D. J. (2026, June 22). *Securing the nation against advanced cryptographic attacks*, Exec. Order No. 14409, 91 Fed. Reg. [pending]. The White House.

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3 Source: Tyldum, M. (Director). (2014). *The imitation game* [Film]. Black Bear Pictures; Bristol Automotive.

4 Source: U.S. Congress. (2018). *National Quantum Initiative Act*, Pub. L. No. 115-368, 132 Stat. 5092.

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9 WQTM is designed to track the total return performance of the WisdomTree Classiq Quantum Computing Index, which generates exposure to both pure play and diversified companies that contribute to the overall quantum computing ecosystem.

Important Risks Related to this Article

There are risks associated with investing, including potential loss of principal. To the extent the Fund invests a significant portion of its assets in the securities of companies of a single country or region, it is more likely to be impacted by events or conditions affecting that country or region. The economic, political, regulatory, and other events and conditions that affect issuers and investments in the United States differ significantly from those associated with other countries and regions. U.S. financial markets have become increasingly globalized becoming more integrated with financial markets around the world and as a result, U.S. financial markets are increasingly vulnerable to the risks that may affect non-U.S. financial markets. The Fund's investments in the U.S. are subject to the risk that they, and the U.S. economy more generally, will be adversely affected by a decrease in imports or exports, changes in trade regulations, inflation, and/or an economic recession in the U.S. The Fund invests primarily in the securities of quantum computing companies. Companies engaged in the development of quantum computing or machine learning technology may be significantly impacted by rapid technological advancements, product obsolescence, intense competition, consumer demand, and government regulation. Such companies are also heavily dependent upon patent and intellectual property rights. The Fund invests in the securities included in, or representative of, its Index regardless of their investment merit and the Fund does not attempt to outperform its Index. The composition of the Index is governed by an Index Committee and the Index may not perform as intended. Please read the Fund's prospectus for specific details regarding the Fund's risk profile.