What's Hot: The US government deepens its backing for quantum

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Key Takeaways

- The two executive orders are designed to work together. One supports quantum development, while the other prepares for the risks quantum progress could create for existing encryption standards.
- The orders do not remove the scientific and engineering challenges of quantum computing, but they can accelerate funding, procurement, talent and commercial momentum.
- Recent breakthroughs show that technical progress is continuing alongside stronger policy support, reinforcing the sectors long-term potential.
- The investment case is broadening beyond pure quantum hardware into software, networking and post-quantum cryptography solutions.
- A diversified ecosystem approach may be more effective than trying to identify a single future winner, as commercialisation is likely to develop across multiple layers over time.
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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 computing1. That image, tech's biggest names flanking a president at one of the most symbolically loaded desks in the world, tells you something important before you 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 exchange2. 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 what it calls the Quantum Computer for Application Development and Discovery Science effort, sometimes noted as QC-ADDS for short, 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 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.

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. 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

It is worth being honest about what policy can and cannot accomplish here. No executive order repeals the laws of physics. The engineering challenges that make fault-tolerant quantum computing difficult, 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 something different and, for investors, arguably 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 Act3, 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 build 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, which is 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 boundary4. This is not a speculative claim, and 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. To translate, 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 correlation5. 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, such as neutral atom platforms from QuEra, Infleqtion and Pasqual, photonic approaches from Xanadu and PsiQuantum, superconducting systems from IBM, Rigetti, Google and IQM, continues to advance on multiple fronts simultaneously. Even Microsoft has announced recent progress with its approach to topological qubits6. 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 is now firmly taking shape, creating an unusual alignment of incentives between public and private actors. The US 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 quantum ecosystem.

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 and 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 standards7. 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 DOE technical specifications process will be worth watching closely over the next 90 days. The qubit counts and fidelity thresholds the Energy Department publishes will effectively define the competitive landscape for which companies can credibly respond to government demand over the next two years.

Positioning for Quantum’s wider growth

Taken together, these Executive Orders reinforce an important point: the quantum opportunity is no longer defined solely by scientific breakthroughs. It is increasingly being shaped by public policy, procurement commitments and the build-out of an enabling ecosystem spanning hardware, software, networking, sensing and cryptography. As government support broadens from research funding to deployment and infrastructure, the range of companies positioned to benefit is expanding as well.

WisdomTree believes investors should look beyond attempts to identify a single future "winner". The commercialisation of quantum technologies is likely to unfold across multiple layers of the quantum ecosystem and over many years, with leadership evolving as the technology matures. The WisdomTree Quantum Computing strategy is designed to capture this broader opportunity by providing diversified exposure to companies contributing to the development of the quantum ecosystem – from computing hardware and enabling technologies to quantum software, networking and post-quantum cryptography solutions needed to secure a quantum era. As the policy backdrop continues to strengthen, we believe a diversified ecosystem approach offers investors a resilient way to participate in one of the defining technology transitions of the coming decade.

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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