QuantumComputing

Weekly Intelligence Report

2026-07-04 | 28 articles | 8 countries

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This Week's Keyword

Quantum Advancements

US/EU drive PQC, FTQC, & AI applications

28	8	$3.9 Billion	$2.013 Billion
articles	countries	USD	USD
Total Articles Analyzed	Source Countries	2025 QC VC Investment	US CHIPS Act QC Funds

All 28 Articles This Week — 5-Axis Evaluation Matrix

How to read columns — Tech Novelty: degree of breakthrough Market Proximity: closeness to commercialization Market Impact: industry-wide effect Data Reliability: quantitative data & peer review US/EU Relevance: direct impact on US/European companies & supply chains

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#01	Yale ERASE FTQC	Research	●●●●○	○○○○○	●●●○○	●●○○○	●●●●●	Yale secures $4M NSF grant for novel "erasure flag" qubit error correction, advancing fault-tolerant QC.
#02	Quantum Systems Fund	Corporate Strategy	○○○○○	●●●●●	●●○○○	●●●○○	●●●●●	German defense tech startup Quantum Systems raises $1.2B at $8B valuation to scale autonomous systems.
#03	QC Nears Viability	Market Overview	○○○○○	●●○○○	●●●○○	●●○○○	●●●●○	Quantum computing is rapidly maturing towards real-world viability, tackling complex problems in finance, pharma, materials.
#04	US Quantum & PQC	Policy/Funding	●●●○○	●●●●○	●●●●●	●●●●○	●●●●●	US allocates $2B CHIPS Act grants for quantum R&D; (IBM, GlobalFoundries) and mandates federal PQC migration by 2030.
#05	Fujitsu 1024-Qubit	Corporate Strategy	●●●○○	●●●○○	●●●●○	●●●●○	●●●○○	Fujitsu plans 1,024-qubit superconducting QC deployment in FY2026, targeting practical QC by 2030.
#06	Duke/IonQ GHZ State	Research	●●●●○	○○○○○	●●●○○	●●●●○	●●●●○	Duke Quantum Center & IonQ achieve first fully distributed 3-node GHZ state using photonic-linked atomic qubits.
#07	QC VC Investment	Market Report	○○○○○	●●●●○	●●●●○	●●●○○	●●●●○	Global VC investment in quantum computing hit record $3.9B in 2025, led by BlackRock, Nvidia, and Temasek.
#08	Horizon Quantum IPO	Corporate Strategy	●●○○○	●●●●○	●●●○○	●●●○○	●●●●○	Horizon Quantum IPO boosted by US EO, plans Ireland research center with IonQ quantum computer.
#09	QC in Pharma R&D;	Analysis	●●○○○	●●●○○	●●●●○	●●○○○	●●●●○	QC in pharma R&D; moving from theory to experiments, with operational impact expected late 2020s for drug discovery.
#10	RIKEN Ei-II 144-Qubit	New Product	●●●●○	●●○○○	●●●○○	●●●●○	●●●○○	Japan's RIKEN launches 144-qubit "Ei-II" superconducting QC with 99.9% fidelity, amid Japan-Taiwan semiconductor collaboration.
#11	IQM Nasdaq IPO	Corporate Strategy	○○○○○	●●●●○	●●●●○	●●●●○	●●●●○	Finnish IQM Quantum Computers debuts on Nasdaq with $1.9B valuation, first European quantum firm on major US exchange.
#12	Qolab Series B	Corporate Strategy	●●●○○	●●○○○	●●●○○	●●●○○	●●●●○	Qolab secures $54.2M Series B led by UC Investments to accelerate superconducting quantum platform development.

#	Article Title	Type	Tech Novelty	Market Proximity	Market Impact	Data Reliability	US/EU Relevance	Summary
#13	QuEra FTQC Roadmap	Corporate Strategy	High	Med-High	High	High	High	QuEra unveils fault-tolerant roadmap, including GigaQuop-class systems, and expands AWS partnership for 2028 "Libra" launch.
#14	QC Investment Shift	Market Report	Low	High	High	Med-High	High	QC investment shifts to ecosystem development, with $2.013B CHIPS Act funds boosting manufacturing and PQC.
#15	QPerfect QuREKA™	New Product	Med-High	High	Med-High	Med-High	High	French QPerfect powers commercial launch of SDT's QuREKA™ hybrid quantum cloud in South Korea, accelerating ecosystem development.
#16	Pasqal Finance QC	Corporate Strategy	Med-High	Med-High	High	High	High	Crédit Agricole CIB and Pasqal deepen partnership to deploy quantum computing in finance, targeting 2028 production use cases.
#17	D-Wave NSF Grant	Research	Med-High	Med	Med-High	Med	High	D-Wave awarded $1.5M NSF grant to advance quantum software, error correction, and workforce development, bolstering US leadership.
#18	SandboxAQ AI Models	New Product	High	High	High	Med-High	High	Google Cloud launches SandboxAQ's quantum-inspired AI models "AQCat" and "AQPotency" to accelerate drug discovery and materials science.
#19	QGT Semi Expansion	Corporate Strategy	Low	High	Med	Med-High	High	Quantum Global Technologies secures $3M Texas grant for $43M Austin semiconductor expansion, strengthening 2nm chip supply chain.
#20	Classiq QAI QaaS	New Product	Med-High	High	Med-High	Med-High	High	Classiq and QAI launch South Korea's first local Quantum-as-a-Service (QaaS) offering, integrating with domestic AI data centers.
#21	Quantum Systems Fund	Corporate Strategy	Low	High	Med	Med-High	High	German Quantum Systems closes €1B Series D funding, soaring to €7B valuation to expand autonomous systems business.
#22	NIST Quantum Sensing	Policy/Research	Med-High	Med-High	High	High	High	U.S. NIST launches new center with SRI International to accelerate commercialization of quantum sensing and sensor manufacturing.
#23	Redwood AI PQC	Corporate Strategy	Med-High	High	High	Med-High	High	Redwood AI acquires Quantum.IQ Technologies, enhancing PQC migration support for government, defense, and finance.
#24	BTQ Acquires QPerfect	Corporate Strategy	Med-High	High	Med-High	Med-High	High	BTQ Technologies acquires French QPerfect, integrating MIMIQ™ quantum emulator and digital twin capabilities into its tech stack.
#25	KRISS US Market	Corporate Strategy	Low	High	Med	Med	High	KRISS partners with Fairfax County EDA to support Korean quantum firms' entry into the U.S. market.
#26	Qblox HPE Hybrid	Corporate Strategy	Med-High	Med-High	High	Med-High	High	Qblox partners with HPE to advance hybrid classical-quantum computing, integrating quantum control into HPE's HPC/AI infrastructure.
#27	US $2B CHIPS Act	Policy/Funding	Med-High	High	High	High	High	US government allocates $2.013B CHIPS Act incentives to nine quantum computing companies, including $1B for IBM Quantum Foundry.
#28	IBM/Cleveland Clinic	Research	High	Med	High	High	High	IBM and Cleveland Clinic successfully simulate 303-atom Trp-cage protein, highlighting quantum drug discovery as imminent reality.

High Med-High Med Low | Yellow highlight = featured article

Three Questions That Demand Your Decision This Week

❶ Is your PQC migration plan on track for 2030?

The US government mandates federal systems to migrate to Post-Quantum Cryptography (PQC) by 2030/2031, impacting all suppliers and partners. Are your products and internal systems compliant with these urgent deadlines?

❷ Does hybrid QC/AI make your R&D; obsolete?

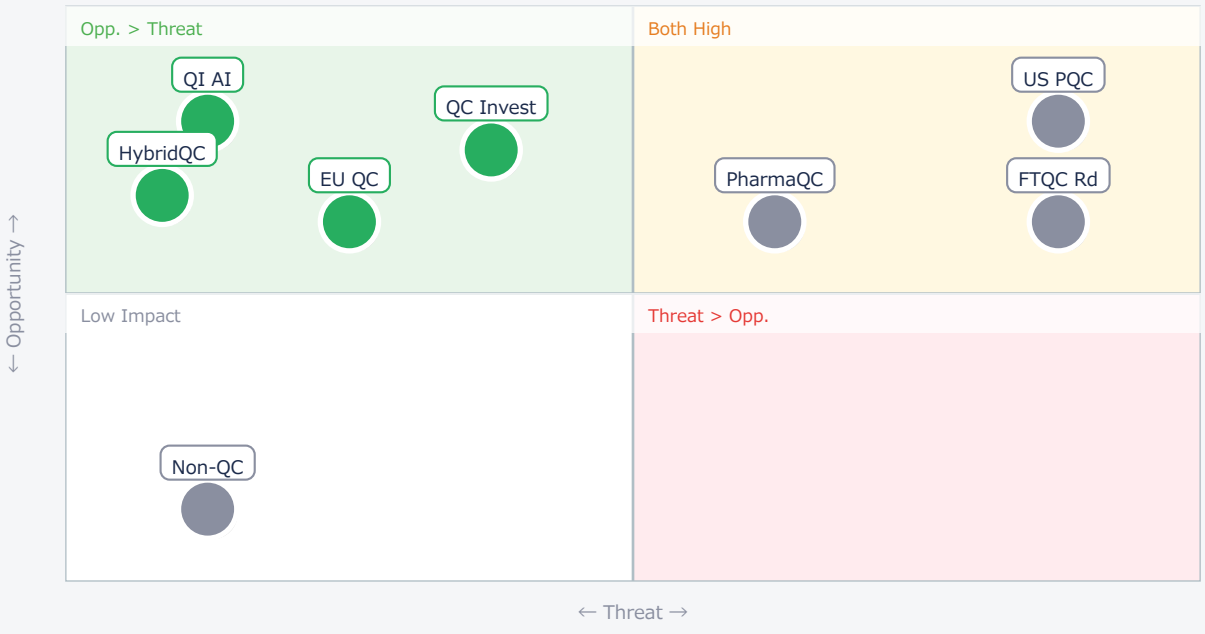
Breakthroughs in quantum-classical hybrid workflows (IBM/Cleveland Clinic, SandboxAQ) accelerate drug discovery and materials science. Are your R&D; teams leveraging these new computational paradigms to maintain competitive edge?

❸ How will fault-tolerant QC impact your long-term strategy?

Companies like QuEra are outlining roadmaps for fault-tolerant quantum computers by 2028, with cloud access via AWS. Are you investing in early application co-design to secure future competitive advantage in this evolving landscape?

Opportunities vs. Threats for US/European Companies

Opportunity vs. Threat Matrix for US/European Companies



Item	Quadrant	↑ Opportunity	↓ Threat
US PQC	Critical	PQC solutions	Crypto exposure
PharmaQC	Critical	New drug pipeline	R&D; obsolescence
FTQC Rd	Critical	Early adoption	Lagging tech
QI AI	Opp.	Faster R&D;	Missed tools
QC Invest	Opp.	Funding access	Increased comp
HybridQC	Opp.	HPC synergy	Integration gap
EU QC	Opp.	Euro market	US dominance

● Non-QC	Ref.	Supply chain	Misallocation

Deep Dive ① — US Government Accelerates Quantum & PQC

#04 | 2026/06/30 | Wiley Rein | Tech Novelty●●●○○ Proximity●●●●○ Market Impact●●●●● Data Reliability●●●●○ US/EU Relevance●●●●●

The U.S. government has launched a comprehensive strategy, including $2 billion from the CHIPS Act for quantum R&D; and a mandate for federal systems to transition to Post-Quantum Cryptography (PQC) by 2030/2031.

IBM receives $1 billion for a superconducting quantum foundry, and GlobalFoundries $375 million for diverse quantum architectures, signaling a critical push for national cyber resilience and quantum innovation.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: The US government's aggressive stance with $2B CHIPS Act funding and PQC mandates by 2030 is a game-changer. The numbers are realistic, reflecting a national strategic priority. The primary technical barrier for PQC is the complex, systemic migration across vast IT infrastructures, not the algorithms themselves. For quantum computing, the challenge is scaling and error correction. [Opportunity]: US/EU materials & component suppliers, OEMs, and technology licensors in PQC and quantum hardware/software stand to gain significantly from these investments and mandates. Early movers in PQC migration services will see high demand. [Threat]: Companies with federal contracts or critical infrastructure relying on pre-quantum cryptography face substantial compliance risks and potential security vulnerabilities if they don't act now. Non-US/EU firms might face barriers to accessing this funding. [Next Actions]: [Strategy] Assess PQC exposure and migration readiness. [Business Dev] Identify opportunities in federal quantum supply chains. [Legal/IP] Review PQC compliance requirements.

Deep Dive ② — QuEra's Fault-Tolerant QC Roadmap & AWS

#13 | 2026/06/25 | PR Newswire | Tech Novelty●●●●○ Proximity●●●○○ Market Impact●●●●○ Data Reliability●●●●○ US/EU Relevance●●●●●

QuEra Computing unveiled its fault-tolerant quantum roadmap, including next-generation GigaQuop-class systems, and announced an expanded multi-year strategic partnership with AWS.

QuEra's first fault-tolerant quantum computer, "Libra," is slated to debut on Amazon Braket in 2028. The company is inviting organizations to co-design applications for future fault-tolerant hardware.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: QuEra's roadmap for fault-tolerant quantum computing and the 2028 "Libra" launch on Amazon Braket are ambitious but provide a concrete timeline for a critical technology. The "GigaQuop-class" metric is a useful attempt to quantify fault-tolerance, but its widespread adoption and comparability need to be validated. The main technical barrier is achieving the required error rates and logical qubit counts for truly useful fault-tolerant computation. [Opportunity]: US/EU OEMs & device manufacturers, and technology licensors developing quantum applications can gain a first-mover advantage by co-designing with QuEra and leveraging early access via AWS Braket. This democratizes access to advanced quantum hardware. [Threat]: Companies that delay engagement with fault-tolerant roadmaps risk being left behind as quantum advantage becomes more accessible. Relying solely on NISQ devices without a path to FTQC could prove strategically short-sighted. [Next Actions]: [R&D;] Engage with QuEra's call for solutions and explore early access to "Libra" on Amazon Braket. [Strategy] Develop a long-term quantum computing strategy that incorporates fault-tolerant capabilities. [Business Dev] Identify potential applications for GigaQuop-class systems.

Deep Dive ③ — Quantum Drug Discovery Breakthrough

#28 | 2026/07/02 | GeneOnline | Tech Novelty●●●●● Proximity●●○○○ Market Impact●●●●○ Data Reliability●●●●○ US/EU Relevance●●●●●

The BIO 2026 AI Summit highlighted quantum computing as an imminent reality for drug discovery, with 2025-2026 as a pivotal turning point for biopharma quantum applications.

IBM and Cleveland Clinic successfully simulated the electronic structure of a 303-atom Trp-cage protein using a hybrid quantum-classical workflow, significantly advancing molecular simulation capabilities.

▶ Strategic Analyst's Perspective

Strategic Analyst's Perspective: The simulation of a 303-atom protein is a significant milestone, pushing the boundaries of quantum chemistry. The published numbers are credible for a hybrid quantum-classical workflow in a research setting. The technical barrier remains scaling this to larger, more complex biological systems and achieving true quantum advantage over classical supercomputers for routine drug discovery tasks. [Opportunity]: US/EU pharmaceutical companies and biotech firms can leverage these hybrid quantum-classical approaches to accelerate drug discovery, molecular modeling, and materials design, potentially unlocking new therapeutic pipelines. Technology licensors for quantum chemistry software will see increased demand. [Threat]: Traditional drug discovery platforms and computational chemistry firms that fail to integrate quantum-inspired or hybrid quantum methods risk falling behind in R&D; efficiency and innovation. Asian competitors are also heavily investing in this space. [Next Actions]: [R&D;] Pilot hybrid quantum-classical workflows for molecular simulation. [Strategy] Evaluate long-term impact on drug discovery timelines and costs. [Procurement] Explore partnerships with quantum software/hardware providers.

Other Notable Articles

Duke Quantum Center & IonQ Demonstrate First Fully Distributed 3-Node GHZ State Using Photonic-Linked Atomic Qubits (Quantum Computing Report)

Tech Novelty●●●●● Proximity●○○○○ Market Impact●●●○○

A foundational breakthrough for modular quantum computing and quantum networking, enabling entanglement across distinct nodes.

IQM Quantum Computers Debuts on Nasdaq with $1.9 Billion Valuation, Becomes First European Quantum Firm Listed on Major U.S. Exchange (Business Wire)

Tech Novelty●○○○○ Proximity●●●●● Market Impact●●●●○

Landmark IPO for a European quantum company on a major US exchange, signaling growing institutional confidence in the sector.

Crédit Agricole CIB and Pasqal Deepen Partnership to Deploy Quantum Computing in Finance, Targeting 2028 Production Use Cases for Credit Risk and Portfolio Optimization (Pasqal)

Tech Novelty●●●○○ Proximity●●●○○ Market Impact●●●●○

Concrete roadmap for quantum computing in finance, targeting production use cases by 2028 for risk and optimization.

Google Cloud Launches SandboxAQ's Quantum-Inspired Scientific AI Models, "AQCat" and "AQPotency," on Marketplace to Accelerate Drug Discovery and Materials Science (GxP News)

Tech Novelty●●●●○ Proximity●●●●○ Market Impact●●●●○

Quantum-inspired AI models now available on Google Cloud, democratizing access to advanced scientific computing for R&D.;

Qblox Partners with HPE to Advance Hybrid Classical-Quantum Computing, Integrating Quantum Control Systems into HPE's HPC/AI Infrastructure (PR Newswire)

Tech Novelty●●●○○ Proximity●●●○○ Market Impact●●●●○

Strategic partnership integrating quantum control systems into HPC/AI infrastructure, accelerating industrial adoption of hybrid QC.

Recommended Actions This Week

Action recommendations based on article evaluation matrix and opportunity/threat analysis.

Immediate (this week)

- [Legal/IP] [Executive] Initiate a comprehensive audit of all cryptographic systems and federal contract compliance for PQC migration by 2030/2031.
- [R&D;] [Strategy] Review current R&D; pipelines for drug discovery and materials science to identify areas where quantum-inspired AI or hybrid QC could offer immediate advantage.

Short-term (1 month)

- [Procurement] [R&D;] Evaluate cloud-based quantum platforms (e.g., Amazon Braket, Google Cloud Marketplace) for early access to fault-tolerant or quantum-inspired AI models.
- [Business Dev] [Strategy] Analyze the competitive landscape in quantum software, hardware, and services, particularly for PQC solutions and industry-specific applications (e.g., finance, pharma).

Medium-long term (quarter+)

- [R&D;] [Strategy] Develop a multi-year roadmap for integrating fault-tolerant quantum computing capabilities, including potential partnerships for co-design and application development.
- [Executive] [HR] Invest in quantum workforce development programs to build internal expertise in quantum algorithms, software, and engineering, addressing future talent shortages.
- [Procurement] [Strategy] Diversify supply chain for critical quantum components and services, leveraging government incentives where available to strengthen domestic capabilities.

QuantumComputing — Selected Articles

Date: 2026-07-04

Articles: 28

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#19 Quantum Global Technologies Secures Over $3 Million Texas State Grant for $43 Million Austin Semiconductor Expansion, Strengthening 2nm Chip Supply Chain

#20 Classiq and QAI Launch South Korea's First Local Quantum-as-a-Service (QaaS) Offering, Integrating with Domestic AI Data Centers

#21 German Quantum Systems Closes €1 Billion Series D Funding Round, Soaring to €7 Billion Valuation to Expand Autonomous Systems Business

#22 U.S. NIST Launches New Center with SRI International to Accelerate Commercialization of Quantum Sensing and Sensor Manufacturing

#23 Redwood AI Acquires Quantum.IQ Technologies, Enhancing Support for Government, Defense, and Financial Institutions in Modernizing Cryptographic Systems for Post-Quantum Era

#24 BTQ Technologies Completes Full Acquisition of QPerfect, Integrating MIMIQ™ Quantum Emulator and Digital Twin Capabilities into its Tech Stack

#25 Korea Research Institute of Standards and Science (KRISS) Partners with Fairfax County EDA to Support Korean Quantum Firms' Entry into U.S. Market

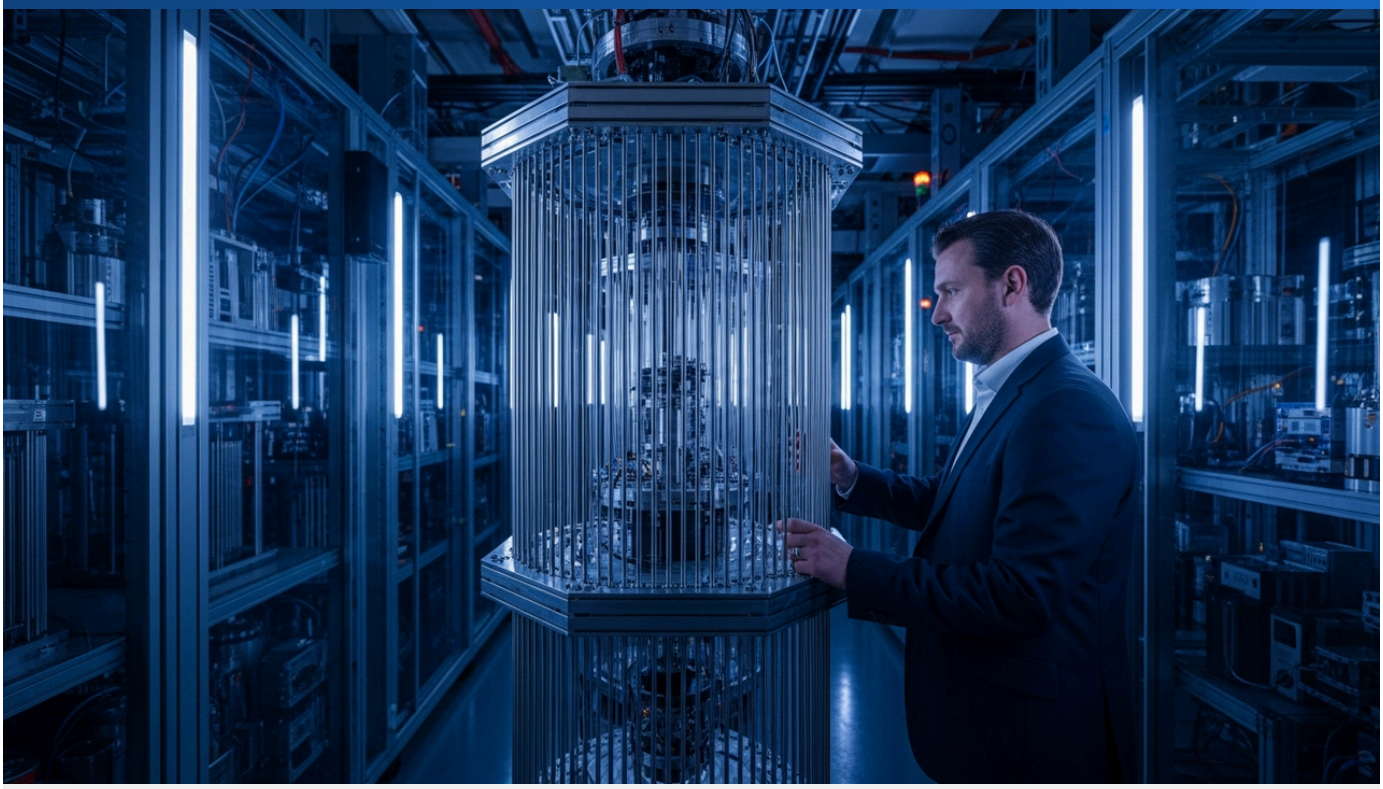
#26 Qblox Partners with HPE to Advance Hybrid Classical-Quantum Computing, Integrating Quantum Control Systems into HPE's HPC/AI Infrastructure

#27 U.S. Government Allocates $2.013 Billion in CHIPS Act Incentives to Nine Quantum Computing Companies, Including $1 Billion for IBM Quantum Foundry

#28 BIO 2026 AI Summit Highlights Quantum Drug Discovery as Imminent Reality: IBM and Cleveland Clinic Successfully Simulate 303-Atom Trp-Cage Protein Electron Structure

#01 Yale's ERASE Project Secures $4 Million NSF Grant to Advance Fault-Tolerant Quantum Computing

Published June 25, 2026 YaleNews USA



OVERVIEW

Yale University's ERASE project has been awarded a $4 million grant from the National Science Foundation (NSF) to accelerate the development of large-scale, fault-tolerant quantum computers. This initiative focuses on a novel error correction approach using "erasure flag" qubits, a strategy designed to significantly improve quantum system reliability. The funding, bolstered by the recent acquisition of Yale startup Quantum Circuits, Inc. by D-Wave Quantum, will drive the initial hardware and software blueprinting essential for future quantum systems and contribute to quantum technology workforce development in Connecticut.

IN DEPTH

Key Findings

Yale University's ERASE project has been awarded a significant $4 million grant from the National Science Foundation (NSF), marking a crucial step forward in the development of large-scale, fault-tolerant quantum computers. This substantial funding injection is set to accelerate research and development efforts aimed at realizing practical quantum computing, which is currently hampered by the inherent instability of qubits.

Technical Details

The ERASE project is pioneering a distinctive and innovative approach to quantum error correction, a formidable challenge in building reliable quantum machines. Specifically, it leverages a technology known as "erasure flag" qubits. This method is designed to enhance the efficiency and precision of error correction processes by making it easier to identify the location of errors when they occur. By pinpointing errors more effectively, the project aims to overcome the fragility of current qubits, which are highly susceptible to environmental noise and suffer from short coherence times. The initiative benefits significantly from the involvement of Quantum Circuits, Inc. (QCI), a Yale spin-off recently acquired by D-Wave Quantum. The integration of QCI's expertise and resources, combined with D-Wave's industrial capabilities, is expected to substantially boost the project's momentum, facilitating the seamless transition from fundamental research to industrial application.

Background & Context

Quantum computing holds immense promise for revolutionizing fields such as drug discovery, materials science, and financial modeling by tackling problems beyond the reach of even the most powerful classical supercomputers. However, the path to widespread adoption has been obstructed by the inherent instability and error proneness of quantum systems, a phenomenon known as decoherence. Investments in sophisticated error correction technologies, like those pursued by the ERASE project, are therefore critical to breaking through this barrier. The U.S. government has identified quantum technology as a top national strategic priority, and this NSF grant is a testament to the ongoing commitment to establish and maintain a leading edge in the global quantum race.

Strategic Significance & Outlook

With this new funding, the ERASE project will focus on creating the initial hardware and software blueprints for building fault-tolerant quantum computers. This includes optimizing quantum architectures, developing advanced control systems, and implementing robust error correction algorithms. Furthermore, the project is also committed to fostering the next generation of quantum technology talent in Connecticut, thereby building a skilled workforce essential for the emerging quantum economy. The successful realization of large-scale, robust fault-tolerant quantum computers would unlock computational capabilities currently deemed impossible, profoundly impacting science, industry, and society. This endeavor represents a significant milestone in transitioning quantum computing from a theoretical pursuit to a tangible, real-world technological force.

Source: https://news.yale.edu/2026/06/25/new-vision-quantum-computing-takes-big-step-forward-new-grant

Collected: July 03, 2026 | Automated Research System (Gemini API)

#02 German Defense Tech Startup Quantum Systems Raises $1.2 Billion at $8 Billion Valuation to Scale Autonomous Systems

Published July 02, 2026 Vestbee Germany

OVERVIEW

Quantum Systems, a German defense technology startup, successfully closed a $1.2 billion Series D funding round, propelling its valuation to $8 billion. The substantial capital infusion is designated for significantly scaling the production of its autonomous defense systems, fortifying supply chains, and investing in advanced AI capabilities. Furthermore, the company announced an expanded strategic partnership with Airbus Defence and Space to collaboratively develop next-generation European defense solutions, signaling a major push in regional defense autonomy and innovation.

IN DEPTH

Key Findings

Quantum Systems, a German defense technology startup, has successfully secured an impressive $1.2 billion in its Series D funding round, achieving a post-money valuation of $8 billion. This massive capital injection is poised to dramatically expand the company's production capabilities for autonomous defense systems and accelerate its technological advancements, solidifying its position as a key player in the European defense tech landscape.

Technical Details

The newly acquired funds are primarily allocated to a significant scale-up of Quantum Systems' autonomous defense systems production. This involves upgrading state-of-the-art manufacturing facilities, implementing highly efficient production lines, and strengthening its global supply chain to meet surging demand. A substantial portion of the investment will also be channeled into research and development for advanced AI functionalities, which are the 'brains' of these autonomous systems. This includes enhancing AI precision and reliability in drone autonomous flight, target recognition, mission planning, and data analysis, ultimately aiming to improve the efficiency and safety of defense operations. Moreover, Quantum Systems has announced an expanded strategic partnership with aerospace giant Airbus Defence and Space. This collaboration is set to co-develop next-generation European defense capabilities, integrating cutting-edge hardware and software to rapidly bring new technologies to market.

Background & Context

The global defense market is undergoing a profound transformation, driven by escalating geopolitical tensions and rapid technological advancements. Artificial intelligence and autonomous systems, in particular, are becoming increasingly vital across a spectrum of military operations, from reconnaissance and surveillance to precision strikes. Nations worldwide are accelerating investments in these technologies to modernize their defense capabilities and bolster domestic industrial strength. Quantum Systems' success aligns with Europe's strategic objective to enhance its defense technology supply chain independence and reduce reliance on external suppliers. This move is critical for the continent to establish a more robust stance in the international security environment.

Strategic Significance & Outlook

With this monumental funding round and enhanced partnership with Airbus, Quantum Systems is expected to significantly strengthen its influence in the global defense technology market. The expansion of production capacity coupled with continuous investment in AI will likely improve the performance and reliability of its autonomous defense systems, potentially leading to new client acquisitions. Furthermore, the company is set to play a pivotal role in driving defense technology innovation and autonomy within Europe. In the long term, autonomous systems are expected to support more complex decision-making processes under various operational conditions, alleviate the burden on human operators, and usher in a paradigm shift in defense strategy and tactics. This funding is viewed not just as corporate growth but as a strategic investment with potential ripple effects across the entire European defense industry.

Source: https://www.vestbee.com/insights/articles/quantum-systems-raises-1-2-b

Collected: July 03, 2026 | Automated Research System (Gemini API)

#03 Quantum Computing Nears Real-World Viability as Technology Maturation Accelerates

Published July 02, 2026 Fast Company USA

OVERVIEW

Quantum computing is rapidly progressing towards real-world viability, moving beyond pure research into stages with tangible applications. Ongoing advancements in hardware stability and algorithmic efficiency are enabling the tackling of increasingly complex problems. This maturation promises to unlock unprecedented computational power across sectors like finance, pharmaceuticals, and materials science, paving the way for transformative industrial breakthroughs and addressing challenges intractable for classical computers.

IN DEPTH

Key Findings

Quantum computing is rapidly advancing its technological maturity, swiftly transitioning from the confines of research laboratories to a phase where real-world applications are becoming increasingly feasible. What was once largely a theoretical possibility is now, due to enhanced hardware stability and algorithmic evolution, beginning to establish its role as a practical problem-solving tool.

Technical Details

Progress in quantum computing is multifaceted, notably observed in the extension of qubit stability (coherence times), reduction of error rates, and an increase in the number of operational qubits. These improvements are critical preconditions for executing more complex computational tasks. Active research and development are ongoing across various quantum modalities, including superconducting qubits, ion traps, neutral atoms, and photonic quantum computers, each demonstrating advantages for specific computation types or scaling strategies. In finance, quantum algorithms are being explored for accelerating Monte Carlo simulations for risk assessment and optimizing complex investment portfolios. The pharmaceutical sector anticipates enhanced accuracy in molecular simulations for new drug discovery and improved analysis of biomolecules for personalized medicine. Materials science is looking forward to groundbreaking applications such as predicting properties of novel materials and designing highly energy-efficient catalysts. These specific applications hint at the potential for quantum computers to demonstrate “quantum advantage” over classical counterparts for certain intractable problems.

Background & Context

Many challenges confronting modern society either demand prohibitive amounts of time for conventional supercomputers or are entirely beyond their computational capabilities. These include complex optimization problems with vast numbers of interacting variables and tasks requiring precise modeling of quantum mechanical interactions. Quantum computers offer a potential breakthrough by leveraging quantum phenomena like superposition and entanglement. In recent years, government agencies, major technology corporations, and startups alike have significantly amplified their investments in the quantum computing sector, fostering the development of the entire ecosystem from hardware and software to application layers.

Strategic Significance & Outlook

As quantum computing accelerates towards practical implementation, its impact across various industries will be immeasurable. In the short term, Noisy Intermediate-Scale Quantum (NISQ) devices, often used in hybrid classical-quantum algorithms, are showing promise in specific optimization problems and machine learning tasks. Long-term, the realization of fault-tolerant, large-scale quantum computers promises to fundamentally transform society by accelerating drug discovery, enabling the creation of new materials, revolutionizing AI capabilities, and building robust cybersecurity systems. The maturation of this technology is expected to be a core driver of next-generation scientific and technological innovation and a source of global competitive advantage. Companies and governments are increasingly compelled to make strategic investments in quantum technology and workforce development to harness this transformative wave effectively.

Source: https://www.fastcompany.com/91567589/quantum-computings-next-leap-may-be-closer-than-you-think

#04 U.S. Accelerates Quantum Tech & PQC Adoption: $2B CHIPS Act Grants to IBM, GlobalFoundries; Federal Systems Mandated PQC Migration by 2030

Published June 30, 2026 Wiley Rein USA

OVERVIEW

The U.S. government has launched a comprehensive strategy to accelerate quantum technology leadership and post-quantum cryptography (PQC) migration, driven by two Executive Orders signed on June 22, 2026. This includes a $2 billion allocation from the CHIPS Act for quantum R&D, with IBM receiving $1 billion for a superconducting quantum foundry and GlobalFoundries $375 million for diverse quantum architectures. Federal high-value assets are mandated to transition to PQC for key establishment by December 31, 2030, and digital signatures by December 31, 2031, signaling a critical push for national cyber resilience against future quantum threats.

IN DEPTH

Key Findings

The United States government has significantly intensified its commitment to quantum information science and technology (QIST) and accelerated its transition to post-quantum cryptography (PQC) through two Executive Orders signed by President Donald Trump on June 22, 2026, alongside a substantial $2 billion allocation in CHIPS Act R&D funding. This strategic offensive mandates that critical federal systems implement PQC for key establishment by December 31, 2030, and for digital signatures by December 31, 2031, aiming to preemptively neutralize future cybersecurity threats posed by advanced quantum computers while simultaneously fostering quantum innovation and commercialization.

Technical / Policy Details

- **Quantum Innovation Executive Order:** This directive outlines a whole-of-government approach to accelerate the commercialization of QIST. A central component is the "Quantum Computer for Application Development and Discovery Science (QC-ADDS) Effort," which aims to develop a "scientifically useful" quantum computer by 2028. This initiative emphasizes a rapid progression from foundational research to practical applications and deployment.
- **Post-Quantum Cryptography Executive Order:** Titled "Securing the Nation Against Advanced Cryptographic Attacks," this order mandates an accelerated migration of federal systems, contractors, and critical infrastructure operators to PQC. Key milestones include federal agencies designating a PQC migration lead within 30 days, the Office of Management and Budget (OMB) issuing implementation guidance within 90 days, and the National Institute of Standards and Technology (NIST) launching a PQC migration pilot project within 180 days. NIST had previously selected HQC as its fifth PQC algorithm in March 2025, broadening the available cryptographic options.

- **CHIPS Act Funding for Quantum Hardware:** Complementing the executive orders, the Department of Commerce announced in May 2026 a $2 billion R&D funding package under the CHIPS Act, distributed among nine quantum companies. Notably, IBM is allocated $1 billion to establish a superconducting quantum foundry, and GlobalFoundries will receive $375 million to advance diverse quantum architectures. These investments underscore a targeted effort to bolster domestic quantum hardware manufacturing capabilities.

Background & Context

The rapid advancements in quantum computing pose an existential threat to current cryptographic standards, potentially compromising national security, economic stability, and critical infrastructure. The U.S. government's updated National Quantum Strategy, emphasizing deployment, commercialization, and cyber resilience, is a direct response to this looming "Q-Day." These new policy measures move beyond mere research support, pushing for practical, systemic security upgrades across all federal operations and extending compliance expectations to contractors and critical infrastructure. This proactive stance aims to ensure the U.S. maintains a competitive edge in the global quantum race, which is increasingly characterized by international competition for technological supremacy.

Strategic Significance & Outlook

These decisive actions by the U.S. government mark a pivotal moment in the quantum landscape. The blend of substantial financial investment and strict regulatory mandates is expected to catalyze innovation across the quantum ecosystem, driving both hardware and software development. The clear PQC migration deadlines will create a burgeoning market for PQC solutions, compelling not only government entities but also their vast network of private sector partners to rapidly invest in and implement quantum-safe technologies. This strategic pivot positions quantum computing as a mainstream technological imperative, transforming risk management and opening new avenues for economic growth and national defense, ultimately shaping the future of global technological leadership.

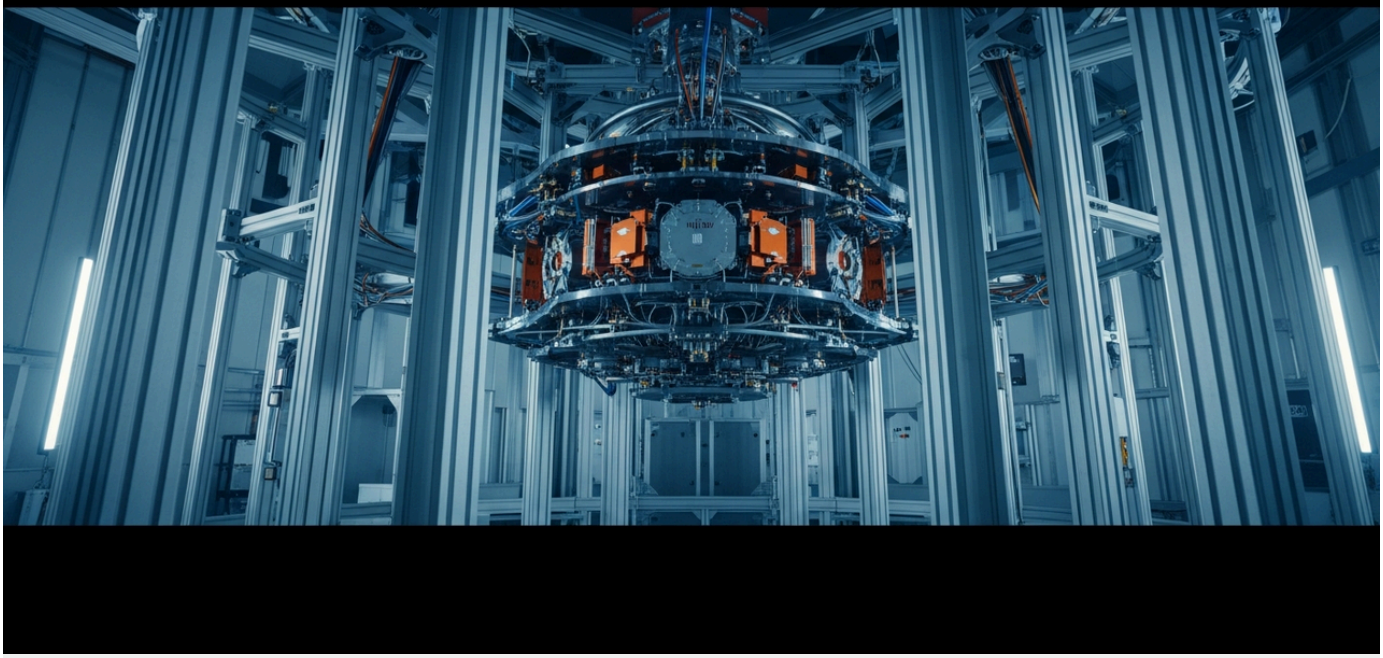
Source: https://www.wiley.law/alert-The-Next-Frontier-of-Quantum-Innovation-Key-Takeaways-from-

President-Trumps-Quantum-and-Post-Quantum-Cryptography-Executive-Orders

Collected: July 03, 2026 | Automated Research System (Gemini API)

#05 Fujitsu to Deploy 1,024-Qubit Superconducting Quantum Computer in FY2026, Targeting Practical Quantum Computing by 2030

Published July 01, 2026 Fujitsu Global Japan



OVERVIEW

Fujitsu announced plans to install and launch a 1,024-qubit class superconducting quantum computer at its Technology Park during fiscal year 2026, marking a significant step towards its goal of achieving practical quantum computing by 2030. The company's roadmap further extends to developing a superconducting quantum computer exceeding 10,000 qubits by FY2030 and a 1,000-logical qubit machine by FY2035. A Fujitsu-commissioned survey revealed that 96% of global executives anticipate benefits from quantum computing, with 58% planning to integrate it into their strategic planning this year, underscoring growing industry confidence.

IN DEPTH

Key Findings

Fujitsu is set to significantly advance its quantum computing capabilities with the planned installation and operation of a 1,024-qubit class superconducting quantum computer at its Fujitsu Technology Park during fiscal year 2026. This move is a cornerstone of the company's ambitious strategy to realize practical quantum computing by 2030, positioning it as a frontrunner in the global race for quantum supremacy. The roadmap includes aggressive targets: developing a superconducting quantum computer with over 10,000 physical qubits by FY2030 and achieving a 1,000-logical qubit fault-tolerant machine by FY2035, demonstrating a clear vision for scaling and error correction.

Technical / Clinical Details

- **Hardware Development Roadmap:** The 1,000-qubit class superconducting quantum computer, currently under development, will be housed in a new facility at Fujitsu Technology Park, slated for completion in 2026. This system is crucial for enabling the next phase of quantum algorithm development and problem-solving. Beyond this, Fujitsu's long-term vision extends to delivering a superconducting quantum computer exceeding 10,000 physical qubits by fiscal 2030. The ultimate goal is a 1,000-logical qubit machine by fiscal 2035, which signifies a major leap towards error-corrected, fault-tolerant quantum computing capable of tackling highly complex problems with reliable precision.
- **Hybrid Computing Approach:** Fujitsu is leveraging a hybrid computing strategy that integrates quantum processors with conventional high-performance computing (HPC) resources. This approach allows for the optimal allocation of computational tasks, where quantum parts handle specific subroutines that offer a quantum advantage, while classical systems manage the overall workflow and data processing. Collaborations, such as with Japan's RIKEN institute, are instrumental in accelerating the research and development of these advanced hybrid architectures, fostering breakthroughs in both hardware and software.

Background & Context

Quantum computing promises to revolutionize various sectors, from drug discovery and materials science to financial modeling and logistics, by solving problems intractable for classical computers. However, achieving practical quantum advantage requires not only increasing qubit counts but also significantly improving qubit coherence and error rates. The market sentiment is increasingly optimistic, as evidenced by a Fujitsu-commissioned survey conducted by FT Longitude, which found that 96% of global executives anticipate benefits from quantum computing, and a substantial 58% plan to integrate quantum technology into their strategic planning within the current year. This indicates a maturing industry ready to move beyond theoretical exploration to tangible commercial deployment.

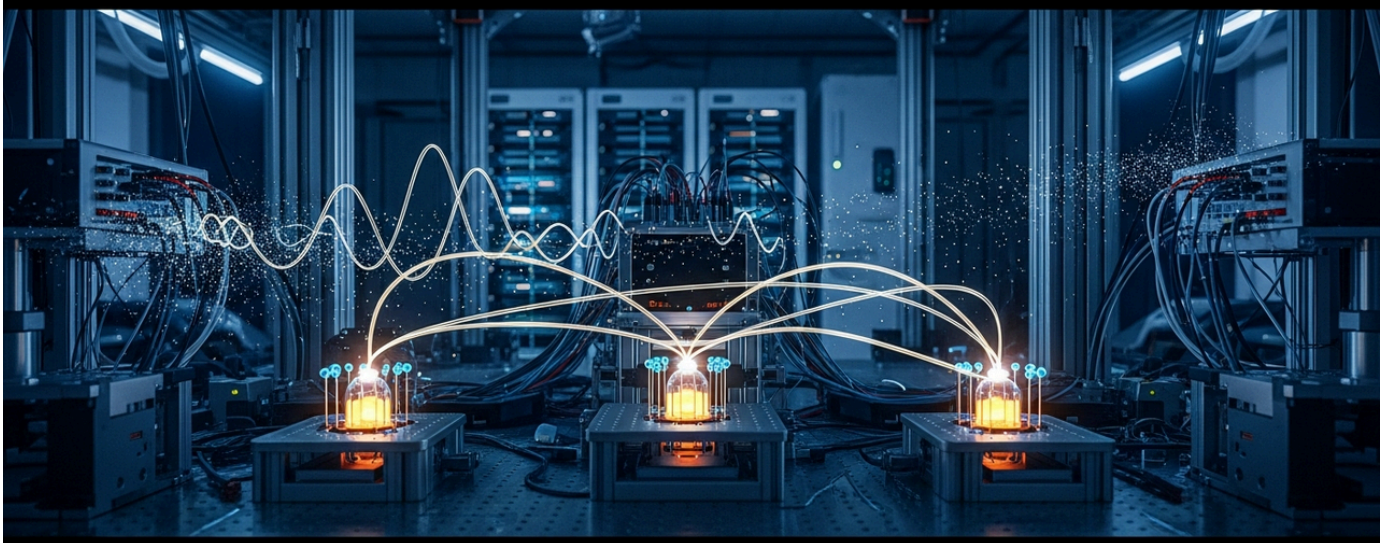
Strategic Significance & Outlook

Fujitsu's aggressive investment and detailed roadmap are pivotal for Japan's standing in the global quantum landscape. The deployment of a 1,000-qubit system in 2026 will bolster near-term quantum application development, especially in the NISQ (Noisy Intermediate-Scale Quantum) era. The 2030 target for practical quantum computing positions the technology not as a distant future concept but as an imminent tool for gaining competitive advantage across industries. Fujitsu's commitment, combined with its strategic partnerships and focus on hybrid solutions, underscores a significant national effort to transform quantum research into impactful real-world solutions, influencing global technological leadership and innovation trends.

Source: https://global.fujitsu/en-global/technology/key-technologies/news/ta-quantum-computing-2030-enterprise-readiness-20260511

#06 Duke Quantum Center & IonQ Demonstrate First Fully Distributed 3-Node GHZ State Using Photonic-Linked Atomic Qubits

Published July 03, 2026 Quantum Computing Report USA



OVERVIEW

The Duke Quantum Center and IonQ have achieved the world's first fully distributed three-node Greenberger-Horne-Zeilinger (GHZ) state, connecting individual atomic qubits via photonic links. This breakthrough, accomplished without local two-qubit gates or post-selection, establishes a crucial framework for modular quantum computing by demonstrating reliable entanglement across distinct processing nodes. The ability to network quantum processors with photonic interconnects is a fundamental step towards building scalable quantum systems and distributed quantum networks.

IN DEPTH

Key Findings

A collaborative research effort between the Duke Quantum Center and IonQ has yielded a significant advance in quantum computing, demonstrating the first fully distributed three-node GHZ (Greenberger-Horne-Zeilinger) state. This pioneering experiment successfully entangled individual atomic qubits located in separate processing nodes, connected exclusively by photonic links. The achievement, which circumvents the need for local two-qubit gates or post-selection, represents a critical milestone for modular quantum computing and provides strong evidence for quantum non-locality in a distributed setting.

Technical / Clinical Details

- **Distributed GHZ State Realization:** The GHZ state is a highly entangled multi-qubit state, fundamental for various quantum information tasks, including quantum communication and computation. In this study, three distinct quantum processing nodes, each containing atomic qubits, were entangled to form a GHZ state through photon-mediated interactions. This means quantum information could be shared and correlated across physically separated units without direct physical contact between their core processors.
- **Role of Photonic Links:** A primary challenge in scaling quantum computers lies in connecting physically distant qubits while maintaining coherence. The research team utilized photons as "flying qubits" to establish entanglement over long distances between atomic qubits within each node. Photons are ideal for this purpose due to their low-loss transmission properties and ability to carry quantum information reliably, effectively acting as high-fidelity quantum interconnects.
- **Implications for Modular Quantum Computing:** This breakthrough is a pivotal step toward realizing modular quantum computing architectures. Instead of fabricating an entire large-scale quantum computer on a single chip, which faces immense engineering challenges, this approach allows for the development of smaller, more manageable quantum processing units (QPUs). These QPUs can then be interconnected using photonic links, enabling the creation of much larger and more complex quantum systems with enhanced scalability and fault tolerance.

Background & Context

Current quantum computers often employ a monolithic design, where all qubits are integrated onto a single chip. However, as qubit counts increase, challenges related to control, cooling, and wiring grow exponentially. Modular quantum computing, which involves networking multiple smaller quantum processors, is a promising alternative to overcome these scaling limitations. The work by Duke Quantum Center and IonQ addresses a key technical hurdle in this modular paradigm: the reliable generation of entanglement between spatially separated nodes. This capability is not only crucial for building scalable quantum computers but also lays foundational groundwork for the development of a quantum internet.

Strategic Significance & Outlook

This scientific achievement has profound implications for the future of quantum technology, promising to accelerate the construction of large-scale fault-tolerant quantum computers and the evolution of distributed quantum networks. By enabling robust connections between quantum nodes via photonic links, this technology could eventually lead to global quantum internet infrastructure and "distributed quantum computation," where multiple quantum computers collaborate to solve problems beyond the capacity of any single machine. This innovation underpins advancements in quantum sensing, quantum communication, and ultimately, the practical realization of general-purpose quantum computers, profoundly influencing future research and technological trajectories.

Source: https://quantumcomputingreport.com/news/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#07 Quantum Computing VC Investment Hits Record $3.9 Billion in 2025, Led by BlackRock, Nvidia, and Temasek

Published June 29, 2026 Crypto Briefing USA

OVERVIEW

Global venture capital investment in quantum computing reached an unprecedented $3.9 billion across approximately 125 deals in 2025, driven by significant capital infusions from major investors including BlackRock, Temasek, and Nvidia. PsiQuantum's $1 billion Series E round in September 2025 notably contributed to this record-breaking year. This surge in private funding, coupled with BlackRock's analysis of quantum computing's implications for blockchain security and its launch of a Quantum Computing UCITS ETF, signifies a strong and growing institutional confidence in the burgeoning quantum revolution.

IN DEPTH

Key Findings

The quantum computing sector witnessed an unparalleled surge in venture capital (VC) investment in 2025, with global funding reaching a record $3.9 billion across approximately 125 deals. This historic influx of capital was spearheaded by prominent investors such as BlackRock, Temasek, and Nvidia, with PsiQuantum's colossal $1 billion Series E round in September 2025 being a significant contributor to this unprecedented total. This trend unequivocally indicates a shift in the perception of quantum technology, moving from a speculative research domain to a burgeoning investment sector with substantial commercial viability and long-term growth potential.

Technical / Clinical Details

- **Record-Breaking Capital Inflow:** The $3.9 billion VC investment in 2025 represents a dramatic increase over previous years, reflecting escalating market confidence and high expectations for quantum computing enterprises. These funds have been primarily directed towards companies specializing in quantum hardware, software, algorithm development, and critical enabling infrastructure technologies, fostering a diverse and competitive ecosystem.
- **Major Investors and Strategic Significance:** The commitment of billions from institutional giants like BlackRock, Nvidia, and Temasek underscores a conviction that quantum computing will play a central role in the future technological landscape. BlackRock, in particular, has not only analyzed the profound implications of quantum computing for blockchain security but has also proactively launched a Quantum Computing UCITS ETF, democratizing access to this high-growth sector for a broader investor base. Nvidia's strategic investments are aimed at bolstering its portfolio by exploring the potential for GPU acceleration in quantum computing, enhancing its relevance across the AI and quantum spectrum.
- **PsiQuantum's Mega-Round:** PsiQuantum's $1 billion Series E funding round stands as one of the largest single investments in a quantum computing company to date. This substantial capital injection signals strong market validation for photonic quantum computing approaches and is critical for accelerating their technological development, pushing towards faster commercialization and deployment of their ambitious quantum systems.

Background & Context

Quantum computing holds transformative potential across diverse sectors, including pharmaceutical discovery, financial modeling, artificial intelligence, and materials science, promising to address problems that are currently intractable for classical computers. Following decades of foundational research, the advent of Noisy Intermediate-Scale Quantum (NISQ) devices in recent years has brought initial practical applications within reach. This technological progress, coupled with significant governmental R&D investments (e.g., the U.S. CHIPS Act), has ignited a wave of private investor interest. The active participation of institutional investors, integrating quantum technology into their portfolios, suggests a maturation of the sector from a purely speculative venture into a high-growth market.

Strategic Significance & Outlook

The record-setting VC funding in 2025 confirms quantum computing as the next major technological frontier. This momentum is anticipated to fuel further innovation, drive mergers and acquisitions, and foster the creation of new market segments in the coming years. Investment in quantum technology is not merely a pursuit of economic returns but also a strategic imperative in the global technological race, crucial for securing national competitive advantages and shaping future infrastructure. For investors, while the sector presents considerable risks, it also offers the potential for exceptionally high returns over the long term, making it an attractive yet challenging opportunity. BlackRock's ETF launch is particularly indicative of the broadening appeal of this technology to a wider investor demographic, promising to further accelerate market development and adoption.

Source: https://cryptobriefing.com/blackrock-nvidia-temasek-quantum-computing-investment/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#08 Horizon Quantum IPO Sees Boost from US Executive Order, Plans Ireland Research Center with IonQ Quantum Computer

Published July 01, 2026 The Motley Fool USA

OVERVIEW

Horizon Quantum (HQ), a quantum software development company, recently completed its initial public offering (IPO), experiencing a stock surge following the U.S. Executive Order on quantum computing. The company plans to establish a research center in Ireland, which will house a quantum computer purchased from IonQ. Investor enthusiasm is primarily driven by the company's future potential and an initiating "buy" rating from investment bank Needham, which highlighted Horizon's first-mover advantage in the critical quantum software space.

IN DEPTH

Key Findings

Horizon Quantum (HQ), a quantum software development company, has successfully gone public, with its stock experiencing a notable uplift following the U.S. Executive Order on quantum computing issued on June 22, 2026. Demonstrating a clear strategic direction, Horizon Quantum is setting up a new research center in Ireland, which will be equipped with a quantum computer acquired from IonQ. This move underscores the company's commitment to advancing quantum software capabilities and solidifying its position as a key player in the nascent quantum ecosystem.

Technical / Business Details

- **Initial Public Offering and Market Response:** Horizon Quantum's IPO reflects a growing investor appetite for the quantum computing market. The U.S. Executive Order, which emphasized quantum technology's strategic national importance, provided additional momentum, illustrating how governmental policy can directly influence valuations within high-tech sectors. This public listing provides the company with significant capital for expansion and showcases the increasing maturity of the quantum industry.
- **Ireland Research Center and IonQ Collaboration:** The company's plan to establish a state-of-the-art research center in Ireland is a strategic pivot to enhance its R&D capabilities. By integrating a quantum computer from IonQ, a leading provider of ion-trap quantum computing hardware known for its high-performance qubits, Horizon Quantum aims to create a robust environment for developing advanced quantum software and algorithms. This hardware-software synergy is critical for maximizing the potential of current quantum devices.
- **Needham's "Buy" Rating:** Investment bank Needham initiated coverage on Horizon Quantum with a "buy" rating, citing the company's significant first-mover advantage in the quantum software domain. As quantum hardware continues to evolve, the development of sophisticated and optimized software is paramount for extracting maximum value and enabling practical applications. Companies like Horizon Quantum, specializing in this crucial layer, are positioned to capture substantial market share as the industry matures.

Background & Context

The advancement of quantum computing is intrinsically linked to progress in both hardware and software. While quantum hardware, particularly Noisy Intermediate-Scale Quantum (NISQ) devices, is still in its early stages with limited qubit counts and inherent noise, highly optimized quantum software is essential to harness their full potential. Horizon Quantum's strategy to provide specialized software expertise addresses this critical need, aiming to improve computational efficiency and enable the development of real-world applications. Ireland, known for its proactive stance in attracting technology companies, offers an appealing environment for R&D centers, with its skilled workforce and supportive ecosystem.

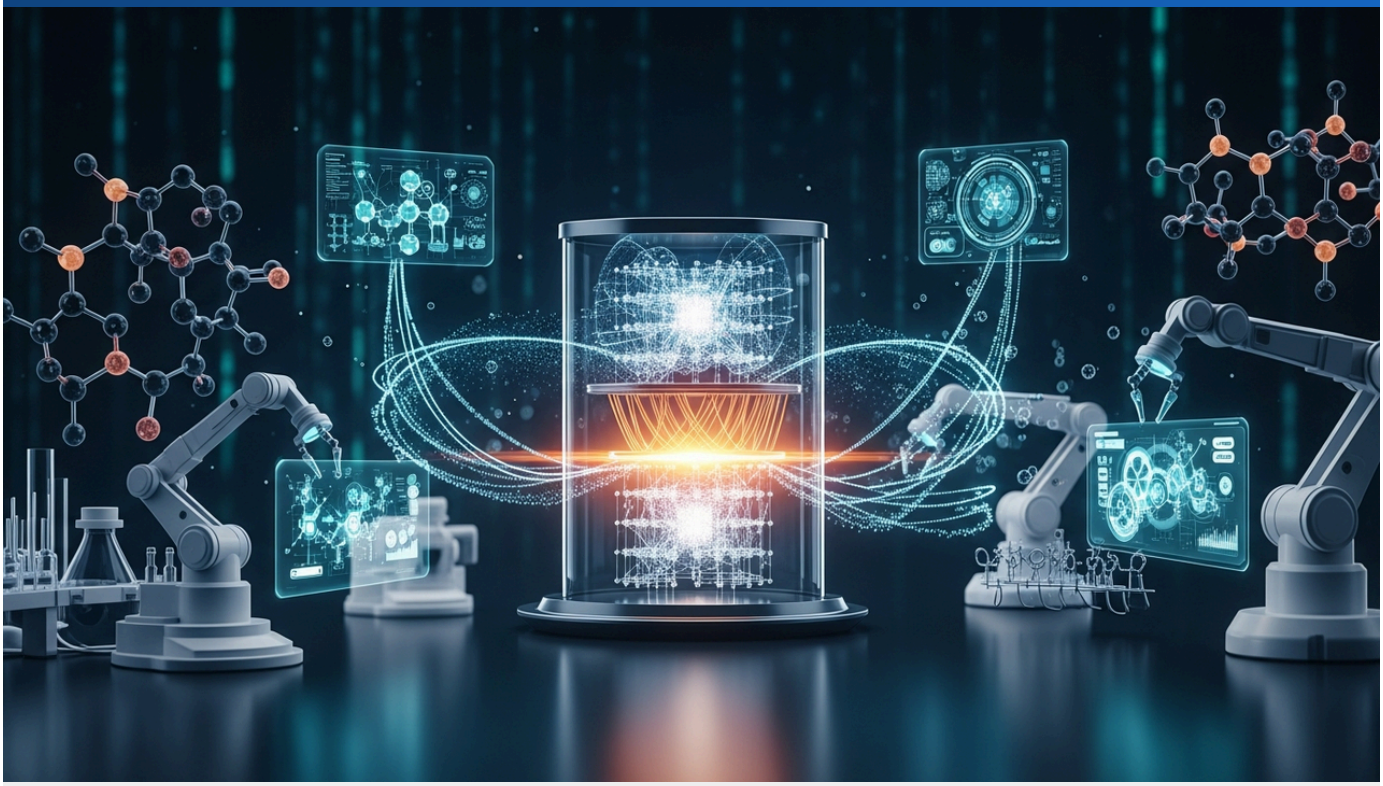
Strategic Significance & Outlook

Horizon Quantum's IPO and its strategic research center establishment represent significant markers of the quantum software market's increasing maturity. The partnership with IonQ promises to foster a symbiotic development between hardware and software, potentially accelerating the commercialization timeline for quantum computing. For investors, quantum software may offer an attractive proposition due to its potentially lower capital intensity compared to hardware development, coupled with high scalability as the market expands. By positioning Ireland as a European hub, Horizon Quantum aims to strengthen its global footprint and become an important enabler in the future quantum ecosystem. Needham's bullish rating further solidifies market expectations regarding the company's promising trajectory.

Source: https://www.fool.com/investing/2026/06/30/this-quantum-computing-stock-recently-went-public/

#09 Quantum Computing in Pharma R&D: Strategic Trends and Recommendations for Leaders Targeting Late 2020s Operational Impact

Published June 28, 2026 Sakara Digital USA



OVERVIEW

Between 2025 and 2026, quantum computing's role in pharmaceutical R&D transitioned from theoretical discussions to concrete experiments and strategic partnerships, with realistic expectations for operational impact on drug discovery emerging in the late 2020s. Tangible progress is evident in achieving quantum chemistry advantage, though current demonstrations largely remain at the small molecule scale. Pharma R&D leaders are advised to closely monitor ongoing experiments, analyze partnership trends, and establish a defensible timeline for integrating quantum solutions into their pipelines to secure future advantages.

IN DEPTH

Key Findings

From 2025 to 2026, the landscape of quantum computing in pharmaceutical R&D has undergone a significant transformation, evolving from speculative discourse to tangible experiments and strategic collaborations. There is now a realistic expectation that quantum computing will deliver operational impact for drug discovery in the late 2020s. Despite current demonstrations primarily focusing on small molecule scales, discernible progress is being made towards achieving quantum chemistry advantage, signaling a maturing phase for quantum applications in the life sciences sector.

Technical / Clinical Details

- **Advancements in Application Areas:** Quantum computing holds the potential to revolutionize various stages of pharmaceutical R&D, including molecular modeling, screening of new drug candidates, prediction of drug properties, and optimization of clinical trial designs. Quantum chemistry calculations, in particular, aim to simulate the electronic structures of complex molecules with unprecedented accuracy—a domain where classical computers face significant limitations. This area is widely regarded as the most promising for quantum computers to demonstrate a "quantum advantage."
- **Concrete Experiments and Partnerships:** Numerous pharmaceutical companies are now engaging in partnerships with quantum technology providers to conduct proof-of-concept (PoC) studies and early pilot projects. These initiatives are designed to improve existing computational methods through quantum algorithms, thereby exploring more efficient drug discovery processes. Initial results are concentrated on small molecule level simulations, which is particularly relevant for the development of small-molecule therapeutics.
- **Pathway to Quantum Advantage:** Quantum chemistry advantage refers to the ability of quantum computers to solve specific chemical problems faster and more accurately than classical supercomputers. Recent progress indicates a clearer pathway towards this advantage, which could dramatically shorten drug development cycles and lead to the discovery of more effective therapies in the future.

Background & Context

The pharmaceutical industry is under increasing pressure due to soaring drug development costs and declining success rates. Consequently, it has been actively embracing cutting-edge technologies like AI and machine learning. Quantum computing is viewed as another transformative tool, expected to enhance the accuracy of molecular simulations during early discovery phases and deepen the understanding of complex biomolecular interactions, thereby accelerating the entire drug discovery process. However, significant technical challenges remain, including qubit stability, error correction, and scalability, which must be overcome for widespread practical adoption. Pharma R&D leaders must therefore adopt a long-term strategic perspective, avoiding short-term hype in favor of sustainable investment and preparatory measures.

Strategic Significance & Outlook

The future of quantum computing in pharmaceutical R&D is highly anticipated, with predictions of operational impact by the late 2020s expected to further accelerate investment and research. Pharmaceutical companies are advised to continuously monitor quantum technology trends, analyze inter-industry partnership strategies, and develop robust timelines for integrating quantum solutions into their R&D pipelines. This proactive approach will enable them to secure a competitive edge in future drug development races and contribute to the creation of novel therapies that address unmet medical needs, ultimately leading to better patient outcomes and economic growth within the sector.

Source: https://sakaradigital.com/blog/quantum-computing-watch-list-pharma-rd-leaders/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#10 RIKEN's 144-Qubit Superconducting Quantum Computer "Ei-II" Commences Operation with 99.9% Fidelity Amid Japan-Taiwan Compound Semiconductor Collaboration

Published June 30, 2026 digitimes Taiwan

OVERVIEW

Japan's RIKEN institute and academic institutions in Taiwan are strengthening collaboration on next-generation compound semiconductors. Concurrently, RIKEN's 144-qubit superconducting quantum computer, "Ei-II," co-developed with Osaka University, officially commenced operation in late March 2026, demonstrating an impressive 99.9% qubit fidelity. This dual announcement highlights deepening international innovation and cooperation in both advanced semiconductor materials and quantum computing hardware.

IN DEPTH

Key Findings

Japan's RIKEN institute and leading academic institutions in Taiwan have announced an intensified strategic collaboration focused on the joint development of next-generation compound semiconductor technologies. Coinciding with this partnership, RIKEN's 144-qubit superconducting quantum computer, "Ei-II," a result of collaborative efforts with Osaka University, officially commenced operation in late March 2026. A particularly significant detail is the demonstrated high fidelity of 99.9% for individual qubit operations on the "Ei-II" system, marking a substantial achievement in quantum hardware performance.

Technical / Clinical Details

- **Joint Development of Next-Gen Compound Semiconductors:** The collaboration between Japanese and Taiwanese research entities targets compound semiconductors, a frontier in advanced semiconductor technology. These materials are crucial for creating faster, more efficient electronic devices and serve as fundamental building blocks for future quantum computing technologies. This partnership aims to leverage the strengths of both regions to secure a competitive advantage in the global technological race for advanced materials.
- **Operation of the 144-Qubit Superconducting Quantum Computer "Ei-II":** The "Ei-II" system, installed at RIKEN's Center for Computational Science, is a superconducting quantum computer built on indigenous Japanese technology. With 144 qubits, it stands among the most advanced Noisy Intermediate-Scale Quantum (NISQ) devices globally. Superconducting qubits are characterized by their operation in cryogenic environments and their capability for high-speed quantum gate operations.
- **99.9% Qubit Fidelity:** Qubit fidelity is a critical metric for evaluating the performance and reliability of quantum computers. Achieving 99.9% fidelity signifies that quantum gate operations are performed with extremely high precision, which is indispensable for suppressing errors and executing more complex quantum algorithms. This high level of fidelity is a crucial step towards implementing effective error correction techniques necessary for fault-tolerant quantum computing.

Background & Context

The field of quantum computing is rapidly advancing through diverse research and development efforts across hardware, software, and underlying materials science. Superconducting qubits, in particular, are a promising architecture adopted by leading global players such as IBM and Google. RIKEN serves as a central hub for quantum technology research in Japan, spearheading national quantum strategies. Moreover, semiconductor technology is indispensable for the evolution of both classical and quantum computing, with Taiwan playing an exceptionally critical role in the global semiconductor supply chain. This Japan-Taiwan collaboration further solidifies the Asia-Pacific region's position as a hub for technological innovation.

Strategic Significance & Outlook

The official launch of "Ei-II" and the demonstration of its high fidelity provide significant momentum for Japan's quantum technology research. This system is expected to contribute to early quantum application development across various fields, including quantum chemistry simulations, optimization problems, and novel material discovery. Furthermore, the Japan-Taiwan cooperation in compound semiconductors will lead to the establishment of essential foundational technologies for enhancing the performance of future quantum devices. This international partnership is poised to accelerate R&D, facilitate knowledge sharing, and foster talent development, thereby strengthening the global presence of both nations in the fiercely competitive quantum technology landscape.

Source: https://www.digitimes.com/news/a20260629PD228/taiwan-japan-academia-quantum-computer-semiconductors-nstc-2026.html

#11 IQM Quantum Computers Debuts on Nasdaq with $1.9 Billion Valuation, Becomes First European Quantum Firm Listed on Major U.S. Exchange

Published July 02, 2026 Business Wire USA

OVERVIEW

Finnish superconducting quantum computing company IQM Quantum Computers completed its business combination with Real Asset Acquisition Corp. and commenced trading on the Nasdaq Global Select Market under the ticker "IQMX" on July 2, 2026. This landmark listing makes IQM the first European quantum computing company to be publicly traded on a major U.S. exchange, achieving a valuation of approximately $1.9 billion and securing net proceeds of €198.7 million ($233.5 million). This strategic move aims to accelerate the commercialization and global expansion of quantum computing, despite prospectus warnings about the potential lack of large-scale commercial traction.

IN DEPTH

Key Findings

IQM Quantum Computers, a Finnish superconducting quantum computing company, commenced trading on the Nasdaq Global Select Market under the ticker “IQMX” on July 2, 2026, achieving a valuation of approximately $1.9 billion. This debut, following a business combination with Real Asset Acquisition Corp., marks IQM as the first European quantum computing company to be listed on a major U.S. exchange. The listing secured net proceeds of approximately €198.7 million ($233.5 million), providing a robust financial foundation to accelerate the company’s growth and global expansion.

Technical / Clinical Details

IQM specializes in superconducting quantum qubit technology, aiming to develop high-performance quantum processors. The company’s vision encompasses not only general-purpose quantum computers but also application-specific quantum accelerators, particularly for sectors such as life sciences, materials science, and finance. The newly acquired capital is expected to intensify R&D investments, enhance quantum chip manufacturing capabilities, and support the market introduction of its products.

Background & Context

The quantum computing sector remains in its nascent stages, yet it attracts significant global investment due to its transformative potential. Europe, in particular, is striving to establish itself as a leading quantum technology power alongside the U.S. and China, and IQM's public listing is a significant milestone in this endeavor. Entering the public market underscores the company's commitment to overcoming technical challenges and market uncertainties, positioning itself as a leader in the commercialization of quantum computing.

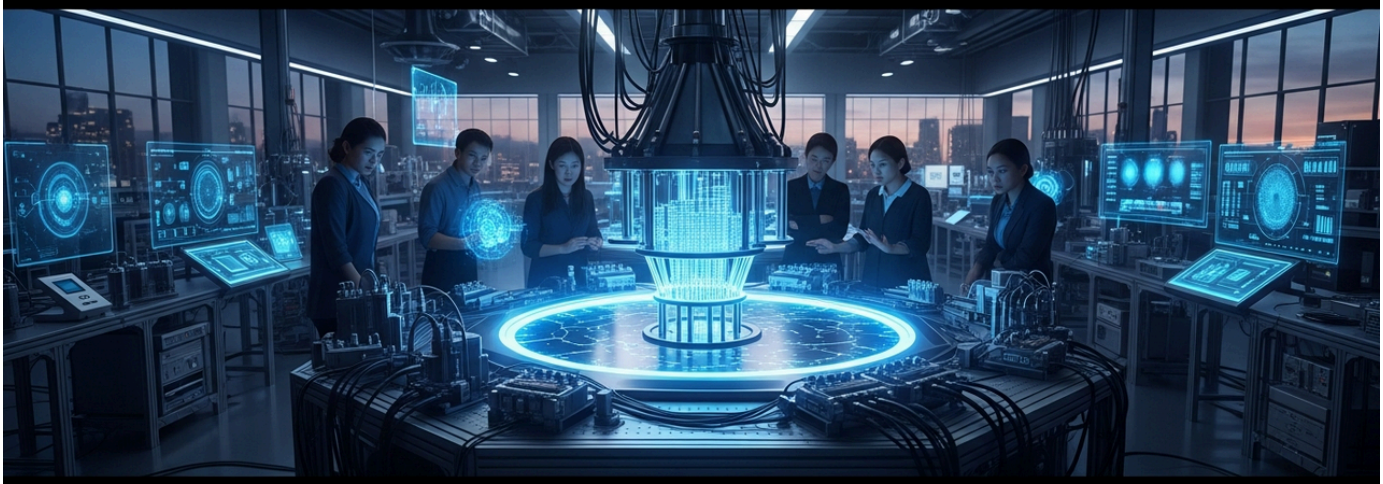
Strategic Significance & Outlook

IQM plans to leverage the raised funds to strengthen its existing quantum computer portfolio, develop new quantum processors, and expand its quantum software ecosystem. The company will also focus on building partnerships and expanding its customer base in key markets to establish a global presence. However, the prospectus also highlights risks inherent to the quantum computing industry, such as the absence of demonstrated large-scale commercial traction and uncertainties regarding technological breakthroughs, making future developments a critical watch point.

Source: https://www.businesswire.com/news/home/20260702960460/en/IQM-Quantum-Computers-Becomes-First-European-Quantum-Computing-Company-Listed-on-a-Major-U.S.-Exchange

#12 Qolab Secures $54.2M Series B Led by UC Investments to Accelerate Superconducting Quantum Platform Development

Published July 02, 2026 GlobeNewswire USA



OVERVIEW

Santa Barbara-based quantum computing hardware startup Qolab announced a $54.2 million Series B funding round on July 2, 2026, led by UC Investments with participation from existing semiconductor investors. The capital, which includes convertible notes and future equity commitments, will be allocated to advancing Qolab's scalable superconducting quantum computing platform. This strategic investment aims to accelerate the path towards fault-tolerant quantum computing and expand partnerships across the global quantum ecosystem.

IN DEPTH

Key Findings

Qolab, a quantum computing hardware startup based in Santa Barbara, successfully secured $54.2 million in Series B funding on July 2, 2026. This significant financing round was led by UC Investments and included commitments for convertible notes and future equity securities, with participation from existing semiconductor investors. The capital raised will be used to accelerate the development of Qolab's scalable superconducting quantum computing platform, expand partnerships across the global quantum ecosystem, and ultimately advance the path toward fault-tolerant quantum computing.

Technical / Clinical Details

Qolab is focused on developing a scalable platform based on superconducting quantum technology. Superconducting qubits are considered one of the most promising candidates for quantum computing due to their long coherence times and high gate fidelities. Qolab's technology aims to innovate both the hardware and architectural aspects for integrating and controlling these qubits on a larger scale. This Series B funding will particularly bolster R&D efforts focused on optimizing chip design, refining manufacturing processes, and developing control systems for efficiently manipulating a greater number of qubits.

Background & Context

The development of quantum computing hardware faces challenges related to technical complexity and high development costs. In the superconducting quantum computing sector, achieving both scalability and fault tolerance is the ultimate goal. The investment in Qolab reflects strong expectations for significant progress in this area and signals growing interest from major institutional investors and the semiconductor industry in the commercialization of quantum hardware. The participation of existing semiconductor investors further indicates the potential for convergence between quantum technology and traditional semiconductor manufacturing.

Strategic Significance & Outlook

Through this funding round, Qolab plans to accelerate its roadmap for developing next-generation superconducting quantum processors. This is expected to lead to systems with a higher number of qubits, broadening the scope of quantum algorithm demonstrations. By expanding global partnerships, Qolab aims to strengthen collaborations with academic institutions, government bodies, and industries, striving for early practical application of quantum computing. The commitment to fault-tolerant quantum computing positions Qolab for long-term technological leadership, representing a crucial step towards achieving future 'quantum advantage'.

Source: https://www.globenewswire.com/news-release/2026/07/02/3321336/0/en/qolab-announces-54-2-million-series-b-financing-and-commitments-led-by-uc-investments-to-accelerate-the-future-of-quantum-computing.html

Collected: July 03, 2026 | Automated Research System (Gemini API)

#13 QuEra Unveils Fault-Tolerant Roadmap Including GigaQuop-Class Systems, Expands AWS Partnership for 2028 "Libra" Launch on Amazon Braket

Published June 25, 2026 PR Newswire USA

OVERVIEW

QuEra Computing detailed the next phase of its fault-tolerant quantum roadmap on June 25, 2026, including next-generation GigaQuop-class quantum computers slated for 2028-2029. The company also announced an expanded multi-year strategic partnership with AWS, confirming QuEra's first fault-tolerant quantum computer, "Libra," will debut on Amazon Braket in 2028. Additionally, QuEra initiated a call for solutions, inviting organizations to co-design applications for future fault-tolerant quantum hardware, marking a significant step toward practical, error-corrected quantum computation.

IN DEPTH

Key Findings

QuEra Computing announced on June 25, 2026, that its first fault-tolerant quantum computer, "Libra," is set to debut on Amazon Braket in 2028, concurrently revealing an expanded multi-year strategic partnership with AWS. This announcement detailed an ambitious fault-tolerant roadmap, including next-generation GigaQuop-class quantum computers projected for 2028-2029. Furthermore, QuEra has launched a call for solutions, inviting organizations to co-design applications for future fault-tolerant quantum hardware, fostering industrial collaboration towards the realization of practical quantum computing.

Technical / Clinical Details

QuEra's fault-tolerant roadmap is based on atomic quantum computer technology, notably introducing the "GigaQuop-class" performance metric. This metric provides a more comprehensive evaluation of fault-tolerance characteristics and computational scale than traditional indicators like Quantum Volume. Specifically, the 2028 "Libra" system will offer initial fault-tolerant capabilities, and its accessibility via Amazon Braket will enable researchers and developers to explore real-world applications. GigaQuop-class systems are expected to achieve more advanced error correction and a larger number of logical qubits, enabling the solution of complex problems previously considered intractable.

Background & Context

Despite its disruptive potential, quantum computing has faced significant barriers to practical implementation due to qubit instability and high error rates. Fault-tolerant quantum computing (FTQC) is a technology that actively detects and corrects these errors, enabling stable computation. QuEra's roadmap outlines a concrete path toward achieving FTQC, and the expanded partnership with AWS is crucial for creating an environment where more users can access this advanced technology through a cloud platform. This accelerates opportunities for industries and research institutions to explore practical quantum computing use cases and demonstrate its value.

Strategic Significance & Outlook

QuEra's fault-tolerant roadmap and expanded strategic partnership with AWS signify a critical milestone towards the industrialization of quantum computing. The launch of "Libra" on Amazon Braket in 2028 will provide early access to fault-tolerant quantum computing for many developers, stimulating the creation of new quantum applications. The call for solutions offers a valuable opportunity to collect use cases from diverse industrial sectors and incorporate feedback into QuEra's hardware design and software development. In the future, GigaQuop-class systems are expected to enable computations impossible for classical supercomputers in fields such as drug discovery, materials science, and optimization problems, bringing closer the day when quantum computing significantly impacts society.

Source: https://www.prnewswire.com/news-releases/quera-unveils-gigaquop-class-fault-tolerant-roadmap-and-invites-organizations-to-co-design-quantum-applications-302810334.html

Collected: July 03, 2026 | Automated Research System (Gemini API)

#14 Quantum Computing Investment Shifts Towards Ecosystem Development, Government Funding Accelerates Manufacturing and Post-Quantum Cryptography with $2.013 Billion CHIPS Act Incentives

Published July 02, 2026 Lux Research USA

OVERVIEW

Investment in quantum computing is increasingly shifting beyond quantum processors to encompass infrastructure, networking, sensing, manufacturing, and security. Public markets have contributed over $2 billion through IPOs and SPACs by Quantinuum, Infleqtion, and Xanadu. U.S. government initiatives, notably $2.013 billion in CHIPS Act incentives from the Commerce Department, are accelerating quantum manufacturing, workforce development, supply chains, and post-quantum cryptography.

IN DEPTH

Key Findings

Investment trends in the quantum computing sector are undergoing a significant paradigm shift, moving from singular quantum processor development to a broader focus on the entire ecosystem, encompassing infrastructure, networking, sensing, manufacturing, and security. This transformation is evident in public market financing, with over $2 billion raised through Quantinuum's IPO and SPACs by Infleqtion and Xanadu. Furthermore, a substantial U.S. government incentive of $2.013 billion under the CHIPS Act is vigorously boosting strategically critical areas such as quantum manufacturing, workforce development, supply chain strengthening, and post-quantum cryptography development.

Technical / Clinical Details

The expansion of investment from isolated quantum processors to the entire ecosystem is driven by the recognition that practical quantum computing necessitates not only high-performance hardware but also supporting peripheral technologies and infrastructure. For instance, quantum networking is essential for decentralized quantum computing and the realization of a quantum internet, while quantum sensing promises innovations in medical diagnostics and high-precision measurements. Post-quantum cryptography is positioned as an indispensable security technology to address the risk of existing cryptographic systems being broken by powerful future quantum computers. CHIPS Act funding directly contributes to strengthening R&D and manufacturing capabilities across these diverse technological domains.

Background & Context

Quantum computing is recognized as a national strategic technology due to its revolutionary potential. The U.S. is deploying large-scale, integrated government and private sector investments and policy support to establish global leadership in this field. The CHIPS Act, primarily aimed at strengthening domestic semiconductor manufacturing capabilities, also allocates resources to the development of the quantum technology ecosystem. This underscores the critical importance of quantum technology from the perspectives of economic security and technological sovereignty, indicating the U.S. ambition to localize the entire quantum technology value chain.

Strategic Significance & Outlook

The trend of quantum computing investment expanding across the entire ecosystem suggests that the practical application of this technology is becoming a more tangible reality. Large-scale government funding will particularly contribute to resolving bottlenecks in quantum manufacturing, fostering a specialized workforce, and building robust supply chains, thereby reducing industrialization barriers. The acceleration of post-quantum cryptography development will intensify international competition for digital security in the quantum era while also creating new business opportunities. This strategic shift in investment is expected to lay the groundwork for quantum computing to bring about widespread economic and social transformation across diverse industries, making its trajectory a critical focus for observation.

Source: https://luxresearchinc.com/blog/quantum-computing-investment-trends-where-the-biggest-opportunities-are-emerging/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#15 French QPerfect Powers Commercial Launch of SDT's QuREKA™ Hybrid Quantum Cloud in South Korea

Published July 02, 2026 PR Newswire South Korea

OVERVIEW

BTQ Technologies Corp. announced on July 2, 2026, that its strategic partner, SDT Inc. of South Korea, would launch the commercial version of its hybrid quantum cloud platform, QuREKA™, at Quantum Korea 2026. French quantum computing company QPerfect is central to this innovation, providing powerful technology to enable researchers, developers, and manufacturers to fully leverage quantum computing's potential. This collaboration is set to accelerate the development of the quantum ecosystem in South Korea and promote the industrial adoption of quantum technologies.

IN DEPTH

Key Findings

BTQ Technologies Corp. announced on July 2, 2026, that its strategic partner, SDT Inc. of South Korea, would unveil the commercial version of its hybrid quantum cloud platform, QuREKA™, at "Quantum Korea 2026." French quantum computing company QPerfect is providing the core technology for this innovative platform, offering a robust technical foundation that enables researchers, developers, and manufacturers to fully unlock the potential of quantum computers. This partnership will play a crucial role in accelerating the development of South Korea's quantum computing ecosystem and fostering the adoption of quantum technologies across industries.

Technical / Clinical Details

The QuREKA™ platform employs a hybrid architecture combining classical high-performance computing (HPC) resources with quantum computing capabilities. QPerfect's technology stack, including its MIMIQ™ quantum emulator, digital twin functionalities, and quantum logic units, allows users to design, test, and optimize quantum algorithms. Specifically, MIMIQ™ can accurately simulate the behavior of quantum circuits even without physical quantum devices, enabling developers to experiment with quantum applications at a reduced cost. This technical contribution facilitates the exploration of hybrid computational solutions for complex problems, with expected applications in drug discovery, materials science, and financial optimization.

Background & Context

Quantum computing holds the promise of transforming various industrial sectors with its potential computational power; however, actual quantum hardware is still nascent and access is limited. Hybrid quantum cloud platforms are emerging as a vital solution to bridge this gap, offering a pathway for companies and research institutions to leverage quantum technology in conjunction with existing classical infrastructure. South Korea is focused on quantum technology development as a national strategy, making the commercial launch of platforms like QuREKA™ crucial for strengthening its domestic quantum ecosystem and enhancing global competitiveness.

Strategic Significance & Outlook

The commercial launch of QuREKA™ represents a landmark event for South Korea's quantum computing sector, signifying improved accessibility to quantum technology for domestic researchers, developers, and enterprises. The integration of QPerfect's advanced technology will ensure the platform delivers high performance and flexibility, stimulating the development of a wide range of quantum applications. Moving forward, SDT and QPerfect are expected to concentrate on expanding the platform's functionalities, growing the user community, and exploring new use cases across various industrial sectors. This will position South Korea to establish itself as a quantum computing hub in the Asia-Pacific region, contributing to global quantum technology innovation.

Source: https://www.prnewswire.com/news-releases/qperfect-powers-the-commercial-launch-of-sdts-qureka-quantum-cloud-at-quantum-korea-2026-302816740.html

Collected: July 03, 2026 | Automated Research System (Gemini API)

#16 Crédit Agricole CIB and Pasqal Deepen Partnership to Deploy Quantum Computing in Finance, Targeting 2028 Production Use Cases for Credit Risk and Portfolio Optimization

Published June 29, 2026 Pasqal France

OVERVIEW

Crédit Agricole CIB and neutral-atom quantum computing leader Pasqal announced a deepened strategic partnership on June 29, 2026, to accelerate the transition from quantum research to operational deployment in capital markets. Building on a collaboration initiated in 2019, this new phase focuses on the industrialization of quantum computing applications, targeting initial production use cases by 2028 in areas such as counterparty credit default risk measurement and portfolio optimization. This alliance marks a significant step towards realizing practical quantum applications in the financial sector.

IN DEPTH

Key Findings

Crédit Agricole CIB and Pasqal, a leader in neutral-atom quantum computing, announced on June 29, 2026, a deepened strategic partnership aimed at accelerating the operational deployment of quantum computing in capital markets. This new phase of collaboration focuses on the industrialization of quantum computing applications, with a target of achieving the first production use cases in financial domains such as counterparty credit default risk measurement and portfolio optimization by 2028. This specific target setting marks a concrete milestone toward the practical implementation of quantum technology in the financial industry.

Technical / Clinical Details

Pasqal's neutral-atom quantum computing technology forms qubits by manipulating atoms cooled to ultra-low temperatures, utilizing their superposition and entanglement properties to execute complex calculations. This technology holds significant potential for scalability and coherence time. In finance, quantum computing is particularly expected to outperform classical methods in areas such as credit risk assessment using Monte Carlo simulations, large-scale portfolio optimization, and high-frequency trading algorithm development. This partnership aims to jointly develop quantum solutions for these challenges and apply them to real-world operations, combining Pasqal's quantum hardware and software development capabilities with Crédit Agricole CIB's financial expertise.

Background & Context

The financial industry consistently demands advanced computational capabilities and modeling due to high market volatility and vast data volumes. However, current classical computers are reaching their limits in solving certain complex problems, especially in risk management and optimization requiring real-time processing. Quantum computing is attracting attention as a technology with the potential to break through these computational limits and provide financial institutions with a new competitive edge. The collaboration between Crédit Agricole CIB and Pasqal, which has been ongoing since 2019, demonstrates a long-term commitment to integrating quantum technology into financial services and confidence in its feasibility.

Strategic Significance & Outlook

The goal of achieving concrete production use cases by 2028 outlines a crucial roadmap for the practical deployment of quantum computing in finance. This partnership will transcend mere research projects, becoming a practical step towards integrating quantum technology into actual financial operations. If successful, it could lead to more accurate counterparty credit risk assessment and significantly improved portfolio performance. Furthermore, this achievement is expected to serve as a precedent for quantum computing adoption by other financial institutions and industrial sectors, accelerating the global proliferation of quantum technology. The continued cooperation between the two companies will play a critical role in shaping the future of financial services in the quantum era.

Source: https://www.pasqal.com/newsroom/credit-agricole-cib-and-pasqal-advance-their-strategic-partnership-to-deploy-quantum-computing-applied-to-finance/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#17 D-Wave Awarded Over $1.5 Million NSF Grant to Advance Quantum Software, Error Correction, and Workforce Development, Bolstering U.S. Quantum Leadership

Published June 30, 2026 Business Wire USA

OVERVIEW

D-Wave Quantum Inc. announced on June 30, 2026, its selection to receive a $1,566,250 grant through the U.S. National Science Foundation's (NSF) National Quantum Virtual Laboratory (NQVL) program. These funds will support the development of new software, compilers, and error correction approaches on D-Wave's platform. The grant is expected to significantly enhance quantum technology workforce development efforts and play a crucial role in strengthening U.S. leadership in quantum computing.

IN DEPTH

Key Findings

D-Wave Quantum Inc. announced on June 30, 2026, that it has been selected to receive a $1,566,250 grant through the U.S. National Science Foundation's (NSF) National Quantum Virtual Laboratory (NQVL) program. This significant funding is designated to support the development of new software, compilers, and error correction approaches on D-Wave's advanced quantum computing platform. Furthermore, the grant is expected to critically enhance workforce development efforts in quantum technology, playing an indispensable role in strengthening U.S. leadership in quantum computing.

Technical / Clinical Details

D-Wave primarily develops quantum annealing quantum computers, excelling in solving optimization and sampling problems. This grant focuses on strengthening the software layer to further unlock the performance of D-Wave's platform. Specifically, developers will advance research and development into new compiler tools for efficiently writing and executing quantum algorithms, as well as innovative error correction approaches for detecting and rectifying qubit errors. These technical advancements are crucial for D-Wave's quantum systems to tackle larger and more complex real-world challenges.

Background & Context

Quantum computing, with its immense computational power, holds the potential to revolutionize diverse industrial sectors such as drug discovery, materials science, financial modeling, and logistics optimization. The U.S. government is making significant investments as a national strategy to secure technological advantage in this field. The NSF's NQVL program aims to foster collaboration among academia, industry, and government agencies to accelerate quantum technology R&D and workforce development. The grant to D-Wave is part of a concrete effort to strengthen the U.S. quantum ecosystem and enhance its global competitiveness.

Strategic Significance & Outlook

This NSF grant will provide a substantial boost for D-Wave to further drive the commercialization and practical application of quantum computing. The development of new software, compilers, and error correction technologies is expected to enhance the utility of D-Wave's platform, attracting more users and industrial partners. Furthermore, investment in workforce development will help address the shortage of quantum technology specialists, laying the foundation for long-term innovation. Through these initiatives, D-Wave aims to contribute to strengthening U.S. quantum leadership and maximizing the impact of quantum technology on society. Future developments will focus on how these technologies contribute to solving real-world problems.

Source: https://www.businesswire.com/news/home/20260630098255/en/D-Wave-to-Receive-%241.5-Million-Grant-Through-NSF-Project-to-Strengthen-U.S.-Quantum-Computing-Leadership

Collected: July 03, 2026 | Automated Research System (Gemini API)

#18 Google Cloud Launches SandboxAQ's Quantum-Inspired Scientific AI Models, "AQCat" and "AQPotency," on Marketplace to Accelerate Drug Discovery and Materials Science

Published June 30, 2026 GxP News USA

OVERVIEW

SandboxAQ's specialized AI models, an independent company under Alphabet, became available via Google Cloud Marketplace starting June 30, 2026. These quantum-inspired models, including "AQCat" for materials science and "AQPotency" for biopharma, leverage numerical data and scientific equations to accelerate drug discovery, new materials development, and semiconductor design. This launch represents a significant step in integrating advanced AI with scientific computing to drive innovation across industries.

IN DEPTH

Key Findings

Specialized AI models from SandboxAQ, an independent company under Alphabet, became available via Google Cloud Marketplace starting June 30, 2026. These groundbreaking quantum-inspired models include "AQCat" for materials science and "AQPotency" for biopharma. The models are designed to dramatically accelerate processes in scientific industries such as drug discovery, new materials development, and semiconductor design by highly leveraging numerical data and scientific equations. This launch marks a crucial step in robustly driving industrial innovation through the convergence of scientific computing and artificial intelligence.

Technical / Clinical Details

SandboxAQ's "AQCat" and "AQPotency" feature AI algorithms developed with inspiration from quantum mechanical principles. While traditional AI models excel at pattern recognition, these models execute calculations based on physical and chemical laws, providing deeper scientific insights. For example, "AQPotency" more accurately predicts the target binding affinity and efficacy of drug candidate molecules, accelerating the lead compound selection process in drug discovery. "AQCat," on the other hand, significantly reduces extensive simulation times in predicting new material properties and searching for optimal semiconductor material combinations. This can shorten R&D cycles and dramatically improve time-to-market.

Background & Context

Fields such as drug discovery, materials science, and semiconductor design critically depend on simulating complex molecular interactions and physical phenomena, which entail extremely high computational loads. Classical computing has historically required vast amounts of time and resources for these calculations, creating a bottleneck for innovation. Quantum computing and quantum-inspired AI are anticipated as next-generation tools to solve these problems. Their availability through Google Cloud Marketplace democratizes access to cutting-edge scientific AI for more companies and research institutions without the need for expensive specialized infrastructure, thus promoting the wider adoption of quantum technology.

Strategic Significance & Outlook

The launch of "AQCat" and "AQPotency" on Google Cloud Marketplace marks a significant turning point for quantum-inspired AI models transitioning from academic research to industrial application. This will enable pharmaceutical companies to increase success rates in new drug development, material manufacturers to rapidly bring higher-performance products to market, and semiconductor designers to shorten the development cycle for next-generation chips. SandboxAQ is expected to further strengthen its collaboration with Google Cloud, extending model functionalities and exploring new application areas. In the future, these models are anticipated to play a central role in accelerating scientific discovery and technological innovation through the convergence of AI and quantum computing.

Source: https://gxpnews.net/en/2026/06/google-to-offer-sandboxaqs-scientific-ai-models-for-drug-discovery-via-cloud-platform/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#19 Quantum Global Technologies Secures Over $3 Million Texas State Grant for $43 Million Austin Semiconductor Expansion, Strengthening 2nm Chip Supply Chain

Published June 25, 2026 Texas Border Business USA

OVERVIEW

Quantum Global Technologies, LLC (QGT) received a $3,074,255 grant from the Texas Semiconductor Innovation Fund on June 25, 2026, supporting its over $43 million capital investment for a new service facility in Austin. This significant expansion is expected to create 287 new jobs. Crucially, it will enhance the domestic supply chain for advanced semiconductor chip manufacturing, particularly for 2nm chips, contributing to national semiconductor independence.

IN DEPTH

Key Findings

Quantum Global Technologies, LLC (QGT) announced on June 25, 2026, that it has received a grant of $3,074,255 from the Texas Semiconductor Innovation Fund. This grant will support over $43 million in capital investment for a new service facility in Austin. This significant expansion project is projected to create 287 new jobs and is expected to substantially strengthen the domestic supply chain for advanced semiconductor chip manufacturing, particularly for 2nm chips, thereby contributing significantly to enhancing U.S. semiconductor self-sufficiency.

Technical / Clinical Details

QGT's service facility expansion aims to bolster critical support infrastructure for state-of-the-art semiconductor manufacturing processes. The 2nm process node represents the forefront of current semiconductor technology, demanding extremely high precision, cleanliness, and specialized manufacturing equipment. QGT's investment enhances its capacity to provide precise cleaning, inspection, and maintenance services compatible with such ultra-fine processes. This will enable domestic semiconductor manufacturers to resolve supply chain bottlenecks and improve the stable supply and production efficiency of next-generation chips.

Background & Context

In response to global semiconductor shortages and escalating geopolitical risks, the U.S. has prioritized the reshoring of semiconductor manufacturing and strengthening supply chains as a national imperative. Securing domestic production capacity, especially for advanced processes like 2nm, is critically important for economic security and technological sovereignty. The Texas Semiconductor Innovation Fund was established to cultivate the state's semiconductor ecosystem, aligning with the federal CHIPS and Science Act. The grant to QGT is part of this broader strategy, demonstrating concrete efforts by the U.S. to re-establish global leadership in the semiconductor sector.

Strategic Significance & Outlook

The expansion of QGT's Austin facility will spur further development of the semiconductor industry in Texas, contributing to regional economic growth and job creation. Crucially, strengthening the domestic 2nm chip supply chain will ensure a more reliable supply of advanced semiconductors for sectors vital to national security and economic competitiveness, including defense, AI, and quantum computing. Through this investment, QGT is expected to play a key role in advanced semiconductor manufacturing and establish itself as a core company driving U.S. technological independence and innovation. Continued domestic investment of this nature is anticipated to further strengthen the entire U.S. semiconductor ecosystem.

Source: https://texasborderbusiness.com/quantum-global-technologies-secures-3m-state-grant-for-43m-austin-expansion/

#20 Classiq and QAI Launch South Korea's First Local Quantum-as-a-Service (QaaS) Offering, Integrating with Domestic AI Data Centers

Published July 01, 2026 Markets Insider South Korea

OVERVIEW

Classiq, a leader in quantum computing software, and QAI Co., Ltd. announced a commercial agreement on July 1, 2026, to launch South Korea's first local Quantum-as-a-Service (QaaS) offering. This integrated solution combines Classiq's enterprise-grade quantum software platform with QAI's domestic AI data center infrastructure, enabling Korean enterprises to develop and execute quantum computing applications. This initiative promotes the democratization of quantum technology in South Korea, accelerating industrial innovation and adoption.

IN DEPTH

Key Findings

Classiq, a leading quantum computing software company, and QAI Co., Ltd. of South Korea announced on July 1, 2026, that they have signed a commercial agreement to launch South Korea's first local Quantum-as-a-Service (QaaS) offering. This integrated solution provides Korean enterprises with an environment to easily develop and execute quantum computing applications by closely combining Classiq's enterprise-grade quantum software platform with QAI's domestic AI data center infrastructure. This groundbreaking initiative is significant for democratizing quantum technology in South Korea and accelerating industrial innovation.

Technical / Clinical Details

Classiq's software platform automates the design and optimization of complex quantum circuits through high-level abstraction, making quantum algorithm development accessible not only to specialists but also to a broader range of engineers. Integration with QAI's domestic AI data center infrastructure enables fast and secure access to quantum simulations and actual quantum hardware. This hybrid model offers companies a cost-effective means to explore the potential of quantum computing and apply it to their business challenges. Application development aiming for quantum advantage is expected in areas such as data processing, optimization, machine learning, and materials science.

Background & Context

Quantum computing holds the potential to revolutionize diverse industrial sectors, including drug discovery, finance, logistics, and AI, with its immense computational power. However, technical complexity and high initial investment costs pose barriers to adoption. The QaaS model mitigates these barriers, accelerating the proliferation of quantum technology by enabling companies to access quantum resources via the cloud. The South Korean government prioritizes quantum technology as a national strategy, making the advent of local QaaS critically important for strengthening the domestic technology ecosystem and enhancing global competitiveness.

Strategic Significance & Outlook

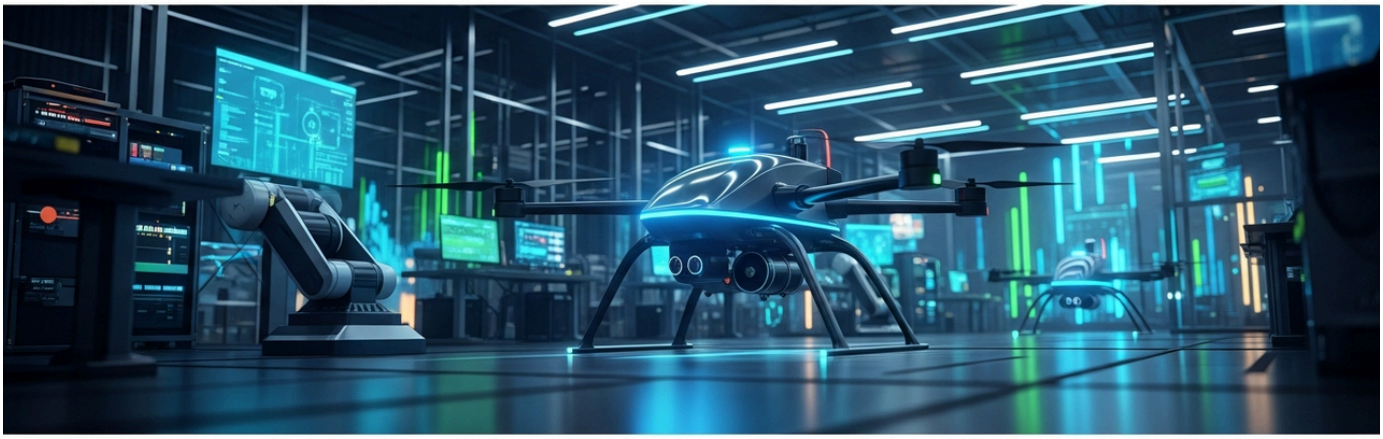
The launch of South Korea's first local QaaS by Classiq and QAI will significantly boost the development of quantum computing in the country. This service will provide a strong foundation for Korean companies, from startups to large enterprises, to advance experimentation and practical implementation of quantum technology. Both companies are expected to continue focusing on expanding platform functionalities, enhancing user support, and pioneering new industrial application areas. This collaboration is anticipated to play an indispensable role in establishing South Korea as one of the major quantum computing hubs in the Asia-Pacific region.

Source: https://markets.businessinsider.com/news/stocks/classiq-and-qai-launch-quantum-cloud-offering-in-korea-1036291851

Collected: July 03, 2026 | Automated Research System (Gemini API)

#21 German Quantum Systems Closes €1 Billion Series D Funding Round, Soaring to €7 Billion Valuation to Expand Autonomous Systems Business

Published July 03, 2026 Munich Startup Germany



OVERVIEW

Germany-based Quantum Systems, focused on autonomous systems, completed a €1 billion ($1.2 billion) Series D funding round on July 3, 2026, led by Blackstone, Noteus, Airbus, and Advent. This financing round boosted the company's valuation to approximately €7 billion ($8 billion). The raised capital will be invested in expanding production capacity, securing supply chains, scaling distribution infrastructure in partner markets, and further developing software and AI for networked autonomous systems.

IN DEPTH

Key Findings

Quantum Systems, a German company focused on autonomous systems, completed a monumental €1 billion (approximately $1.2 billion) Series D funding round on July 3, 2026. This historic financing was led by prominent investors including Blackstone, Noteus, Airbus, and Advent, propelling the company's valuation to approximately €7 billion (around $8 billion). The capital raised is strategically earmarked for expanding production capacity, strengthening supply chains, scaling distribution infrastructure in partner markets, and further developing software and AI for networked autonomous systems.

Technical / Clinical Details

Quantum Systems primarily develops high-performance autonomous drone systems and related software for defense, security, and industrial applications. Their drones integrate advanced sensors, AI-based image analysis, and real-time decision-making capabilities, utilized in surveillance, reconnaissance, infrastructure inspection, and precision agriculture. This funding will particularly emphasize enhancing AI-driven data processing capabilities, strengthening edge computing power, and developing networked autonomous systems that enable collaborative operations between drones. This aims to realize next-generation platforms capable of autonomously executing more complex missions.

Background & Context

Autonomous systems, especially drone technology, have undergone rapid evolution in recent years across both civilian and defense sectors. Growing geopolitical tensions and demonstrated supply chain vulnerabilities have led European nations to prioritize strengthening domestic defense and security technology development and production capabilities. The participation of strategic investors like Airbus indicates that Quantum Systems' technology is recognized as a crucial strategic asset within Europe's defense and aerospace industries. Furthermore, the involvement of major private equity funds like Blackstone reflects strong confidence in the company's growth potential and market leadership.

Strategic Significance & Outlook

This Series D funding round will further solidify Quantum Systems' technological leadership and significantly enhance its competitiveness in the global market. Expanding production capacity will address increasing demand, while securing supply chains will reduce vulnerabilities to geopolitical risks. Scaling distribution infrastructure in partner markets will enable broader customer reach, and continuous investment in software and AI will ensure the company's products remain at the technological forefront. Quantum Systems is expected to leverage this capital to set new standards in the autonomous systems sector and further strengthen its position as a key player not only in Europe but also in the global market.

Source: https://www.munich-startup.de/en/122841/billion-dollar-round-for-quantum-systems/

Collected: July 03, 2026 | Automated Research System (Gemini API)

#22 U.S. NIST Launches New Center with SRI International to Accelerate Commercialization of Quantum Sensing and Sensor Manufacturing

Published June 29, 2026 NIST USA

OVERVIEW

The U.S. National Institute of Standards and Technology (NIST) announced on June 29, 2026, the launch of a new center in partnership with SRI International to accelerate the commercial readiness of quantum sensing and quantum sensor manufacturing. This initiative builds upon the Quantum Economic Development Consortium (QED-C) to address critical gaps in quantum manufacturing engineering. The center aims to establish robust commercial quantum industry and solidify U.S. leadership in this burgeoning field.

IN DEPTH

Key Findings

On June 29, 2026, the U.S. National Institute of Standards and Technology (NIST) announced the launch of a new center, in strategic partnership with SRI International, aimed at accelerating the commercial readiness of quantum sensing technologies and quantum sensor manufacturing. This vital initiative is built upon the achievements of the Quantum Economic Development Consortium (QED-C) and specifically addresses identified gaps in quantum manufacturing engineering. The center's ultimate goal is to establish a robust commercial quantum industry within the U.S. and solidify American global leadership in this rapidly evolving field.

Technical / Clinical Details

Quantum sensing technology utilizes principles of quantum mechanics to measure physical quantities with extraordinary precision. For example, it can detect gravity, magnetic fields, time, and temperature at levels previously unattainable by conventional sensors. These sensors are expected to have diverse applications in medical imaging (e.g., ultra-sensitive MRI), precise navigation, underground exploration, and secure communication systems. The new center will focus on the design, prototyping, and, critically, the development of scalable manufacturing processes for these quantum sensors. Specifically, it aims to resolve technical challenges related to mass production of quantum sensors through quality control, standardization, and supply chain optimization.

Background & Context

Quantum technology holds significant potential not only in quantum computing but also in sensing and communication. To outpace competitors like China and Europe, the U.S. has invested heavily in quantum technology development as a national strategy. Quantum sensing, in particular, is expected to have applications in strategically vital areas such as defense and space exploration, beyond civilian uses. However, a major challenge exists in transitioning from laboratory-level prototypes to reliable commercial products, particularly concerning manufacturing techniques, quality control, and standardization. This new center will serve as a crucial infrastructure to bridge these gaps and foster the growth of the commercial quantum industry.

Strategic Significance & Outlook

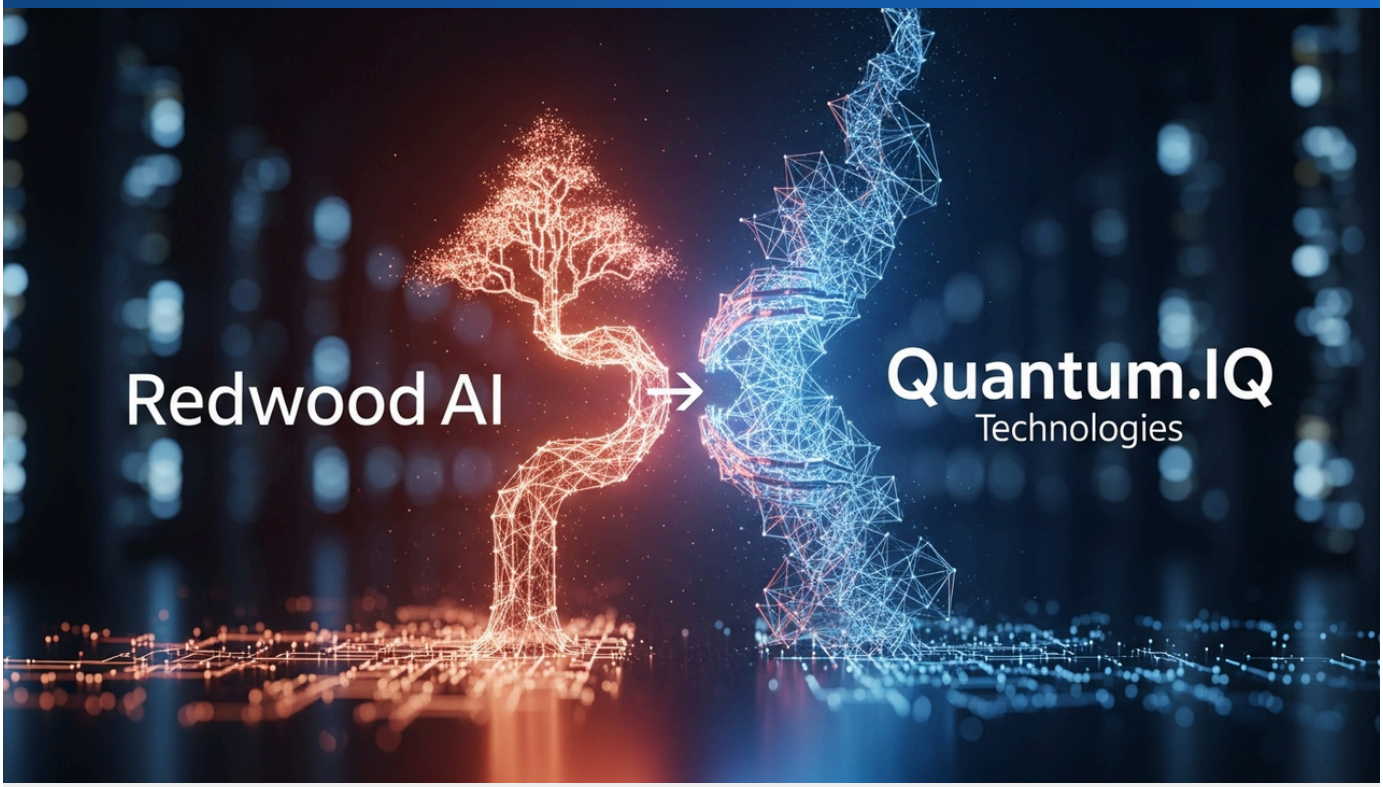
The new center launched by NIST and SRI International will play an extremely vital role in the U.S. quantum technology ecosystem. Accelerating the commercialization of quantum sensing and sensor manufacturing is expected to create new industrial sectors, generating economic growth and employment opportunities. The center will facilitate collaboration among academia, industry, and government agencies, serving as a hub to accelerate quantum technology innovation and practical application. In the future, more precise and versatile quantum sensors are expected to be deeply integrated into our daily lives and industrial processes, driving the digitalization and intelligence of society as a whole. This U.S. initiative has the potential to be a decisive move in the global quantum technology race.

Source: https://www.nist.gov/news-events/news/2026/06/nist-launches-center-drive-manufacture-quantum-technologies

Collected: July 03, 2026 | Automated Research System (Gemini API)

#23 Redwood AI Acquires Quantum.IQ Technologies, Enhancing Support for Government, Defense, and Financial Institutions in Modernizing Cryptographic Systems for Post-Quantum Era

Published June 29, 2026 Mergers & Acquisitions USA



OVERVIEW

Redwood AI acquired Quantum.IQ Technologies on June 29, 2026, a company specializing in software to help government, defense, and financial institutions modernize their cryptographic systems against future quantum computing threats. Quantum.IQ Technologies' platform provides cryptographic asset discovery, exposure assessment, and migration planning towards post-quantum cryptography. This acquisition signifies a crucial step in strengthening cybersecurity measures against emerging quantum threats.

IN DEPTH

Key Findings

Redwood AI announced on June 29, 2026, its acquisition of Quantum.IQ Technologies, a company specialized in Post-Quantum Cryptography (PQC) software. This acquisition aims to enhance software solutions that assist government, defense agencies, and financial institutions in protecting and modernizing their cryptographic systems against future quantum computing threats. Quantum.IQ Technologies' platform offers capabilities to discover cryptographic assets, assess exposure to quantum threats, and devise effective migration plans to PQC, addressing the demands of a new era of cybersecurity.

Technical / Clinical Details

Quantum.IQ Technologies' platform features advanced scanning capabilities to automatically discover existing cryptographic assets (such as certificates, keys, and protocols) within an organization and evaluate their vulnerability to attacks by future quantum computers. Based on this assessment, it provides tools for prioritizing which systems should migrate to PQC and for formulating concrete migration paths and schedules. PQC refers to new cryptographic schemes based on mathematical problems that are resistant to being broken by quantum algorithms like Shor's and Grover's. Through this acquisition, Redwood AI can now offer comprehensive solutions to simplify and automate the transition to PQC.

Background & Context

The advancements in quantum computing pose a significant threat to current public-key cryptography systems, which is a serious concern for global digital infrastructure, particularly for government agencies, defense, and financial services. To prepare for this 'Q-Day' (the day when quantum threats become a reality), institutions worldwide are accelerating their migration to post-quantum cryptography. The U.S. government is increasingly mandating the transition to PQC, with NIST (National Institute of Standards and Technology) actively working on PQC standardization. Redwood AI's acquisition comes against this backdrop, providing crucial support for enterprises and government agencies to effectively and efficiently manage their PQC migration.

Strategic Significance & Outlook

The acquisition of Quantum.IQ Technologies by Redwood AI will significantly strengthen its position in the post-quantum cryptography field and enhance its competitiveness as a leading PQC solution provider in the market. Particularly, it will improve its capability to serve highly regulated clients such as government agencies and defense sectors. Moving forward, Redwood AI is expected to integrate Quantum.IQ Technologies' technology with its existing AI solutions to offer more intelligent and automated cybersecurity measures. This strategic move represents a critical step in shaping the future of digital security in the quantum era and has the potential to accelerate the growth of the entire PQC market.

Source: https://www.themiddlemarket.com/latest-news/redwood-ai-acquires-quantum-iq-technologies

Collected: July 03, 2026 | Automated Research System (Gemini API)

#24 BTQ Technologies Completes Full Acquisition of QPerfect, Integrating MIMIQ™ Quantum Emulator and Digital Twin Capabilities into its Tech Stack

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OVERVIEW

BTQ Technologies Corp. announced on July 1, 2026, it received final approval for the full acquisition of QPerfect, a French quantum computing company. This strategic acquisition integrates QPerfect's MIMIQ™ quantum emulator, advanced digital twin capabilities, and quantum logic units into BTQ's technology stack. This move significantly advances BTQ's mission to build trusted quantum technologies and strengthens its quantum computing solutions portfolio.

IN DEPTH

Key Findings

BTQ Technologies Corp. officially announced on July 1, 2026, that it has received final approval for the full acquisition of QPerfect, a French quantum computing company. This strategic acquisition fully integrates QPerfect's MIMIQ™ quantum emulator, advanced digital twin functionalities, and quantum logic units into BTQ's existing technology stack. This technological integration significantly advances BTQ's mission to build trusted quantum technologies and substantially strengthens its portfolio of quantum computing solutions.

Technical / Clinical Details

QPerfect's MIMIQ™ quantum emulator is an innovative tool capable of simulating the behavior of quantum circuits with high precision, without requiring physical quantum hardware. This allows developers to efficiently design and debug quantum algorithms, and to advance R&D even when access to physical devices is limited. The digital twin functionality creates virtual models of quantum systems, enabling real-time monitoring and prediction of their performance, thereby assisting with system optimization and troubleshooting. Furthermore, quantum logic units are core components of future fault-tolerant quantum computers, essential for constructing logical qubits with error correction capabilities. The integration of these technologies into BTQ's platform will enable the provision of more robust and scalable quantum computing solutions.

Background & Context

In the field of quantum computing, as hardware evolves, the importance of peripheral technologies such as simulation, software development, and error correction is increasing. Noise and errors in physical qubits remain significant barriers to practical implementation, and high-precision emulators like MIMIQ™ are invaluable tools in addressing this challenge. Digital twin technology has already proven successful in aerospace and manufacturing industries and is becoming an indispensable approach for managing and optimizing the complex behavior of quantum systems in quantum computing. This acquisition is part of BTQ's strategy to establish leadership across the entire quantum technology value chain, contributing to the development of the global quantum ecosystem.

Strategic Significance & Outlook

The full integration of QPerfect's technology will play a decisive role in BTQ Technologies establishing a competitive advantage in the quantum computing market. The MIMIQ™ emulator will enable BTQ's clients to accelerate quantum algorithm development and testing, while digital twin capabilities will enhance the operational efficiency and reliability of quantum systems. Furthermore, the acquisition of quantum logic unit technology establishes a strong foundation for BTQ to enter the future fault-tolerant quantum computer market. BTQ aims to leverage these new capabilities to offer more comprehensive and reliable quantum solutions to research institutions, governments, and industrial clients. Moving forward, the focus will be on how these integrated technologies accelerate the practical application of quantum computing.

Source: https://www.prnewswire.com/news-releases/btq-technologies-receives-final-approval-for-full-acquisition-of-qperfect-advancing-its-mission-of-building-trusted-quantum-technologies-with-world-class-emulation-digital-twin-and-control-capabilities-302815500.html

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#25 Korea Research Institute of Standards and Science (KRISS) Partners with Fairfax County EDA to Support Korean Quantum Firms' Entry into U.S. Market

Published July 03, 2026 Seoul Economic Daily South Korea

OVERVIEW

The Korea Research Institute of Standards and Science (KRISS) announced on July 3, 2026, a collaboration with the Fairfax County Economic Development Authority (FCEDA) to assist Korean quantum companies in entering the U.S. market. KRISS leads the "Quantum Computing Quantum Transformation (QX) Project" to foster a quantum industry ecosystem centered in Daejeon. This partnership aims to provide Korean firms with regional market information and matchmaking opportunities with U.S. institutions, accelerating their global expansion.

IN DEPTH

Key Findings

On July 3, 2026, the Korea Research Institute of Standards and Science (KRISS) announced a partnership agreement with the U.S. Fairfax County Economic Development Authority (FCEDA) to launch an initiative supporting Korean quantum technology companies in effectively entering the U.S. market. This collaboration is part of KRISS's "Quantum Computing Quantum Transformation (QX) Project," centered in Daejeon, representing a concrete step to accelerate the global expansion of Korea's quantum industry ecosystem. FCEDA will provide Korean companies with localized U.S. market information, identification of business opportunities, and matchmaking assistance with relevant U.S. institutions.

Technical / Clinical Details

KRISS is responsible for standardizing and promoting national R&D across broad quantum technology fields, including quantum computing, quantum sensing, and quantum communication. The Korean companies supported through this partnership are expected to span diverse technological areas, such as superconducting qubits, ion-trap quantum computers, quantum software, post-quantum cryptography, and quantum sensors. FCEDA's support will specifically focus on providing information regarding the U.S. market's regulatory environment, intellectual property protection, funding opportunities, and local business practices, assisting Korean firms in formulating strategies for market success while maintaining technological superiority.

Background & Context

Quantum technology, due to its innovative potential, is a field where countries worldwide, including the U.S. and China, are concentrating development as a national strategy. South Korea, too, is pursuing large-scale R&D projects, led by KRISS, to establish its presence in this global competition. The U.S. market is one of the largest investors in and markets for quantum technology, making it a critical target for Korean companies. The KRISS-FCEDA collaboration offers a valuable opportunity for Korean quantum startups and SMEs to gain the necessary networks and knowledge for expanding their operations in the U.S. This is based on the recognition that international cooperation is essential for the commercialization and widespread adoption of quantum technology.

Strategic Significance & Outlook

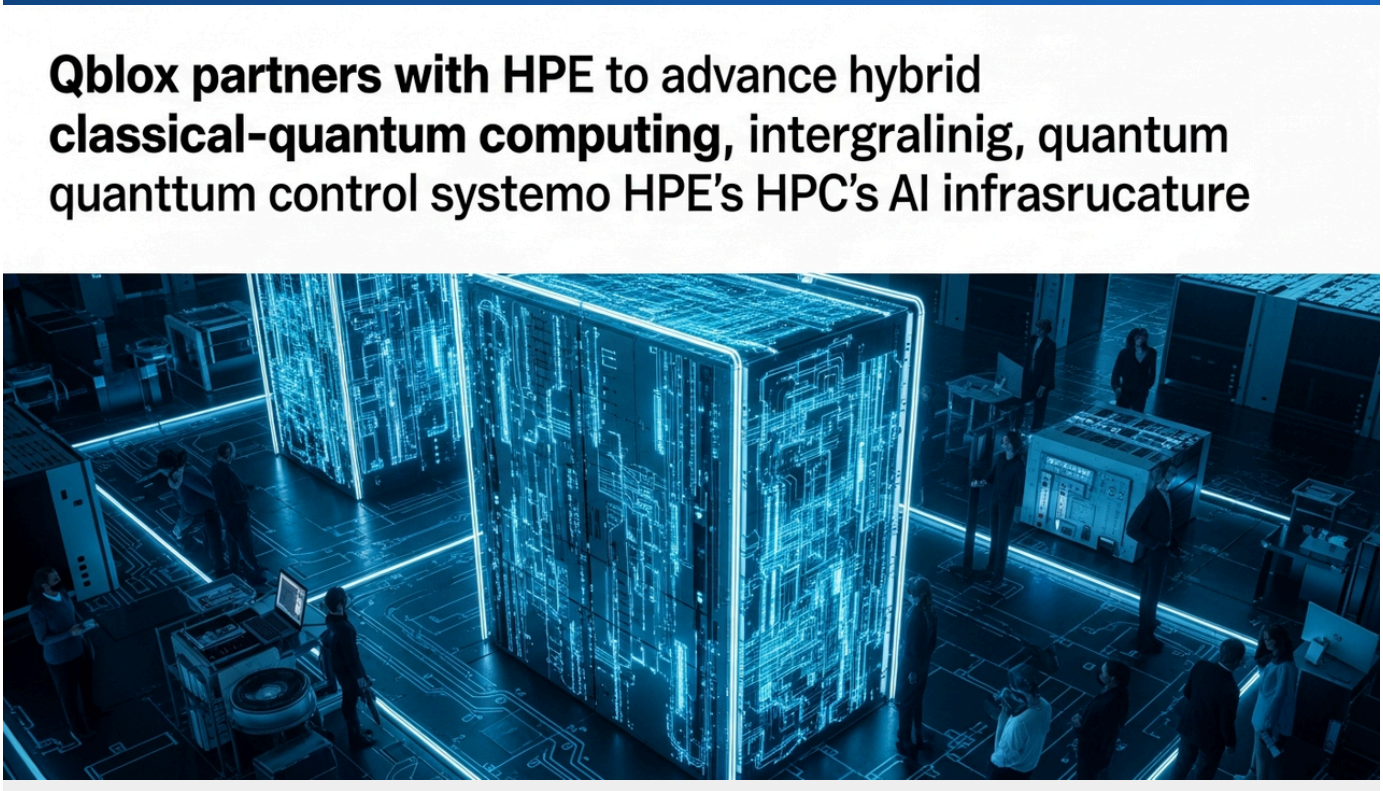
This KRISS-FCEDA partnership will play a crucial role in reducing market entry barriers for Korean quantum companies into the U.S. market and enhancing their global competitiveness. If successful, it is expected that more Korean quantum technologies will be adopted in the U.S. market, stimulating technological exchange and investment between the two countries. KRISS will feed insights gained through this partnership back into its domestic QX project, further strengthening and internationalizing the Daejeon quantum industry ecosystem. In the future, South Korea has the potential to expand its contribution to global innovation as a major international player in the quantum technology field.

Source: https://en.sedaily.com/society/2026/07/03/kriss-to-help-korean-quantum-firms-enter-us-market

Collected: July 03, 2026 | Automated Research System (Gemini API)

#26 Qblox Partners with HPE to Advance Hybrid Classical-Quantum Computing, Integrating Quantum Control Systems into HPE's HPC/AI Infrastructure

Published June 25, 2026 PR Newswire Netherlands



OVERVIEW

Qblox, a provider of scalable quantum control electronics, announced a partnership with Hewlett Packard Enterprise (HPE) on June 25, 2026, to advance hybrid classical-quantum computing. Qblox's control systems will be a core enabler for HPE's efforts to integrate quantum technologies at scale with its high-performance computing (HPC) and AI infrastructure. This collaboration marks a significant step towards accelerating the industrial adoption of quantum computing and solving more complex computational challenges.

IN DEPTH

Key Findings

Qblox, a specialized provider of scalable quantum control electronics, announced a strategic partnership with Hewlett Packard Enterprise (HPE) on June 25, 2026, to vigorously advance the field of hybrid classical-quantum computing. Central to this collaboration is Qblox's high-performance quantum control system, which is set to become a core enabler for HPE's efforts to integrate quantum technologies at scale with its existing high-performance computing (HPC) and artificial intelligence (AI) infrastructure. This cooperation represents a significant step towards accelerating the industrial adoption of quantum computing and solving complex computational problems that were previously intractable.

Technical / Clinical Details

Qblox's quantum control electronics are modular systems that enable precise and simultaneous control of multiple qubits. These systems encompass fundamental functionalities such as qubit initialization, gate operations, and state readout, and are compatible with diverse quantum hardware, including superconducting qubits and spin qubits. The integration into HPE's HPC and AI infrastructure signifies that Qblox's control systems will enable "hybrid" workflows that seamlessly link classical and quantum computational resources. This allows for efficient computational models where classical algorithms perform preprocessing, quantum computation solves specific bottlenecks, and classical algorithms perform post-processing.

Background & Context

Quantum computing holds the potential to bring about innovation across various fields such as drug discovery, materials science, and financial modeling. However, to fully unleash its computational power in its current state, close collaboration with classical computing is essential. The entry of global HPC leaders like HPE into the quantum sector is a clear indication that quantum computing is transitioning from the laboratory stage to industrial applications. The partnership with Qblox is a strategic move for HPE to offer integrated quantum solutions to its broad HPC customer base, thereby accelerating the adoption and utilization of quantum computing.

Strategic Significance & Outlook

The Qblox-HPE partnership will be a significant milestone in the development of hybrid classical-quantum computing. This integrated approach will enable enterprises and research institutions to explore the potential of quantum computing more practically and efficiently. Qblox will be able to offer its quantum control systems to a wider customer base by leveraging HPE's global sales network and technical support. Meanwhile, HPE will strengthen its competitiveness in the market by incorporating quantum technology into its HPC/AI portfolio. In the future, this partnership is expected to overcome the challenges of scalability and practicality facing quantum computing, paving the way for large-scale industrial applications.

Source: https://www.prnewswire.com/news-releases/qblox-collaborates-with-hpe-to-advance-hybrid-classical-quantum-computing-302810746.html

#27 U.S. Government Allocates $2.013 Billion in CHIPS Act Incentives to Nine Quantum Computing Companies, Including $1 Billion for IBM Quantum Foundry

Published June 25, 2026 The Motley Fool USA

OVERVIEW

The U.S. Department of Commerce proposed $2.013 billion in incentives under the CHIPS and Science Act to nine companies developing quantum computing technologies, aiming to bolster domestic manufacturing and accelerate the development of utility-scale, fault-tolerant quantum computers. IBM is set to receive $1 billion for a quantum foundry, GlobalFoundries $375 million, and companies like Atom Computing, D-Wave, Infleqtion, PsiQuantum, Quantinuum, Rigetti, and Diraq up to $100 million each. Additionally, President Trump signed an Executive Order on June 22, 2026, directing the development of powerful quantum computers by 2028 and a government-wide transition to post-quantum cryptography.

IN DEPTH

Key Findings

The U.S. Department of Commerce has proposed a total of $2.013 billion in incentives under the CHIPS and Science Act to nine companies developing quantum computing technologies. This massive investment aims to strengthen domestic manufacturing capabilities and accelerate the development of utility-scale, fault-tolerant quantum computers. Under this plan, IBM is allocated $1 billion for establishing a quantum foundry, GlobalFoundries will receive $375 million, while other quantum companies such as Atom Computing, D-Wave, Infleqtion, PsiQuantum, Quantinuum, Rigetti, and Diraq are each set to receive up to $100 million. Furthermore, President Trump signed an Executive Order on June 22, 2026, mandating the construction of powerful quantum computers by 2028 and a government-wide transition to post-quantum cryptography, signaling a robust commitment to advancing U.S. quantum strategy.

Technical / Clinical Details

CHIPS Act funding is being invested across various technological domains within quantum computing. For instance, IBM's $1 billion will be used to build foundry capabilities for quantum chip manufacturing, packaging, and testing, accelerating advanced quantum hardware production domestically. Investment in GlobalFoundries will facilitate the integration of existing semiconductor manufacturing technologies with quantum devices. Up to $100 million for other quantum companies will support enhancing qubit performance, ensuring scalability, and developing error correction techniques for their respective platforms, such as neutral atoms (Atom Computing, Infleqtion), superconducting circuits (D-Wave, Rigetti), ion traps (Quantinuum), and photonics (PsiQuantum). The Executive Order's push for post-quantum cryptography will accelerate R&D and implementation of new cryptographic algorithms designed to resist attacks from future quantum computers.

Background & Context

Quantum computing, with its immense computational power, has the potential to revolutionize diverse industrial sectors including drug discovery, materials science, financial modeling, and artificial intelligence. To establish global leadership in this field and ensure economic security and technological sovereignty, the U.S. has adopted a national strategy involving large-scale investments and policy support. The CHIPS and Science Act aims to strengthen the U.S. semiconductor industry and enhance its international competitiveness in advanced technology sectors, with quantum computing being one of its core technologies. The Executive Order demonstrates a strong will to accelerate quantum technology adoption across the government and prioritize the transition to post-quantum cryptography to secure digital infrastructure.

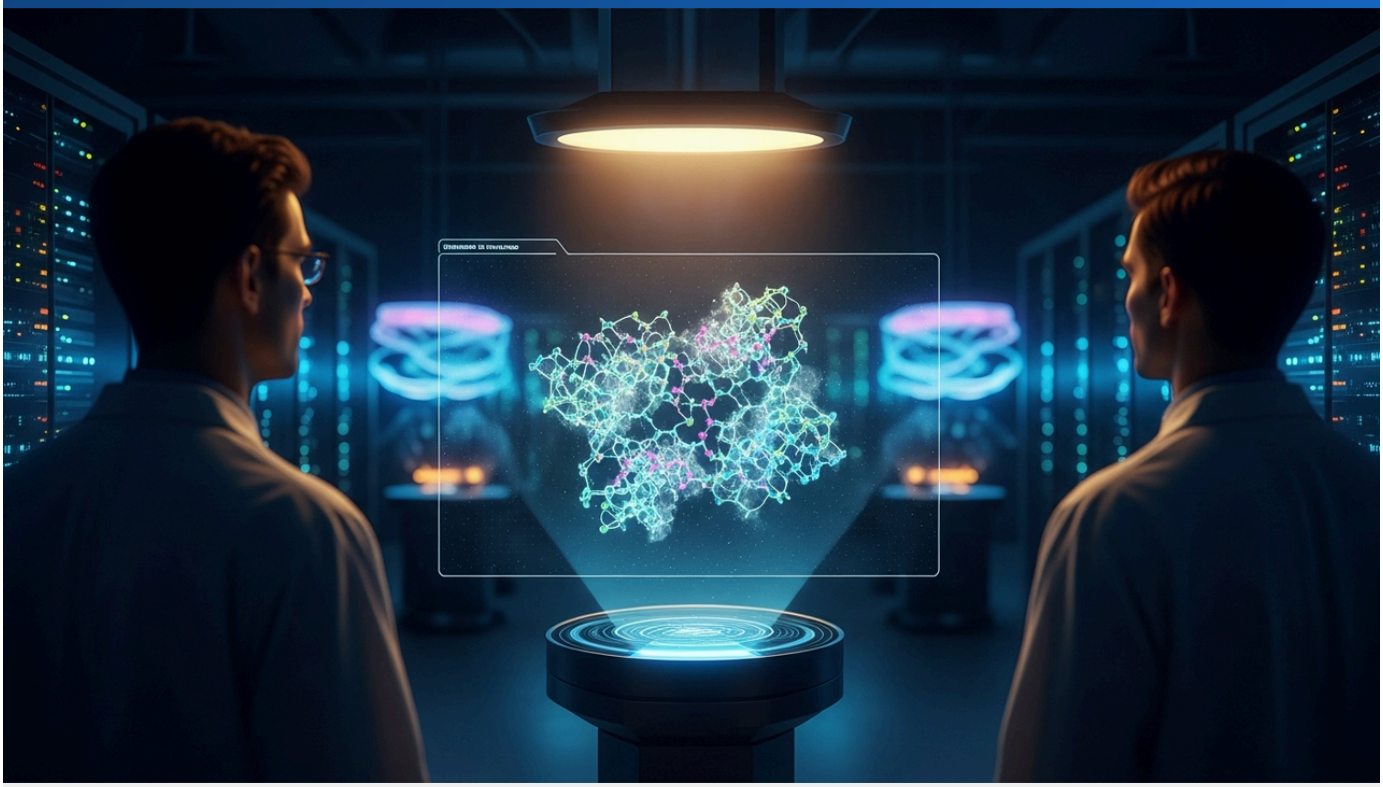
Strategic Significance & Outlook

The U.S. government's investment exceeding $2 billion and the Presidential Executive Order will dramatically accelerate innovation and industrialization within the quantum computing sector. Funding for both established companies like IBM and GlobalFoundries, as well as emerging players such as Atom Computing, will foster technological diversity and competition. The establishment of domestic quantum foundry capabilities will contribute to supply chain resilience and enhanced security, strengthening U.S. technological independence. The 2028 target for building powerful quantum computers and the government-wide transition to post-quantum cryptography set clear milestones, sending a strong signal to the entire industry. This comprehensive approach is expected to lay the groundwork for the U.S. to lead the economic and social transformation that quantum computing promises, making its trajectory a critical area of observation.

Source: https://www.fool.com/investing/2026/06/25/the-us-government-is-betting-billions-on-quantum-c/

#28 BIO 2026 AI Summit Highlights Quantum Drug Discovery as Imminent Reality: IBM and Cleveland Clinic Successfully Simulate 303-Atom Trp-Cage Protein Electron Structure

Published July 02, 2026 GeneOnline Global



OVERVIEW

The BIO 2026 AI Summit underscored quantum computing as an imminent reality for drug discovery, positioning 2025-2026 as a definitive turning point for biopharma quantum applications. A key highlight was the successful simulation of the electronic structure of a 303-atom Trp-cage protein by IBM and Cleveland Clinic, which finalized a hybrid quantum-classical workflow in March 2026. This breakthrough significantly advances molecular simulation capabilities, holding immense potential to accelerate next-generation drug discovery processes.

IN DEPTH

Key Findings

The BIO 2026 AI Summit emphatically highlighted quantum computing as an imminent reality for the drug discovery sector, designating 2025-2026 as a pivotal turning point for biopharma quantum applications. A prominent key achievement cited at the summit was the successful simulation of the electronic structure of a relatively large 303-atom Trp-cage protein by IBM and Cleveland Clinic in March 2026, finalizing a hybrid quantum-classical workflow. This technical breakthrough significantly enhances molecular simulation capabilities and holds immense potential to accelerate next-generation drug discovery processes.

Technical / Clinical Details

Simulating the electronic structure of a Trp-cage protein is crucial for understanding the chemical properties and reactivity of complex molecules. The scale of 303 atoms represents a domain in quantum chemistry calculations that is extremely challenging for classical methods, and this success demonstrates the efficacy of hybrid quantum-classical workflows. In this workflow, classical supercomputers handle parts of the task, while the quantum computer tackles the most computationally intensive portions, such as calculating electron correlation energy. This synergistic approach leverages the strengths of both systems, enabling the prediction of complex molecular behavior with unprecedented accuracy and speed. This technology has direct applications in designing novel drug candidates, understanding drug-target interactions, and predicting side effects, potentially revolutionizing the efficiency of the drug discovery process.

Background & Context

The pharmaceutical industry faces significant challenges in the form of increasing time and cost for new drug development. Molecular simulation plays a vital role in the early stages of drug discovery, but its computational limits have been a bottleneck for innovation. Quantum computing is anticipated as a next-generation technology to break through these computational barriers, enabling faster and more accurate molecular simulations. The partnership between IBM and Cleveland Clinic is a prime example, reflecting a global trend of academic and industrial collaboration to apply quantum technology in the biopharmaceutical sector. The emergence of such successful cases clearly indicates quantum computing's transition from theoretical possibility to concrete industrial application.

Strategic Significance & Outlook

The success of IBM and Cleveland Clinic in simulating the electronic structure of a Trp-cage protein demonstrates the profound impact quantum computing will have on pharmaceutical R&D. Moving forward, this hybrid quantum-classical workflow is expected to broaden its application to the simulation of larger and more complex biomolecules. This will enable pharmaceutical companies to significantly accelerate the processes of drug candidate discovery, optimization, and toxicity assessment, ultimately leading to the faster delivery of safer and more effective treatments to patients. As highlighted by the BIO 2026 AI Summit, quantum drug discovery is no longer a distant future technology but is becoming an urgent reality that will shape the pharmaceutical industry's competitiveness, with further breakthroughs strongly anticipated in this field.

Source: https://www.geneonline.com/2026-bio-ai-summit-kickoff-session-benchling/