

Vietnam: Charting a Quantum Path Through Research and Resilience

August 2025



Executive Summary

Vietnam isn't making much noise in the quantum race—and that's exactly the point. Instead of hype cycles, it's taking a steady, deliberate approach: leveraging its strengths in math and science, developing a new generation of tech talent, and focusing on its broader goal of digital sovereignty.

2025 is shaping up to be a pivotal year. Research networks are coming together. The government is planning for the long term. And cross-border collaborations are accelerating. For Vietnam, quantum isn't just a trend—it's part of a broader strategy for scientific credibility and technological resilience.



National Strategy & Infrastructure

Vietnam doesn't have a national quantum strategy yet—but the groundwork is quietly being laid.

The Ministry of Science and Technology (MOST) and the Vietnam Academy of Science and Technology (VAST) are leading early-stage work in key areas:

- Quantum computing & simulation – for materials science and drug development
- Quantum communication – to support secure infrastructure and cybersecurity
- Quantum sensing – especially for environmental monitoring and smart agriculture





Highlights from 2024–2025:

- The Vietnam Quantum Research Network (VQRN) was launched, linking top universities in Hanoi, HCMC, and USTH
- Investments have started flowing into computing infrastructure, particularly for hybrid and simulation models
- Policy teams are drafting a National Quantum Development Roadmap, expected in 2026

The approach is methodical. It's less about fanfare, more about capabilities.

Academic Strengths & Private-Sector Momentum

Vietnam's academic community is doing a lot of the heavy lifting.

Institutions like VNU-Hanoi, USTH, and the Hanoi University of Science and Technology are expanding their programs in quantum optics, quantum information, and theoretical physics. Meanwhile, the Vietnam Institute for Advanced Study in Mathematics (VIASM) has introduced new tracks in quantum algorithms and quantum machine learning.

One notable step: the Quantum Vietnam Fellowship, launched in 2024, is providing seed funding for graduate students and early-career researchers—especially those returning from international programs.



On the private-sector side:

- Interest is slowly building, especially in cybersecurity, fintech, and e-government
- Agritech and logistics firms are exploring quantum use cases in optimization and supply chain resilience.
- Big players like FPT Software, Viettel, and VinAI are starting to connect with universities on R&D projects.

There's potential here—but it still needs structure and sustained support to scale.



Global Partnerships & Funding Pathways

Vietnam is making clever use of its international ties to compensate for limited domestic resources.



Key moves:

Active member in the Asia-Pacific Quantum Collaboration Forum, working on shared standards with Japan, Singapore, and South Korea

Running bilateral research programs with France, Japan, and Korea—including PhD exchange and lab infrastructure support

Collaborating with UNESCO, OECD, and Horizon Europe on ethics, funding, and talent development

Involved in the Global South Quantum Alliance, helping to shape more equitable access to quantum research and infrastructure

Vietnam is using diplomacy and multilateral engagement as a bridge toward deeper technical capacity.

Strategic Positioning in Global Tech Forums



Vietnam isn't in the G7, but it's carving out a respected voice in emerging tech diplomacy.

In 2025:

It took part in the ASEAN–EU Digital Dialogue, advocating for ethical frameworks and data sovereignty in quantum

Co-hosted the Mekong Emerging Tech Summit, focused on inclusive access to AI and quantum tools, especially in climate and education

Signed on to the Global Responsible Quantum Principles, endorsing transparency, peaceful uses, and open standards

Opportunities & Challenges

Opportunities:

Strong national tradition in math and theoretical science,, Youthful, digitally fluent population and growing STEM pipeline

Credibility in multilateral diplomacy and regional coordination

Challenges:

No dedicated national funding mechanism for quantum Limited hardware/testbed access

Brain drain—especially of top-tier researchers

Private-sector engagement is still limited outside a few niches

Vietnam has many of the right ingredients—but needs greater coordination, investment, and infrastructure to translate potential into progress.

What's Ahead: 2025–2030 Outlook

Over the next 3–5 years, here's what to watch for:

A national quantum strategy—likely with emphasis on simulation and communication

Government pilot programs in post-quantum encryption, especially in finance and e-government

Expanded research exchanges with key partners (France, Japan, Singapore)

Investment in centers of excellence, focusing on agriculture and pharmaceutical simulation

Vietnam's not trying to dominate the global quantum scene—but it *is* aiming to lead regionally, with integrity and focus.

Final Reflection

Vietnam's approach to quantum technology isn't loud or swift—it's intentional. There's a careful rhythm to how it's developing: academic depth, international trust, and long-term planning over quick wins. In a world where flashy announcements often overshadow real ability, Vietnam is choosing a different path: steady, serious, and rooted. It's not chasing headlines. It's building credibility. And that's a meaningful move of its own.

