



BSA 2026 Quantum Technologies Agenda

An Agenda to Lead in a Quantum World

Quantum computing will transform sectors like energy, finance, and health care, pushing beyond the limits of classical computing.

Quantum technology—including hardware, networking, sensing, and software—stands at the forefront of the next technological revolution. Policymakers must move decisively. Governments that plan now, and act strategically—while building and fostering global partnerships—will be best positioned to capture the benefits of quantum computing.

Many governments have been adopting quantum initiatives, but most remain fragmented, underfunded, and narrowly focused. Some, helpfully, focus on the

need to deploy post-quantum cryptography (PQC), but few address the full technology stack or support commercialization. More ambitious and coordinated policy is essential to ensure national competitiveness and security in a quantum future.

The pace of advancements in quantum hardware is accelerating rapidly. As in prior computing eras, software and algorithms will determine real-world value. Governments, as they consider quantum technology strategies, should therefore focus on the infrastructure deployment to promote the development of mature, quantum-specific software tools, optimized algorithms, and integration systems. Investment in these layers of the quantum stack will be key to real-world quantum advantages.

SIX STEPS FOR QUANTUM POLICY READINESS

1

Invest in Research and Development of Quantum Software and Algorithms That Leverage Quantum Hardware and Networking Infrastructure

2

Invest in Preparing for Industry Adoption of Market-Ready Quantum Solutions

3

Build a Quantum-Ready Workforce

4

Implement a Clear, Comprehensive Quantum Strategy

5

Foster International Collaboration and Security

6

Upgrade to Post-Quantum Cryptography (PQC)

Key Policy Recommendations

We recommend six steps for quantum policy readiness:

1 Invest in Research and Development of Quantum Software and Algorithms That Leverage Quantum Hardware and Networking Infrastructure

Governments should emphasize deployment of quantum infrastructure and invest in the development of quantum-focused software, algorithms, and integration tools. Investing in software and algorithms would unlock new use cases and applications of quantum technologies. Governments should offer support for startups, university labs, testbeds, and industry partnerships that are developing the software and algorithms needed to ensure that quantum infrastructure advances translate into usable systems.

2 Invest in Preparing for Industry Adoption of Market-Ready Quantum Solutions

Governments should actively encourage and support businesses engaged in using secure, innovative quantum solutions in key industry sectors. Governments should facilitate targeted actions, including regulatory adjustments, infrastructure enhancements, and training initiatives, to prepare those sectors for adoption.

3 Build a Quantum-Ready Workforce

Launch targeted workforce initiatives to build a pipeline of skills and workers fluent in quantum. These programs should include not only an understanding of hardware development but also software and algorithm development and implementation.

4 Implement a Clear, Comprehensive Quantum Strategy

Governments including the US, the European Union (EU), Australia, Canada, India, Japan, Singapore, and the United Kingdom (UK) have recently adopted comprehensive strategies for quantum technology. These strategies need appropriate oversight and

accountability and must be implemented in a way that provides direction and clarity to stakeholders across industry sectors and the government. A strategy is most likely to be successful with the appointment of a single, empowered individual or office with the mandate to coordinate across departments and who can represent the nation in international quantum forums.

5 Foster International Collaboration and Security

No one government can succeed in quantum computing alone. Joint research, development, and supply-chain agreements with like-minded partners, along with engagement in international standards bodies to ensure interoperable policies, are crucial. Recent examples of agreements among the US, the UK, and Australia; bilaterally between Japan and the EU, the UK, and Singapore; and between the US and the UK each provide important framework examples. Similarly, like-minded partners should work together to increase competitiveness and the responsible sharing of technology by coordinating international security frameworks, technology-sharing agreements, and coordinated export controls.

6 Upgrade to Post-Quantum Cryptography (PQC)

Governments that have not already begun the process should develop PQC road maps, launch pilot programs to begin upgrading today, and leverage commercially available AI tools to inventory and prioritize PQC upgrades.

Conclusion

Quantum computing will not wait for governments to catch up. The countries that lead in quantum will shape the global norms, standards, and benefits of the technology. Policymakers must act now to lay the foundation for long-term quantum leadership. By implementing the steps outlined above, governments can ensure they are not merely reacting to the quantum era, but shaping it.