

QIR

Quantum
Index Report
2025

MIT INITIATIVE ON THE DIGITAL ECONOMY

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► Interactive website and public data

The Quantum Index Report 2025 is accompanied with interactive tools available on our website (qir.mit.edu) and we share our raw data with the community available to download from our website (qir.mit.edu/data).

In memory of Shawneric Hachey, whose unique talent and dedication shaped the way this project is presented today.



Center for Quantum Networks
A National Science Foundation Engineering Research Center



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▶ Team

Jonathan Ruane, Principal Investigator and Editor-in-Chief
MIT Sloan School of Management
MIT Initiative on the Digital Economy

Elif Kiesow, Senior Researcher and Project Manager
MIT Initiative on the Digital Economy

Johannes Galatsanos, Researcher
MIT Initiative on the Digital Economy

Carl Dukatz
Accenture

Edward Blomquist
Accenture

Prashant Shukla
Accenture



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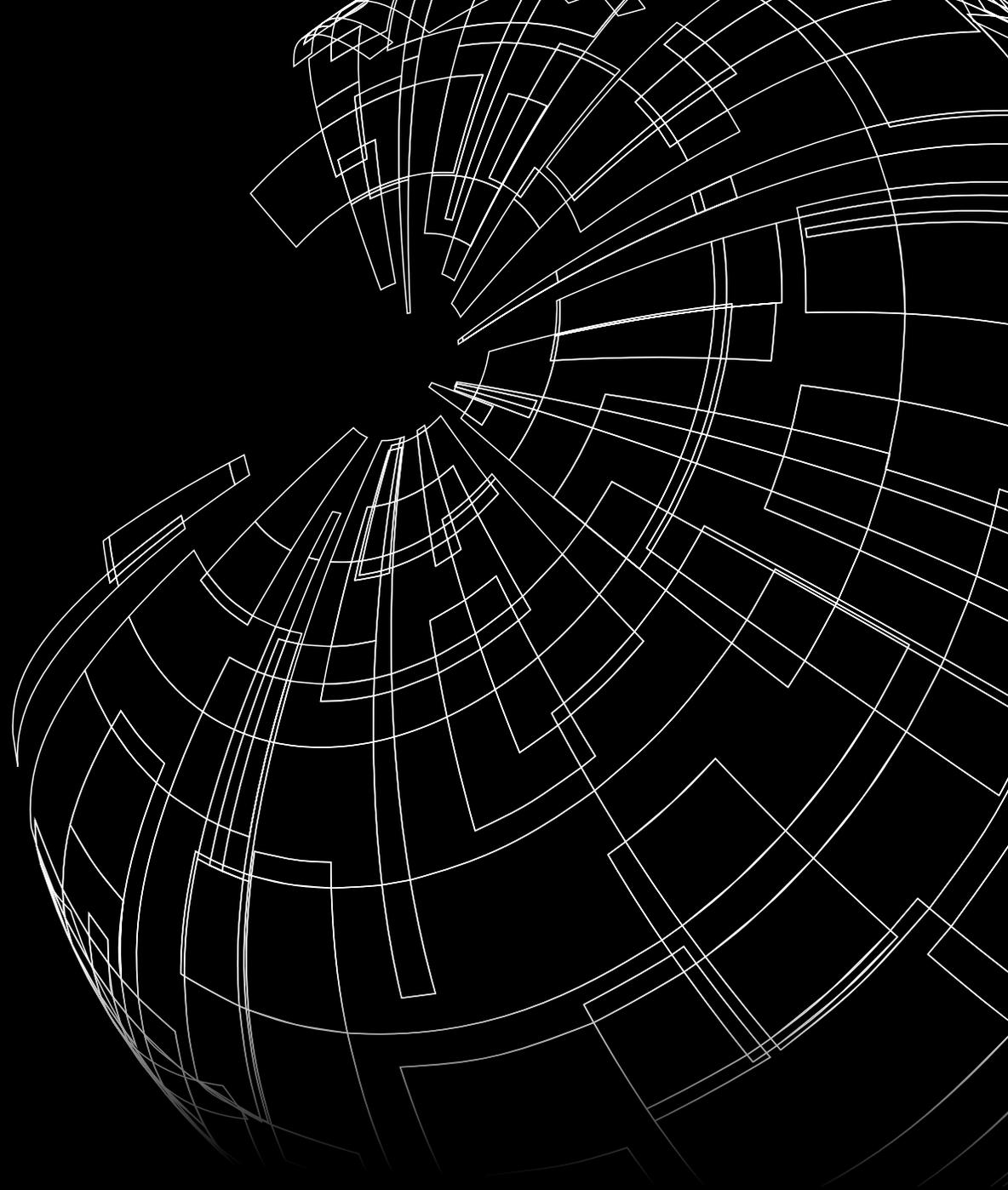
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5 | Policy

National governments around the world are increasingly recognizing quantum technologies as a domain of strategic importance—one that intersects with economic competitiveness, national security, and scientific leadership. As a result, quantum policy is no longer confined to academic funding or isolated research programs. It is becoming a centerpiece of industrial strategy, with countries racing to define and implement national quantum initiatives, invest in infrastructure, and shape global standards. This policy momentum reflects a broader geopolitical dynamic, where early movers aim to secure technological sovereignty and influence the trajectory of the quantum future.

Policy frameworks worldwide face common challenges in managing quantum technology development. One critical issue is the tension between promoting innovation and ensuring security. Nations must balance the need to protect sensitive quantum research with the requirement for international collaboration to advance the field. In 2024, several countries, including the US, Australia, UK, Canada and the Netherlands imposed aligned export controls on quantum technologies.¹

Most countries have pursued largely independent approaches to their quantum plans. In contrast, the European Union's Quantum Flagship² program serves as a model for coordinated continental-level quantum research, pooling national resources while maintaining a shared framework for ethical oversight and societal impact. The future of quantum technology policy making will likely involve increasingly sophisticated international frameworks. Current trends suggest a move toward hybrid models that combine national sovereignty with international cooperation. This evolution in governance approaches reflects the unique nature of quantum technologies, which demand high levels of international cooperation especially at the research level, while simultaneously respecting legitimate national security concerns.



In order to provide a focused analysis of the global policy landscape, this chapter zooms in on policies of seven countries, two leading players in the quantum technology space, the US and China; three anglophone economies with comprehensive national policies in quantum technologies, the UK, Canada and Australia; and two important players serving as European technology hubs, the Netherlands and Ireland.

5.1 | United States

The United States has established a comprehensive framework for quantum technology policy development through the National Quantum Initiative (NQI), launched in 2018.³ This whole-of-government approach coordinates contributions from across federal departments and agencies through either the National Science and Technology Council (NSTC) Subcommittee on Quantum Information Science or the NSTC Subcommittee on Economic and Security Implications of Quantum Science. Recent policy developments have strengthened this framework, notably through the CHIPS and Science Act of 2022, which authorized quantum networking infrastructure development and STEM education integration. The National Defense Authorization Act (NDAA) for fiscal year 2022 further expanded the initiative's scope by formalizing the NSTC Subcommittee on the Economic and Security Implications of Quantum Science.

Cybersecurity is a central pillar of US quantum technology policy, particularly in light of emerging threats to classical encryption systems. The President's National Security Memorandum 10, released in May 2022, established comprehensive policies for promoting quantum computing leadership while addressing cryptographic vulnerabilities.⁴ The policy emphasizes transitioning to quantum-resistant cryptography and protecting sensitive technological information, with particular concern about adversaries potentially collecting encrypted data for future decryption. International cooperation has become increasingly important, with strategic documents highlighting the need for dedicated funding mechanisms and enhanced interagency coordination of international practices.⁵

Another crucial pillar of US quantum technology policy is international cooperation. The US government has signed bilateral quantum cooperation statements with Australia, Denmark, Finland, France, Germany, Japan, South Korea, the Netherlands, Sweden, Switzerland, and the United Kingdom.⁶ These bilateral partnerships facilitate high-level dialogues between relevant government agencies and create opportunities for enhanced collaboration between research institutions, universities, and industry.

In 2024, the US issued new export controls relating to quantum technologies.⁷ The restrictions apply to quantum computers and a broad range of associated items including "related equipment, components, materials, software, and technology that can be used in the development and maintenance of quantum computers."

Overall, the US approach aims to balance national interests with global collaboration—promoting mutual benefits while protecting intellectual capital and property.

5.2 | Australia

Australia has launched a comprehensive National Quantum Strategy that aims to transform the nation's future through technological advancement. The strategy was developed through extensive consultation with the quantum sector and wider community before its release in May 2023.⁸ By 2030, Australia aims to be recognized as a leader of the global quantum industry, with quantum technologies becoming integral to a prosperous, fair, and inclusive Australia. The strategy identifies both opportunities and challenges, including the potential to capitalize on existing expertise, build sovereign capability, and benefit from economic growth through increased productivity, while addressing challenges in commercialization, capital attraction, infrastructure access, and skills development.

The strategy is built around five central themes that will guide actions over seven years: creating thriving research and development, securing essential quantum infrastructure and materials, building a skilled workforce, establishing supportive standards and frameworks that support national interests, and building a trusted, ethical ecosystem. Key initiatives include investing in quantum ecosystem growth, supporting commercialization, and establishing new programs to incentivize quantum use cases. The government has committed significant resources, including earmarking at least \$1 billion from the \$15 billion National Reconstruction Fund for critical technologies. Implementation will be collaborative, drawing on the strengths of industry, businesses, universities, states, territories, and trusted international partners to ensure Australia realizes its quantum opportunity.

In 2024, Australia imposed export controls on quantum by the expansion of its "Defence and Strategic Goods List" dual-use section Category 4 (Computers) to include quantum computers.⁹

5.3 | Canada

Canada has launched a comprehensive National Quantum Strategy backed by a \$360 million investment over seven years, positioning the country to maintain its competitive position in quantum research and technology development.¹⁰ This builds on the fact that Canada has a number of globally recognized academic institutions with strong quantum research efforts, such as the University of Waterloo and University of Toronto. It is also the home to quantum firms such as D-Wave and Xanadu.

The Canadian strategy is built on three interrelated pillars: research, talent, and commercialization, which support key missions that will guide Canada's quantum development. The initiative aims to strengthen Canada's existing quantum research capabilities while growing domestic quantum technologies, companies, and talent, with particular focus on making Canada a world leader in quantum computing hardware and software development.

The strategy's three missions focus on specific technological areas: (1) developing and deploying quantum computing hardware and software, (2) establishing a national secure quantum communications network with post-quantum cryptography capabilities, and (3) supporting the development and early adoption of quantum sensing technologies. Implementation will be supported through various programs, including the Natural Sciences and Engineering Research Council of Canada (NSERC) quantum streams, the National Research Council's Quantum Research and Development Initiative (QRDI), and Canada's Global Innovation Clusters. The strategy emphasizes collaboration between academia, industry, and government, with a focus on creating thousands of jobs and establishing Canada as a global leader in quantum technologies.

According to national strategy, Canada is also committed to strengthening country-to-country collaboration both bilaterally and multilaterally, with an emphasis on key allied countries. This should not only permit jointly advancing knowledge, but also position Canada to work towards ensuring the interoperability of these technologies. The strategy envisions Canada playing a central role in emerging supply chains, with attention paid to protecting sensitive technologies where deemed necessary.

In 2024, Canada implemented export controls on quantum technologies with an update to its export control list, adding quantum computers.¹¹

5.4 | United Kingdom

The UK's National Quantum Strategy, published in March 2023, outlines a comprehensive 10-year vision to establish the UK as a leading quantum-enabled economy.¹² The strategy builds on the UK's existing quantum strengths, with the government dedicating £2.5 billion to its quantum research and innovation program over ten years. The first two years will see £25 million targeted at training skilled quantum workers through quantum-related fellowships and doctoral training.

The UK has already established itself as a significant player in quantum technology, with approximately 160 companies in the quantum sector and the second-highest percentage of private equity investment in quantum computing globally, second only to the US.¹³

The strategy focuses on five key missions:¹⁴ developing UK-based quantum computers capable of running 1 trillion operations by 2035; deploying the world's most advanced quantum network at scale by 2035; implementing quantum sensing solutions in every National Health Service (NHS) Trust by 2030; deploying quantum navigation systems on aircraft by 2030; and lastly, implementing mobile, networked quantum sensors across critical infrastructure sectors (transport, telecoms, energy, and defense sectors) by 2030. These missions are supported by the National Quantum Technology Program (NQTP)¹⁵, which connects government, academia, and industry to accelerate quantum technology development and commercialization. The strategy emphasizes collaboration between academia and industry, with partnerships involving prominent institutions

and companies while maintaining a strong focus on responsible development and international cooperation.

In 2024, the UK announced export controls on quantum technologies by including quantum computers under the section “Computers and related equipment, materials, software and technology” via amendments to its Export Control Order.¹⁶

5.5 | The Netherlands

The Netherlands has established a comprehensive quantum strategy through Quantum Delta NL, a National Growth Fund program focused on positioning the country as an internationally leading center for quantum technology research and development.^{17,18} The program is structured around three catalyst (CAT) programs: (1) quantum computing and simulation, (2) a national quantum network, and (3) quantum sensing applications.

These catalyst programs aim to provide the resources for members to accelerate introduction of quantum to the market via easier access to quantum networks, computers, and simulators—and in doing so, the Netherlands intends to lower barriers to development and testing. Within each catalyst, Quantum Delta NL created four action lines centered around the following themes: research and innovation, quantum ecosystem, human capital, and societal impact.

Funded research initiatives fall within one or more of the six research lines as described in the National Agenda for Quantum Technology¹⁹: Quantum computing, quantum simulation, quantum communication, quantum sensing, quantum algorithms, and post-quantum cryptography. The program has already demonstrated significant impact, with 16 projects awarded funding in 2022 and 19 in 2023. In March 2025, the National Growth Fund advisory committee approved its updated programming.²⁰

Despite its strong research foundation, the Netherlands faces significant challenges in attracting private investment to support its quantum ambitions, according to findings presented in the Invest-NL report “The role of the Netherlands in quantum technology”.²¹ The 18 existing or upcoming Dutch quantum companies require between €1 billion and €2 billion to reach profitability, with €150-300 million needed within 18 months.²² While the government has allocated over €600 million through the National Growth Fund, private investors have contributed only €10-15 million in startup capital, significantly less than comparable investments in the United States. The government is actively working to address this funding gap, with Invest-NL prepared to invest part of its €250 million allocation for fundamental technologies in quantum companies.²³ The Netherlands has also strengthened its international position through strategic partnerships, notably signing a joint statement with the United States in February 2023 to enhance cooperation in quantum information science and technology.²⁴

With regard to internationalization, the Netherlands advocates balancing different objectives. The country endorses the EU's ambition of building up its own strategic tech industry, which would help guard against undesired dependencies. At the same time, the Netherlands sees 'open markets' as the appropriate departure point and is willing to promote mutual trust between innovative clusters worldwide.²⁵

In 2024, the Netherlands expanded the list of items subject to export control by including quantum computers under the category "Computers: Systems, equipment and components".²⁶

5.6 | China

China has emerged as an ambitious possible global leader in quantum technology, with its strategy characterized by significant state investment and comprehensive national planning. It was announced (and frequently disputed) that the government has allocated an estimated \$15 billion to quantum research and development, accounting for over 50% of global public investment in the field.²⁷ This investment has enabled China to achieve several notable milestones, including the launch of the world's first quantum satellite, Micius, in 2016,²⁸ and the development of the world's largest quantum communication network spanning 12,000 kilometers.²⁹ The strategy emphasizes both quantum computing and quantum communication, with particular success in the latter area, where China leads the world in patents and implementation.

China's quantum strategy is distinct from Western approaches, with a strong emphasis on state-led development and technological sovereignty.³⁰ The Ministry of Industry and Information Technology (MIIT) has identified quantum computing as a "future industry" within its broader industrial policy, focusing on fault-tolerant quantum computing technology and quantum software development.³¹ The government has invested in an extensive quantum research facility in Hefei, Anhui Province, covering an area of 37 hectares, aiming for it to be an internationally leading research hub.

The country has implemented a systematic approach to drive and shape standards development.³² In 2025, China launched its own initiative to develop quantum-resistant encryption standards,³³ paralleling the push by the US to create such standards in its effort organized by the US National Institute of Standards and Technology (NIST).³⁴

While private investment in Chinese quantum companies appears to be limited when compared to the US, the state-led approach has enabled a rapid buildup of capabilities.³⁵ China's strategy also includes significant investment in quantum education and workforce development, with initiatives like the "Education Modernisation 2035 Plan" to prepare future generations for quantum technology development.³⁶

5.7 | Ireland

Ireland launched its national quantum strategy in 2023, "Quantum 2030: A National Quantum Technologies Strategy for Ireland," which aims to establish the country as an internationally competitive hub for quantum technology by 2030.³⁷ The strategy recognizes Ireland's unique position as a global technology hub, with nine of the top ten global software companies and three of the top four internet companies maintaining significant operations in the country. While Ireland currently trails similarly sized European states in quantum technologies, the strategy outlines an ambitious plan to capitalize on the country's existing technology ecosystem and develop indigenous quantum capabilities.

The five pillar approach focuses on supporting excellent fundamental and applied quantum research, fostering top science and engineering talent, prioritizing national and international collaboration, stimulating innovation, entrepreneurship and economic competitiveness, and building awareness of quantum technologies and real-world benefits.

The strategy focuses on developing Ireland's quantum research capabilities and building a strong quantum workforce. The initiative emphasizes increasing training through research for scientists, engineers, mathematicians, and electrical engineers, with particular attention to developing "quantum engineers". The government is actively encouraging major technology companies with existing Irish operations to establish quantum technology research labs and recruit early stage Irish scientists. One early success is the hosting of IBM's sole European Research Lab³⁸ with a focus on quantum in Dublin.

While Ireland faces challenges in competing with countries like the Netherlands, Denmark, and Finland, the strategy represents a significant step toward establishing Ireland as a competitive player in the global quantum technology landscape. The strategy also sets out to build and maintain collaboration with international partners. For instance, Ireland intends to strengthen quantum-technologies research links with the EU, US, and UK. This could be supported by developing new funding mechanisms, as well as drawing on established sources of funding.

5.8 | Overview

	United States	Australia	Canada	United Kingdom
Main Initiative	National Quantum Initiative Act	National Quantum Strategy	National Quantum Strategy	National Quantum Strategy
Date	December 2018	May 2023	January 2023	March 2023
Funding	\$2.7 billion over 5 years (proposed reauthorization)	A\$1 billion	Up to C\$360 million	£2.5 billion over 10 years
Focus Areas	Quantum computing, sensing, communications	Research, commercialization, infrastructure, workforce, ethics, international partnerships	Quantum computers and software, quantum communications, quantum sensors	Quantum science, engineering, business support, regulatory framework
Workforce Development	Quantum education and workforce hub	Aim to be world's top destination for quantum talent	Talent development as a key pillar	New skills initiatives, doctoral training, fellowships
Key Feature	Shift from basic research to applications in reauthorization	Attention to responsible innovation	Missions-based approach	Aim to be quantum-enabled economy by 2033 via support for business and standards development

	Netherlands	China	Ireland
Main Initiative	National Agenda on Quantum Technology	National Strategy for Quantum Science and Technology	Quantum 2030
Date	September 2019	Ongoing since 13th five-year plan (2016-2020)	November 2023
Funding	€615 million (Quantum Delta NL program)	\$15 billion (estimated)	Full budget unknown (IrelandQCI project: €10 million)
Focus Areas	Commercialization, education, ethical development, community building	Quantum communications, computing, sensing	Quantum computing, communications, sensing, international collaboration, ecosystem building
Workforce Development	Focus on training new talents	Centralized talent development at USTC	Develop quantum skills base, support researchers, SMEs, and innovators
Key Feature	Quantum Delta NL program implementation with focus on ecosystem building	Centralized, state-controlled approach with rapid development focus	Emphasis on coordination, talent development, and leveraging EU/UK/US partnerships

5.9 | Future research

Building on this analysis of national quantum policies from select countries, our aim for future reports is to incorporate additional nations. We also intend to add more detailed comparative analysis with more precise assessments of different governance approaches in the coming years. The tracking framework established in this chapter would provide valuable longitudinal insights into policy evolution and effectiveness over time, allowing researchers to identify successful regulatory adaptations and best practices in balancing innovation with governance objectives. Please reach out to share additional data or insights that might contribute to this work. Our QIR website provides further up-to-date documentation of evolving policies, serving as a dynamic complement to this chapter.

You can reach us at contact@qir.mit.edu.

► Footnotes

¹ These states are parties to Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, however this particular export control implementation effort took place outside of the official Wassenaar Arrangement. This could potentially mean that export control limitations might apply to countries party to the Arrangement if they do not implement similar controls or until the Arrangement ends up covering quantum technologies.

² 'Quantum Technologies Flagship | Shaping Europe's Digital Future' <<https://digital-strategy.ec.europa.eu/en/policies/quantum-technologies-flagship>> accessed 3 April 2025.

³ 115th Congress, 'H.R.6227 - National Quantum Initiative Act' (21 December 2018) <<https://www.congress.gov/bill/115th-congress/house-bill/6227/text>> accessed 3 April 2025.

⁴ The White House, 'National Security Memorandum on Promoting United States Leadership in Quantum Computing While Mitigating Risks to Vulnerable Cryptographic Systems' (The White House, 4 May 2022) <<https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/05/04/national-security-memorandum-on-promoting-united-states-leadership-in-quantum-computing-while-mitigating-risks-to-vulnerable-cryptographic-systems/>> accessed 20 March 2025.

⁵ National Science and Technology Council, 'Advancing International Cooperation In Quantum Information Science And Technology' (2024).

⁶ *ibid.*

⁷ National Quantum Coordination Office, 'Department of Commerce Releases Export Controls on Quantum Technologies' (National Quantum Initiative, 6 September 2024) <<https://www.quantum.gov/department-of-commerce-releases-export-controls-on-quantum-technologies/>> accessed 3 April 2025.

⁸ Department of Industry Science and Resources, 'National Quantum Strategy' (2023) <<https://www.industry.gov.au/publications/national-quantum-strategy>> accessed 3 April 2025.

⁹ Australian Government, 'Defence and Strategic Goods List 2024' <<https://www.legislation.gov.au/F2024L01024/asmade>> accessed 3 April 2025.

¹⁰ Government of Canada, 'Canada's National Quantum Strategy' (Innovation, Science and Economic Development Canada 2023) <<https://ised-isde.canada.ca/site/national-quantum-strategy/en/national-quantum-strategy-roadmap-quantum-computing>> accessed 3 April 2025.

¹¹ Global Affairs Canada, 'Notice to Exporters No. 1129 – Amendment to the Export Control List: Quantum Computing and Advanced Semiconductors' (GAC, 19 June 2024) <<https://www.international.gc.ca/trade-commerce/controls-controles/notices-avis/1129.aspx?lang=eng>> accessed 3 April 2025.

¹² UK Department for Science, Innovation and Technology, 'National Quantum Strategy' (GOV.UK, March 2023) <<https://www.gov.uk/government/publications/national-quantum-strategy>> accessed 3 April 2025.

¹³ UK Department for Science, Innovation and Technology, 'National Quantum Strategy Additional Evidence' (GOV.UK, December 2023) <<https://www.gov.uk/government/publications/national-quantum-strategy>> accessed 3 April 2025.

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- ¹⁶ 'The Export Control (Amendment) Regulations 2024' <<https://www.legislation.gov.uk/uksi/2024/346/regulation/2/made>> accessed 3 April 2025.
- ¹⁷ <https://quantumdelta.nl/>
- ¹⁸ 'Launching Quantum Delta NL: Dutch Players Join Forces to Build the Future of Quantum Technology' <<https://thequantuminsider.com/2021/01/28/launching-quantum-delta-nl-dutch-players-join-forces-to-build-the-future-of-quantum-technology/>> accessed 3 April 2025.
- ¹⁹ Quantum Delta NL, 'National Agenda for Quantum Technology' (2019).
- ²⁰ 'Quantum Delta NL Expands Strategy with Renewed National Growth Fund Support' (Quantum Delta NL) <<https://quantumdelta.nl/news/quantum-delta-nl-expands-strategy-with-renewed-national-growth-fund-support>> accessed 3 April 2025.
- ²¹ 'De Rol van Nederland in Quantum Technologie' (Invest-NL, 31 October 2023) <<https://www.invest-nl.nl/page/2868/de-rol-van-nederland-in-quantum-technologie>> accessed 3 April 2025.
- ²² Matt Swayne, 'The Netherlands Is Putting A Call Out For Quantum Investors' (The Quantum Insider, 31 October 2023) <<https://thequantuminsider.com/2023/10/31/the-netherlands-is-putting-call-out-for-quantum-investors/>> accessed 3 April 2025.
- ²³ *ibid.*
- ²⁴ National Quantum Initiative, 'The United States and the Netherlands Sign Joint Statement to Enhance Cooperation on Quantum' (15 February 2023) <<https://www.quantum.gov/the-united-states-and-the-netherlands-sign-joint-statement-to-enhance-cooperation-on-quantum/>> accessed 3 April 2025.
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- ²⁸ Karen Kwon, 'China Reaches New Milestone in Space-Based Quantum Communications' (Scientific American) <<https://www.scientificamerican.com/article/china-reaches-new-milestone-in-space-based-quantum-communications/>> accessed 3 April 2025.
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- ³⁰ Marc Julienne, 'China's Quest for a Quantum Leap' [2024] Reconnect China Policy Brief 15.
- ³¹ Ministry of Industry and Information Technology (2024) No. 12, 'Implementation Opinions of Seven Ministries Including the Ministry of Industry and Information Technology on Promoting the Innovative Development of Future Industries' <https://cset.georgetown.edu/wp-content/uploads/t0582_future_industries_EN.pdf>.
- ³² 'China Raising the Ante on Standards Setting' (QED-C, 6 July 2022) <<https://quantumconsortium.org/blog/china-raising-the-ante-on-standards-setting/>> accessed 3 April 2025.
- ³³ Matthew Sparkes, 'China Launches Hunt for Ways to Protect Data from Quantum Computers' (New Scientist, February 2025) <<https://www.newscientist.com/article/2467574-china-launches-hunt-for-ways-to-protect-data-from-quantum-computers/>> accessed 3 April 2025.
- ³⁴ 'NIST Releases First 3 Finalized Post-Quantum Encryption Standards' [2024] NIST <<https://www.nist.gov/news-events/news/2024/08/nist-releases-first-3-finalized-post-quantum-encryption-standards>> accessed 3 April 2025.
- ³⁵ 'China's Long View on Quantum Tech Has the US and EU Playing Catch-up | Merics' (n 29).
- ³⁶ Jakob P, 'Chinese Quantum Companies and National Strategy 2023' (The Quantum Insider, 13 April 2023) <<https://thequantuminsider.com/2023/04/13/chinese-quantum-companies-and-national-strategy-2023/>> accessed 3 April 2025.
- ³⁷ Government of Ireland, 'Quantum 2030 A National Quantum Technologies Strategy for Ireland' (2023).
- ³⁸ Blathnaid O'Dea, 'IBM to Invest €10m in Skills Development for Its Irish Workforce' (Silicon Republic, 18 May 2023) <<https://www.siliconrepublic.com/careers/ibm-ireland-skills-investment>> accessed 3 April 2025.

11 | Appendix

Chapter 3 | Venture funding

This data was gathered by Accenture in collaboration with The Quantum Insider (TQI) using The Quantum Insider Funding Database. The methodology and limitations are explained below:

Funding numbers are obtained from open media sources (press releases, articles, etc). For example, Riverlane funding round:

<https://www.riverlane.com/press-release/riverlane-raises-75-million-to-meet-surg-ing-global-demand-for-quantum-error-correction-technology>.

Where possible TQI emails the companies to validate if they are missing investors or details. Not all companies disclose the size of funding rounds (e.g. QEDMA shows as \$4.7 million seed but they haven't publicly disclosed their top up round so they have asked not to be included in the dataset). Based on this, there will be gaps in reporting and the data should be viewed as indicative rather than complete.

Chapter 4 | Quantum in corporate communications

The data was collected by Accenture through AlphaSense on 10th March 2025 using keyword search term "quantum computing." The documents presented in this section include five categories, (1) Company Documents consisting of US Filings, Global Filings, Company House Filings, Private Company Filings, Event Transcripts, ESG, Thought Leadership, Other Company Publications; (2) Research Documents consisting of Broker Research, IDC Research, Consultancy Research, Broker Feed; (3) Transcript Documents consisting of Event Transcripts; (4) News Documents consisting of Financial Times, Market News, General News, Trade Publications, RSS Feeds, LexisNexis, (5) Expert Call Documents consisting of Expert interviews.

Chapter 5 | Policy

The policy research was completed through comprehensive desk research specifically designed to capture the rapidly evolving landscape of quantum technology initiatives across multiple countries, including detecting and analyzing the national strategy documents and implementation plans, which involved cross-referencing multiple official sources and analysis of policy implementation progress.



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MIT Initiative on the Digital Economy

245 First Street, Room E94-1521, Cambridge, MA 02142 USA

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