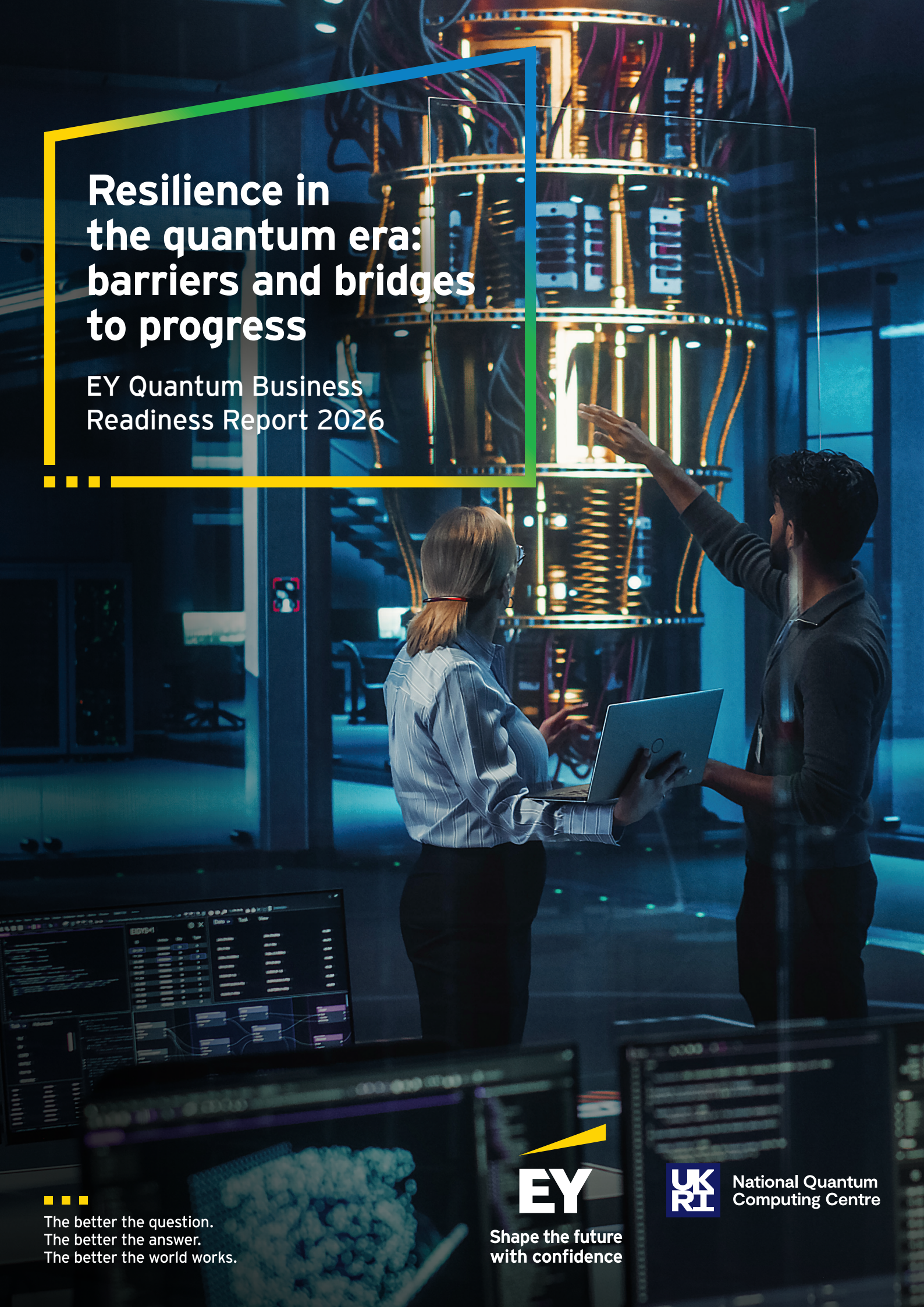

Resilience in the quantum era: barriers and bridges to progress

EY Quantum Business Readiness Report 2026

The better the question.
The better the answer.
The better the world works.

Shape the future with confidence

National Quantum Computing Centre

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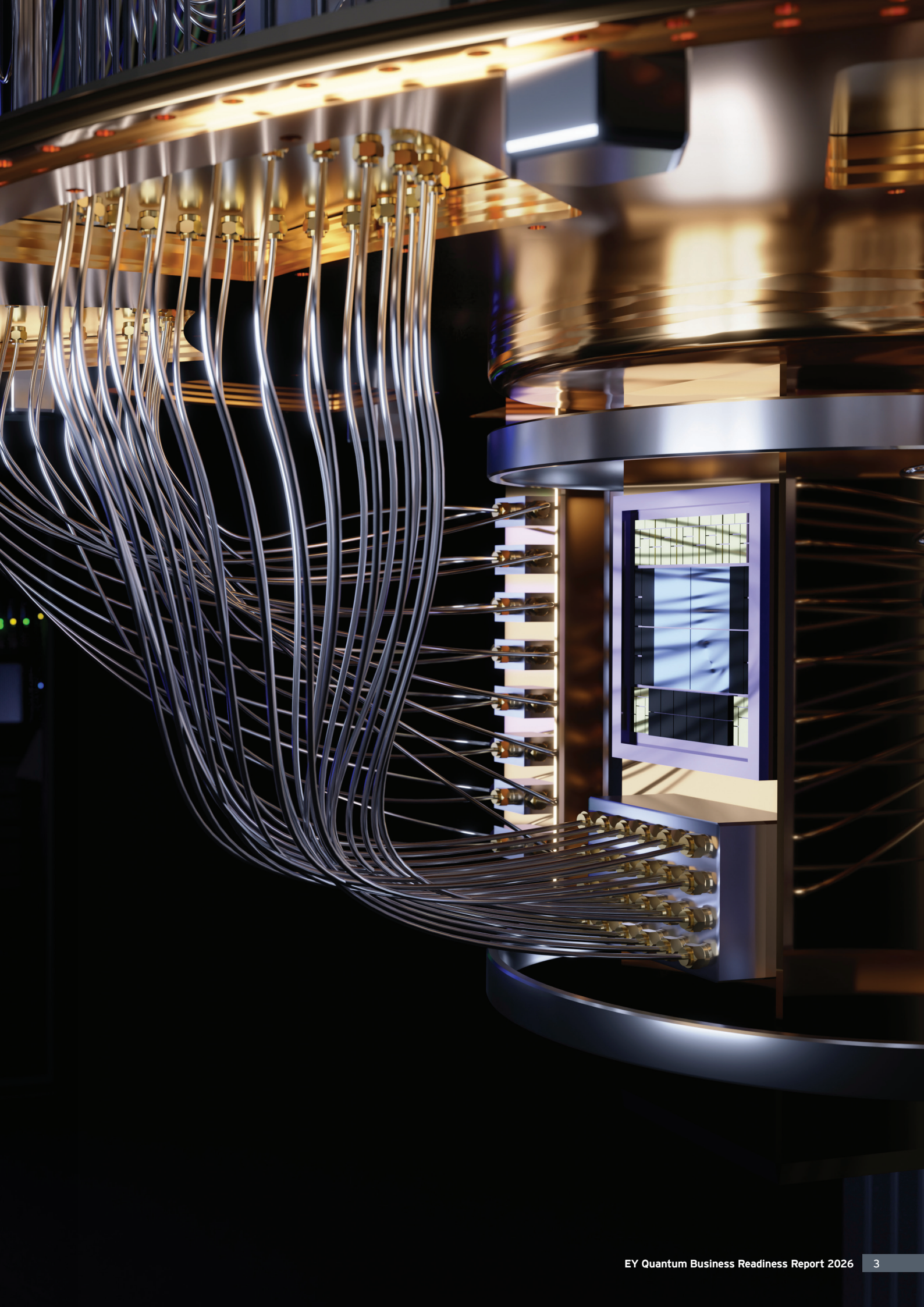


Foreword

The EY 2026 Quantum Computing Readiness Survey shows that UK organizations are increasingly investing in understanding the potential impact of quantum computing. This reflects continued progress in the development of the technology since the EY 2022 survey, *How can you prepare now for the quantum computing future?*[1], alongside growing awareness of its strategic relevance across sectors and its longer-term implications for cryptography and digital security.

In brief, the survey highlights three themes.

- **Awareness of potential impact is high, but expectations of maturity remain cautious**. Across a broad range of industries and organization sizes, nearly nine in 10 UK leaders expect developments in quantum computing to disrupt their sector within the next five years. This is tempered by the view of 60% of respondents that the technology is unlikely to be sufficiently mature to play a significant role in the core activities of most companies in their sector until the following five-year period.
- **Barriers to progress persist and engagement remains uneven**. Despite rising awareness, active engagement remains modest and varies by organization size and sector. Larger organizations (around one-quarter) and firms in Financial Services and Technology (around one-third) are most likely to be engaged today. Respondents continue to highlight perceived technical complexity, challenges integrating quantum capabilities into existing technology estates, and access to specialist talent as key barriers. Talent, in particular, is increasingly recognized as a necessary investment to support progress.
- **The ecosystem remains central to navigating uncertainty and building capability**. Most respondents (62%) recognize the need to work with a broader ecosystem to access the capabilities required to deliver value from quantum technologies. Early engagement with this ecosystem plays an important role in building organizational understanding, developing internal capability, and accessing specialist skills and partners. The survey also shows growing interest in wider ecosystem impacts, including environmental considerations and responsible technology design.

The survey follows a significant year for the field. In 2025, the United Nations designated the International Year of Quantum Science and Technology[2], alongside continued technical progress in areas such as fault tolerance and sustained investment from both government and the private sector. In the UK, the government built on its £2.5 billion National Quantum Strategy launched in 2023[3], with the 2025 Compute Roadmap[4] outlining a pathway to support organizations in moving from vision to execution. More recently, in March 2026, the UK Government announced a raft of support worth up to £2 billion to establish the UK as a world leader in Quantum as the UK aims to become the first country in the world to commit to making and deploying Quantum computers at scale by the early 2030s.[5]

This momentum is echoed globally, with public investment and infrastructure development continuing to accelerate. Quantum technologies are also expected to remain a strategic priority for governments, driven by national security considerations and long-term economic growth objectives.

The survey's assessment of impact over the next decade reflects a growing appreciation that quantum computing must still scale significantly to deliver widespread impact, and that different use cases are at different levels of maturity. At the most demanding end of the spectrum, the computational capabilities required to break widely used cryptographic systems are often estimated to remain a decade away. However, the complexity of cryptographic transition and risks such as adversarial data harvesting mean that organizations need to take informed and proportionate action today. Many other use cases require substantially lower levels of capability, with earlier impact expected in areas such as fundamental research and materials science.

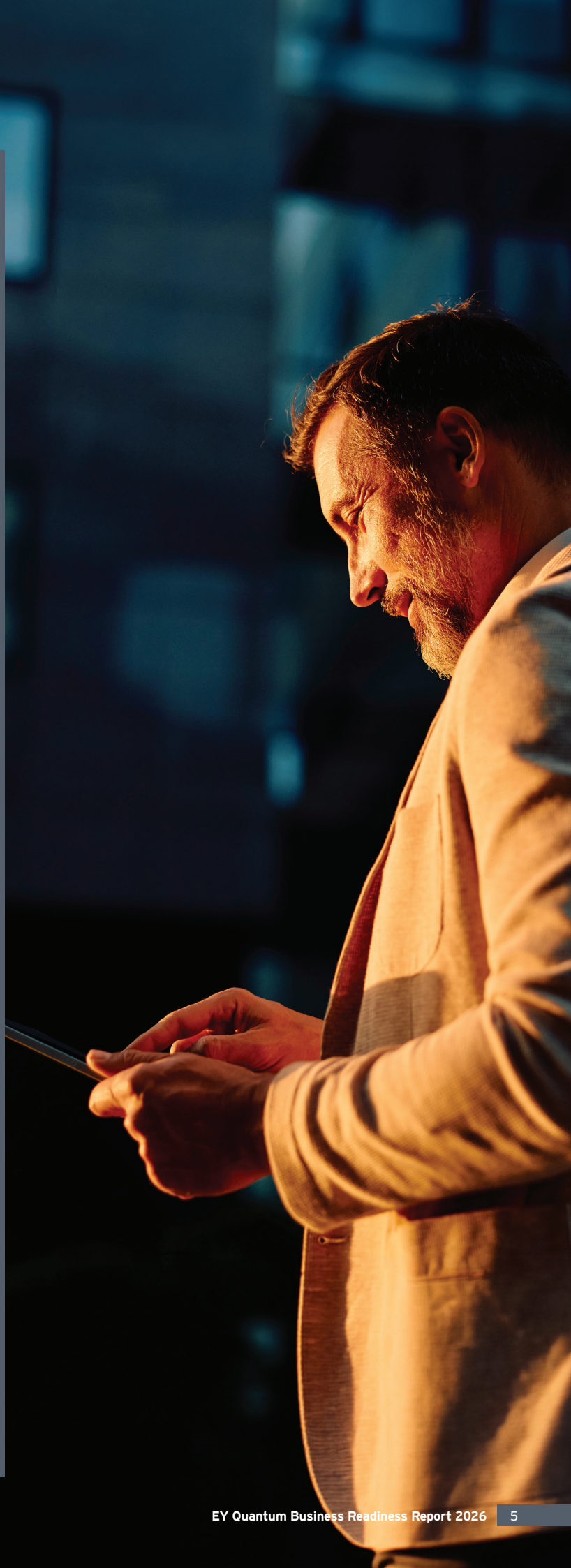
Looking ahead, progress in quantum computing is increasingly intertwined with advances and investment cycles with other technologies, including other quantum capabilities such as sensing, communications and timing, as well as with rapid developments in artificial intelligence. This convergence has the potential to alter development timelines in the coming years.

Finally, the survey highlights emerging considerations around the environmental and ethical implications of quantum technologies. Given the diversity of physical platforms and use-case trajectories, these impacts remain uncertain but potentially significant over the longer-term.

Understanding the role quantum technologies have to play in building resilient ecosystems will be an important focus as the technology continues to evolve.

We would like to thank the NQCC for their support as well as all survey respondents.

Piers Clinton-Tarestad
Partner, Technology Risk, EY LLP.



1. "Preparing for the quantum computing future", EY, 2022.
2. IYQ 2025, accessed 17 January 2026.
3. UK Department for Science, Innovation & Technology, National Quantum Strategy, National Quantum Strategy, accessed 17 January 2026.
4. UK Compute Roadmap, Department for Science, Innovation & Technology; gov.uk/government/publications/uk-compute-roadmap/uk-compute-roadmap, accessed 15 December 2025.
5. UK's "Quantum leap" to help beat disease, deliver high-paid jobs, and strengthen national security, as first country in the world to roll out Quantum computers at scale – GOV.UK, accessed 23 March 2026.

Chapter

01

Urgent but elusive: A paradox that risks stalling progress

Quantum computing is gaining boardroom attention, but direct action remains limited and uneven across sectors.

For most organizations, quantum computing remains paradoxical: simultaneously urgent yet intangible. This survey of 500 senior leaders across UK organizations with revenues over £150 million a year reveals a striking tension. Nearly nine in 10 (87%) expect quantum computing to disrupt their sector within five years – but only one-third (35%) have made it a strategic priority – revealing a clear gap between expectation and action.

> "Mind the gap: Expectations around quantum computing are high — 87% of leaders say it will significantly disrupt their sector within five years — but this is tempered by current investment levels, with only 35% rating it as a high or moderate priority in their technology strategy, rising to just 40% among organizations with more than £15bn in revenue.
>
> **Piers Clinton-Tarestad**
> Technology Risk, EY LLP.

This disconnect is further reflected in how leaders view quantum's operational impact. While disruption is expected sooner, just 21% surveyed believe quantum will play a significant role in their organization by 2030. Instead, 58% anticipate that shift between 2031 and 2035. This recalibrated outlook reaffirms the shift since the EY 2022 Quantum Readiness Report,[6] when nearly half expected significant impact by 2025.

This shift doesn't signal waning interest; it reflects the complexity and logistical challenges that an integration of this scale entails. Even those in IT, tech and data roles within organizations cite "difficulty in integrating with existing and legacy IT" as the number one challenge in adopting quantum in the short term (79%). Unlike AI, which can often be scaled with existing teams, quantum computing is perceived to be far more complex to implement, demanding access to niche hardware, advanced research and highly specialized talent. This level of complexity can often deter people from making the first move in experimentation.

However, organizations do not need to wait for proprietary infrastructure to begin. Software for experimenting with quantum computing and algorithms is already accessible via the cloud, enabling experimentation and use case development – even without internal capability. In many cases it's simply about sourcing and onboarding the right partners to get started.

Where are the conversations taking place?

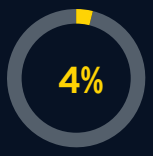
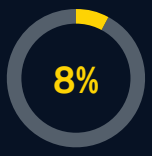
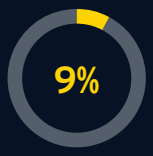
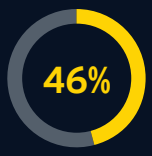
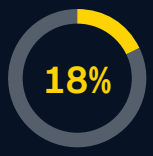
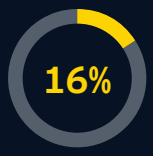
Only 4% of organizations surveyed say they have a formalized and funded quantum plan in motion. At the board level, 56% report having had preliminary discussions, though no formal plan exists. This figure drops to 46% among the C-suite and 37% at the director level – suggesting that awareness and engagement remain uneven across leadership tiers.

Sectoral differences are also emerging in the research. While overall only 12% of organizations have a formalised, funded plan in place this rises to 27% in technology, media and telecommunications and 35% in financial services.

6. "Preparing for the quantum computing future", EY, 2022.

Chart 1: Quantum planning remains sporadic, with sharp differences by sector

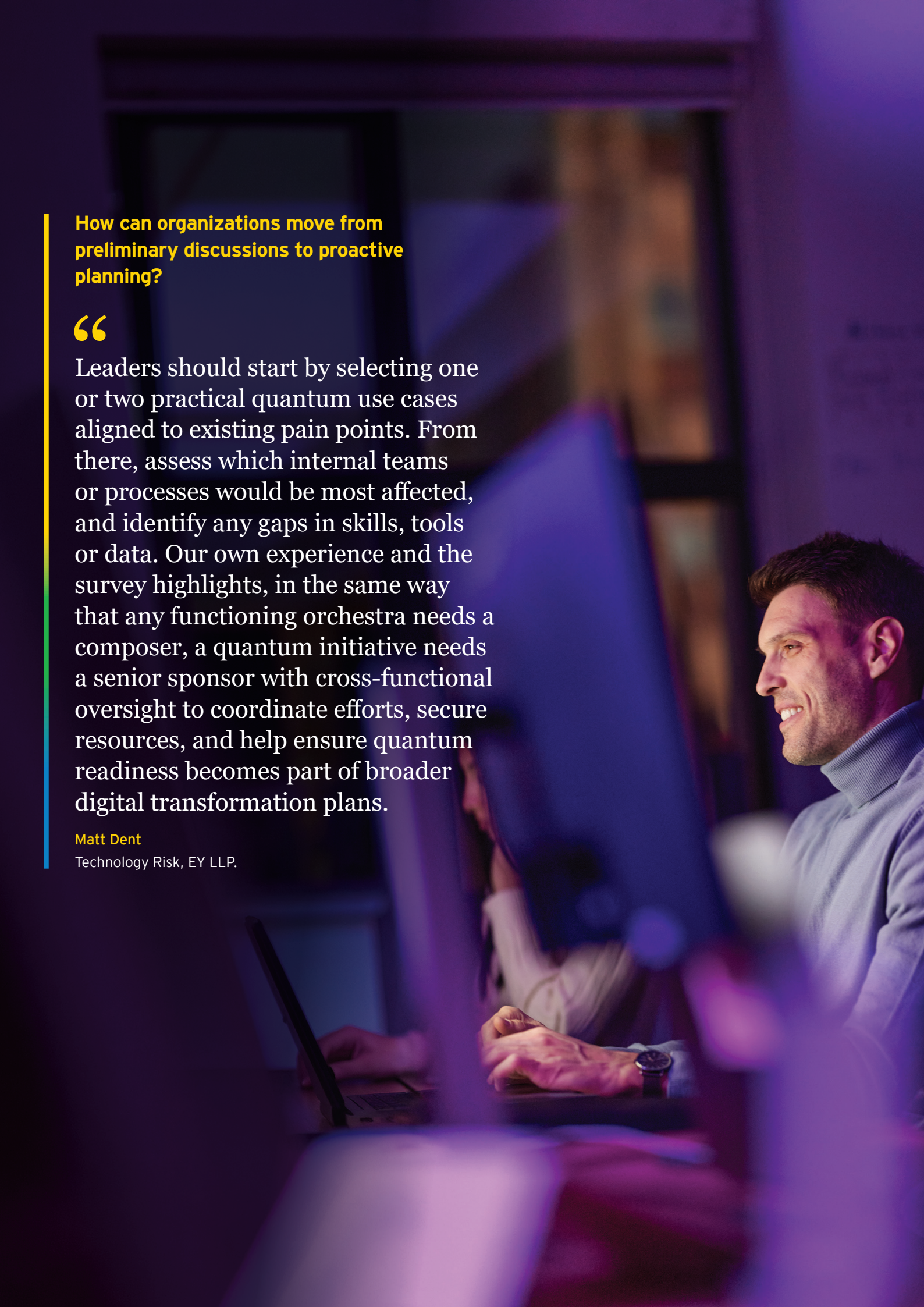
Does your organization have a formal plan for the adoption of quantum computing?

	We have a formalized and funded plan, which we have started to action	We have a formalized and funded plan, which we have not yet started to action	We have an outline of a plan, but it is not formalized and current activities are "side of desk"	We have had some preliminary discussions, but no plan yet exists	We do not have a plan, but hope to create one within the next year	We do not have a plan, and currently have no desire to create one
Total organizations						
Industrial Products and Mobility	3%	4%	12%	53%	14%	14%
Technology, Media & Entertainment, Telecommunications	12%	15%	3%	47%	14%	9%
Consumer Products and Retail	0%	2%	5%	47%	29%	18%
Financial Services	7%	28%	22%	29%	2%	12%
Power & Utilities; Oil & Gas and Chemicals	0%	7%	2%	58%	16%	16%
Health and Life Sciences	6%	9%	13%	41%	25%	6%
Professional Firms and Services	8%	2%	11%	47%	19%	13%

How can organizations move from preliminary discussions to proactive planning?

Leaders should start by selecting one or two practical quantum use cases aligned to existing pain points. From there, assess which internal teams or processes would be most affected, and identify any gaps in skills, tools or data. Our own experience and the survey highlights, in the same way that any functioning orchestra needs a composer, a quantum initiative needs a senior sponsor with cross-functional oversight to coordinate efforts, secure resources, and help ensure quantum readiness becomes part of broader digital transformation plans.

Matt Dent
Technology Risk, EY LLP.



Chapter

02

Ecosystem collaboration will move the needle on readiness

Coordinated partnerships will be essential to scaling quantum capabilities and accelerating organizational readiness.

The shift toward ecosystem-led engagement is reshaping how organizations approach quantum readiness. Rather than focusing solely on internal technical capability, organizations are broadening their lens — considering strategic partnerships, risk management frameworks, talent planning and early-stage use case development. The UK government's announcement of support for quantum technology reflects this need for ecosystem collaboration.[7]

This is a critical piece of the quantum puzzle. Organizations need to be asking themselves the following questions: Who are we partnering with? How are we managing quantum risk? Are we talent mapping for the roles of the future? What use cases are we exploring now to build fluency for the future?

Security is a case in point. Quantum computing's potential to break classical asymmetric encryption is well known. The UK's National Cyber Security Centre (NCSC) issued formal guidance in March 2025 urging organizations to prepare for post-quantum threats.[8]

Since the EY 2022 survey, organizational awareness of the quantum threat landscape has increased however this is yet to be translated to consistent action. For example, half of respondents (49%) are reliant on third-parties to address this risk but haven't yet engaged with them. This leaves a critical vulnerability, particularly as quantum capabilities scale and regulatory expectations rise.

Sustainability is another emerging frontier. Quantum simulation could accelerate breakthroughs in materials science, energy optimization and climate modelling — capabilities that many business leaders believe could support long-term climate goals. Four in five (80%) respondents say quantum computing will influence the UK's net zero targets and two-thirds (67%) expect it to impact their own sustainability strategies.

However, there's ambiguity in how that impact is understood. Some organizations may be focused on the energy demands of quantum infrastructure — though in practice, most will access quantum capabilities via Application Programming Interfaces (APIs) and cloud providers, which means their direct Scope 1 emissions (from owned operations) and Scope 2 emissions (from purchased energy) will remain limited. Others see greater potential in quantum's ability to unlock solutions to complex sustainability challenges.

Despite these potential implications, ethical governance remains underdeveloped. While two-thirds (67%) say they'll "consider" ethical governance, one in five (21%) say it's not important — suggesting ethical integration remains a low priority. This is a critical gap. As quantum capabilities scale, so too will the need for public trust, cross-border standards, and responsible deployment — something we discuss at length in the EY Quantum Ethics White Paper in collaboration with the University of Oxford.[9] Forward looking markets have an opportunity to lead here — not just in technology, but in stewardship.

7. UK's "Quantum leap" to help beat disease, deliver high-paid jobs, and strengthen national security, as first country in the world to roll out Quantum computers at scale — GOV.UK.
8. "Timelines for migration to post-quantum cryptography guidance," National Cyber Security Centre; ncsc.gov.uk/guidance/pqc-migration-timelines, accessed 17 January 2026.
9. EY & Oxford University Whitepaper, Towards Responsible Quantum Computing; ey.com/content/dam/ey-unified-site/ey-com/en-uk/newsroom/2024/06/ey-oxford-uni-whitepaper-quantum-ethics-05-2024.pdf, accessed 17 January 2026.

Chapter

03

Moving from boardroom awareness to enterprise action

Turning quantum awareness into action means reshaping models, strategies and talent at scale.

The business case for quantum is evolving. In the survey, leaders identified machine learning enhancement (43%) and optimization (40%) as the most disruptive long-term use cases — far ahead of cryptography (4%) or simulation (3%). This reflects a shift in perception: quantum computing is not just a security threat or scientific tool, but a potential accelerator of core organizational functions. Pricing, supply chains and AI models could all be reshaped by quantum algorithms.

Still, most organizations surveyed are in the early stage of their journey. Nearly half (46%) have had preliminary discussions but not created a plan. That is because steep barriers persist across the board: complexity (80%), market uncertainty (66%), integration challenges (60%) and talent shortages (47%) all feature highly — the latter being an especially prevalent concern among those in IT job functions (50% vs all other job functions at 40%). When it comes to prioritizing emerging technologies — almost all organizations (99%) prioritize generative AI, compared to just over one-third (35%) who see quantum computing as a priority — yet more than four in five (84%) fear losing competitive advantage if others move faster on it.

Those in tactical roles (heads of department, directors and management) are much more concerned about their organization's limited access to quantum hardware and software (52%) compared to strategic job roles (board members and c-suite) (38%) — suggesting a clear disparity in barriers for those who are embedded in day-to-day operations.

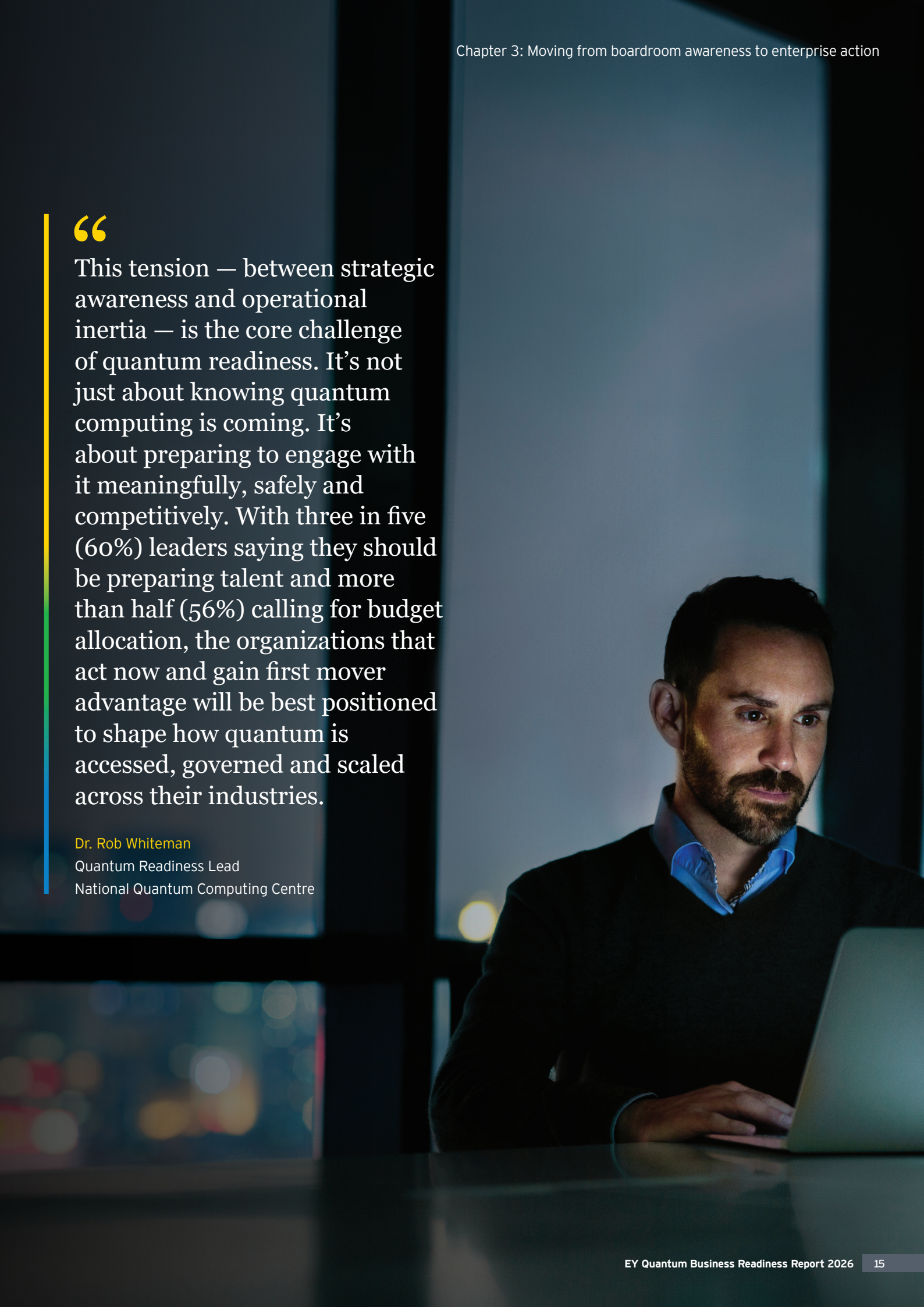
In internal transformation, three areas stand out as primary challenges. Planning and strategy models (63%), business models (56%) and talent strategies (54%) are the top areas leaders say will require substantial change to adopt quantum computing tools.

It is interesting to look at this breakdown by sector too. Sector responses vary widely, with financial services expecting their planning and strategy model to require the most change as a result of adopting quantum. For technology, media and telecommunications, this shifts to digitalization strategy. Leaders in healthcare expect it to be their research and development (R&D) model that will require the most change.

Chart 2: Quantum will reshape strategy, talent and business models – across all sectors

Where within your organization would the adoption of quantum computing tools require substantial change?

	Our planning and strategy model	Our business model	Our talent strategy	Our digitalization strategy	Our R&D model	Our production model	Our supply chain and sourcing model	Our ESG strategy
Total organizations	63%	56%	54%	52%	45%	35%	28%	14%
Industrial Products and Mobility	56%	59%	64%	49%	42%	42%	50%	18%
Technology, Media & Entertainment, Telecommunications	55%	58%	61%	71%	45%	36%	17%	33%
Consumer Products and Retail	59%	48%	41%	52%	45%	36%	48%	8%
Financial Services	76%	64%	52%	59%	24%	19%	5%	9%
Power & Utilities; Oil & Gas and Chemicals	70%	67%	63%	37%	70%	60%	33%	14%
Health and Life Sciences	59%	66%	41%	31%	72%	50%	31%	0%
Professional Firms and Services	62%	42%	55%	62%	42%	9%	6%	2%



> This tension — between strategic awareness and operational inertia — is the core challenge of quantum readiness. It's not just about knowing quantum computing is coming. It's about preparing to engage with it meaningfully, safely and competitively. With three in five (60%) leaders saying they should be preparing talent and more than half (56%) calling for budget allocation, the organizations that act now and gain first mover advantage will be best positioned to shape how quantum is accessed, governed and scaled across their industries.

Dr. Rob Whiteman
Quantum Readiness Lead
National Quantum Computing Centre

Chapter

04

Organizations must not delay talent and partner strategy

Early investment in talent and partnerships is critical to avoid being left behind in the quantum race.

In 2022, almost half (48%) of organizational leaders surveyed expected quantum computing to play a significant role in their sector by 2025. Today, that optimism has been tempered by experience. Just 21% of respondents now believe quantum will reach maturity by the end of this decade, while the majority (59%) expect meaningful impact to arrive between 2031 and 2035.

This recalibration should not be mistaken for retreat. On the contrary, it reflects a more mature understanding of where quantum technology truly stands. The shift in timelines is a positive development — a sign that organizations are moving beyond the pipe dream or hype technology stage and beginning to grasp the complexity and reality of integrating quantum into real-world business environments.

Quantum computing is not a linear extension of classical IT. It requires new architectures, new algorithms and fundamentally new ways of thinking. Rather than replacing classical systems, quantum computers will work alongside them — each addressing different problems. Still, the barriers to adoption identified in our survey — from technical complexity and market uncertainty to integration challenges and talent constraints — underscore just how significant that shift will be.

Talent, in particular, remains a critical constraint. Just over half of respondents (54%) say their talent strategy will need to change significantly to accommodate quantum computing. Yet only 13% are actively preparing for the skills they will need. This echoes the 2022 findings, where talent scarcity was identified as the most significant risk to quantum readiness. Four years on, the challenge remains unresolved.

The implications are clear: without early investment in workforce development and ecosystem engagement, organizations risk being locked out of the quantum economy. Building capability will take time — so starting now is critical.

Yet most organizations surveyed remain cautious. While 45% anticipate recruiting specialist quantum talent within the next three-to-five years, only 13% expect to do so in the immediate term. Similarly, just 16% plan to form partnerships with quantum suppliers or specialists in the next one to two years, despite 62% acknowledging that their quantum capabilities will likely be developed collaboratively. Most expect to form partnerships (38%) and establish governance protocols (37%) only in the next three-to-five-year window — or later.

Leadership planning is similarly delayed. Only 13% of respondents expect to appoint a dedicated quantum lead in the next one to two years. Just 14% expect to establish internal processes to govern quantum-related risks in the same period.

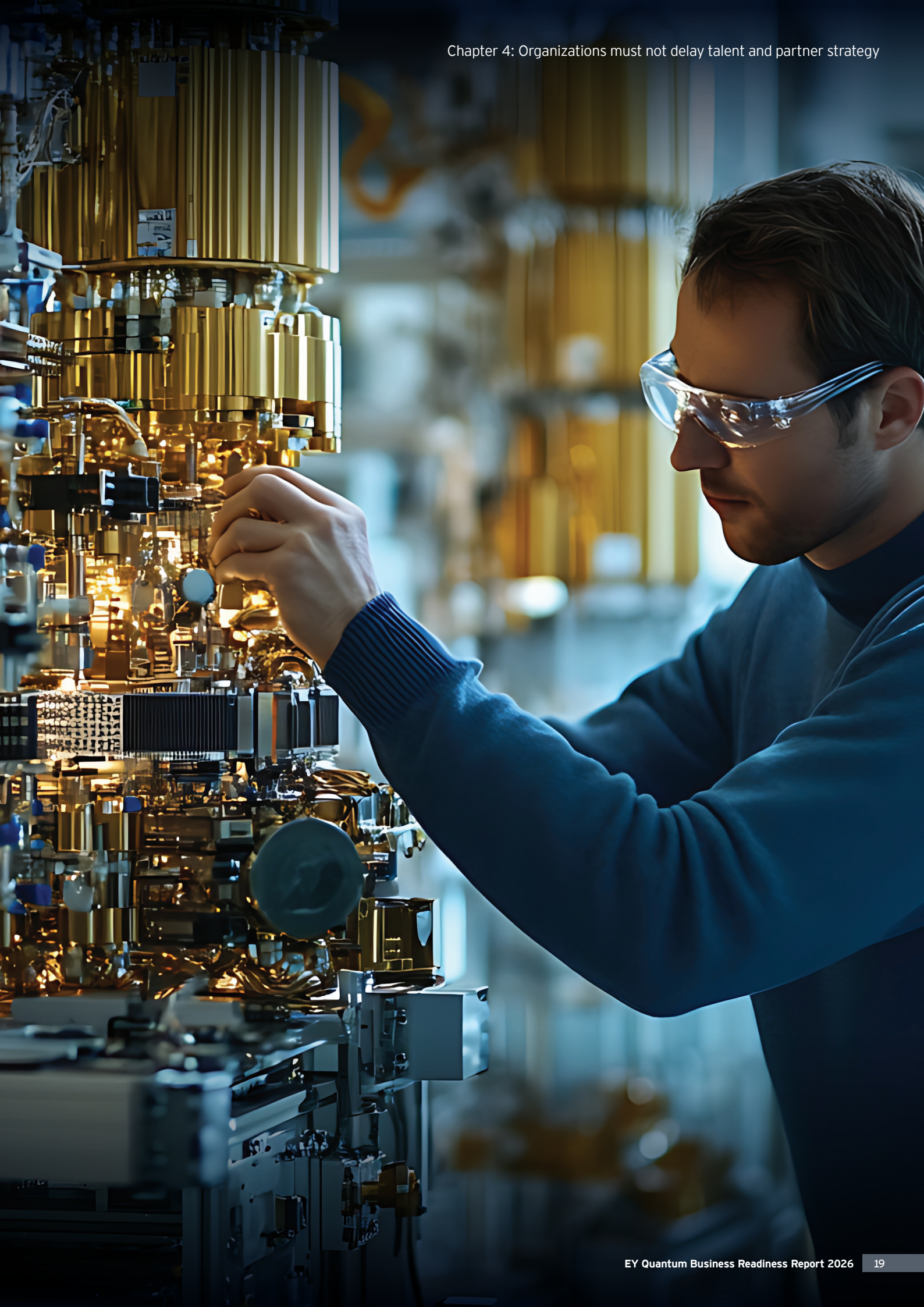
To harness the opportunity quantum presents, organizations must go further — investing not only in people, but in the broader technological readiness required to support adoption. This includes upgrading infrastructure, rethinking architecture, and embedding quantum into long-term strategy. Organizations don't need to do this alone — they should leverage the continued investment of governments and academia to accelerate capability-building and reduce risk.

> “These figures suggest that while quantum is widely recognized as a long-term disruptor, few organizations are taking near-term steps to prepare.
>
> **Craig Farrell**
> EY Technology, EY LLP.

Chart 3: Quantum planning is on the horizon but not moving at the necessary pace

What is your best estimate of when your organization will take the following actions in relation to quantum computing?

	We've already done this	Currently in progress	Likely to happen in the near-term (one-to-two years)	Likely to happen in the mid-term (next three-to-five years)	Likely to happen in the long-term (more than five years)	Unlikely to happen	Don't know
Lobbying the government for support and funding for quantum computing	(0%)	2%	17%	35%	42%	1%	2%
Actively working to develop code and algorithms in relation to quantum computing	1%	3%	11%	38%	45%	1%	2%
Appointing someone to lead any related quantum computing efforts	2%	4%	13%	36%	44%	1%	1%
Setting up partnerships with relevant suppliers and specialists in the quantum computing ecosystem	1%	5%	16%	38%	39%	1%	1%
Setting up processes to govern and manage related risks	1%	4%	14%	37%	42%	1%	1%
Actively tracking and monitoring the progress of relevant quantum computing technology vendors	1%	5%	15%	38%	38%	1%	3%
Setting up a pilot team to explore the potential for quantum computing in your business	2%	6%	16%	34%	40%	1%	1%
Seeking to recruit specialist quantum computing talent	1%	8%	13%	45%	31%	1%	1%
Strategic planning in relation to use of quantum computing	2%	8%	18%	42%	28%	1%	1%



Chapter

05

Governance in the quantum computing era

Managing quantum risks requires governance that builds trust, resilience and competitive advantage.

The expanding risk landscape

Quantum computing is advancing rapidly, bringing with it a new class of risks that demand urgent attention. As outlined in earlier chapters, this is not a typical technology shift – it challenges existing systems, regulatory frameworks and competitive dynamics. Organizations should be preparing for disruption that extends far beyond IT teams.

The organizational leaders surveyed identified a broad spectrum of risks associated with quantum computing. The most immediate concern is competitive pressure. Eight in ten (83%) respondents worry about the risk of losing market position as others in their sector adopt quantum to accelerate innovation or reduce time to market.

This is closely followed by fears of rapid obsolescence in existing IT systems (81%) and the need to comply with future regulation (80%). Disruption to core business models (78%) and the threat of quantum-enabled cyberattacks (75%) also rank highly. When it comes to organizational awareness of risks, though those in IT specific roles do have a slightly heightened awareness of how leadership is paying attention to potential challenges, it's not just this cohort who feel concerned.

Organizations shouldn't feel they have to tackle these challenges alone. There is an onus on policy makers to support organizations with clarity on regulations around quantum. Not just to manage risk, but to accelerate innovation and ensure the technology scales with trust and transparency.

Chart 4: Organizational leaders are paying attention to the potential business risks emerging from quantum

How much attention is your organization's leadership currently paying to the following potential future business risks posed by quantum computing?

	Average	Those in IT specific roles	All other roles
Loss of competitive advantage as others in your sector use quantum computing to build better products and services, or to go to market faster	83%	85%	79%
Rapid obsolescence of your existing IT tools	81%	85%	74%
Need to comply with potential future regulation	80%	82%	76%
The potential for disruption of your core business model	78%	77%	81%
Bad actors having better tools to overcome traditional encryption and security protocols	75%	77%	70%
The need to build appropriate governance and protocols for this new technology	73%	74%	73%
Lack of public trust in the technology	72%	76%	67%
An inability to find talent if you need to adopt quantum computing tools quickly	69%	69%	68%
Potential for ethical and societal risks	67%	69%	65%

The concerns addressed above are not hypothetical. As quantum capabilities mature, organizations will inevitably face the prospect of adversaries — both nation state and criminal — gaining access to tools that can break encryption, optimize operations at unprecedented speed, or simulate complex systems with transformative efficiency.

This disconnect highlights the need for proactive governance. Waiting for regulatory clarity or technological maturity will leave organizations exposed. Instead, leaders must begin assessing their current exposure, engaging with policymakers and developing internal protocols for quantum risk management. This could include actions such as inventorying cryptographic assets, evaluating supplier readiness and integrating quantum into broader enterprise risk frameworks.

Embedding ethics and transparency into quantum strategy

Beyond operational risk, quantum computing raises deeper questions about ethics, transparency and public trust. As with artificial intelligence, the deployment of quantum technologies will require organizations to navigate complex societal expectations — from data privacy and algorithmic accountability to equitable access and environmental impact.

Yet current levels of preparedness remain mixed, impacted by their maturity of using the technology. While more than 80% of respondents at the "Engaging" or "Early" stages of use cases said developing ethical guidelines and practices for the responsible use of quantum computing is very important, this rises to 100% for those currently engaging with quantum

Chart 5: Developing ethical guidelines and practices to build public trust for the responsible use of quantum increases as organizations engage more with quantum technology

How important is it for your organization to develop ethical guidelines and practices to build public trust for the responsible use of quantum computing?

	Engaging	Early stages of testing use cases	Identified use cases	Not identified use cases/not started
It is very important	100%	79%	8%	1%
It is something we will consider	0%	21%	86%	63%
It is not important to us	0%	0%	7%	36%
Don't know	0%	0%	0%	0%

computing. And for those who have not yet started engaging or testing use cases, less than 5% think it is very important. This suggests increasing recognition of important of ethical considerations as organizations engage more with the technology. This gap between intention and action is particularly striking given the scale of anticipated disruption and the potential for public concern.

Embedding ethics into quantum strategy is not just about compliance – it's about building trust, managing risk and ensuring long-term value. Organizations that act early on responsible innovation will be better positioned to influence standards and scale quantum technologies with confidence.

To that end, organizations should begin by identifying where ethical risks may arise in their quantum use cases, establishing cross-functional governance structures and engaging with regulators, academia and civil society to shape responsible innovation frameworks. As quantum capabilities grow, so too must the systems that govern them.

> "These figures suggest increasing recognition of the importance of ethical considerations as organizations engage more with the technology. Frameworks for responsible innovation can support organizations in addressing ethical considerations and building public trust, moving from awareness to action. The Responsible Quantum Industry Forum, led by the NQCC and industry co-chairs techUK and UKQuantum, aims to enable the quantum industry to put responsible quantum into practice, building on shared principles and shaping next steps as the technology evolves.

Dr Natasha Oughton
Quantum Computing Policy and Ethics Lead,
National Quantum Computing Centre

Chapter

06

Conclusion: Preparing for quantum at enterprise scale

Preparing now ensures organizations can scale quantum with confidence and shape its future impact.

Building for a more resilient quantum future

Quantum computing is advancing quickly. While few organizations are ready to deploy it at scale, most expect disruption within the next three-to-five years. The challenge now is to actively prepare for it with intent — and without delay. This report has outlined the strategic, operational and ethical dimensions of quantum readiness and the data shows that organizations are behind where they ideally need to be.

Organizations yet to embark on preparations should act promptly to avoid falling behind. History repeatedly shows that organizations that are slow to embrace breakthrough technologies, such as AI, cloud computing or digital platforms, risk falling behind their more agile competitors. Organizations that delayed integrating these innovations then often struggled to close the gap, facing lost market share and competitive disadvantage compared to early adopters.

Therefore, organizations should consider taking the following six steps to start actively preparing:

- **Track external signals:** Quantum progress is uneven but accelerating. Organizations should monitor developments across hardware, algorithms, and policy — both within their sector and beyond. Staying informed is critical to avoid being blindsided by competitor moves, regulatory shifts, or sudden leaps in capability.
- **Assess internal readiness:** Most organizations are delayed in mapping out how quantum could affect their business. A cross-functional team should urgently assess readiness through both a risk and opportunity lens — identifying where quantum could create value and where vulnerabilities may emerge. This includes reviewing infrastructure, governance and exposure to post-quantum security threats, as well as evaluating how quantum capabilities might enhance core operations.
- **Identify the talent you'll need:** Quantum readiness is as much about people as technology. Organizations should assess internal capabilities and external talent needs — from technical specialists to strategic leaders. With only 13% actively preparing talent today, early movers will have an advantage in securing the right people.
- **Explore use cases:** Quantum's potential is vast, but not all use cases are equally relevant and the ability to deliver impact depends on the type of quantum computer available. Organizations should distinguish between "useful" fault-tolerant quantum computers — which could unlock breakthroughs in fields like medicine, materials science, and optimization — and cryptographically relevant quantum computers (CRQCs), which are sophisticated enough to break current encryption standards and have far-reaching security implications. For most, the greatest near-term value will come from exploring use cases in optimization, simulation and machine learning enhancement where early experimentation can build fluency and clarify organizational direction.
- **Understand the ecosystem:** The quantum supplier landscape is growing but fragmented. Organizations should assess which partners are best positioned to support pilots and long-term initiatives. Building trusted relationships now will pay dividends as the technology matures.
- **Build enterprise fluency:** Quantum computing can feel inaccessible to non-specialists. Organizations should invest in education across leadership, technical teams, and operations — demystifying the technology and embedding it into broader innovation and risk strategies.

While this research draws on UK-based respondents, the insights are globally relevant. The challenges around talent scarcity, ecosystem complexity and governance uncertainty are shared across all markets. As quantum capabilities scale, organizations worldwide will face similar decisions about when to act, how to prepare and what role they want to play.

As summarized at the close of the 2022 report, quantum readiness is not so much a gap to be assessed as a road to be walked, with next steps being regularly revisited as the landscape evolves. That message holds even more weight today. Those that move early — with clarity, collaboration, and purpose — won't just be braced for disruption. They'll help shape the global quantum economy.

About this research

Between 8 and 29 October 2025, the global EY organization conducted research to understand how prepared organizations are for quantum computing. The research explored responders' perceptions of quantum computing, how it may impact their organization and how they are preparing for adoption. Through an anonymous online survey, responses were collected from 500 UK-based respondents who had at least a limited understanding of quantum computing. Of these, 30% were c-suite or board members and 70% heads of department of directors. 65% were involved in the IT function and 35% non-IT. The sample was split across sectors: Consumer Products and Retail, Digital and Technologies, Financial services, Manufacturing, Professional and business services and Real Estate, Hospitality and Construction.

To participate in the survey, respondents were required to work for organizations with £150m or more in annual revenue and 38% had revenues of £15b or more.

About the NQCC

The NQCC is the UK's national lab for quantum computing, dedicated to accelerating the development of quantum computing by addressing the challenges of scaling up the technology. The centre is working with businesses, government, and the research community to deliver quantum computing capabilities for the UK and support the growth of the emerging industry.

The NQCC's programme is being delivered jointly by UKRI's research councils, EPSRC and STFC. It is a part of the National Quantum Technologies Programme (NQTP) to develop and deliver quantum technologies across the areas of sensing, timing, imaging, communications and computing.

The centre is headquartered in a purpose-built facility on STFC's Rutherford Appleton Laboratory site at the Harwell Campus in Oxfordshire.

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