

BUILDING REGULATORY MATURITY: FROM QUANTUM SECURITY TO QUANTUM ADVANTAGE

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ABOUT

The Global Finance & Technology Network (GFTN) is a Singapore-headquartered organisation that leverages technology and innovation to create more efficient, resilient, and inclusive financial systems through global collaboration. GFTN hosts a worldwide network of forums (including its flagship event, the Singapore FinTech Festival); advises governments and companies on policies and the development of digital ecosystems and innovation within the financial sector; offers digital infrastructure solutions; and plans to invest in financial technology startups through its upcoming venture fund, with a focus on inclusion and sustainability.

For more information, visit www.gftn.co



The Point Zero Forum is an annual gathering of 2,000 leading central bankers, regulators, policymakers, industry leaders, technologists, and investors from around the world. Over three days of dialogue and collaboration, we work to align policy, finance, and technological roadmaps to advance sustainability, inclusivity, innovation, and efficiency in the global financial ecosystems.

For more information, visit <https://www.pointzeroforum.com/>



GFIN is a network of over 90 organisations committed to supporting financial innovation in the interests of consumers. It seeks to provide a more efficient way for innovative firms to interact with regulators, helping them navigate between countries as they look to scale new ideas. This includes the ability to apply to join a pilot for firms wishing to test innovative products, services or business models across more than one jurisdiction.

GFIN also aims to create a new framework for co-operation between financial services regulators on innovation-related topics, sharing different experiences and approaches.

For more information, visit <https://www.thegfin.com/>



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INTRODUCTION

In June 2026, the Global Financial Innovation Network (GFIN) and Global Financial Technology Network (GFTN) convened financial service regulators, industry leaders, and quantum innovators.

The roundtable explored the progress made across the sector in preparing for and mitigating the quantum-related cybersecurity risk, and the lessons that experience could offer as stakeholders begin exploring potential quantum applications. While continued progress on quantum security remains essential, the roundtable considered how the sector can expand its focus towards the collaboration and experimentation required to capture future quantum innovation opportunities.

The discussion was shaped by GFIN's ongoing Project Otto, which seeks to provide a framework for measuring regulatory maturity across both quantum security and quantum innovation. The roundtable provided an opportunity to bring stakeholder experiences and perspectives to that work.

The session was designed to enable progressive exploration and synthesis of perspectives. Participants reflected on the quantum

security journey and discussed what translated early awareness into organisational action. The discussion then moved to the role of regulatory engagement, specifically what actions added value or changed behaviours. Finally, participants discussed the extent to which the lessons from quantum security could support experimentation, investment and the adoption of quantum applications in financial services.

Project Otto

Led by the UK's Financial Conduct Authority (FCA), Project Otto is a world first GFIN initiative focused on understanding what regulatory maturity means in the context of quantum security and quantum innovation.

As a broader programme of work, Project Otto provided a starting point for the roundtable, while the discussion brought wider stakeholder experiences and perspectives to the questions it is exploring.

1. CHAIR'S CLOSING TAKEAWAYS

In closing the session, five takeaways stood out. These were the points that connected the discussion on quantum security to the future agenda for quantum applications.

1 Progress should not become complacency

The room recognised real progress on quantum security, but also that there is more action needed. Awareness has increased, standards have emerged, migration planning has begun and regulators are engaging much more actively with industry. But there is still a substantial journey ahead. Regulators will need to continue working alongside firms as migration moves from planning into implementation, while at the same time beginning to build the capabilities, relationships and regulatory understanding needed for the applications journey.

2 Coordination and competitiveness will need careful balance

On the security side, the case for interoperability, international alignment and compatible regulatory approaches is clear. As attention turns towards applications and economic opportunity, jurisdictions will naturally think more about domestic competitiveness, investment and the strength of their own quantum ecosystems. That creates an important question for regulators: how do we support national innovation and competitiveness without creating fragmentation that ultimately weakens the global financial system? Balancing those two forces may become one of the defining regulatory challenges of the next phase.

3 Awareness raising remains a shared duty

The security journey showed the importance of raising awareness clearly and repeatedly. Regulators, financial institutions and technology providers have all played a role in cutting through the noise, explaining the scale of the challenge and giving organisations a clearer sense of the timelines involved. The question now is whether we can apply that lesson as effectively to quantum applications: cutting through the hype, being clear about where genuine advantage may lie, and helping industry understand both the scale of the opportunity and the journey required to reach it.

4 Regulatory leadership means setting direction

Regulators have a role in setting out expectations, signalling priorities and making clear what they want from industry and from themselves. Some regulators may choose to move earlier or take a more active leadership role than others. But at the very least, we should be asking what a credible baseline of regulatory maturity looks like across jurisdictions and how we collectively provide enough clarity for firms to act.

5 Experimentation, experimentation, experimentation

The strongest repeated message was experimentation: regulatory-driven, industry-driven and collaborative. Experimentation allows us to test assumptions, uncover issues we had not anticipated, and ask better questions. If there is one practical lesson that cuts across the entire discussion, it is that we need to keep learning by doing.



2. KEY DISCUSSION POINTS

Lessons from the quantum security journey

Readiness proved more credible than predictions

Across both regulators and industry, the most successful early programmes avoided precise predictions on when the threat would materialise. Instead, stakeholders built momentum by using a frame of readiness for a potentially high-impact, non-linear technology transition supported by measured resource and discernible milestones.

An accumulation of signals rather than a single breakthrough

The publication of PQC standards, cybersecurity agency guidance, regulatory communications and migration plans by major technology companies progressively changed the decision context. As these signals converged, the debate shifted from whether organisations should prepare, to how and when they should do so.

Experimentation provided evidence for early action

Early pilots and applied experimentation helped to make the topic of quantum security more tangible and surfaced practical challenges such as interoperability, cost, and operational performance.

Senior sponsorship supports sustained organisational activity

Early quantum initiatives benefited from senior leaders who understood the non-linear evolution of emerging technologies. Maintaining regular dialogue with C-suite, sharing external developments, and bringing quantum risks into formal governance committees helped support measured investment and embed quantum within wider organisational decision-making.

What can the quantum security journey teach us about regulatory engagement?

Regulators can translate uncertainty into actionable expectations

Alongside the emergence of post-quantum standards and migration timelines, regulators played a central role in supporting industry players to prioritise actions. By clarifying direction and expected outcomes, regulators enabled firms to translate technological uncertainty into practical roadmaps and early action.

Experimentation can support regulatory credibility

Through experimentation, regulatory authorities have been able to better understand the operational, architectural, and performance challenges associated with the quantum security migration. This has strengthened the evidence base for future regulatory expectation and provides authorities with greater credibility when asking industry to act.

International alignment matters, even when uniformity is unrealistic

Discussants explored the challenges associated with different national timelines, regulatory approaches, and the coexistence of different cryptographic ecosystems, particularly for firms operating multinationally. These conditions can force difficult choices over how to prioritise investment and sequence migrations across jurisdictions. Complete harmonisation may be unrealistic due to national and regulatory competitiveness, but greater consistency in direction, compatible timelines for migration action, and interoperability can significantly reduce the challenge.

Successful regulatory action is not purely rulemaking

Experiences of the quantum security journey have demonstrated that regulators can add value beyond creating formal regulation. Regulators have been most effective when convening the ecosystem to translate complex technical issues into outcomes that decision-makers can understand. By asking the right questions, bringing the right stakeholders together and signalling that an issue matters, regulators have materially influenced widespread industry action. This collaborative role is also central to GFIN and Project Otto, providing a forum for regulators to share experience, develop collective understanding and explore what regulatory maturity means in practice.

Applying the lessons to quantum innovation

Regulatory clarity can unlock further experimentation

Regulators cannot leverage compliance obligations to facilitate industry experimentation on quantum use cases. Instead, regulators can reduce uncertainty around how experimentation will be treated, how existing regulatory framework apply, and what risks need further consideration. Equally, more direct regulatory engagement can make it easier for firms to justify continued experimentation programmes.

Experimentation is only the first step

Participants repeatedly highlighted the value of learning by doing. However, application experimentation must move beyond generating more proofs of concepts towards testing the path to deployment. Similarly to the security journey, future application experimentation should test how applications can be deployed, governed, and scaled in a real financial environment.

There is a pre-competitive window for collaboration

The financial services industry has made a significant amount of progression in quantum security. This is, in part, thanks to the non-competitive nature of the topic that facilitates widespread collaboration. In the context of quantum innovation, there is currently a window in which firms, technology providers and regulators can collaborate on shared challenges without undermining future competition. Sandboxes, shared test environments and non-competitive use cases could accelerate collective learning before clearer commercial advantage causes incentives to diverge.



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