Post Quantum Readiness Is a Leadership Problem, not a Cryptography Problem

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February 2026

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Executive Summary

Post quantum readiness is often framed as a future cryptographic problem. In reality, it is a present governance and leadership challenge with long-term consequences. While timelines for large-scale quantum computing remain uncertain, the risks associated with delayed preparation are well understood and difficult to reverse. Institutions that defer engagement narrow their future options and increase transition risk. This paper argues that post quantum readiness should be treated as a leadership responsibility rather than a technical milestone and examined within the broader convergence of cyber, artificial intelligence, and quantum risk.

Purpose

This paper distills and expands the post quantum argument from the flagship essay *Preparing Leaders and Institutions for Cyber, AI, and Quantum Risk*. It is intended for senior leaders and policymakers responsible for cybersecurity, data protection, and long-term institutional risk.

The Misconception

Post quantum readiness is often treated as a future technical challenge that can be addressed once timelines are clearer and standards are finalized. This framing misunderstands the nature of the risk. The most consequential challenges associated with post quantum transition are not cryptographic. They are institutional.

Quantum computing introduces a long-horizon but irreversible risk to widely used encryption methods. Data encrypted today may need to remain secure for decades. Communications intercepted now can be stored and decrypted later. These realities shift the problem from one of algorithm selection to one of preparedness and governance.

Why Delay Increases Risk

Many institutions defer post quantum planning because operational urgency feels distant. While this instinct appears prudent, it overlooks the complexity of cryptographic transition. Migration affects infrastructure, applications, supply chains, procurement cycles, and interagency coordination. These elements evolve slowly and cannot be changed quickly without disruption.

Waiting for certainty narrows future options. Once technical thresholds are crossed, institutions face compressed timelines, higher costs, and contested accountability. In this context, inaction is not neutral. It is a decision to accept greater transition risk.

The Governance Gap

Post quantum risk often falls between organizational boundaries. Security teams understand cryptographic exposure but may lack authority to drive enterprise-wide planning. System owners focus on mission delivery rather than long-term cryptographic durability. Leadership may assume the issue will be addressed when standards mature.

Without explicit governance, responsibility becomes diffused. Each group assumes another will act when necessary. This pattern persists until transition becomes unavoidable, at which point decision-making becomes reactive rather than deliberate.

Leadership Responsibility

Effective post quantum readiness does not require predicting when large-scale quantum computing will arrive. It requires leadership engagement before urgency forces action. Leaders must establish governance structures that clarify ownership, elevate risk early, and enable coordinated planning across systems and agencies.

Institutions that treat post quantum readiness as a leadership responsibility preserve flexibility and reduce disruption. Those that defer engagement often encounter the risk as a crisis rather than a managed transition.

Implication

Post quantum readiness is best understood as a test case for institutional decision-making under uncertainty. It demonstrates why emerging technology risk cannot be governed solely through technical expertise or delayed until timelines are certain. Leadership awareness and governance capacity determine outcomes long before cryptography becomes operationally obsolete.

Relationship to the Flagship Essay

This position paper draws directly from Sections 1, 2, and 6 of *Preparing Leaders and Institutions for Cyber, AI, and Quantum Risk*, which examines post quantum risk as part of a broader convergence of cyber, AI, and quantum challenges.