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# From Sovereignty to Managed Interdependence: A Forward-Looking Agenda for EU Quantum Policy

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**Brussels, 26 October 2026** - Europe risks framing quantum sovereignty too narrowly – as self-sufficiency across the entire quantum computing stack. As the EU plans the release of the Quantum Act, a new ECIPE study argues that this approach is unlikely to deliver the outcomes policymakers seek. Europe should pursue managed interdependence: reserving direct control for the narrow set of dependencies that pose genuine and severe strategic risks, while strengthening the international collaborations, partnerships and capabilities that allow European ecosystems to innovate, commercialise and benefit from quantum computing.

The paper shows that quantum is particularly ill-suited to a self-sufficiency model. Research in quantum information science is more internationally collaborative than in other strategic technologies, including AI and cloud computing, and this openness is a structural feature of the field rather than a sign of its immaturity. Quantum capabilities accumulate in specialised clusters that depend on global networks, making the cluster the relevant unit of competition. And quantum computing is expected to create most of its economic value through adoption across the wider economy rather than through direct ownership of hardware. The ecosystems best placed to benefit are not the most self-contained, but the ones that combine international connectedness with commercial and absorptive capacity.

Dependencies and risk are not evenly distributed across the quantum computing stack. At the software layer, the priority is openness, interoperability, portability and avoiding vendor lock-in. At the control layer, it is operational resilience: ensuring that systems can be maintained, adapted and operated without dependence on a single supplier. At the hardware layer, where some dependencies are more concentrated, it is supply security, built on European strengths, trusted partners

and diversified supply. This reflects a fundamental distinction between controlling inputs and securing outcomes: what matters for Europe is access to quantum capabilities, competitive ecosystems, and firms able to capture value from adoption – goals that do not always require domestic ownership of every element of the stack.

***"Europe does not need to own every part of the quantum stack to be sovereign in quantum; it needs to be able to access, use and shape the best quantum capabilities, and to remain a partner others cannot do without"***, said Fredrik Erixon, co-author of the study and Director at ECIPE. "***Self-sufficiency would cut Europe's strongest clusters from the networks that make them succeed",*** he added.

The paper therefore recommends replacing the ambition of technological independence with managed interdependence: strengthening areas where Europe has competitive advantages, reserving control for the few genuinely sensitive dependencies that meet a demanding threshold, and building trusted partnerships for capabilities that are globally distributed. For European policymakers, the objective should be to ensure that Europe remains an indispensable participant in the global quantum network, protects critical capabilities, develops world-class clusters and enables widespread industrial adoption.

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