



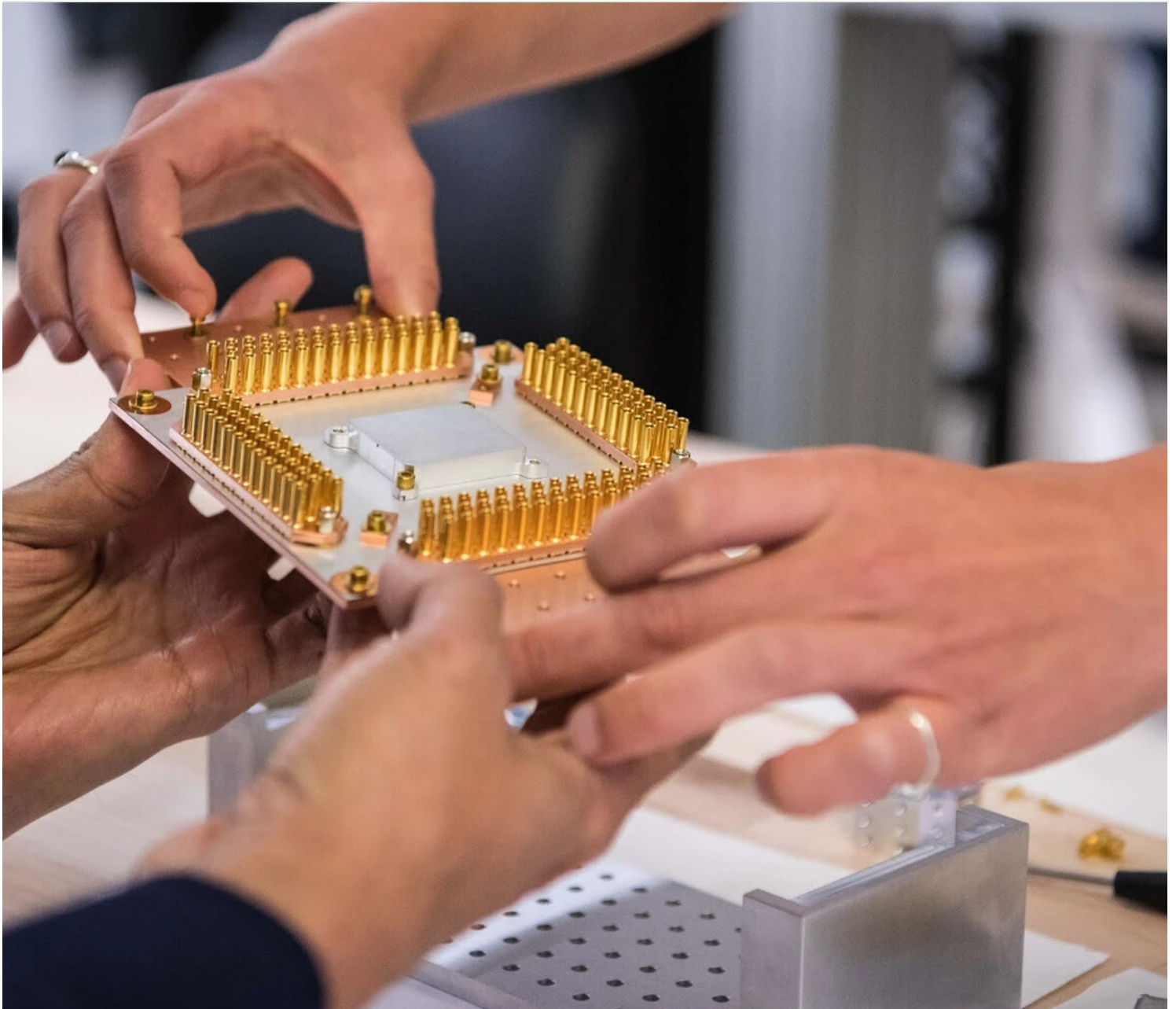
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EMERGING TECHNOLOGIES

Can we build a safe and inclusive 'quantum economy'?

Feb 5, 2024



From healthcare to renewable energy, the impact of quantum technologies promises to be far-reaching.
Image: Reuters

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This article is part of:



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- The World Economic Forum's *Quantum Economy Blueprint* is a new guide for building a 'quantum economy', accessible to all nations and societies.
 - This includes steps for creating a national quantum strategy, broadening access to quantum technologies and raising awareness about them.
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Quantum technologies can transform whole industries, advance human society and tackle some of the world's toughest challenges. They can also find solutions to problems that classical computers have not and may never solve.

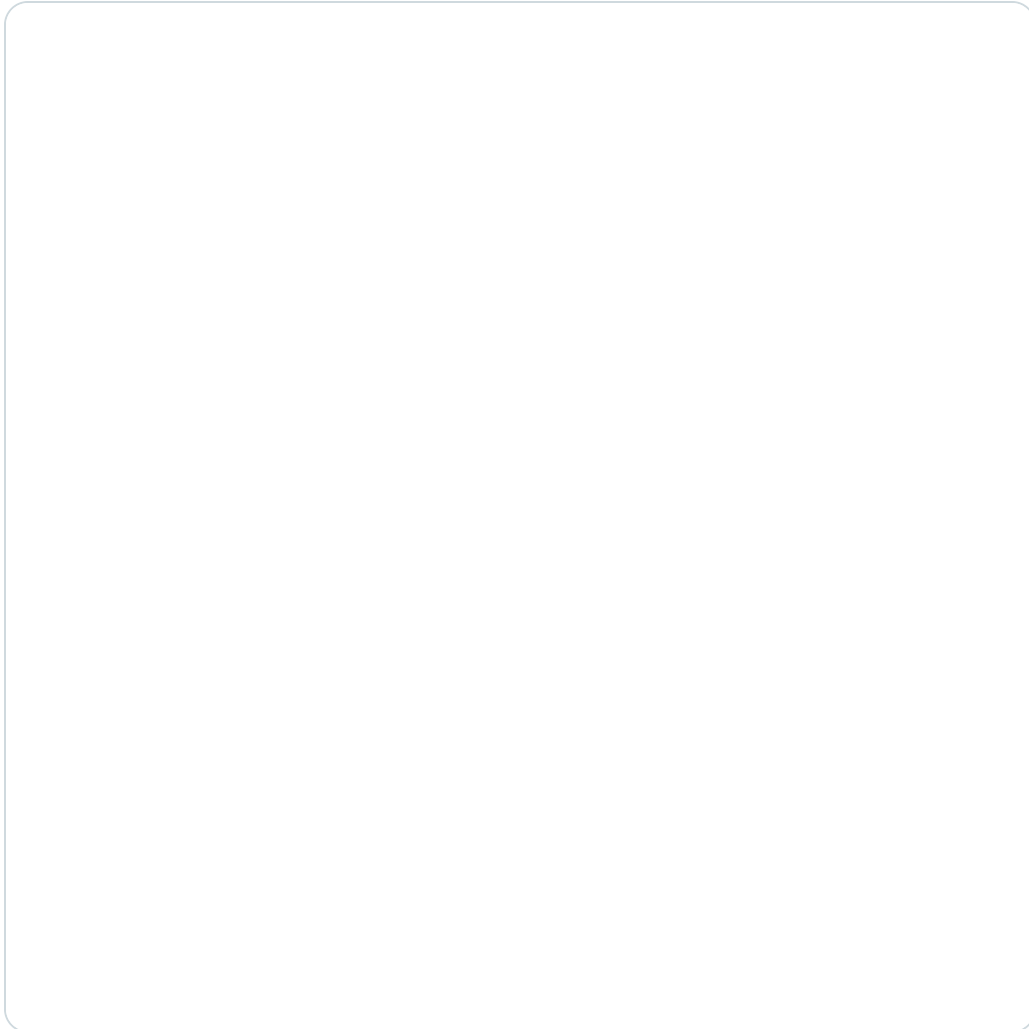
In a new report, the World Economic Forum sets out a framework to build a 'quantum economy' that is accessible to all nations and societies, developed responsibly, and focused on economic growth and job creation.

The *Quantum Economy Blueprint* has been published in collaboration with technology company IBM and SandboxAQ, an artificial intelligence and quantum technology company.



[@IBM](#), to devise strategies that foster the advancement of the global [#quantum](#) economy, ensuring its universal benefits as quantum technologies progress.

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17



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individual particles such as atoms – the smallest building blocks of matter that make up everything around us; photons (particles of light) and electrons (particles charged with energy).

Using quantum mechanics – the science of how these particles behave – scientists are unlocking advances, including powerful quantum computers with immense processing power and quantum communications networks that can't be hacked.

Through new ways of processing, gathering and sending information, quantum technologies are pushing the frontiers in computing, sensing and communication, among other areas.

Why does quantum technology matter?



These innovations should be shared for “the betterment of society, the sustainability of the planet and the welfare of future generations”, says SandboxAQ CEO, Jack Hidary in an interview with the World Economic Forum (which you can watch in the video above).

Making these technologies accessible to everyone will have a “broad and long-lasting impact” on the future of society, he says.

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What's the current state of quantum technology development?

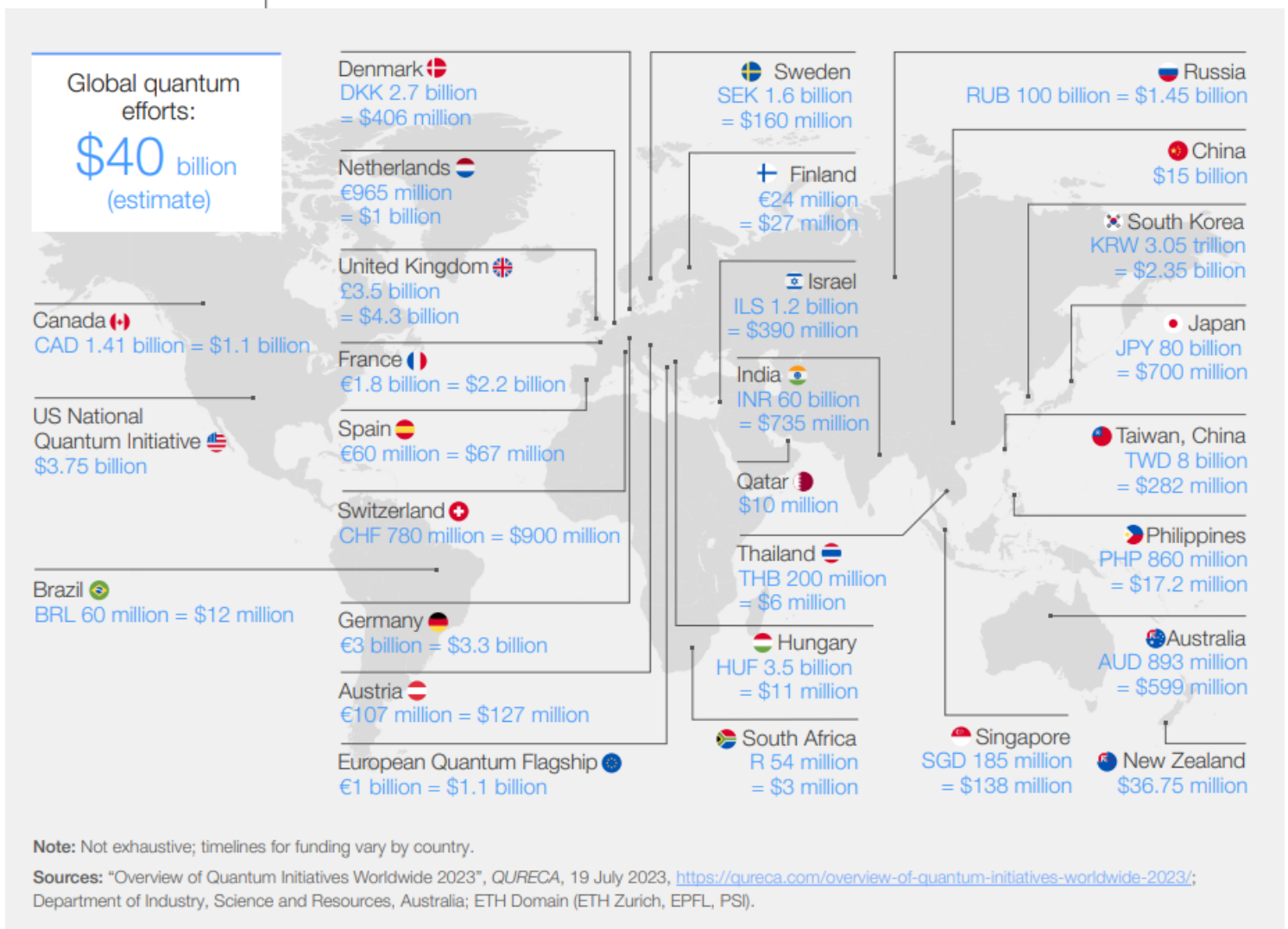
Quantum science and technology currently attracts around \$40 billion globally, in research and innovation funding from the public sector; the number is continually rising.

Combined with artificial intelligence, quantum technologies are already being used in - for example - highly sensitive quantum sensors that drive key applications in medicine and navigation.



The *Quantum Economy Blueprint* is a framework for all countries, regions and industries globally to develop inclusive and democratic strategies for using quantum capabilities.

FIGURE 1 | Public sector investments in quantum technologies worldwide



Quantum technologies have attracted \$40 billion in public funding. Image: World Economic Forum

What's in the *Quantum Economy Blueprint*?



To develop quantum technologies quickly and responsibly, the report says collaboration is key. Government, academia and industry can also work together to raise awareness about quantum technologies.

The *Quantum Economy Blueprint* also looks at building a quantum-literate workforce and using quantum technologies to strengthen national and economic security.

Other important themes include creating standards for quantum technologies, developing them responsibly and addressing cybersecurity threats from advanced quantum algorithms.



Source: World Economic Forum, *Quantum Computing Governance Principles*, 2022.

The Quantum Economy Blueprint offers guidance on how countries can develop quantum strategies. Image: World Economic Forum

Have you read?

- [The world is heading for a 'quantum divide': here's why it matters](#)
- [The quantum security era is coming – here's how leaders can prepare for it](#)



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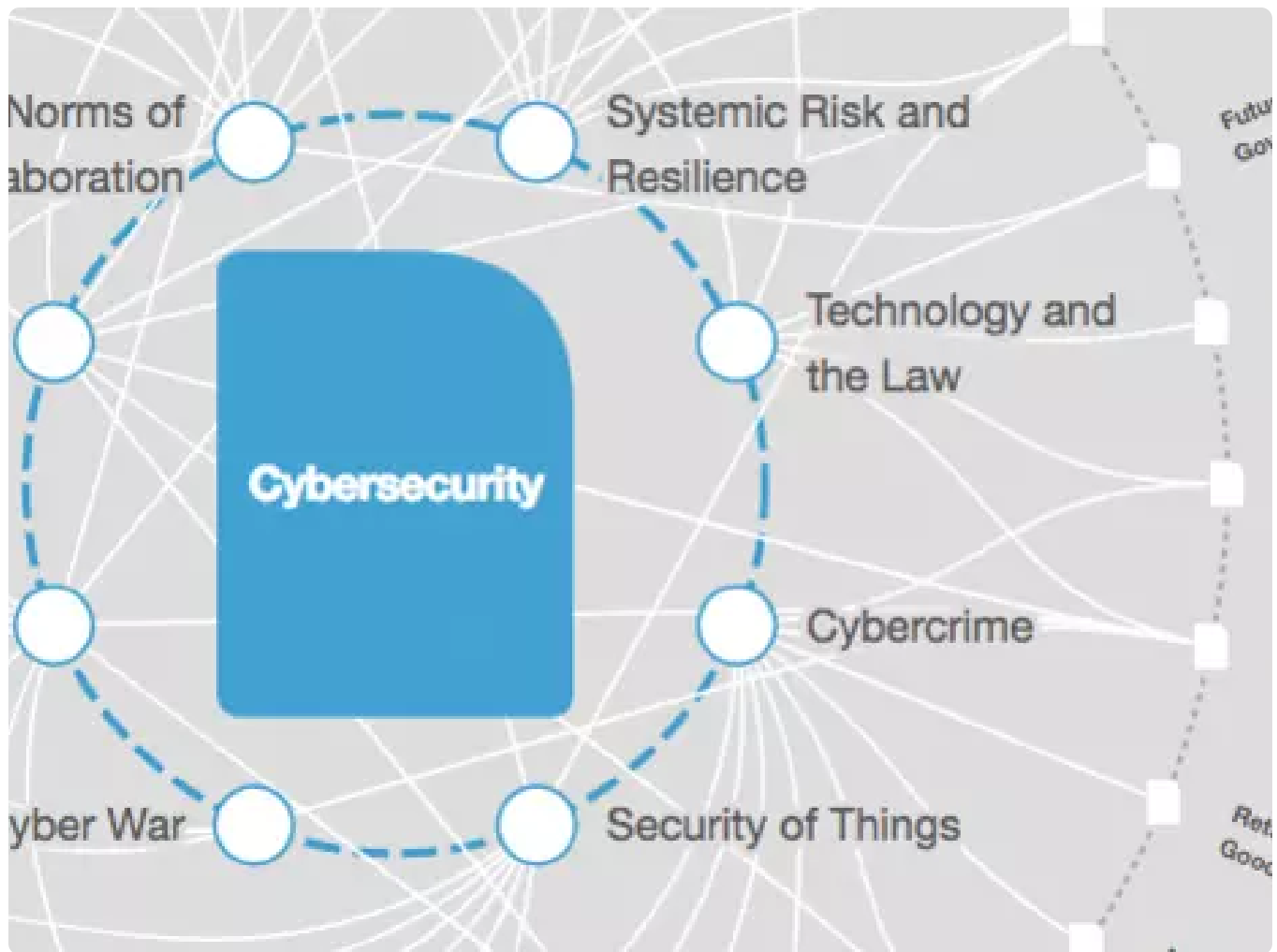
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