# Business leaders ramp up investments in quantum AI despite cost and knowledge barriers



### The Emergence of Quantum Artificial Intelligence: Business Leaders Embrace New Frontiers

A recent survey of 500 global business leaders has unveiled a robust enthusiasm for quantum artificial intelligence (AI), with over 60% actively pursuing investments or exploring its potential. This survey, conducted by SAS, included responses from executives across a diverse array of sectors, including healthcare, manufacturing, finance, and government, from regions such as the United States, China, France, Mexico, and the United Kingdom. It revealed that more than 70% of those surveyed consider themselves at least somewhat familiar with the concept of quantum AI, signalling a rising awareness of its transformative capabilities.

Among the applications highlighted, data analytics and machine learning emerged as the primary areas of promise, cited by 48% of respondents. Other significant applications include research and development (41%), cybersecurity (35%), supply chain logistics (31%), finance and risk management (26%), and marketing (20%). This broad spectrum illustrates the transformative potential of quantum AI across various sectors, hinting at its capability to unlock new efficiencies and insights that traditional technologies might struggle to achieve.

Despite this optimism, the survey pinpointed several critical barriers to the adoption of quantum AI within the business landscape. High costs emerged as the foremost concern, acknowledged by 38% of respondents. Moreover, a lack of understanding (35%) and uncertainty regarding practical applications (31%) were cited as significant deterrents. Additional challenges included a shortage of skilled personnel and the absence of regulatory clarity, both recognised by 31% and 26% of participants, respectively.

Bill Wisotsky, Principal Quantum Architect at SAS, noted the implications of these findings, saying, "For decades SAS has helped organisations across a host of industries find better answers faster... With the emergence of quantum technologies, companies can analyse more data than ever." This sentiment underscores the industry's commitment to harnessing quantum capabilities to solve complex problems, yet also highlights the pressing need for educational initiatives and training to support this shift.

Some firms are already making strides toward practical implementation. A major consumer goods company is collaborating with SAS on a proof of concept focused on hybrid quantum-classical optimisation, integrating quantum annealing with classical optimization algorithms. This highlights a growing trend where organisations seek to leverage both quantum and classical computing capabilities to address intricate challenges.

In this evolving landscape, notable partnerships are emerging to bolster the development of quantum solutions. D-Wave Quantum Inc., for instance, has recently announced a significant collaboration with Zapata AI to enhance commercial applications that merge generative AI with quantum computing technologies. Their partnership aims to develop algorithms capable of addressing computationally challenging problems, particularly in areas such as drug discovery.

The introduction of on-premises quantum computing systems by D-Wave further demonstrates the commitment to advancing research and experimentation in quantum technologies. This initiative enables organisations to seamlessly integrate quantum systems with existing frameworks, allowing for tailored research and the pursuit of innovative applications in AI and quantum simulations.

Moreover, collaborations like that between D-Wave and Japan Tobacco Inc. signify the practical applications being pursued in the pharmaceutical sector, illustrating how quantum capabilities can expedite drug discovery processes. By utilising quantum AI in analysing complex molecular data, companies can potentially revolutionise the pace of developing new pharmaceuticals.

Finally, D-Wave's roadmap to enhance its Leap quantum cloud service embodies a strategic response to the industry's escalating demand for more efficient AI and machine learning workloads. As the synergy between quantum computing and AI continues to develop, the industry anticipates clearer pathways for integrating these advanced technologies into everyday business practices.

While widespread adoption of quantum technology is still perceived as a future endeavour, the survey results indicate high levels of interest and investment among business leaders. With ongoing research, investment in personnel, and the establishment of regulatory frameworks, the barriers to quantum AI adoption could soon be lowered, paving the way for an era where organisations can truly leverage the full potential of quantum intelligence.

## Reference Map:

* Paragraph 1 – [[1]](https://news.google.com/rss/articles/CBMikgFBVV95cUxNVF80dHhlV3RNSzFEWkhvaHR4aTlVd0t3OTBTZ056eXE1anZHOEpQUDdnQk5idlluenRYWVFLVTAxZVZ0aGJWbFQ3UWV6cHFXNFFDYUVMNUI0eXd4M1pZczh2aFdIZGlzSWQ0d0ZESmlycjlKYUVnLXBuNFJnSXBYMXdmOTBtemgtemZRVVFVdXNaUQ?oc=5&hl=en-US&gl=US&ceid=US:en)
* Paragraph 2 – [[1]](https://news.google.com/rss/articles/CBMikgFBVV95cUxNVF80dHhlV3RNSzFEWkhvaHR4aTlVd0t3OTBTZ056eXE1anZHOEpQUDdnQk5idlluenRYWVFLVTAxZVZ0aGJWbFQ3UWV6cHFXNFFDYUVMNUI0eXd4M1pZczh2aFdIZGlzSWQ0d0ZESmlycjlKYUVnLXBuNFJnSXBYMXdmOTBtemgtemZRVVFVdXNaUQ?oc=5&hl=en-US&gl=US&ceid=US:en)
* Paragraph 3 – [[1]](https://news.google.com/rss/articles/CBMikgFBVV95cUxNVF80dHhlV3RNSzFEWkhvaHR4aTlVd0t3OTBTZ056eXE1anZHOEpQUDdnQk5idlluenRYWVFLVTAxZVZ0aGJWbFQ3UWV6cHFXNFFDYUVMNUI0eXd4M1pZczh2aFdIZGlzSWQ0d0ZESmlycjlKYUVnLXBuNFJnSXBYMXdmOTBtemgtemZRVVFVdXNaUQ?oc=5&hl=en-US&gl=US&ceid=US:en)
* Paragraph 4 – [[1]](https://news.google.com/rss/articles/CBMikgFBVV95cUxNVF80dHhlV3RNSzFEWkhvaHR4aTlVd0t3OTBTZ056eXE1anZHOEpQUDdnQk5idlluenRYWVFLVTAxZVZ0aGJWbFQ3UWV6cHFXNFFDYUVMNUI0eXd4M1pZczh2aFdIZGlzSWQ0d0ZESmlycjlKYUVnLXBuNFJnSXBYMXdmOTBtemgtemZRVVFVdXNaUQ?oc=5&hl=en-US&gl=US&ceid=US:en)
* Paragraph 5 – [[1]](https://news.google.com/rss/articles/CBMikgFBVV95cUxNVF80dHhlV3RNSzFEWkhvaHR4aTlVd0t3OTBTZ056eXE1anZHOEpQUDdnQk5idlluenRYWVFLVTAxZVZ0aGJWbFQ3UWV6cHFXNFFDYUVMNUI0eXd4M1pZczh2aFdIZGlzSWQ0d0ZESmlycjlKYUVnLXBuNFJnSXBYMXdmOTBtemgtemZRVVFVdXNaUQ?oc=5&hl=en-US&gl=US&ceid=US:en), [[2]](https://www.dwavesys.com/company/newsroom/press-release/d-wave-and-zapata-ai-announce-strategic-technical-and-commercial-collaboration-to-advance-quantum-enabled-machine-learning)
* Paragraph 6 – [[3]](https://www.dwavesys.com/company/newsroom/press-release/d-wave-announces-on-premises-systems-offering-to-push-boundaries-of-quantum-fueled-research-and-advance-quantum-ai-development), [[4]](https://www.dwavesys.com/company/newsroom/press-release/japan-tobacco-inc-and-d-wave-announce-collaboration-aimed-at-accelerating-innovative-drug-discovery-with-quantum-ai)
* Paragraph 7 – [[5]](https://www.dwavesys.com/company/newsroom/press-release/d-wave-announces-roadmap-to-extend-leap-quantum-cloud-service-for-ai-ml), [[6]](https://www.dwavesys.com/company/newsroom/press-release/zapata-ai-and-d-wave-quantum-announce-expanded-partnership-to-accelerate-development-and-delivery-of-generative-ai-platforms)

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## Bibliography

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2. <https://www.dwavesys.com/company/newsroom/press-release/d-wave-and-zapata-ai-announce-strategic-technical-and-commercial-collaboration-to-advance-quantum-enabled-machine-learning> - D-Wave Quantum Inc. and Zapata Computing, Inc. (operating as Zapata AI) have announced a multi-year strategic partnership to develop and market commercial applications that combine generative AI and quantum computing technologies. The collaboration focuses on joint technical development and commercial deployment of applications for customers facing computationally complex problems. Utilizing quantum-enabled machine learning algorithms, these applications will leverage D-Wave’s quantum technologies, which have been proven to perform coherent quantum annealing with over 5,000 qubits. The initial focus is on building quantum generative AI models that accelerate the discovery of new molecules.
3. <https://www.dwavesys.com/company/newsroom/press-release/d-wave-announces-on-premises-systems-offering-to-push-boundaries-of-quantum-fueled-research-and-advance-quantum-ai-development> - D-Wave Quantum Inc. has introduced on-premises D-Wave Advantage quantum computing systems, enabling research centers, academic institutions, and governments to purchase these systems to advance quantum-fueled experimentation and development. The offering includes shipping, installation, calibration, and ongoing maintenance to ensure optimal performance. On-premises installation allows customers to integrate seamlessly with existing classical and high-performance computing systems, leverage and tune system parameters, and take advantage of new system innovations as they are developed. This initiative aims to drive advanced research and new discoveries in areas such as artificial intelligence and quantum simulation.
4. <https://www.dwavesys.com/company/newsroom/press-release/japan-tobacco-inc-and-d-wave-announce-collaboration-aimed-at-accelerating-innovative-drug-discovery-with-quantum-ai> - D-Wave Quantum Inc. and the pharmaceutical division of Japan Tobacco Inc. (JT) have announced plans to collaborate on a joint proof-of-concept project that will leverage quantum computing technology and artificial intelligence (AI) in the drug discovery process, termed 'Quantum AI-driven Drug Discovery.' The project aims to accelerate the speed and quality of training JT’s novel AI-driven analysis systems, with the goal of pioneering a new process for discovering 'first-in-class' pharmaceutical small compounds. D-Wave's annealing quantum computing solutions will serve as accelerators in this endeavor.
5. <https://www.dwavesys.com/company/newsroom/press-release/d-wave-announces-roadmap-to-extend-leap-quantum-cloud-service-for-ai-ml> - D-Wave Quantum Inc. has announced a roadmap to enhance its Leap quantum cloud service, aiming to strengthen the connection between quantum optimization, artificial intelligence (AI), and machine learning (ML). The roadmap includes support for quantum-enhanced and energy-efficient AI model training, as well as integrating AI and optimization to address important customer use cases. This initiative responds to the growing demand from customers seeking to leverage quantum computing to accelerate AI and ML workloads, particularly in the face of increasing computational and energy requirements in the AI industry.
6. <https://www.dwavesys.com/company/newsroom/press-release/zapata-ai-and-d-wave-quantum-announce-expanded-partnership-to-accelerate-development-and-delivery-of-generative-ai-platforms> - Zapata Computing Holdings Inc. (Zapata AI) and D-Wave Quantum Inc. have expanded their joint commercial partnership to accelerate the development and delivery of integrated quantum and generative AI solutions in D-Wave’s Leap cloud platform. The new agreement leverages Zapata’s Universal Generative AI software for rapid development and builds upon D-Wave’s Leap real-time quantum cloud service to support quantum, hybrid quantum, and classical AI solutions. The collaboration focuses on improved and more energy-efficient model training, more performant models, and the synergistic use of Generative AI and quantum optimization.
7. <https://www.dwavesys.com/company/newsroom/press-release/d-wave-announces-collaborations-to-advance-quantum-coherence> - D-Wave Quantum Inc. has announced collaborations aimed at advancing quantum coherence, a critical factor in the performance of quantum computers. The company is working with various partners to enhance the stability and reliability of quantum systems, which is essential for practical applications in fields such as artificial intelligence, materials science, and optimization problems. These collaborations are part of D-Wave's ongoing efforts to improve quantum computing technologies and expand their applicability across different industries.