

Quantum Computing Could Help GCC Countries Fulfil Their AI Ambitions, New Study Finds

The Gulf Countries must adopt quantum computing to boost national innovation and security, according to PwC's latest research paper, *The Future of Quantum Computing in the Middle East*, in conjunction with Dubai's World Government Summit.

The new study, which assesses the potential impact of quantum computing and details expected opportunities and specific risks, found that the Gulf region is investing heavily in AI and the rise of quantum computing will support this ambition.

The report recommends that quantum computing investment should be a feature of all national strategic agendas, particularly in the Middle East, where research budgets are relatively modest yet the rewards of early investment could be considerable.

"Quantum computers are able to perform complex calculations at 100 million times faster than the speed of current computers: the associated leap in processing power will vastly accelerate scientific advances and transform knowledge economies," said Simone Vernacchia, Partner and Digital Cybersecurity, Resilience and Infrastructure Leader at PwC Middle East.

"When quantum computing is combined with other advanced technologies—big data analytics, artificial intelligence, the Internet of Things (IoT) and cloud computing—the potential to accelerate innovation in almost any field of knowledge is beyond anything conceivable today."

He added that the technology has the potential to elicit discoveries in medicine, energy exploration, space engineering and many more areas. But it also bears the potential to render existing cyber-security technologies obsolete, with strong consequences on national security, as the speed and sophistication of malicious code cracking outpaces current approaches to network and data protection.

Quantum computing is still in its relatively early stages. One of the main opportunities in the short term for nations in the Middle East, therefore, will be to foster experimentation and encourage the development of potential use cases.

Gulf nations that take swift action have a good chance of exploiting quantum computing to their advantage, and in staying competitive with other regions that until now have taken the lead.

The past few years have seen an increase in investments in AI and cloud services across the Middle East, which is expected to accrue 2% of the total global benefits of AI in 2030. This is equivalent to \$320 billion. The largest gains are expected to accrue in Saudi Arabia where AI is expected to contribute over \$135.2 billion in 2030 to the economy, equivalent

to 12.4% of GDP. In relative terms the UAE is expected to see the largest impact of close to 14% of 2030 GDP, according to a PwC report.

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