

Quantum Computing: A new paradigm nears the horizon

https://marketpublishers.com/r/Q5E2A16ADB5DEN.html

Date: August 2020

Pages: 63

Price: US\$ 3,300.00 (Single User License)

ID: Q5E2A16ADB5DEN

Abstracts

This study looks into the present perspective of quantum computing and its present state of development, as well as its future outlook.

The study proposes an accessible description of the new computing paradigm brought by quantum technology and presents the potential applications and benefits that the new approach would bring. It also focuses on the potential consequences for cybersecurity and telecommunications.

Alongside the perspective it offers on the current quantum computing ecosystem, the study outlines a vision of the current state of development of the technology. This includes an analysis of the positioning of key players (IBM, Microsoft, D-Wave) and of the investment programmes of some 12 key nations including USA, China, parts of the EU, Russia, Japan and South Korea.)

Finally the study analyses the likely development of the technology and its foreseeable impacts.



Contents

1. EXECUTIVE SUMMARY

2. QUANTUM TECHNOLOGY DEFINITIONS

- 2.1. Quantum computing glossary
- 2.2. Quantum properties and principles for a quantum computer

3. QUANTUM COMPUTING TECHNOLOGIES

- 3.1. Scope of the study
- 3.2. The two main approaches to quantum computing
- 3.3. Analog-quantum computing (AQC)
- 3.4. Gate-based quantum computing
- 3.5. Qubit: state of the art

4. STATE OF PLAY OF QUANTUM TECHNOLOGY

- 4.1. Quantum computing foreseen benefits
- 4.2. Quantum foreseen limitations
- 4.3. The quantum computing race
- 4.4. How to compare performance in quantum computing?
- 4.5. Milestones and limitations for quantum computing
- 4.6. Quantum supremacy: another milestone reached in 2019?

5. QUANTUM TECHNOLOGY APPLICATIONS

- 5.1. Quantum computing potential applications
- 5.2. Most important QC potential applications
- 5.3. Quantum computing: potential applications
- 5.4. Focus: Quantum computing impact on cryptography
- 5.5. Solution to build a post-quantum secure system

6. KEY PLAYERS AND INITIATIVES

6.1. Private Player Profiles

IBM

Google



Microsoft

D-Wave

Other large tech firms - Familiar traditional computing increasingly getting involved

Cloud players also highly active

Hundreds of quantum computing start-ups

What about telcos?

6.2. Public Initiatives

National programmes in quantum technologies nvestment in Quantum technology

7. ANALYSIS AND PERSPECTIVES

- 7.1. Technology Perspective: Common misconceptions on quantum computing
- 7.2. Ecosystems analysis
- 7.3. Cybersecurity perspective
- 7.4. Perspectives of development
- 7.5. Vision of future development



List Of Tables

LIST OF TABLES AND FIGURES

3. Quantum Computing Technologies

Comparison between analog and digital quantum computing

Functioning of an analog-quantum computer

Scheme: Simplified functioning of a quantum algorithm: Grover's research

List of qubits technology currently developed in the world

4. State of Play of Quantum Technology

Main quantum algorithms discovered

Number of qubits achieved since 1998

Main quantum calculators as of June, 2020

5. Quantum Technology Applications

Quantum computing: main threats

6. Key Players and Initiatives

Private ecosystem investing in quantum computing

Public funding for quantum computing and related technologies

IBM cryostat wired for a 50-qubit system

IBM Q Network Partner

A dilution refrigerator houses the Sycamore chip used to demonstrate the quantum supremacy experiment

Microsoft Azure Quantum full-stack ecosystem

D-Wave 2000Q quantum annealer

Patent applications per quantum technologies in 2015



I would like to order

Product name: Quantum Computing: A new paradigm nears the horizon Product link: https://marketpublishers.com/r/Q5E2A16ADB5DEN.html

Price: US\$ 3,300.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer

Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/Q5E2A16ADB5DEN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:	
Last name:	
Email:	
Company:	
Address:	
City:	
Zip code:	
Country:	
Tel:	
Fax:	
Your message:	
	**All fields are required
	Custumer signature

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970