Quantum Computing Industry Study

Landscape of industry sectors,
public-private partnerships, and standards

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Executive summary

This report provides a snapshot of the current landscape of the quantum computing industry. Although the industry is at an early stage, revenues are expected to almost double in the next five years. The report assesses the awareness and impact of quantum computing on diverse industries, the prevalence of consortia and partnerships aimed at accelerating progress and the state of standards development to support commercial applications.

This report describes interest in quantum computing by other industry sectors. It documents substantial awareness outside of the immediate quantum ecosystem of the potential utility of quantum computing. Industry sectors as diverse as aerospace, architecture, automotive, defense & intelligence, electronics, energy, finance, logistics, pharmaceuticals, retail, and others have published or organized events on quantum computing for their constituents. A total of nearly 140 events and publications across 26 sectors have been identified. This interest in quantum computing among communities of end users is instrumental for promoting the development and use of quantum computing technology, helping spur demand and growing the quantum industry.

The report also identifies quantum-specific consortia around the world that have activities in quantum computing. Nearly two dozen are identified in Canada, Denmark, the European region, Netherlands, Germany, Japan, etc. Public-private partnerships focused on research and development in quantum information science and technology have been established by programs and centers established by the National Science Foundation and Department of Energy.

Another metric of an emerging industry like quantum computing is the current state of standards. The current state of quantum computing standards reflects the nascent state of quantum computing technology. This report provides additional context from the standardization of other quantum technologies. Quantum computing-related technological standards are generally embryonic and formative. Nevertheless, standards-setting efforts pertaining to quantum technologies are taking place, with several early, project-focused activities underway.