



# STATE OF THE GLOBAL QUANTUM INDUSTRY 2025

The quantum industry has experienced strong growth driven by advances in quantum hardware and software, increased government and private investments, and growing interest from industries such as finance, health care, materials science, logistics, and defense. This report primarily reflects the global industry as of the end of 2024.

## COMPOSITION

6,502

QUANTUM-ENGAGED  
ORGANIZATIONS

513

PURE-PLAY QUANTUM COMPANIES

## MARKET

\$1.45B+  
2024  
MARKET SIZE



\$1.07B

REVENUE FROM  
QUANTUM COMPUTING



\$375M

REVENUE FROM  
QUANTUM SENSING

## WORKFORCE



14,500+ PURE-PLAY WORKERS ADVANCING QUANTUM



7,400+ QUANTUM-RELATED POSITION OPENINGS IN 2024

## INVESTMENT

\$3.1B

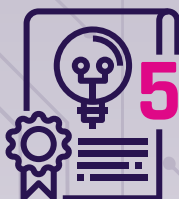
GOVERNMENT FUNDING  
COMMITMENT IN 2024



\$2.6B

PRIVATE VENTURE CAPITAL  
IN 2024

## INTELLECTUAL PROPERTY



55,293

ACTIVE PATENTS

13%

AVG ANNUAL PATENT  
GROWTH OVER LAST  
FOUR YEARS



FOR METHODOLOGY VISIT:  
[BIT.LY/SQIR2025](https://bit.ly/SQIR2025)

Note: Monetary amounts are reported in US dollars.

# COMPOSITION

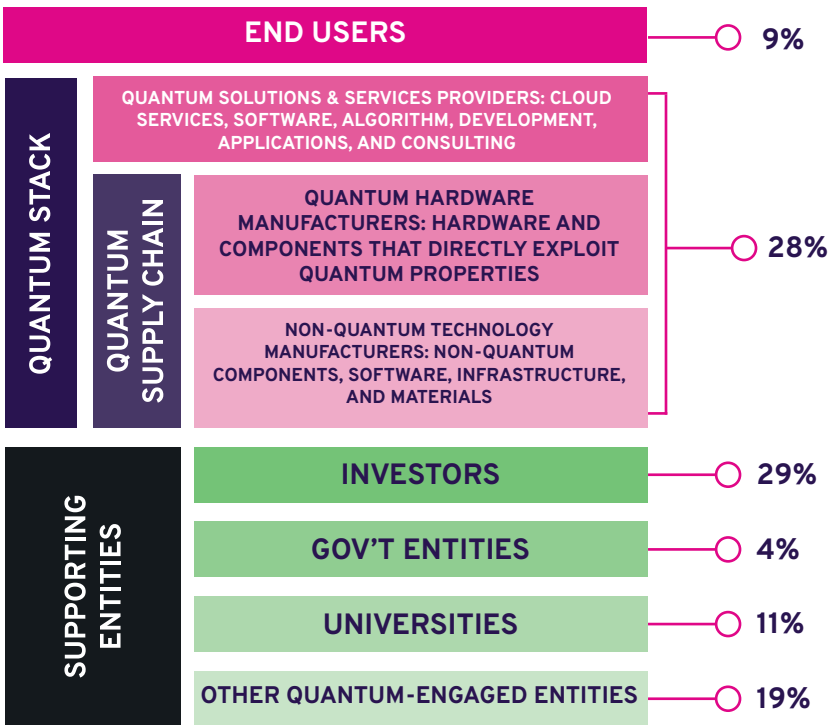
The quantum industry spans segments including computing—which makes up the most significant portion of the market—sensors, cryptography, and communication technologies. It comprises companies that focus solely on quantum technology (pure-play) as well as established technology companies, universities, laboratories, and other entities that dedicate a portion of their attention and resources to advancing quantum technology (partial-play).

## QUANTUM-ENGAGED ORGANIZATIONS

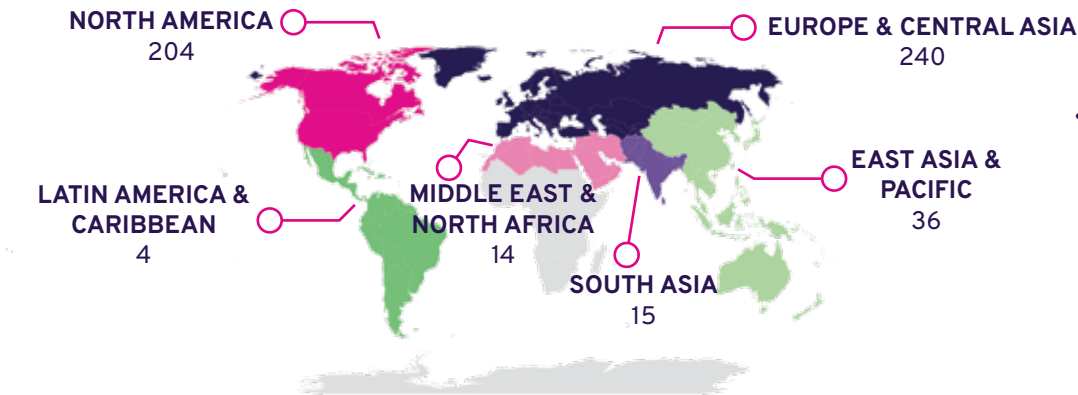


- Strong commercialization focus via investors (29%) and quantum stack entities (28%)
- Universities and 'other quantum-engaged entities' (research laboratories, quantum technology centers, etc.) together account for 30% of market, reflecting their foundational role in advancing quantum research
- High ratio of quantum stack entities to end users is typical for emerging deep-tech sectors and signals opportunity for ecosystem development as industry scales

## QUANTUM ECOSYSTEM STRUCTURE

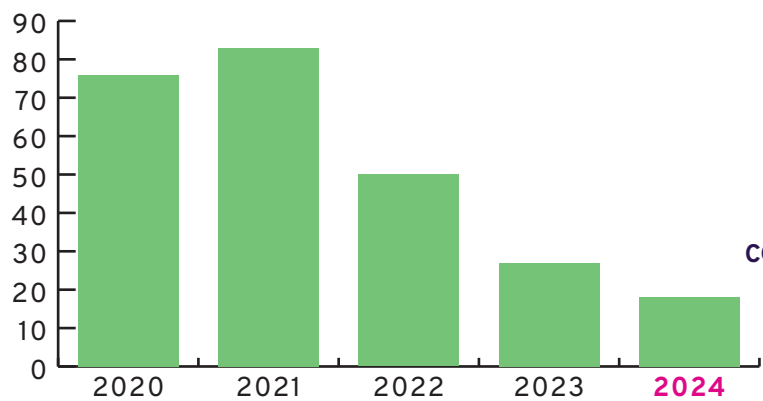


## PURE-PLAY COMPANIES BY REGION

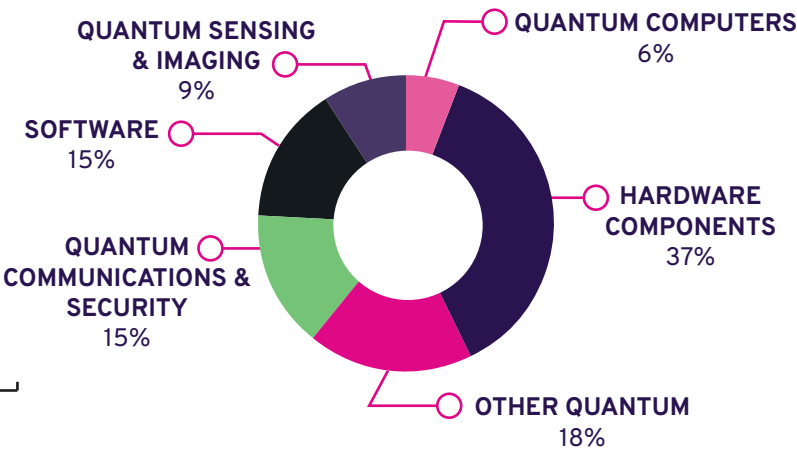


- United States leads overall in number of pure-play companies (148), followed by United Kingdom (64), Canada (56), Germany (48), and France (25), reflecting their favorable ecosystems for quantum technology innovation

## PURE-PLAY COMPANIES BY YEAR FOUNDED



## CLASSIFICATION OF QUANTUM STACK COMPANIES



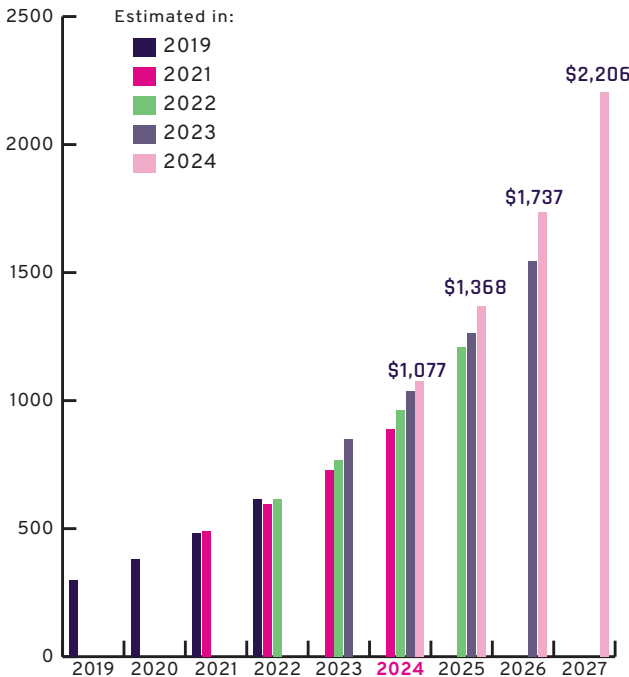
- Average of 51 pure-play companies formed each year in 2020-24
- Decrease in new pure-play companies since 2021 reflects a maturing marketplace, increase in mergers & acquisitions, and concentration of venture funding on fewer, less risky firms and technology

Quantum computing and quantum sensing show the most significant promise among all quantum technologies for generating the most revenue in the near future. North America comprises 44% of the global market for Quantum computing and 35% of the global market for quantum sensing.

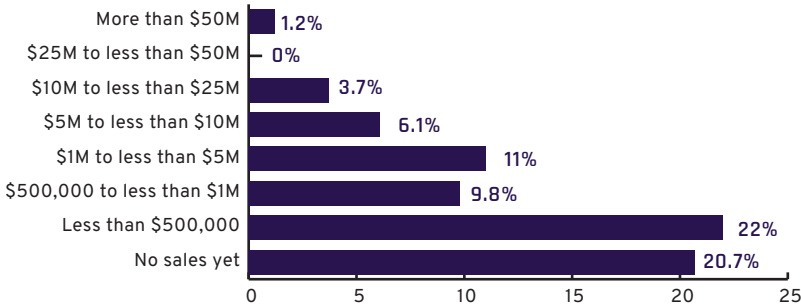
QUANTUM COMPUTING MARKET ESTIMATE: \$1.07B IN 2024

27% ANNUAL GROWTH RATE ESTIMATED TO DRIVE GLOBAL QUANTUM COMPUTING MARKET TO \$2.2B IN 2027

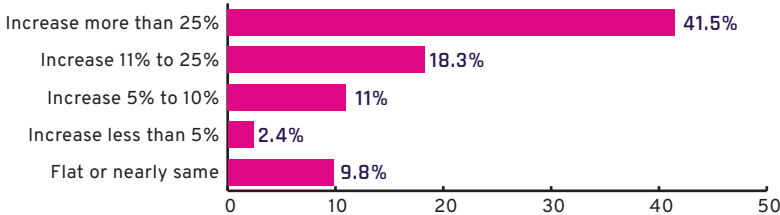
GLOBAL QUANTUM COMPUTING MARKET (\$M)



2024 QUANTUM COMPUTING-RELATED COMPANY REVENUE



PROJECTED QUANTUM COMPUTING-RELATED COMPANY REVENUE CHANGE FROM 2024 TO 2025

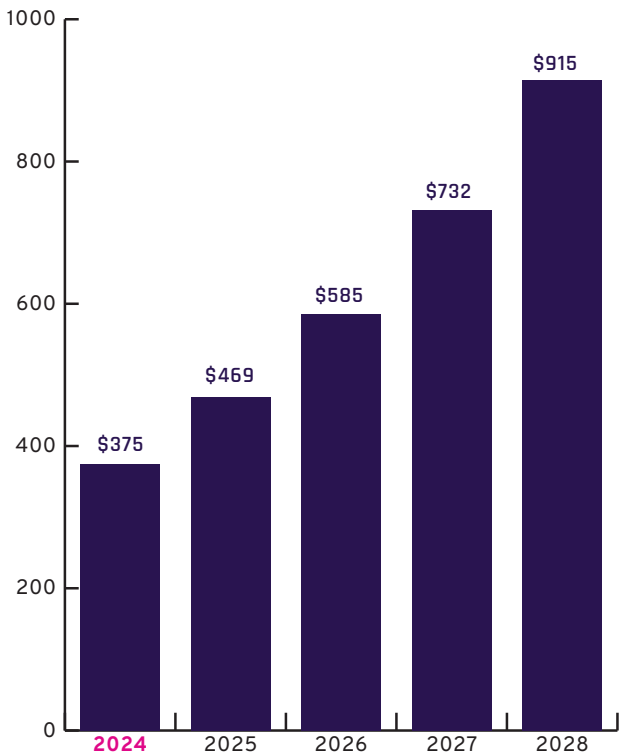


- End-user sectors seen as most attractive for quantum computing suppliers in near future: (1) chemistry and materials, (2) financial services, and (3) logistics
- Top quantum computing algorithms in near future: (1) simulation/modeling, (2) hybrid quantum computing algorithms, (3) optimization, and (4) artificial intelligence
- While quantum computing companies' own revenue projections are optimistic, there is concern over potential decrease in investment

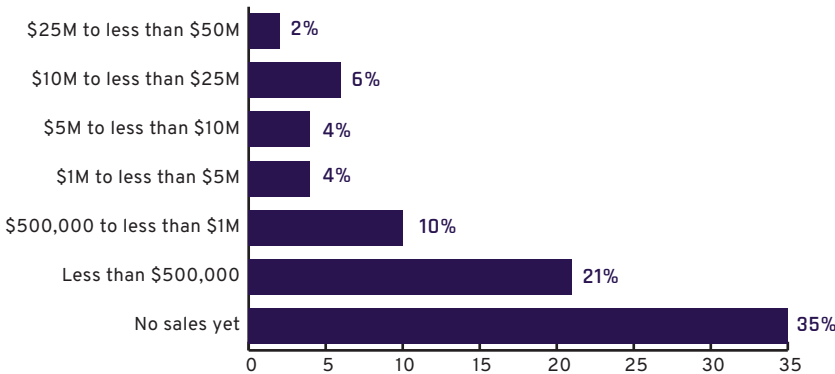
QUANTUM SENSING MARKET ESTIMATE: \$375M IN 2024

25% ANNUAL GROWTH RATE ESTIMATED TO DRIVE GLOBAL QUANTUM SENSING MARKET TO \$915M IN 2028

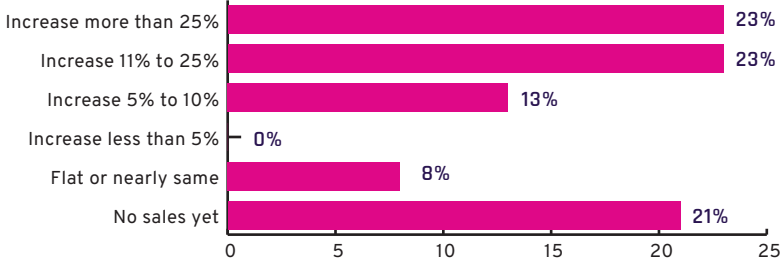
GLOBAL QUANTUM SENSING MARKET (\$M)



2024 QUANTUM SENSING-RELATED COMPANY REVENUE



PROJECTED QUANTUM SENSING-RELATED COMPANY REVENUE CHANGE FROM 2024 TO 2025



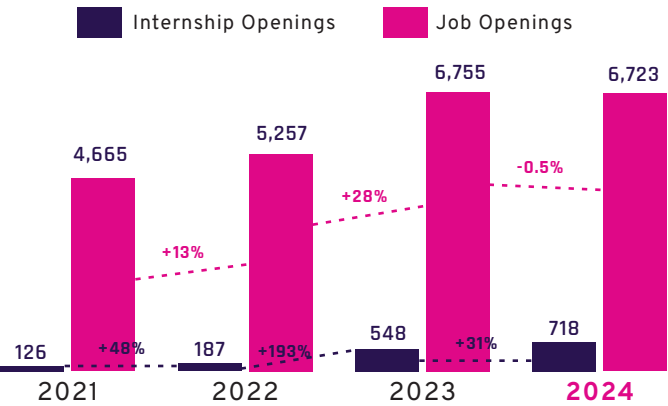
- Global market for quantum sensors is expected to grow over next decade, driven by applications in health care, defense, and advanced manufacturing
- Atomic clocks are currently among most in-demand quantum sensors, with applications related to geospatial navigation, telecommunications, and financial services

Note: For graphs conveying percentages of companies estimating revenue, companies with unshareable proprietary information or uncertainty in their estimates were excluded, hence percentages may sum to less than 100%.

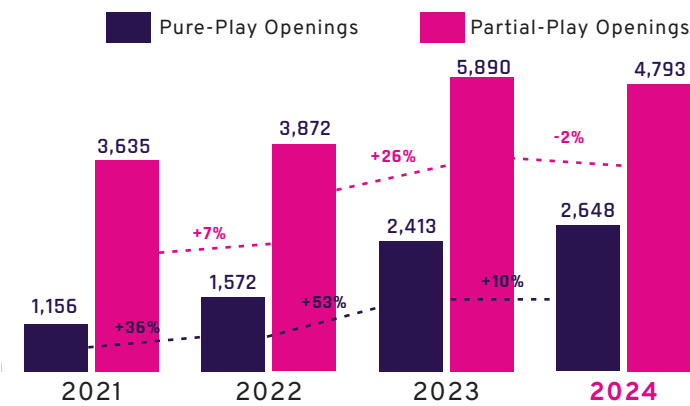
# WORKFORCE & PIPELINE

The pure-play quantum workforce is estimated to be 14,517 professionals globally as of 2024, while the estimate of all quantum-engaged workers may be close to 200,000. This includes physicists, computer scientists, engineers, mathematicians, and software developers. The number of quantum-related job and internship openings has increased globally since 2021, with 7,300+ openings in both 2023 and 2024.

## QUANTUM-RELATED OPENINGS BY POSITION TYPE

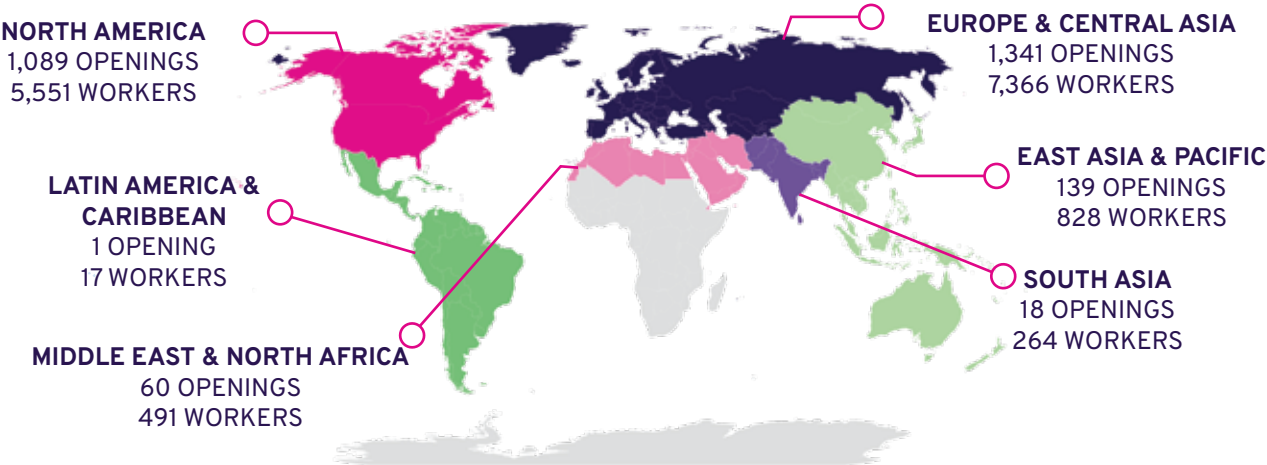


## QUANTUM-RELATED OPENINGS BY ORGANIZATION TYPE



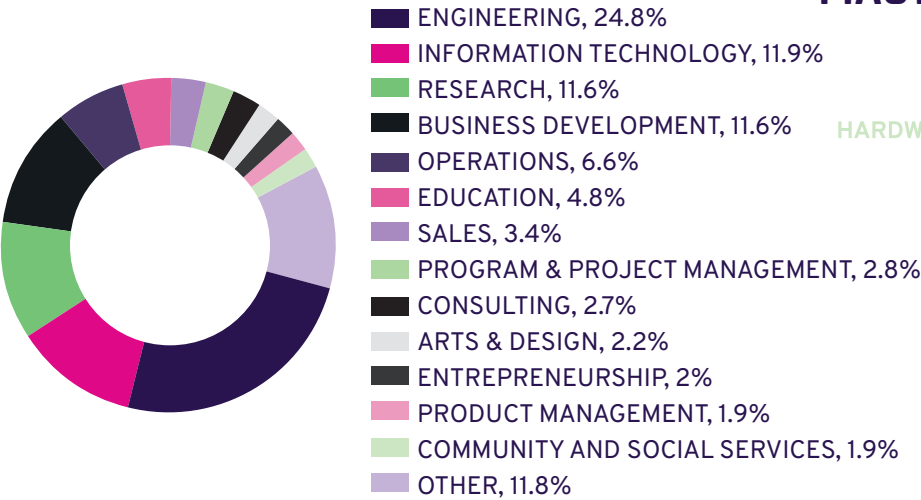
- Over past three years, annual growth rates of quantum-related internship openings outpaced those of quantum-related job openings, and annual growth rates of job & internship openings among pure-play companies outpaced those among partial-play organizations
- 2024 saw substantial increase in number of recruiters engaged in candidate searches for quantum technology workers

## PURE-PLAY JOB & INTERNSHIP OPENINGS AND WORKERS BY REGION IN 2024

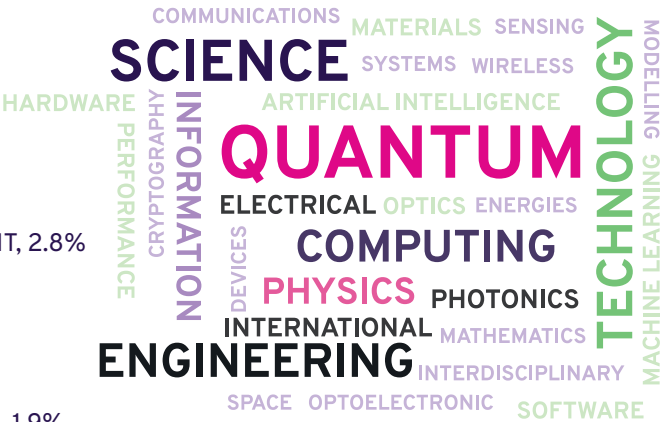


Note: Remote job & internship openings are not represented on the map.

## QUANTUM WORKFORCE BY ROLE



## KEY TERMS AMONG QUANTUM MASTER'S DEGREE PROGRAM TITLES

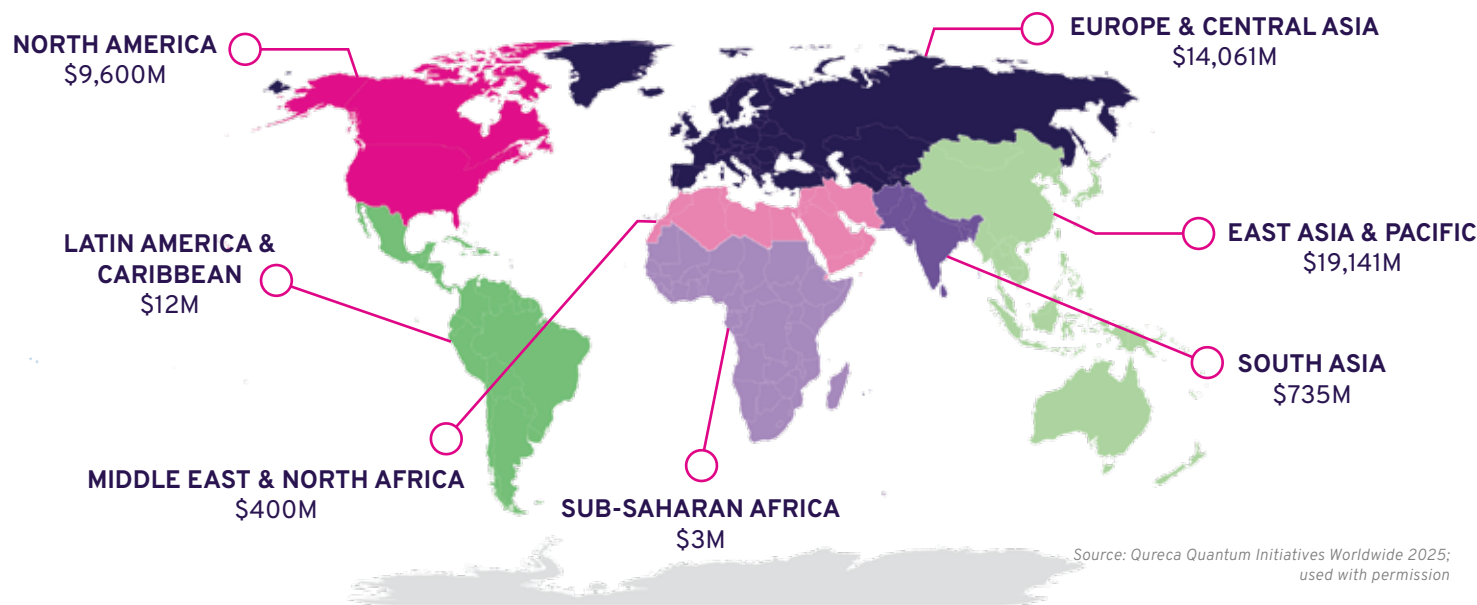


- Top three roles in quantum workforce—engineering, information technology, and research—account for almost half (48.3%), reflecting industry's reliance on STEM skills; however, non-STEM expertise is also common, reflecting multidisciplinary collaboration among technical, business, and end-use roles in quantum technology development
- Universities are increasingly offering quantum-specialized graduate programs in engineering, computing, physics, and related fields, creating more focused pathways to quantum careers

# INVESTMENT & INTELLECTUAL PROPERTY

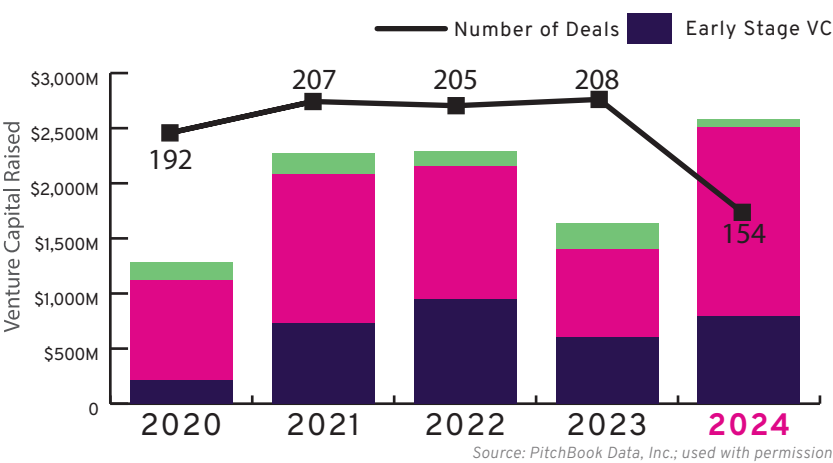
Both public and private funding for quantum technology continues to grow year-over-year globally. Public funding commitments for quantum research and innovation increased by more than \$3.1B over the past year, reaching an estimated \$44.5B total. Private venture capital investment in the quantum industry reached a record high of nearly \$2.6B in 2024, rebounding from the decline seen in 2022-23. Patents also indicate the pace and geographic distribution of quantum advances and markets, and currently more than half of the patents across all quantum technologies are filed in China.

## PUBLIC INVESTMENTS IN QUANTUM TECHNOLOGY BY REGION

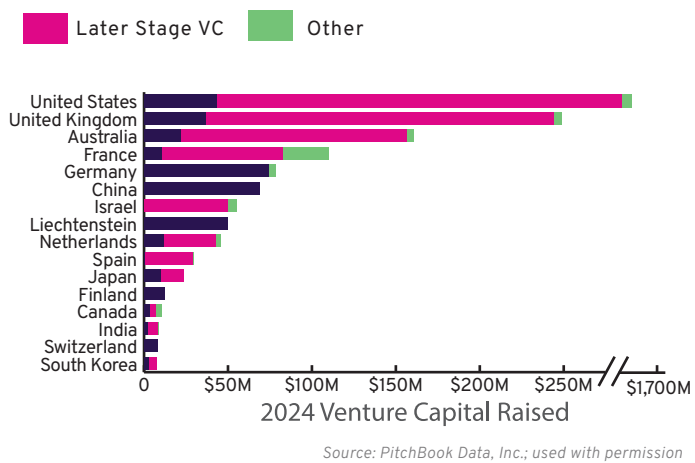


- China's estimated public funding for quantum research and innovation (\$15B) accounts for 78% of funding in East Asia and the Pacific and 34% of global public investment
- United States (\$7.7B) and United Kingdom (\$4.3B) are next highest funders of quantum by aggregate commitments

## VENTURE CAPITAL RAISED & NUMBER OF DEALS BY YEAR

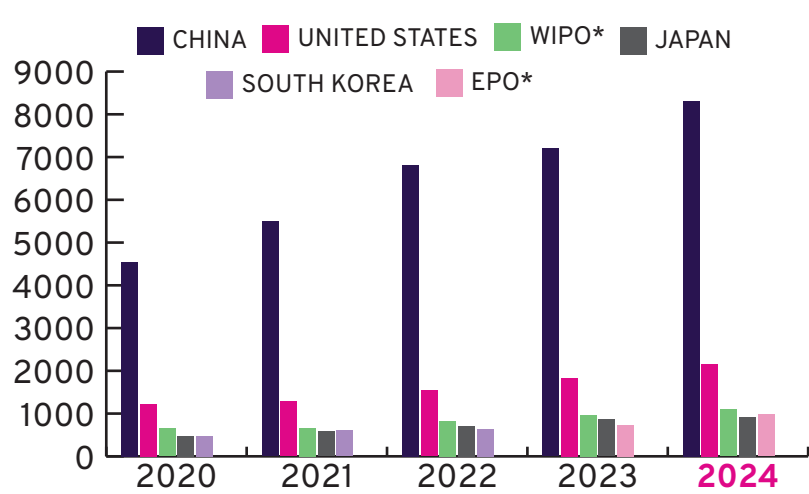


## 2024 VENTURE CAPITAL LEADERS BY QUANTUM COMPANY HQ COUNTRY



- 58% increase in funding from 2023 to 2024 went to 54 fewer deals, highlighting maturation of quantum startups and their technology
- US-based quantum companies raised nearly \$1.7B in venture capital in 2024, far surpassing any other global leaders

## QUANTUM-RELATED PATENTS FILED IN TOP JURISDICTIONS ANNUALLY 2020-24



- Chinese patents represent more than half (54%) of quantum filings in 2020-24, approximately four times that of United States. Similarly, number of patent-filing entities is four times higher in China than in United States during this period
- Between 2020 and 2024, ~70% of WIPO patents expired, reflecting not only maintenance cost pressures but also strategic decisions by organizations to focus on key patents and markets

\*World Intellectual Property Organization (WIPO) and European Patent Office (EPO) each represent regional patent coverage

# QED·C

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