

Quantum Technologies

Practices and Industries

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Quantum technology takes advantage of the physics of subatomic particles. Past innovation in quantum technology yielded MRI machines, lasers, and atomic clocks. However, a new wave of quantum technology is now being researched and developed for improvements in existing products and services, as well as interesting products and services never before implemented that take advantage of quantum behaviors. A profound increase in research and investment is being focused on cutting-edge quantum computing and quantum sensing technologies. As more companies enter the quantum technology playing field, increased competition makes it more important than ever for companies to consider appropriate intellectual property protection to best protect the end goals of the company.

For example, many quantum technology companies are start-ups with the goal of going public via IPO. Quantum technology companies pursuing this goal or other goals need to consider how best to brand their business and how to protect their specific innovations to maximize value for potential investors and distinguish themselves from competitors. Also, in forming joint ventures and collaborations with others, careful consideration of IP issues is critical for ensuring that the company will have the rights needed to maintain control over their innovations.

To best advise clients in the quantum technology field, we have found it beneficial for attorneys to have science backgrounds and an understanding of advanced physics. Members of the Haynes Boone Quantum Technologies Practice Group hold degrees in computer science, electrical engineering, physics, and other relevant fields, and many of our attorneys have worked in-house at leading quantum-related technology companies. Our Quantum Technologies team is well-situated to focus on all aspects of intellectual property protection for the highly specialized field of quantum technology. We work closely with our clients as trusted advisors to protect and enforce our clients' intellectual property rights.

Our experience covers all aspects of business development services necessary for companies pursuing the development of quantum technologies, including:

- **Patents**
 - Strategic patent preparation and filing by working with technical development teams to discern which patent applications to file to keep ahead of potential competitors and their

- investors, and which quantum technology inventions to protect as a trade secret.
 - Helping clients enforce and defend their quantum-related patent rights.
 - Conducting freedom-to-operate and infringement investigations with respect to client-proposed quantum-based products and services.
 - Instituting post-issuance proceedings before the U.S. Patent and Trademark Office to invalidate U.S. quantum-based patents owned by competitors or other third parties.
- **Trademarks**
 - Product launch strategies including conducting clearance searches.
 - Obtaining trademarks for new quantum-based brands.
 - Instituting opposition and cancellation proceedings before the U.S. Patent and Trademark Office.
- **Technology Transactions**
 - Drafting Technology and IP licensing agreements to commercialize quantum technology.
 - Forming and managing joint ventures and strategic alliances.
 - Representing clients in structuring and negotiating agreements involving the research and development of quantum technology and related intellectual property.
- **Corporate/Venture Capital**
 - Advising on company formation.
 - Developing start-up financing and fundraising strategies tailored to quantum-focused entities.
 - Advising quantum companies on corporate governance matters.
 - Evaluating tax law issues relevant to start-ups.
 - Providing guidance regarding reorganization, mergers, acquisitions, and joint ventures of quantum tech companies.