IDC Financial Insights Presents Inaugural Research on Quantum Computing for Banking

Two new reports from IDC Financial Insights provide a primer on this transformational technology with potential to significantly improve bank infrastructure

FRAMINGHAM, Mass., January 15, 2020 – IDC Financial Insights today announced publication of a two-part series that delves into the world of quantum computing in the context of banking. According to the new reports, quantum computing services will play an important role in the bank's infrastructure arsenal going forward, delivered through cloud services. This initial research will help IT leaders within the banking industry better understand how and where to implement quantum computing to improve existing infrastructure.

The first report, *Quantum Computing in Banking: Part 1 — The Technology* (Doc #US45721219), serves as a primer designed to support the fundamental understanding of quantum computing and highlights the physics behind this transformational technology, critical to understanding why quantum computing is (or will eventually be) superior to classical computing platforms. The second report, *Quantum Computing in Banking: Part 2 — The Algorithms and Use Cases* (Doc #US45721419), reviews potential and real use cases being explored and deployed by banks worldwide today and where specific types of quantum computing will influence the industry's further transformation.

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Quantum computing is a technology that promises to improve the bank's ability to address problems in speeds that are exponentially faster than today's best computers and has the potential to help solve problems the industry thought would always be intractable. Multiple companies have built real, usable computers based on quantum phenomena that seem unreasonable if not literally incredible. While these machines are still in their infancy, the ecosystem of software and quantum simulators that have sprung up in anticipation of the physical machines represents a dynamic and forward-looking potential to transform many of the processes we count on in the banking industry.

To leverage the opportunities in quantum computing, IDC recommends three action items:

- **Research and keep up with advances in the science**. The world of quantum is changing on an almost monthly basis. Even if the institution has no firm plans to implement quantum today, or in the next 12 months, the bank should be ready to take advantage of quantum simulators or machines whenever, and wherever, it makes sense.
- **Encourage quantum development**. Banks that maintain their own cadre of software developers should encourage sandbox philosophies that encourage their developers to use the facilities and networks created by the major providers, IBM, Google, Microsoft, D-Wave, and so forth, to gain familiarity with quantum paradigms and, again, be prepared to use that learning to solve real-world problems at the bank.
- **Engage and participate in quantum networks**. At higher levels in the institution, leaders need to engage with their IT providers, whether hardware, software, or services firms, and understand where these organizations stand with regard to their own participation in this technology. Banks should likewise be involved in helping to develop standards around quantum practices.

Quantum computing represents a tremendous opportunity to solve problems that have heretofore been classified as intractable or infeasible to solve given the pace of banking. According to the new reports, there are definite areas of quantum computing, particularly around optimization, that have already been shown to be amenable to quantum simulators. And the effort involved to solve those problems will not be wasted as the software developed on simulators will be portable to true quantum hardware when it becomes more available.

"While it's still in its infancy, quantum computing through simulation is already showing tremendous potential, particularly in solving complex optimization problems," said Jerry Silva, research director, Global Banking at IDC. "As the hardware underlying quantum computing matures even further, those same solutions will reach exponentially faster speeds and be more and more available to the broader banking market."

To arrange a one-on-one briefing with Jerry Silva, please contact Sarah Murray at 781-378-2674 or sarah@attunecommunications.com. Reports are available to qualified members of the media. For information on purchasing reports, contact insights@idc.com ; reporters should email sarah@attunecommunications.com.

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