COMMERCIAL QUANTUM COMPUTING

Q3 Investor Presentation

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FORWARD-LOOKING STATEMENTS

Certain statements in this presentation are forward-looking, as defined in the Private Securities Litigation Reform Act of 1995. These statements involve risks, uncertainties, and other factors that may cause actual results to differ materially from the information expressed or implied by these forward-looking statements and may not be indicative of future results. Forward-looking statements in this presentation include, but are not limited to, statements regarding the future growth of the quantum industry and potential investment in quantum; the pace and trajectory of the development of quantum technology; quantum's future total addressable market (TAM); future commercial use-cases for quantum; D-Wave's expected production deployments for customers; D-Wave's anticipated progress towards achieving quantum supremacy in significant and meaningful problems; D-Wave's plans for its Advantage2™ and Advantage3™ systems, as well as its other technological innovations; the potential for increase in value of D-Wave's technology; D-Wave's potential to obtain additional financing through the ELOC; and D-Wave's anticipated SOC 2 Type 2 compliance. These forward-looking statements are subject to a number of risks and uncertainties, including, among others, various factors beyond management's control, including the potential for D-Wave's competitors to outpace its technological growth; our ability to raise funds under the ELOC or otherwise; general economic conditions and other risks; our ability to expand our customer base and the customer adoption of our solutions; risks within D-Wave's industry, including anticipated trends, growth rates, and challenges for companies engaged in the business of quantum computing and the markets in which they operate; the outcome of any legal proceedings that may be instituted against us; risks related to the performance of our business and the timing of expected business or financial milestones; unanticipated technological or project development challenges, including with respect to the cost and/or timing thereof; the performance of our products; the effects of competition on our business; the risk that we will need to raise additional capital to execute our business plan, which may not be available on acceptable terms or at all; the risk that we may never achieve or sustain profitability; the risk that we are unable to secure or protect our intellectual property; volatility in the price of our securities; the risk that our securities will not maintain the listing on the NYSE; and the numerous other factors set forth in D-Wave's Annual Report on Form 10-K for its fiscal year ended December 31, 2022 and other filings with the Securities and Exchange Commission. Undue reliance should not be placed on the forward-looking statements in this presentation in making an investment decision, which are based on information available to us on the date hereof. We undertake no duty to update this information unless required by law.

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OUR MISSION

TO UNLOCK THE POWER OF QUANTUM COMPUTING TO BENEFIT BUSINESS AND SOCIETY STARTING TODAY

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D-WAVE AT A GLANCE

ESTABLISHED PRODUCT PORTFOLIO:

- World's largest quantum computer
- Accessible through production-grade cloud service
- Demonstrated advantage over classical computing

GROWING COMMERCIAL ADOPTION:

- 1st commercial quantum computing company
- 30+ proven business use cases
- Initial applications moving into production

HIGH-VALUE CONSULTATIVE SERVICES:

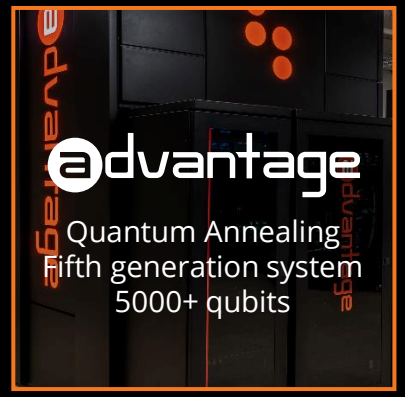
- 20+ successful POC engagements in 18 months
- Advisory services to aid in production deployment

INDUSTRY PERSPECTIVE:

"We believe today's quantum technology can play a key role in ensuring optimal and efficient construction and operation of buildings and are eager to use D-Wave's quantum solutions in support of that effort."

– Dr. Reinhard Schlemmer, board member, VINCI Energies

MARKET LEADER









STRONG CUSTOMER BASE

mastercard · NEC · BASF · Deloitte. · VINCI ENERGIES · NTT docomo · RECRUIT · save on foods · accenture · ArcelorMittal · LOCKHEED MARTIN · Johnson & Johnson · BANK OF CANADA BANQUE DU CANADA · BBVA · unisys · DENSO · CaixaBank

THOUGHT LEADERSHIP

220+ U.S. granted patents
140+ Pending worldwide
60+% Annealing AND Gate

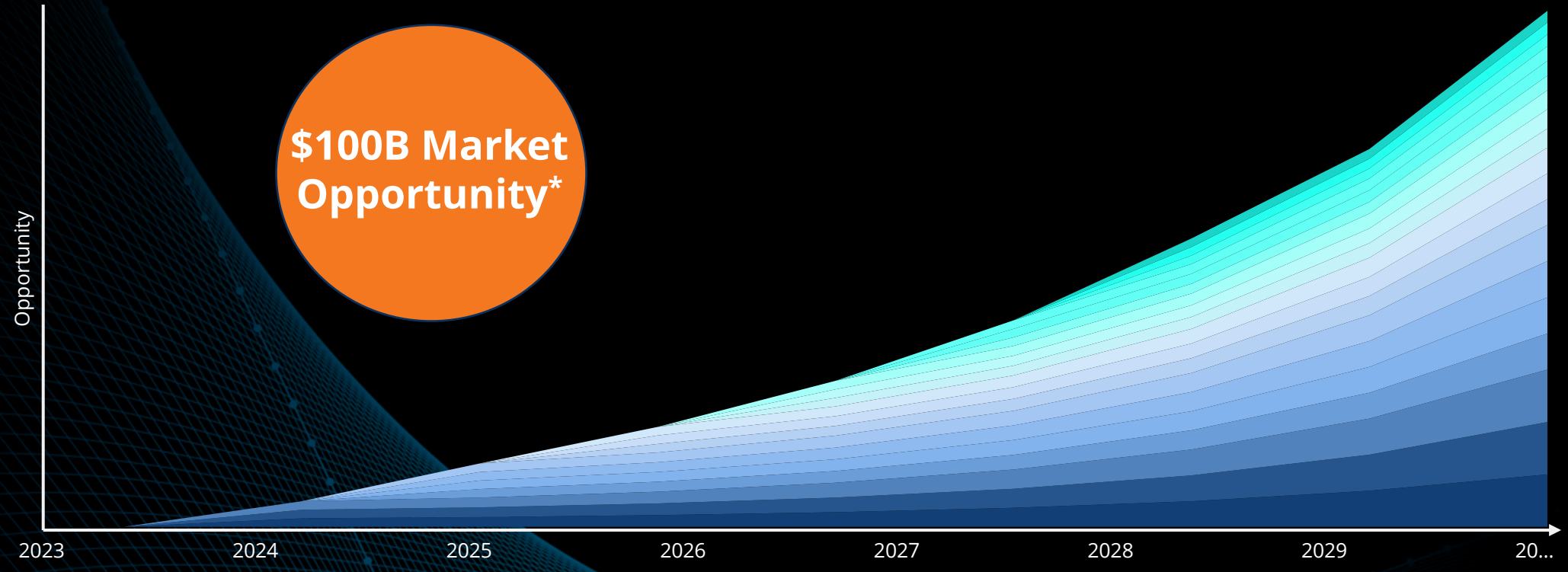
Top three quantum patent portfolio globally
(Source: GlobalData)

40 PhDs

Over 225 scientific papers published

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VALUE CREATION THROUGH THE ONGOING INTRODUCTION OF NEW USE CASES



Production Application Use Cases

Scheduling & Routing
- Workforce Scheduling
- Job Shop Scheduling
- Vehicle Routing

Allocation & Risk Management
- Resource Allocation
- Customer Offer Allocation
- Portfolio Optimization
- Fraud Detection

Machine Learning
- Model Training
- Prompting Optimization
- Feature Selection

Defense & Aerospace
- Missile Defense Optimization
- Satellite Placement
- Radar Scheduling

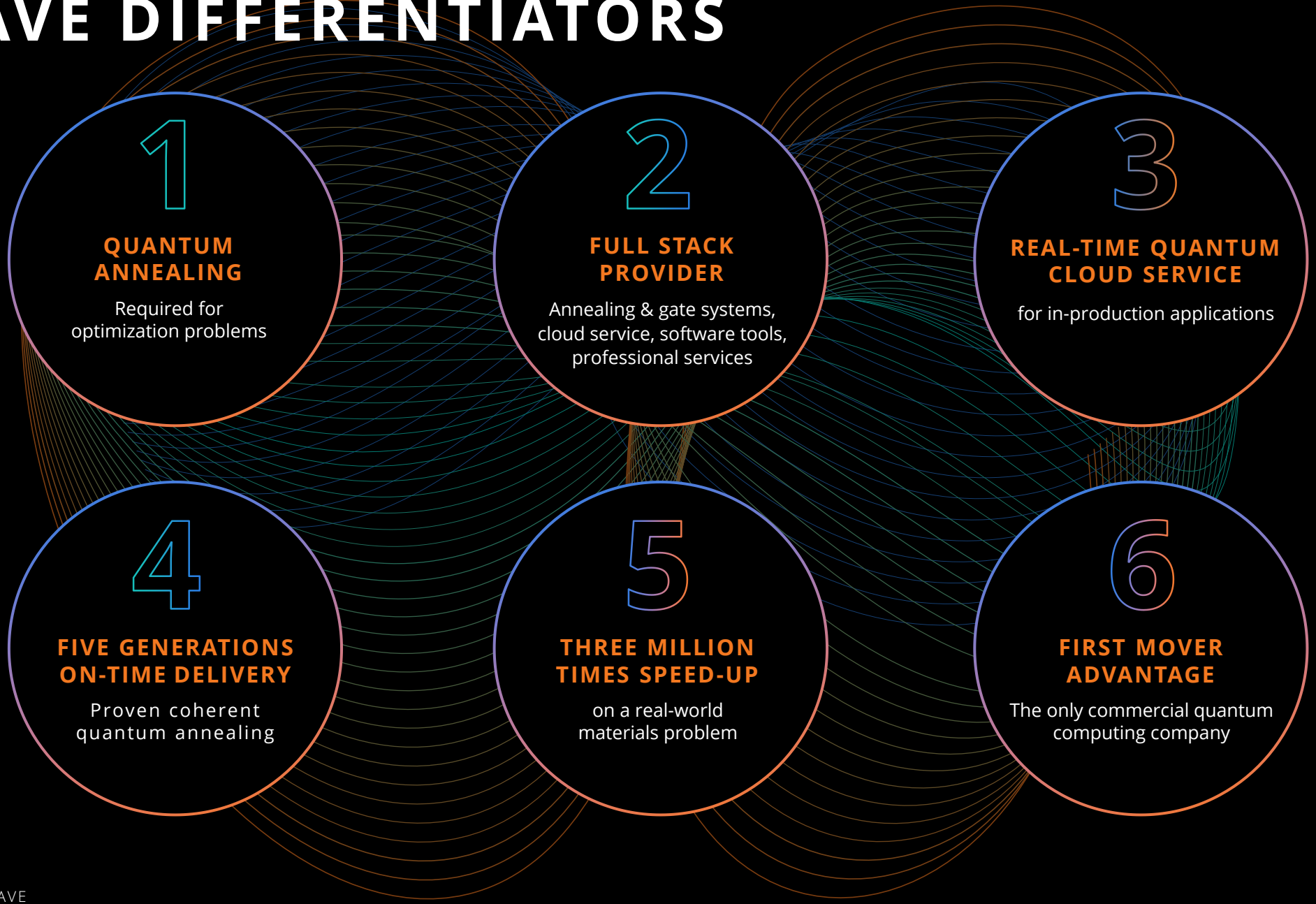
Process & Flow
- Wireless Infrastructure Optimization
- Network Flow Optimization
- Supply Chain Optimization

Advanced Use Cases
- Drug Discovery
- Protein Design
- Energy Unit Commitment

** Based on D-Wave analysis*

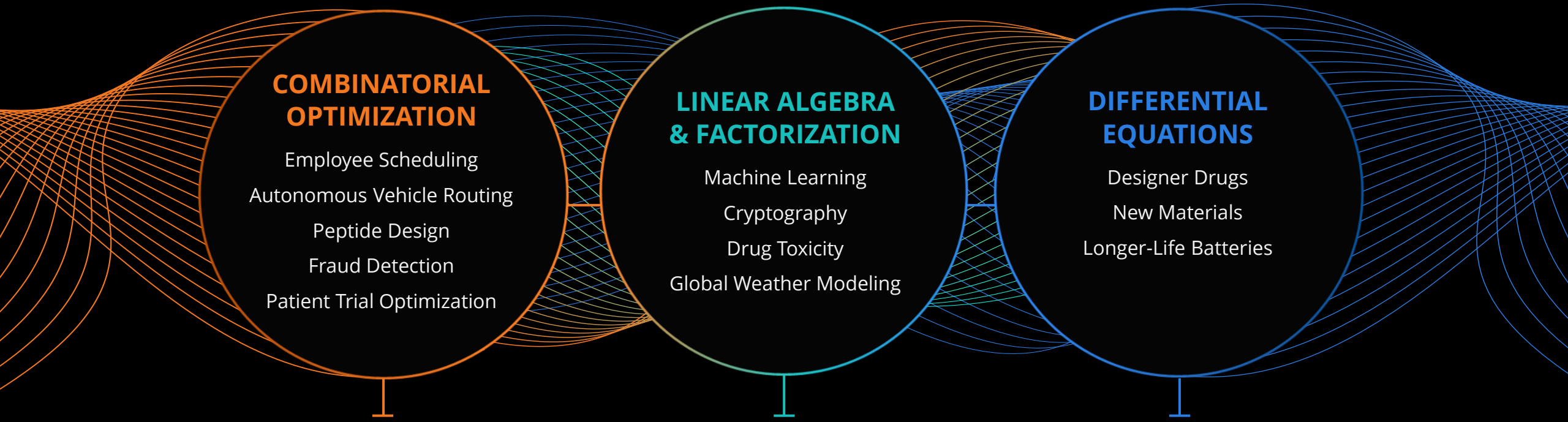
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D-WAVE DIFFERENTIATORS



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CHOOSING THE RIGHT QUANTUM TECHNOLOGY



ANNEALING

AN EASIER ON-RAMP TO QUANTUM COMPUTING

Natively optimization

Commercial today

ANNEALING

OR

GATE

GATE-MODEL

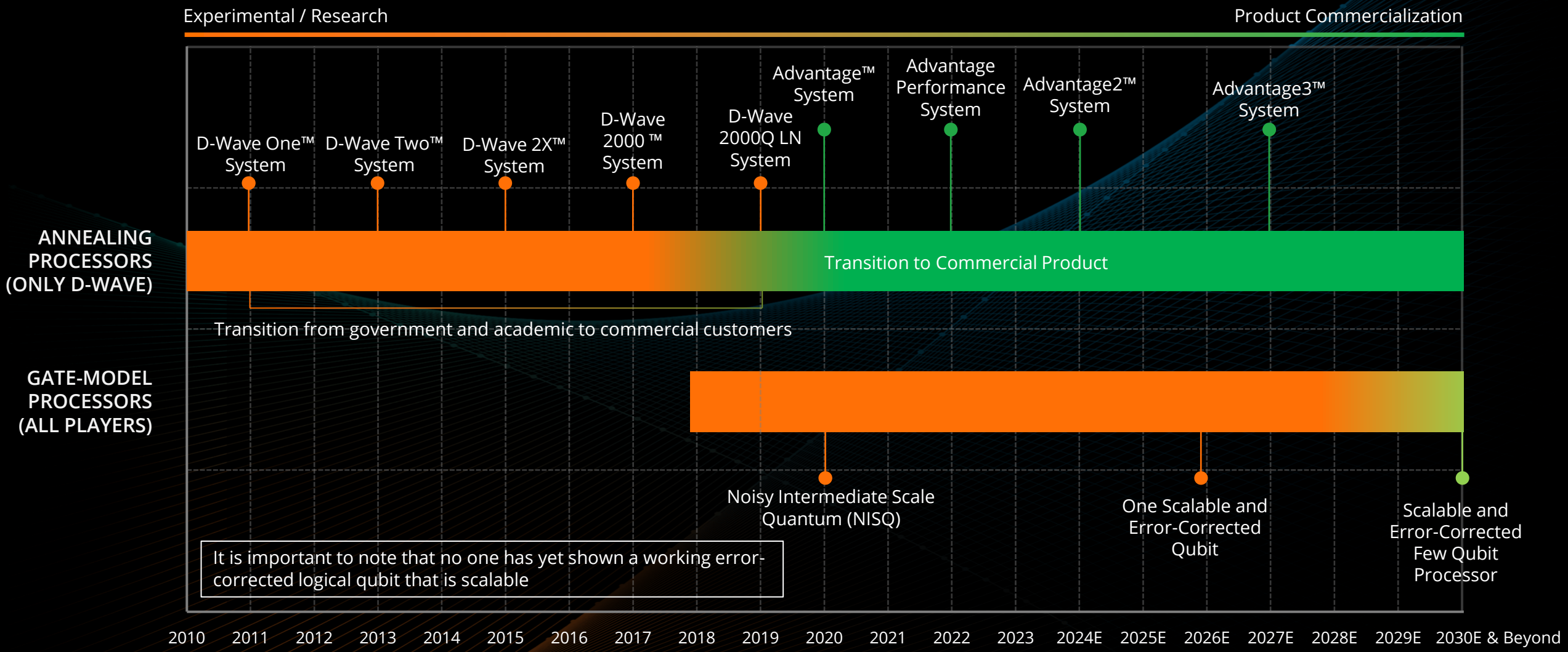
HIGHER INVESTMENT COST & LEARNING CURVE

Suited to differential equations

7+ years to commercialization

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LEADING THE COMMERCIALIZATION OF QUANTUM TECH



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THERE IS ALREADY STRONG DEMAND FOR QUANTUM SOLUTIONS

80% OF COMPANIES
plan to increase quantum computing (QC) commitment in next 2-3 years[1]

42% OF BUSINESS LEADERS
see QC as key for logistics/supply chain management[1]

31% OF ENTERPRISES
have abandoned complex problems because of time to solve[2]

CATALYSTS FOR ADOPTION:
business process efficiencies, increased revenue[1]

BENEFITS:
speed, cost, and accuracy

33%
OF COMPANIES FORSEE ANNUAL QC BUDGETS OF $15M OR HIGHER[1]

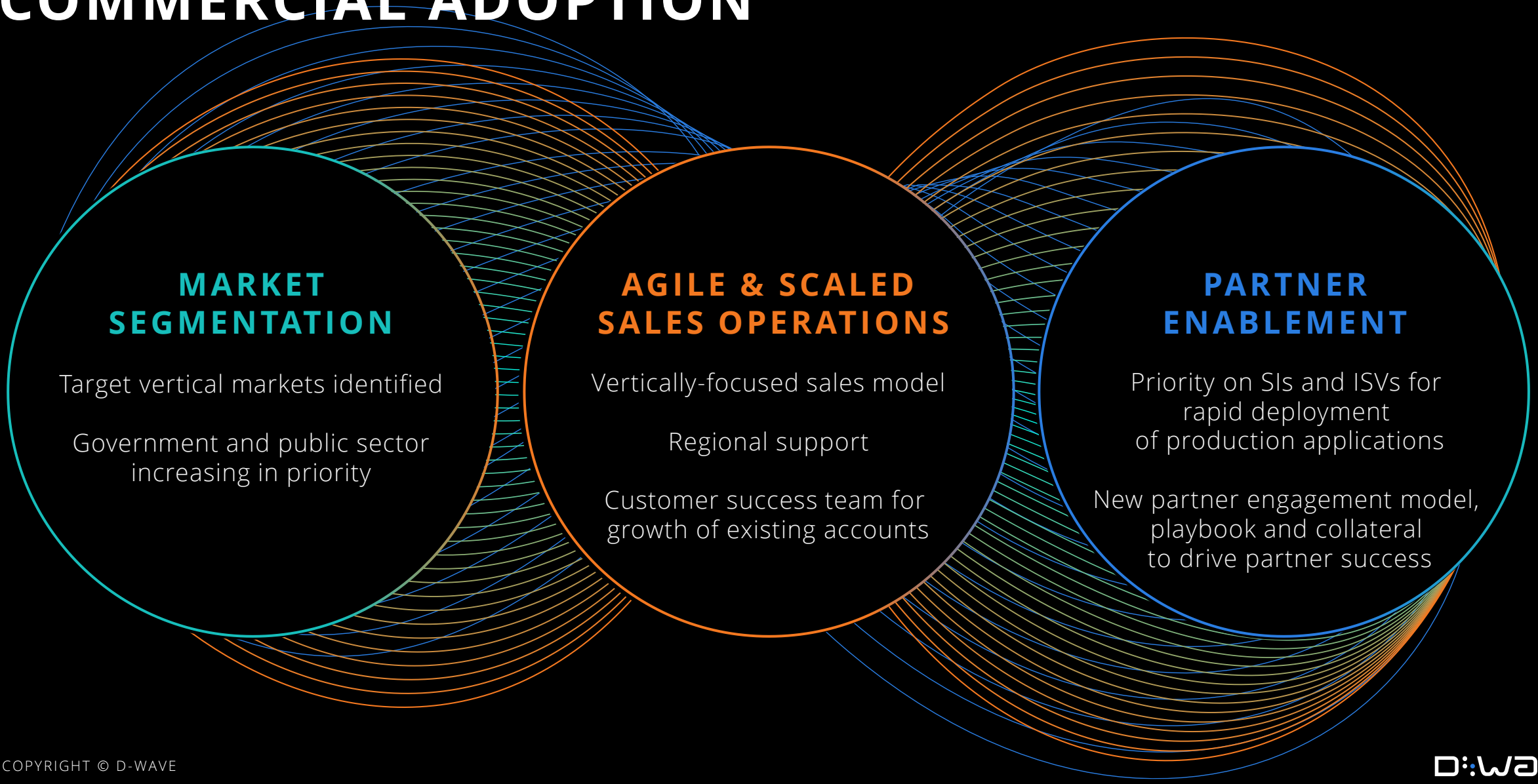
$850B
EXPECTED TAM BY 2043[3]

99+
NEAR-TERM COMMERCIAL USE CASES IDENTIFIED BY EXPERTS[4]

1. Hyperion research
2. 451 research
3. BCG research
4. McKinsey research

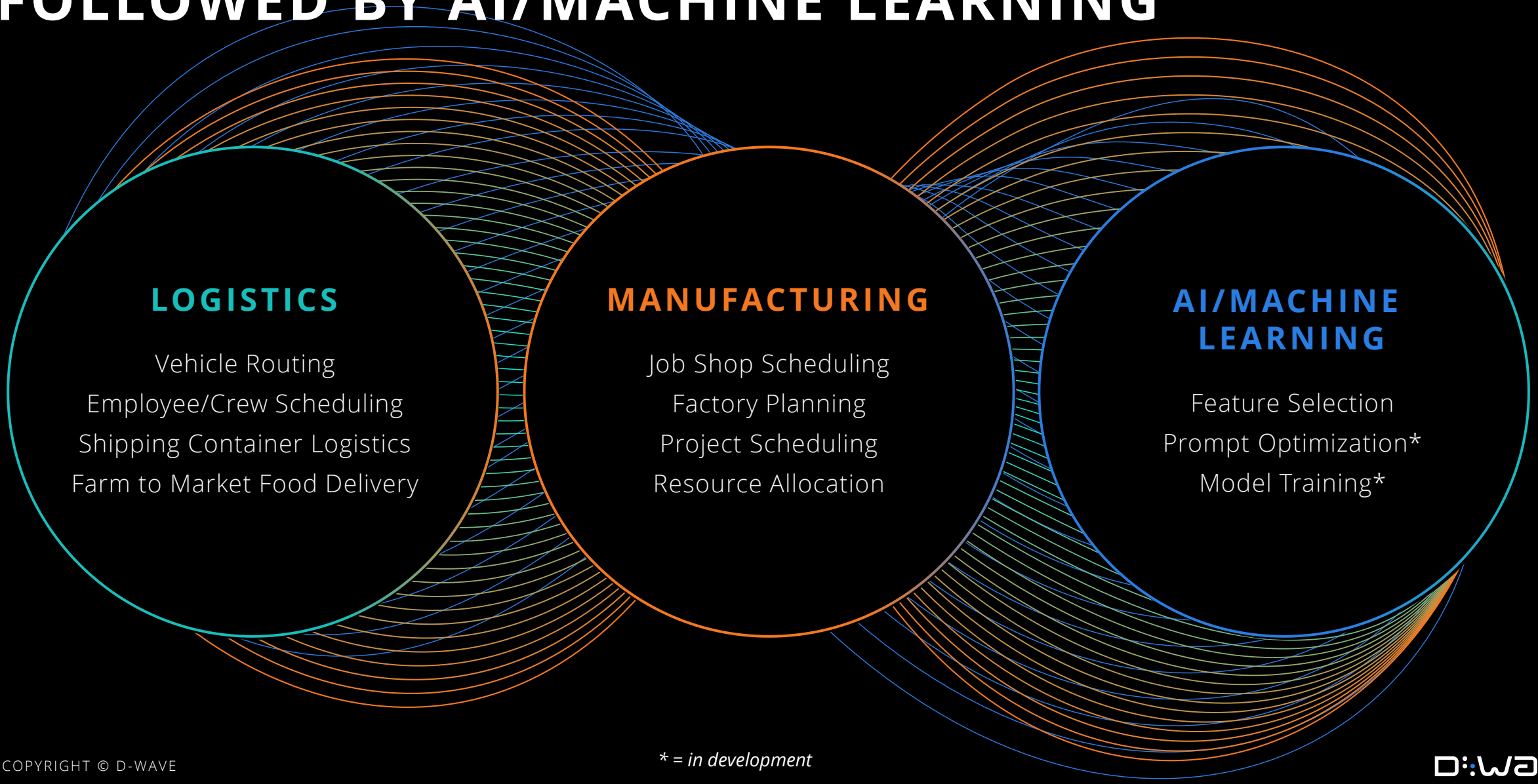
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GO-TO-MARKET APPROACH ACCELERATING COMMERCIAL ADOPTION



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FOCUS ON LOGISTICS AND MANUFACTURING FOLLOWED BY AI/MACHINE LEARNING



* = *in development*

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CUSTOMERS REALIZING TANGIBLE BUSINESS RESULTS WITH D-WAVE TECHNOLOGY

Pattison Food Group

E-commerce driver delivery scheduling

IPG

Tour routing

Davidson

Radar scheduling

satispay

Customer rewards

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OPTIMIZED DRIVER SCHEDULING



80%

REDUCTION IN SCHEDULING TIME

Pattison Food Group

Canada's largest Western-based provider of food and health products is moving multiple quantum hybrid applications into production. The first, an e-commerce driver delivery scheduling application, is now in production to create schedules that serve over 100 stores. This application has trimmed what was an 80-hour task to just 15 hours each week, an 80% time savings. The company will soon bring another quantum-hybrid application into production that optimizes in-store resource scheduling in stores across Canada.

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AUTOMATED TOUR ROUTING



TASK REDUCED FROM 12 HOURS TO LESS THAN ONE HOUR

IPG

Identifying optimal routes for promotional tours is critical to ensuring all client requirements and federal regulations are considered. The Interpublic Group worked with D-Wave to identify routes that reduce the costs of producing and running these tours.

D-Wave's technology was able to solve the given problem in less than an hour and is well designed to allow for an easy transition to a full production-quality application.

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D-Wave

ENHANCED RADAR SCHEDULING



15%

INCREASE IN RESOURCE UTILIZATION

Davidson

Davidson, a technology services company that provides innovative engineering, technical and management solutions for the Department of Defense, aerospace and commercial customers, has been working with D-Wave on several quantum-hybrid applications to advance national defense efforts.

Most recently we've built a radar scheduling application that efficiently manages the time-limited resources of a phased-array radar system, enabling scheduling of communication with moving objects. We observed enhanced resource utilization in all our test cases. On average, we achieved a 15% increase in utilization across all problem scenarios and time limits, with the highest improvement reaching an impressive 42%.

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OPTIMIZED CUSTOMER REWARDS PROGRAM



50%

IMPROVEMENT IN CUSTOMER REWARDS PROGRAM

satispay

Satispay is the leading Italian fintech unicorn focused on revolutionizing mobile payments. Together we've built a quantum-hybrid application that optimizes customer rewards initiatives.

Using D-Wave's constrained quadratic model hybrid solver, the application showed an improvement of 50% in customer rewards programs for the same amount of budget.

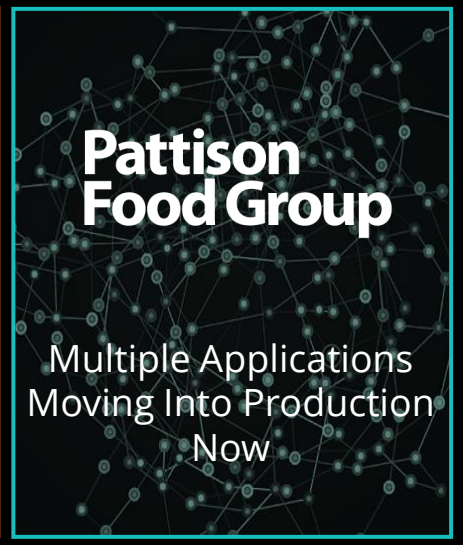
A testament to its potential business value, Satispay plans to transition the quantum-hybrid application into production, with internal teams expected to use it weekly.

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PRODUCTION APPLICATION DEPLOYMENTS ON THE NEAR-TERM HORIZON









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SHAPING GOVERNMENT QUANTUM PROGRAMS FOR INCLUSIVITY AND NEAR-TERM APPLICATION SUPPORT



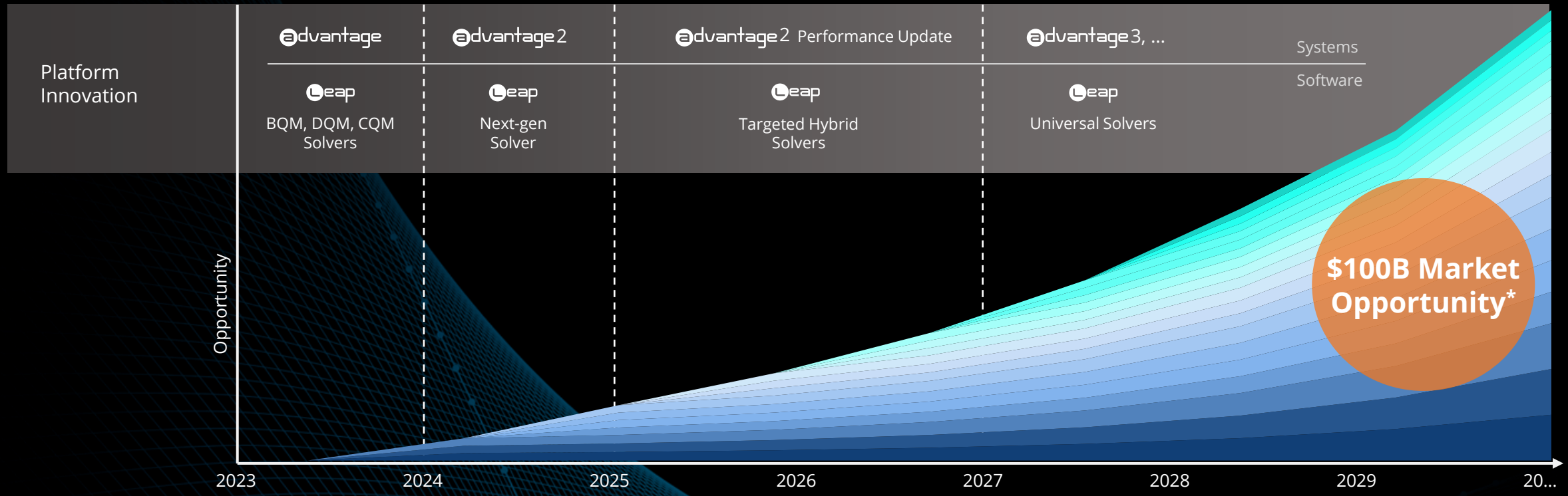
Ensuring reauthorization of U.S. National Quantum Initiative quickly

Supporting legislation that explicitly includes all quantum technologies – annealing, gate model and hybrid

Encouraging support for near-term application development and workforce upskilling

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TECH & PRODUCTS DRIVING CUSTOMER USE CASES



Production Application Use Cases

Scheduling & Routing
- Workforce Scheduling
- Job Shop Scheduling
- Vehicle Routing

Allocation & Risk Management
- Resource Allocation
- Customer Offer Allocation
- Portfolio Optimization
- Fraud Detection

Machine Learning
- Model Training
- Prompting Optimization
- Feature Selection

Defense & Aerospace
- Missile Defense Optimization
- Satellite Placement
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Process & Flow
- Wireless Infrastructure Optimization
- Network Flow Optimization
- Supply Chain Optimization

Advanced Use Cases
- Drug Discovery
- Protein Design
- Energy Unit Commitment

** Based on D-Wave analysis*

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A PRODUCT ROADMAP BUILT TO DELIVER CUSTOMER ROI

GREATER PROCESSING POWER
ADVANTAGE2 PROCESSOR

- Increased processor performance with Advantage2 system
- Improved qubit coherence
- Improved connectivity
- Ability to address more complex customer optimization problems

INCREASED SOFTWARE VALUE
LEAP™ SERVICE

- Advancement of quantum-hybrid solver software
- Improved solution quality for larger, more complex customer problems

RELIABILITY AND ACCESS
FULL STACK

- Software and hardware enhancements to drive production-grade reliability
- Continued work on key compliance initiatives such as SOC 2 Type 2
- Expanded support for growing go-to-market initiatives

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EVER-INCREASING ADVANTAGE SYSTEM PERFORMANCE, ENGINEERED FOR BUSINESS

ADVANTAGE SYSTEM

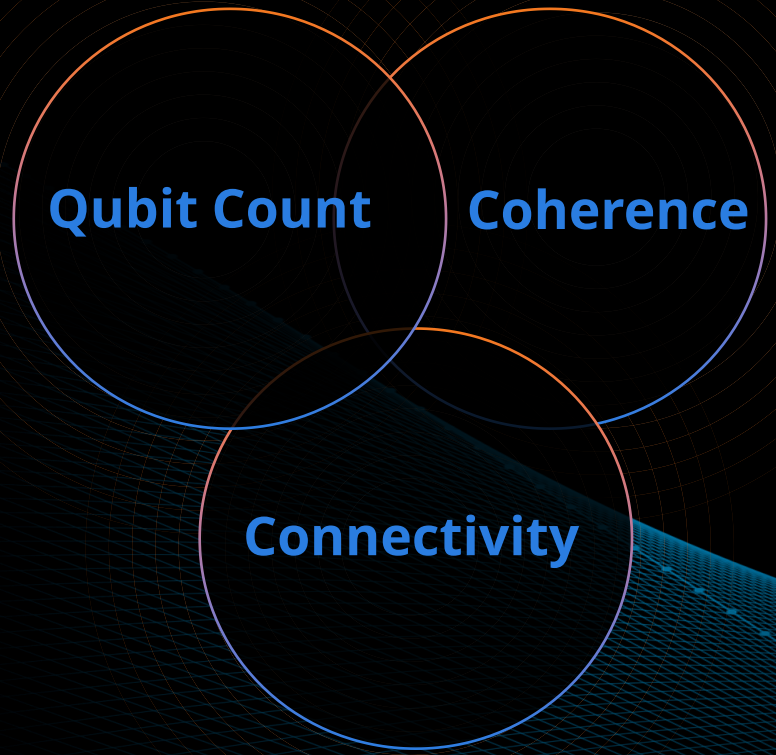
- **Proven to improve solution quality faster** than classical alternatives (i.e. scaled polynomial speed-up) on a class of hard optimization problems (Nature, 2023)
- **10x faster time-to-solution** for 3D lattice problems than D-Wave 2000Q system (arXiv, 2020)
- **Well-suited for tackling variety of customer problems**, including vehicle routing, crew scheduling, manufacturing job shop scheduling, and resource allocation
- Coupled with quantum hybrid solvers, **capable of solving large application problems**, including: binary and integer variables, linear and quadratic terms, problems with up to 100,000 constraints (and 500,000 variables), and inequality & equality constraints

ADVANTAGE2 SYSTEM *(FORTHCOMING)*

- Fueling customer success with **greater qubit coherence and connectivity** that will address even larger, more complex customer use cases
- Expect **increased energy scale**, which lowers error rates; **improved solution quality**; and **increased probability of finding optimal solutions**
- Calibration of 1,100+ qubit prototype in new, lower noise fabrication stack, with **benchmarks showing higher performance** on certain optimization problems
- Successful quantum error mitigation techniques are **extending coherent annealing range** by nearly an order of magnitude (arXiv, 2023)

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ADVANCEMENTS IN COHERENCE AND CONNECTIVITY ALSO SHOW BUSINESS BENEFITS



Value of quantum systems doesn't rest solely on number of qubits

We're progressing important work in qubit coherence (ability to maintain a quantum state) and connectivity

Announced notable progress in development of high coherence fluxonium qubits, which are qubits capable of doing quantum computations for a longer period of time without errors

Designed, manufactured, and operated fluxonium qubits that have demonstrated quantum properties that are comparable to the *best seen* to date in peer-reviewed scientific literature
https://www.dwavesys.com/media/e42bbtcw/fluxonium-coherence_external.pdf

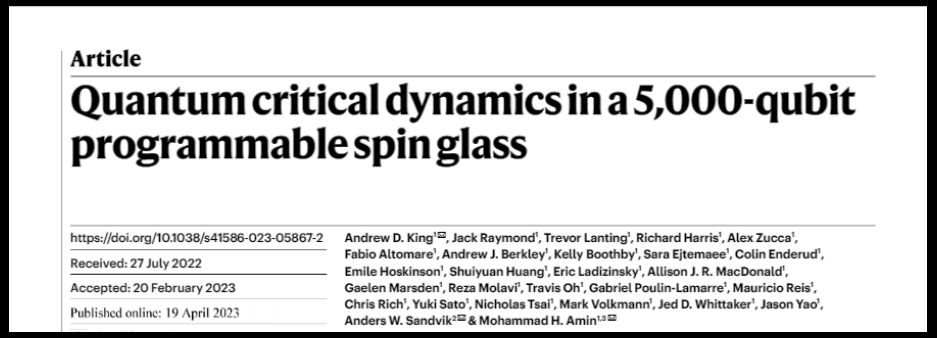
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REACHING MILESTONES ON THE PATH TO QUANTUM SUPREMACY

We believe D-Wave will be the first quantum company to definitively demonstrate quantum supremacy in significant and meaningful problems, beyond random number generation

Research efforts are underway, with a number of significant achievements already realized:

- Proven performance scaling advantage in theory and measurements of coherent quantum annealing
- Demonstrated with Advantage quantum computers
- Demonstrated on hard material simulation problem instances
- Further increases in coherence time translates into greater performance advantage

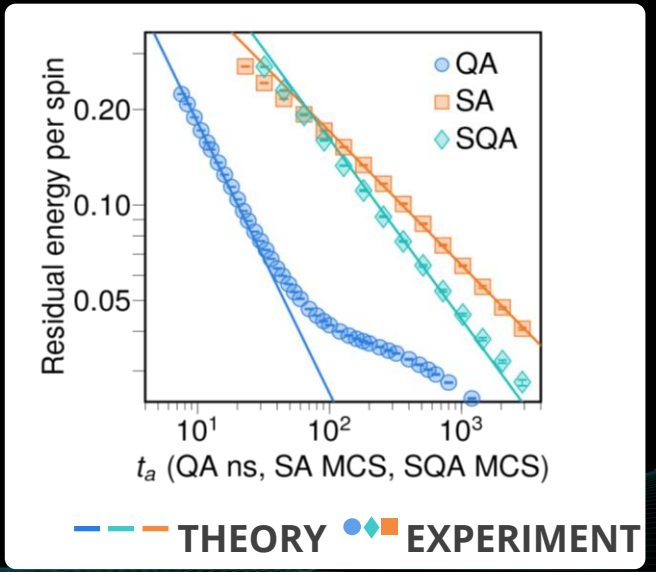


Article

Quantum critical dynamics in a 5,000-qubit programmable spin glass

https://doi.org/10.1038/s41586-023-05867-2
Received: 27 July 2022
Accepted: 20 February 2023
Published online: 19 April 2023

Andrew D. King[1✉], Jack Raymond[1], Trevor Lanting[1], Richard Harris[1], Alex Zucca[1], Fabio Altomare[1], Andrew J. Berkley[1], Kelly Boothby[1], Sara Ejtemaee[1], Colin Enderud[1], Emile Hoskinson[1], Shuiyuan Huang[1], Eric Ladizinsky[1], Allison J. R. MacDonald[1], Gaelen Marsden[1], Reza Molavi[1], Travis Oh[1], Gabriel Poulin-Lamarre[1], Mauricio Reis[1], Chris Rich[1], Yuki Sato[1], Nicholas Tsai[1], Mark Volkmann[1], Jed D. Whittaker[1], Jason Yao[1], Anders W. Sandvik[2✉] & Mohammad H. Amin[1,3✉]



*Lower and steeper are better

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LEAP REAL-TIME QUANTUM CLOUD SERVICE AND ADVANCING HYBRID SOLVERS UNLOCKING NEW USE CASES



Launched new algorithmic updates to our Constrained Quadratic Model hybrid solver

- Increased performance for existing binary problem classes, including offer allocation, portfolio optimization, and satisfiability

Focusing future software developments on extending production-grade performance, security and scalability

- Production leadership practices that support rapidly scaling customer application deployments
- Hybrid solver performance enhancements
- Authentication and additional security features

Initiated exploration of our solutions' integration with new machine learning areas

- Prompt optimization
- Model training

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PRODUCTION-GRADE RELIABILITY REFLECTS OUR COMMERCIAL MATURITY

Focused on delivery of secure, reliable, and production-grade quantum tech stack at scale and across geographies to support customers' production deployments

- Introduced new administration features that give customers the ability to manage their own organization and associated projects; supports rapid growth of reseller and partner programs
- Released zero downtime deployment features that let us introduce new software enhancements in the Leap quantum cloud service without service interruption
- Entered final stages of securing SOC 2 Type 2 compliance, an initiative that helps ensure protection of customer data and streamlines procurement for companies that require data compliance

99%

UPTIME FOR LEAP QUANTUM CLOUD SERVICE

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D-WAVE QUANTUM PATENT PORTFOLIO RANKED AS 3RD LARGEST IN WORLD

500+ granted and pending patents worldwide, including:

- 220+ US granted patents
- 210+ granted and pending patents worldwide (non-US)

60%+ of the portfolio applies to both gate model and annealing quantum computing

Portfolio covers hardware and software, including systems, qubits and other devices, fabrication, architecture, system software, cryogenics, hybrid quantum computing, and applications of quantum computing

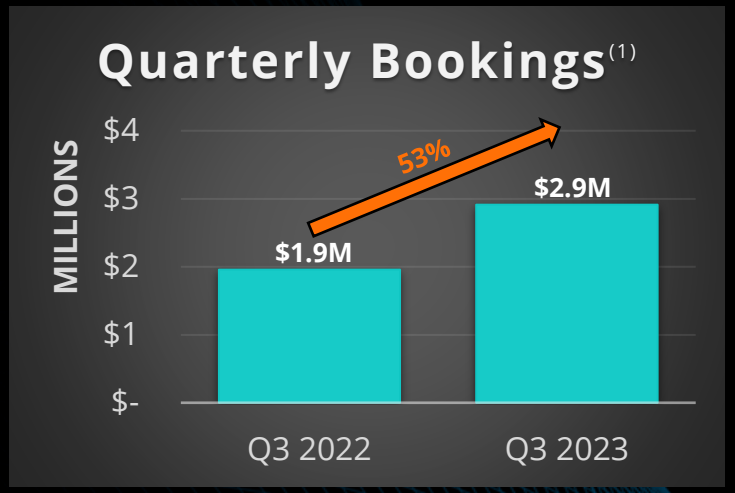


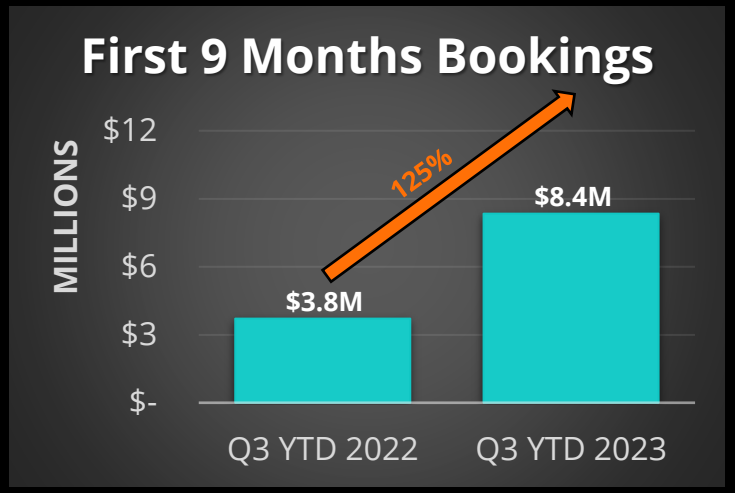
220+ US Granted Patents

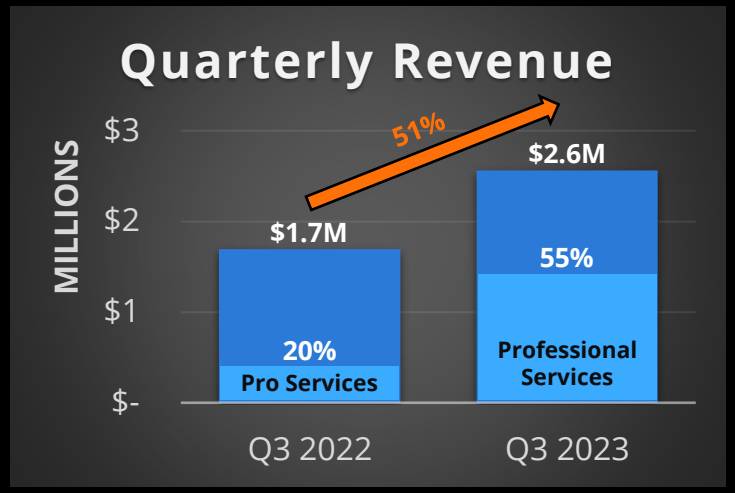
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Q3 FINANCIAL UPDATE

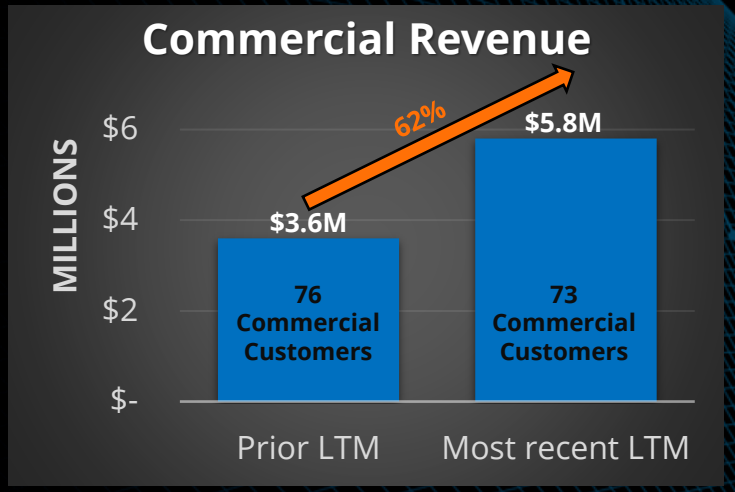
Significant Growth in Bookings, Revenue, Commercial Traction & Cash

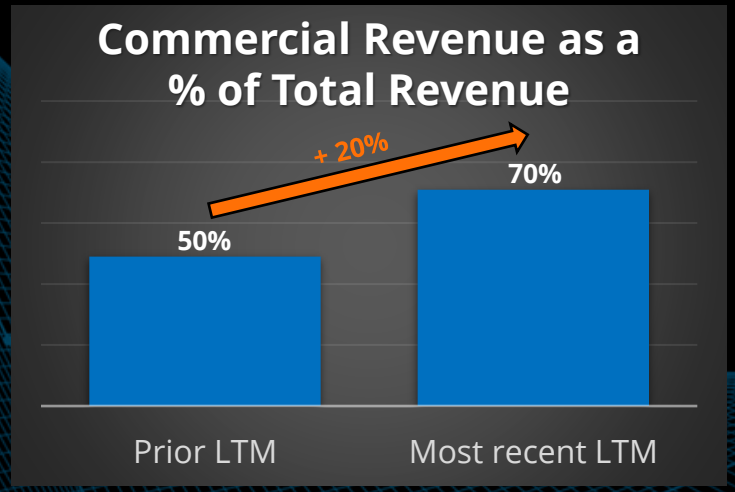


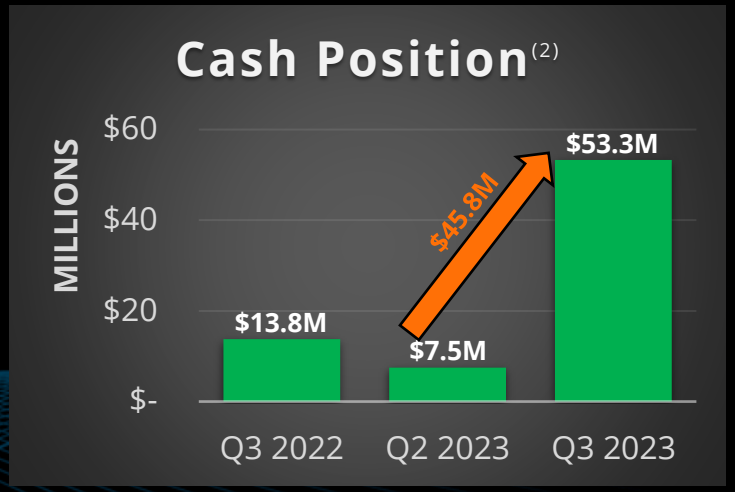




(1) Sixth consecutive quarter of YOY growth in bookings

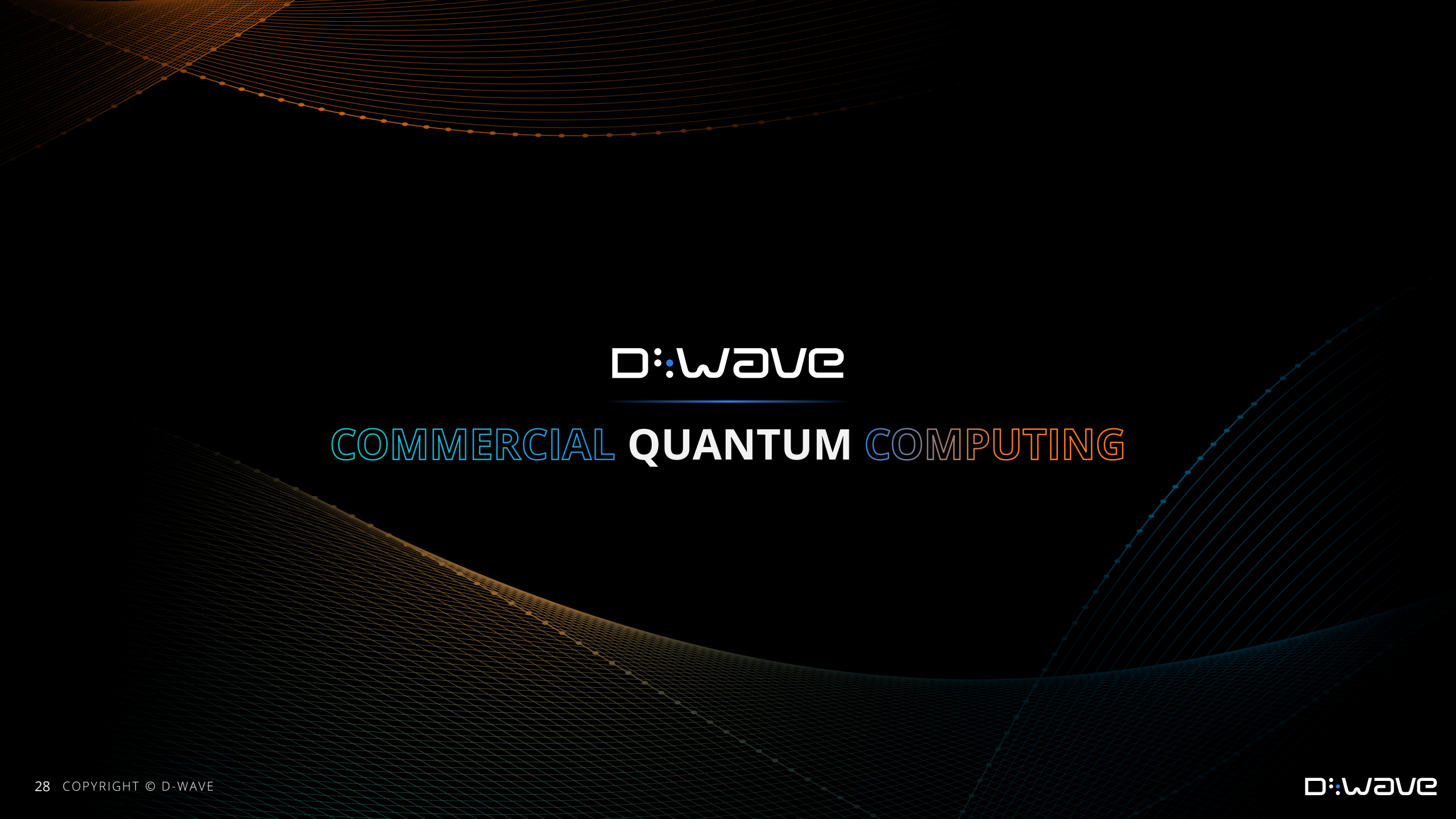






(2) Additional source of liquidity is $84.4M in remaining availability under the ELOC through October 2025, subject to a $1.00 minimum stock price

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