D-Wave
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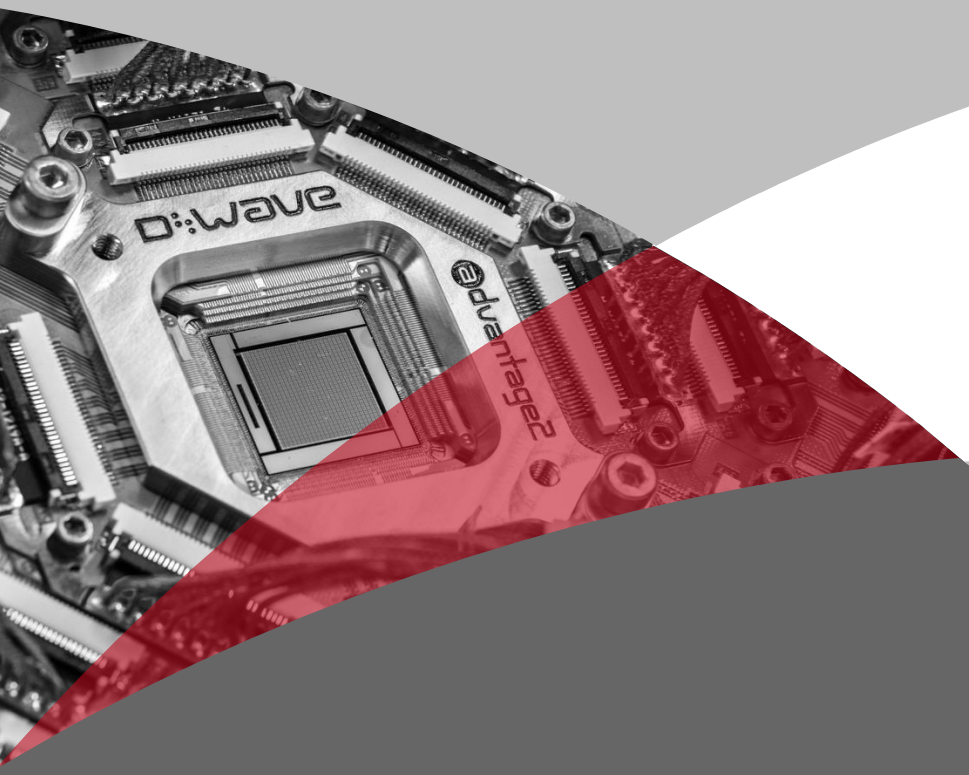

Quantum Computing:

The Key to Addressing Today's Complex Business Problems

July
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WAKEFIELD

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Executive Summary

Quantum computing is the next frontier, as it promises speed and efficiency beyond even our most powerful supercomputers. As surveyed business leaders struggle to optimize areas like logistics, scheduling, and design, **the vast majority (81%) believe they've reached the limit of the benefits they can achieve through optimization solutions running on classical computers.** Quantum computers could provide faster, higher quality solutions to address computationally complex business problems, such as streamlining supply chains and optimizing manufacturing processes.

Most (88%) believe their company would go above and beyond for even a 5% improvement in optimization, according to a survey of 400 business leaders and logistics and operations decision-makers conducted by Wakefield Research on behalf of D-Wave. But there are barriers preventing companies from improving optimization capabilities. Organizations surveyed aren't realizing this potential because they lean on outdated technology (39%), have budgetary restrictions (38%), and rely on classical optimization that runs on conventional computers (36%).

For the vast majority (87%), complacency is getting in the way of innovation. Yet close to a quarter of surveyed leaders (22%) already see quantum making a huge impact for those who have adopted it, while another 50% anticipate it will be disruptive for their industry.

It's time for change. Companies are taking baby steps toward adopting quantum computing to maximize optimization. **Among those surveyed, 53% are planning to build quantum computing into their workflows and 27% are considering doing so, indicating a growing recognition of the technology's real-world business value.** Among those who have not yet implemented quantum optimization, 31% expect to roll it out within the next two years. The majority of those who have invested, or plan to within the next two years (72%), anticipate a return of at least $1 million.

Key Findings

81%

Believe they've reached the limit of the benefits they can achieve through optimization solutions running on classical computers.

88%

Would go above and beyond for even a 5% improvement in optimization.

The potential value of quantum computing in their industry

22%

It is already making a huge impact for those who have adopted it.

50%

It will likely be disruptive, but the specific impact is unclear at this point.

For those who have not yet adopted quantum optimization, top barriers include:

44%

Lack of in-house expertise.

40%

Concerns about demonstrating ROI.

87%

Feel complacency is the greatest barrier to innovation at their company.

85%

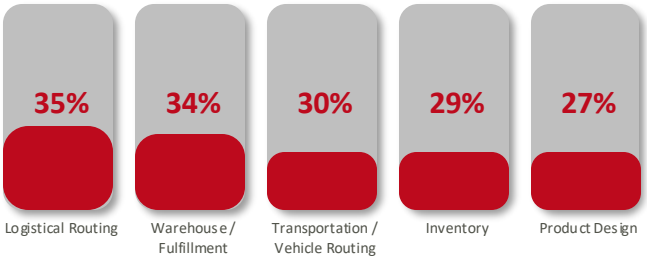
Believe their company will become less competitive if they don't adopt quantum optimization within the next 2 years.

A Business Need

Surveyed business leaders see a need for optimization, but they're at a loss as to how to gain these efficiencies. Most (88%) agree – and 33% strongly agree – that their company would go above and beyond for even a 5% improvement in optimization. This is especially true in the manufacturing industry, where 43% strongly agree.

The top five areas their companies most need to increase optimization are: logistical routing (35%); warehouse and fulfillment (34%); transportation and vehicle routing (30%); inventory (29%); and product design (27%).

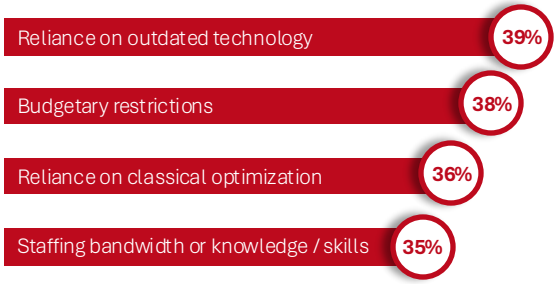
Top areas in need of increased optimization



Q: What are the top five areas your company most needs increased optimization?

The vast majority (85%) think their company needs to invest more in technological innovation to realize their optimization goals, including 23% who believe they need to invest significantly more. Surveyed leaders find themselves stuck in the routine. Some lean on outdated technology (39%) or rely on classical optimization that runs on conventional computers (36%).

Barriers to improving optimization capabilities



Q: What barriers are preventing your company from improving its optimization capabilities?

Others (38%) point to budgetary restrictions as a blockade to optimization improvements. Staffing bandwidth or a lack of knowledge and skills is also holding some (35%) back from optimization, including 41% of those in North America. At more established companies that have been in business for 20 years or more, respondents also note a reluctance to change (40%) as an obstacle to improvement.

While overall half (50%) believe their company's approach to the speed of innovation is about right, most (81%) acknowledge they're prevented from going further unless they bring in new methods, noting they've reached the limits of the benefits they can achieve through optimization solutions running on classical computers.

It's hard for decision-makers to admit that they can do better. In fact, most of those surveyed view complacency as the greatest barrier to innovation at their company (87%), a figure that rises to 94% among those in North America while slightly fewer (72%) believe this to be the case in Asia Pacific (APAC).

Spotlight

Overinvested in AI?

As surveyed business leaders search for new solutions to optimize, many find themselves invested - perhaps too heavily - in artificial intelligence (AI).

75%

agree that their company has focused too much attention and effort on AI, causing them to miss out on other, more valuable types of technology solutions that could improve business outcomes.

In fact, 37% of surveyed leaders whose companies have yet to invest in quantum optimization cite prioritizing other technology as one of the reasons why they haven't yet given it a whirl. This comes as 85% believe there is a need to invest more in technological innovation to achieve optimization goals.

This may be particularly the case at newer companies, established within the past 20 years, where 37% of surveyed leaders strongly agree that their companies have tunnel vision when it comes to AI.

Over-indexing on AI can lead to too little resources for other technologies. Among surveyed leaders who see quantum computing as very or extremely helpful for solving the specific operational challenges their company is facing, 80% indicate their company has focused too much on AI, to the detriment of other more valuable technology solutions.

Keeping Pace with Technology

Surveyed business leaders recognize the importance of quantum:

85%

believe their company will definitely or probably become less competitive if they don't adopt quantum optimization within the next 2 years.

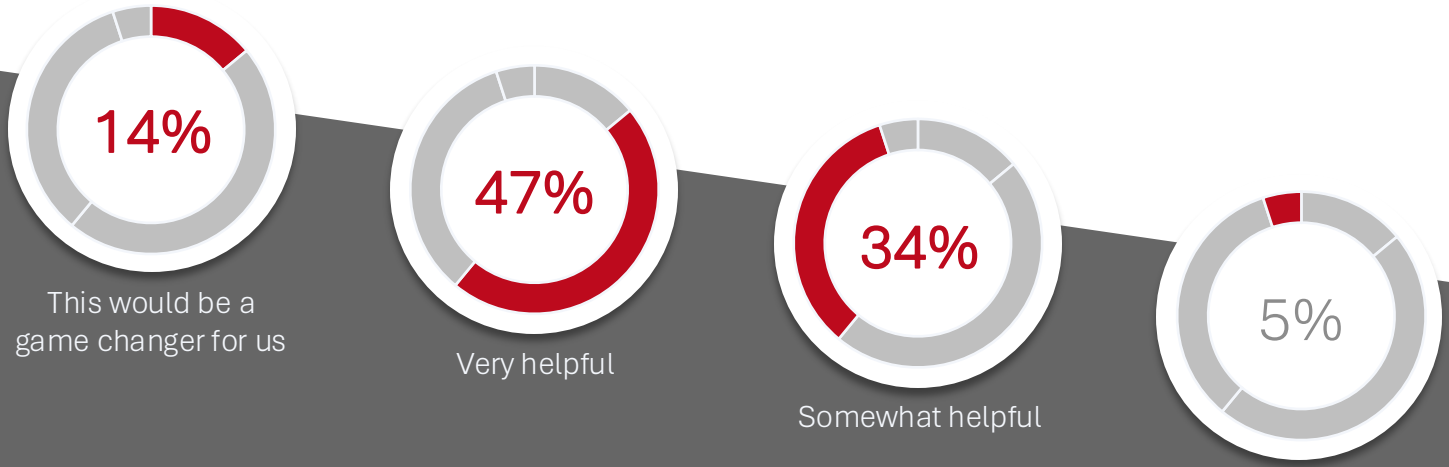
This is especially true in North America (95%) and Europe (93%), while fewer in APAC (55%) anticipate falling behind.

This belief that quantum will distinguish winners from losers is well-founded. Close to a quarter of surveyed leaders (22%) are already seeing it make a huge impact for those who have adopted it, while another 50% anticipate it will be disruptive for their industry.

For those who have already implemented quantum or expect to within the next 2 years, 34% have seen it make a huge impact, while the majority of those not planning to implement within the next 2 years (57%) believe it will likely be disruptive.

Perhaps more importantly, surveyed leaders recognize the potential it could have in their own companies. Three in five (60%) expect quantum computing-based optimization to be very or extremely helpful in solving the specific operational challenges their company faces. Among those most familiar with quantum, who know what it is used for or have used it already, this figure rises to 73%, including nearly a quarter who describe it as "a game changer."

Potential value of quantum optimization in solving the company's specific operational challenges

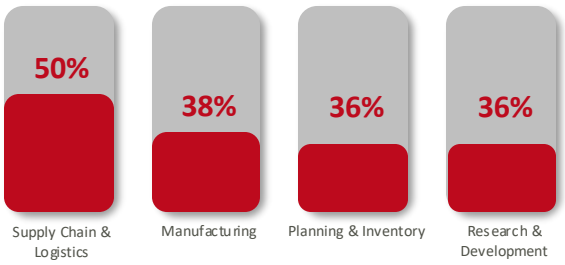


Q: How useful would you expect quantum computing-based optimization to be in helping to solve the specific operational challenges your company is facing?

Benefits of Quantum

Surveyed business leaders expect that the implementation of quantum computing into their workflows could lead to improvements across operations. The area of their business they most commonly expect to benefit from an investment in quantum optimization is supply chain and logistics (50%). They also see potential for quantum computing to optimize their company's manufacturing (38%), planning and inventory (36%), and research and development (36%).

Areas of the business that could benefit from quantum optimization



Q: What areas of the business would most benefit from your company investing in quantum computing-based optimization?

Respondents at the VP and C-Suite level, in particular, are excited for quantum optimization in their supply chain and logistics, with 61% citing it as a top area that could benefit. Among more mid-level decision makers surveyed, in a manager or supervisor role, production (40%) and IT (38%) are often seen as areas that could improve with quantum.

Potential outcomes most likely to drive investment in quantum

1. Innovation for new products & services
2. Improve operational efficiency
3. Reduce costs
4. Increase revenue

Q: What potential outcomes would be the most likely drivers for your company to invest, or invest more, in quantum computing?

A look at the desired outcomes that would most likely spur these surveyed business leaders to invest in quantum computing confirms the need for increased operational efficiency. Surveyed leaders cite improving operational efficiency and driving innovation for new products and services among the most likely drivers for their company to invest in quantum optimization. Among VPs and the C-Suite respondents, 50% view increased innovation for new offerings as a top driver for potential investment.

The bottom line is of course important as well, with 41% of surveyed leaders including cost reduction and 37% noting increased revenue as drivers for them to invest in quantum computing.

Spotlight

Career Boost from Quantum

Surveyed business leaders are taking a personal interest in delving into quantum computing. A strong majority (89%) believe their own career would advance if their company were to invest in quantum optimization.

89%

believe their personal career would advance
if their company were to invest in quantum optimization.

This is especially the case in North America and Europe, where 93% and 94% agree with this, respectively, compared to 76% of those in APAC. More than a third of respondents in North America (34%) strongly agree that working at a company with quantum optimization would help advance their career.

The belief that company investment in quantum computing would benefit their personal career is even stronger among those who feel it could be very or extremely helpful in solving their organization's operational problems. Among this group, 40% strongly believe company investments in quantum optimization would advance their personal career – a notable bump over the 28% of all surveyed leaders who strongly believe this. It seems they're likely considering all those resume bullets demonstrating just how much they helped their company succeed using quantum optimization.

ROI from Quantum

Companies are taking steps towards implementing quantum computing to maximize optimization. Among those surveyed, 53% are planning to build quantum computing into their workflows and 27% are considering doing so, indicating a growing recognition of the technology's real-world business value. And this isn't referring to "someday" plans – among those who have not yet adopted quantum optimization, 31% expect to roll it out within the next 2 years.

Among current or soon-to-be adopters of quantum optimization surveyed, the anticipated investment level varies. Most are looking to either spend $500,000 to $1 million (33%), or between $1 million and $5 million (34%), within the first 12 months of implementation. Another 18% of surveyed leaders expect to invest more than $5 million.

And many anticipate seeing a return that exceeds their investment within the first 12 months of implementation. Close to half (46%) expect a ROI of between $1 and $5 million, while 27% predict an even larger ROI of more than $5 million in the first 12 months. About 1 in 5 (22%) expect to see a return of $500,000 to $1 million. This may be something to keep in mind for the 35% of surveyed business leaders whose company has not yet implemented quantum optimization due to budgetary restrictions.

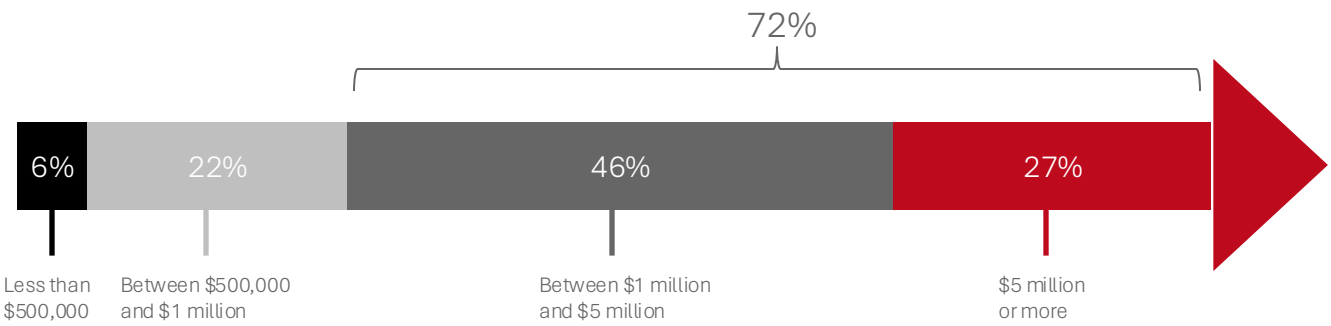
Spotlight

Quantum Push

Surveyed business leaders recognize that they could do more to optimize their processes. They're open to trying new technology, but for various reasons – lack of expertise, concerns about ROI – many haven't yet implemented quantum optimization.

Among those surveyed whose company has not yet implemented quantum computing, 44% haven't taken action in part because they lack in-house expertise with the technology. And for roughly one in three surveyed business leaders (35%), budgetary restrictions are holding them back from engaging with quantum.

Anticipated ROI in the first 12 months of implementing quantum optimization



Q: *(Among those whose company has already implemented quantum optimization or plan to do so within the next 2 years)* What is the monetary value (return-on-investment) you expect to see from your organization's investment in quantum computing-based optimization [in the first 12 months of implementing it / over the next 12 months]?

Conclusion

For surveyed business leaders, the crucial decision to make as new technologies emerge for optimization is how much they should lean into those tools. While appetite for innovation and greater efficiencies is strong, knowledge about how to achieve those improvements is lacking. Half of surveyed leaders (51%) are familiar enough with quantum computing to know what it is used for, including some who have already used it. Most of the rest have at least a basic knowledge of what quantum computing is but aren't sure how to apply it.

Those willing to take the leap now will likely find themselves ahead of the competition as quantum computing continues to gain traction. Indeed, 26% are convinced their company will become less competitive if they don't adopt quantum optimization within the next 2 years.

Surveyed decision-makers hope to get a lot out of their investments in quantum computing. Most (60%) see it as very or extremely helpful for solving the specific operational challenges they're facing, with the greatest benefits expected in supply chain and logistics, followed by manufacturing and planning and inventory. The majority of respondents with quantum already built into their workflows, or that plan to adopt it within the next two years, anticipate ROI of at least $1 million (72%) in the first 12 months, including 27% who anticipate ROI of $5 million or more. They expect optimization for their supply chain and logistics, while also aspiring to drive innovation for new products and services and improvements to operational efficiency.

Surveyed business leaders need to explore quantum optimization to remain competitive, and they know it. The limits of classical computing have been reached, and those who have taken steps toward quantum computing are already seeing the benefits.

METHODOLOGICAL NOTES

This survey was conducted by Wakefield Research among 400 business leaders and decision-makers (Managers, Directors, VPs, and C-Levels) in North America (U.S., Canada), Europe (Germany, UK), and APAC (Japan) between May 2nd and May 15th, 2025, using an email invitation and an online survey. All respondents are logistics or operational managers and decision-makers at their organization and make decisions about optimization in their line-of-business (such as resource optimization, workforce optimization, etc.), from the following key sectors: retail, logistics, supply chain, manufacturing, life sciences, and financial services.

Results of any sample are subject to sampling variation. The magnitude of the variation is measurable and is affected by the number of interviews and the level of the percentages expressing the results. For the interviews conducted in this particular study, the chances are 95 in 100 that a survey result does not vary, plus or minus, by more than 4.9 percentage points in the Global Sample, 6.9 percentage points in North America, and 9.8 percentage points in Europe and APAC from the result that would be obtained if interviews had been conducted with all persons in the universe represented by the sample.

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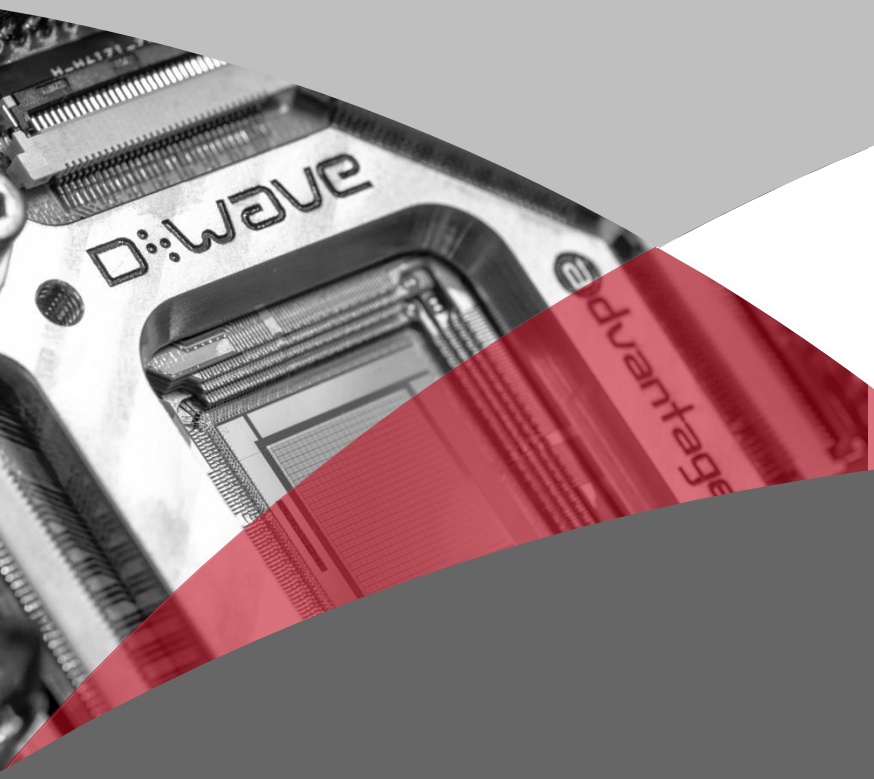

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