# CONQUERING RESOURCE CHALLENGES:
# REDUCE COSTS WITH QUANTUM OPTIMIZATION

**Improving resource efficiencies is essential for organizations that need to manage a range of labor, materials and other resources from both inside and outside the organization, as they navigate hurdles such as demand-forecasting inaccuracies and cost pressures**

These challenges can result in resource conflicts and inefficient workload distribution and hinder everything from operational excellence and competitiveness to national security. However, traditional computing methods often fall short due to manual analysis and classical computing limitations, leading to missed revenue opportunities and ineffective strategies.

## QUANTUM OPTIMIZATION: A POWERFUL SOLUTION

Quantum-powered resource optimization can address an organization's needs for better and more efficient distribution of materials, funds, and personnel. It resolves resource conflicts by managing competing demands across departments, balances workloads to prevent bottlenecks, and aligns assets with critical projects for stronger impact. This approach can reduce waste, elevate productivity, and help achieve a sustainable competitive advantage. Today's network operators, for instance, must manage bandwidth distribution to ensure seamless connectivity, while energy companies need to better measure power grid utilization to meet fluctuating demands. Logistics companies are tasked with coordinating fleet operations to guarantee timely deliveries, and healthcare systems must allocate medical resources to respond to patient needs efficiently.

D-Wave solves these and other complex optimization problems through hybrid computing solutions that use the best of classical and quantum computing technologies. D-Wave's annealing quantum computers, boasting over 5,000 qubits, are the largest in the world. They enable organizations to leverage quantum programming to develop advanced commercial applications. Through the Leap™ quantum cloud service, customers can access hybrid solvers capable of handling problems with millions of variables and hundreds of thousands of constraints. **This secure, real-time, production-grade service offers over 99% uptime and availability.**

## BENEFITS OF QUANTUM-POWERED RESOURCE OPTIMIZATION

- Enhances resource management processes for more effective operations.
- Reduces cost by cutting down the need for additional infrastructure.
- Enables insights into complex data to make better decisions.

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## USE CASE: QUANTUM OPTIMIZATION IN ACTION AT NTT DOCOMO

NTT DOCOMO, Japan's largest telecommunications company, aimed to enhance network performance by reducing signal congestion through predicting future movement patterns and optimizing base-station combinations. D-Wave's hybrid-quantum technology helped them effectively streamline base-station tracking areas by analyzing extensive historical data on device movements. This approach led to a 15% reduction in paging signals during peak periods.

"We anticipate that our quantum optimization strategy will further refine network efficiency, allowing us to maintain high-quality service without additional infrastructure investments as network traffic increases. With D-Wave's hybrid quantum technology, we aim to set a new standard in the telecommunications industry for operational performance."

**— Takatoshi Okagawa, director of research and development strategy at NTT DOCOMO**

## GET STARTED NOW

Are you ready to explore how quantum optimization can meet your resource optimization needs?

With our hands-on team of experts and our Launch™ program, it's easy to reap the benefits of quantum optimization now. Our team will guide you through every step of your journey: we'll validate your use case, offer an optimized and thoroughly tested solution, and ensure a smooth path to production deployment.

**Sign up for a consultation today.**