



POWER

# DIGITAL TRANSFORMATION

## Automate and optimize power network generation, transmission, distribution, and consumption

As power companies feel the pressure to reduce carbon emissions by increasing the use of renewable energy, they are also striving to expand the use of distributed energy systems. What's needed to solve these challenges is automated, real-time control over power grids and customer interactions.

The key lies in modernizing system networks and creating connected intelligence across devices through digital transformation. Achieving this mission enables power companies to analyze big data generated by Internet of Things (IoT) networks. This in turn creates visibility into real-time system performance and enables power companies to improve business agility and connect with customers—directly and cost-effectively.

### PROVEN RESULTS

QUEST DEVELOPED A SOLUTION THAT REMOTELY MONITORS AND CONTROLS ACTUATOR VALVES, APPLIES REAL-TIME EDGE ANALYTICS, AND DISPLAYS INTUITIVE REAL-TIME VISUALIZATIONS OF DIAGNOSTICS TO THE PLANT OPERATOR.

**100%** INCREASE IN PLANT UPTIME

**0%** UNPLANNED SHUT DOWNS AND MAINTENANCE

**INCREASE IN VALUE CHAIN EFFICIENCY**





## Digital Solutions on the Cutting Edge of Technology

QuEST Global provides a wide scope of expertise across the power domain and digital transformation best practices. Backed by our focus and commitment to start projects quickly and take full ownership of managing the progress of our engineering teams, we specialize in digital technologies that improve product development and streamline power generation, transmission, distribution, and consumption.

Many of our digital transformation solutions are powered by NVIDIA artificial intelligence (AI) technology, and we were the first company to be granted preferred partner status by NVIDIA. We make use of our partnerships with world leaders to maximize asset performance management and digital maintenance support systems for the power sector.



## Asset Performance Management to Drive Aftermarket Services

QuEST also streamlines aftermarket services for power companies by integrating power plant systems and consumer devices with IoT networks. This enables real-time visibility into system performance to proactively identify when maintenance and repairs are needed.

One of our key tools in helping power companies digitize and manage aftermarket services is the GE Predix asset performance management solution. We provide an application that integrates with the Predix platform to remotely monitor turbines. Our solution converts big data into a usable format for analysis for power companies and then builds data models to generate actionable insights.

## Proven Results: Gas and Electricity Consumption Reduced by 15%

### QUEST MISSION

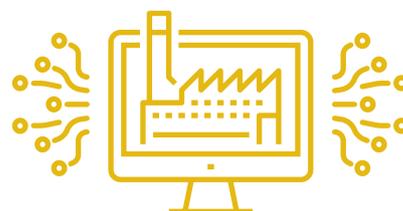
**Reduce energy use for a major U.S. museum** by implementing an energy-efficient temperature and humidity control solution that is integrated with the museum's HVAC system.

### QUEST SOLUTION

**Optimized energy consumption by leveraging an IoT network to access 1.3TB of historical data.** Applied machine learning algorithms to predict optimal set points for dehumidification, reheating, and re-humidification.

### RESULTS

- **15% reduction** in electricity and gas consumption
- **Natural gas savings** of \$70,000 per year (\$1,000 for every 10,000 of cubic feet per minute)
- **Electricity savings** of \$280,000 per year (\$4,000 for every 10,000 of cubic feet per minute)



# Power System Processes: Digitally Transformed

QuEST's digital transformation solutions enhance the real-time capabilities of a wide range of power company processes:

- Asset planning and performance management
- Operations and field support
- Energy aggregation, management, and storage integration platforms
- Supply and demand platforms
- Network controls
- Connected and interoperable devices
- Digital customer models
- Smart sensors for homes, cars, cities, and wearables

## ARTIFICIAL INTELLIGENCE

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Design and deployment of deep neural intelligent networks to automate data collection and analytics.

## ENTERPRISE APPLICATIONS

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Software engineering and back-end integration of big data analytics, cloud, mobile, and website applications and content; integration with workforce productivity, customer service, and B2B sales applications.

## INTERNET OF THINGS (IoT)

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Consulting, design, development, and device-to-cloud system integration for asset performance management, edge computing, energy management, security, and surveillance.

## VIRTUAL REALITY/AUGMENTED REALITY

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360-degree virtual/augmented reality environments integrated with enterprise systems and workflows to increase workforce productivity and enable content publishing across maintenance, training, sales, and marketing teams.

## ROBOTICS R&D

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Humanoid robots to digitally transform support operations and other business functions.

## SECURITY

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Consulting and security enablement for IoT networks and blockchain processes.





## Connect with Customers Faster, Directly, and Cost-Effectively

Given the market demands to automate and optimize power generation, distribution, and consumption, power companies require systems modernization and connected intelligence. QuEST helps answer these challenges so power companies can improve business agility—by enabling the digital transformation of design, development, manufacturing, and aftermarket processes. With the ability to analyze large quantities of data and generate insights in real time, power companies can ensure reliable on-demand power and can connect with customers more cost-effectively.

### QuEST Expertise

QuEST Global provides the knowledge, experience, and expertise needed to enable new business models and achieve bottom-line results in the power industry. Our world-class engineering services and productivity-focused solutions enable us to execute the most complex requirements. We enable our customers to conquer challenges and capitalize on opportunities to transform their businesses by accelerating next-generation technology initiatives.

## Why Partner with QuEST for Digital Transformation

In addition to digital transformation expertise and partnerships with leaders in the digital technology sector, QuEST offers flexible local-global resource engagement models. Our onsite and nearby resources facilitate communications while power-industry domain and engineering experts in our worldwide centers of excellence provide the knowledge of digital transformation best practices.



To learn how QuEST Global's transformative engineering solutions can help you succeed, contact:

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or visit [quest-global.com](http://quest-global.com)

QuEST Global is an engineering services and solutions partner to many of the world's most recognized Fortune 500 brands in aerospace and defense, medical devices, power, and transportation. For more than 20 years, QuEST has been a trusted partner providing comprehensive support across the complete engineering lifecycle, helping our customers improve efficiency, increase quality, create new products, and open new markets. Through a collaborative and customized approach, QuEST enables its customers to manage traditional engineering requirements as well as the convergence of digital and mechanical technology to help them create safe, dependable, and high-quality products and services.

