Solutions for Energy and Utilities in the New Digital Era

Enabling a Sustainable Future

The energy and utility industry faced more change, competition and uncertainty in the past five years than the previous 100 years. Pressures on the industry include an aging infrastructure, retiring experts in the field, security concerns, shifts to decarbonization, and more. As a result, utilities need to become digital powerhouses by adopting technologies that efficiently support new data-driven business models.

HITACHI
Inspire the Next

Digital Technologies Drive Financial and Operational Value

Utilities are adapting as the supply and demand for energy is shifting toward renewable energy sources. The rise of electric vehicles, energy storage, prosumers, microgrids and shifting consumer demand are leading to an increased complexity of distribution grids and competition. All of these changes are forcing the entire energy industry to redefine itself through connected assets, workers and data to enable faster decision-making and to create new business models. The industry must proactively drive value and manage risk, both financial and operational, to stay competitive in this evolving environment.

New Synergies for the Energy and Utilities Industry

Hitachi helps accelerate the digitalization of utilities through solution offerings that cover the entire energy value chain. We can optimize the availability and efficiency of energy generation, capture new data sources to support the complexity of distributed energy resources (DERs), and predict and prevent asset failure. In addition, our solutions help optimize fleet services to get the right people to the right place at the right time for emergency repairs or routine maintenance — and use health and safety analytics to get to the root cause of accidents.

> "Many utilities are initiating their journey, while others have accelerated, launching a myriad of agile or digital factories, attracting new profiles, and building in-house applications to tap into the potential of automation, analytics, and mobile to transform their core business processes.
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> McKinsey, "The Digital Utility"[1]

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[1] McKinsey, "The Digital Utility," June 2018

Gain Value as You Prepare for the Digital Future

Transform your operations and systems with digital technologies that create substantial business value: reduce operating expenses and increase performance, reliability, resiliency, safety, and profits. Our digital utility solutions in four broad areas bring together our software, hardware and services capabilities to solve your toughest challenges.

Digital Transformation and Data Modernization

Define your overall transformation objectives, establish your strategy, prioritize your investments, and execute your transformation program through our deep industry knowledge along with tools and frameworks to help manage and gain insights from your data.

Follow a roadmap for transformation supported by technology enablement for cloud, multicloud, artificial intelligence (AI), machine learning (ML), data strategy and governance, and more.

Connected Asset Performance

Lumada Asset Performance Management helps visualize asset health scores using physics, prognostics and machine learning models. Lumada Data Services and Lumada Edge Intelligence help you integrate data from sensors and various systems of records. Overall, it helps you understand the health of your assets, simulate their operation and the effect on the life expectancy of those assets, and develop an asset maintenance and replacement strategy.

Improve grid reliability, reduce unplanned downtime and improve overall maintenance efficiency to drive higher availability and reliability of your networks, reducing costs and risks.

Intelligent Operations Management

Reduce maintenance costs and improve operational visibility to pair the right work with the right skill sets in the plant or in the field. Effectively optimize your operations and maintenance of your assets.

You'll improve asset availability, implement value-driven workforce scheduling, integrate with back-end systems and gain visibility across operations with advanced analytics for better, faster decision-making.

Health, Safety and Environment Solutions

Smart Spaces and Lumada Video Insights capabilities combine computer vision and machine learning to activate data from video, 3D Lidar and other IoT sensor devices. Achieve automated detection for safety standards and compliance across your facilities.

Get safety geo-fencing and alerts for faster response and mitigation, use facial recognition for key card access, and reduce safety incidents and injuries caused by accidents.

Solutions for Utilities and Other Asset-Intensive Industries

Optimize the availability and efficiency of energy generation and energy market intelligence, capture new data sources to support the complexity of distributed energy resources, and predict and prevent asset failure. Our solutions cover optimizing fleet services for emergency response and using data-driven decision-making for hiring, training and retention.

Generation: Reduce Costs for Improved ROI
Optimize your plant operations and generation portfolio to increase efficiency and profitability, reduce generation fuel costs and improve storage usage. Use data-driven supply and demand matching to enable renewable generation including DERs.

Transmission: Optimization for Availability and Reliability
Improve ROI on transmission investment decisions. Enhance grid planning by incorporating DERs, evaluating non-wires alternatives, and implementing predictive asset maintenance. Apply fault and status detection using sensors and high-frequency data to improve availability and consistency.

Distribution: Operational Improvements for Reliable Delivery
Use predictive asset maintenance based on asset condition to ensure more uptime. Employ field service management and vegetation management such as optimizing trim cycles, route analytics and contractor management. Improve field-force enablement and optimization.

Customer: Improve Satisfaction With Availability and Rapid Response
Optimize emergency responses to outages and storms to better support your customer base in time of need. Improve customer interactions by providing insight, segmentation and choice. Improve overall health and safety of operations with analytics.

Corporate: Responsible Operations for Economic, Environmental, and Societal Good
Integrate data-driven tools to decrease grid load by balancing supply and demand. Implement root cause analysis of common accidents with health and safety analytics. Make data-driven decisions to improve hiring, training and performance management.

27%
of consumers have made digital interactions with utility providers their 'new normal'.[2]

Accenture Interactive

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[2] Accenture Interactive, "Powering a new digital experience with Adobe," September 23, 2019

We Offer New Synergies for the Energy and Utility Industry

Together, Hitachi ABB Power Grids and Hitachi Vantara provide unparalleled capabilities that increase energy efficiency, reliability and sustainability. Improve customer value and ensure safe and secure operations with solutions that drive your digital transformation and secure future operations.

- **Reduce opex** with optimized maintenance strategies, value-driven workforce scheduling and a single pane of glass view of your operations.

- **Reduce capex** with expert and statistical asset modeling, prognostics and simulation capabilities to increase asset availability and life expectancy.

- **Increase worker safety** with live location tracking, geofencing capabilities, remote monitoring, augmented reality and video analytics technology.

- **Gain a faster time to value** through our shared interoperable and modular, microservice-based software and easy data ingestion and service delivery mode.

Draw from Hitachi's deep experience delivering transformative solutions. Innovate across the value chain to discover new business models and revenue streams, deliver better outcomes for your customers and partners with reliable and greener energy, increased customer satisfaction and smarter cities.

Let us help you on your transformation journey with innovative solutions that meet your unique needs and prepare you for future successes. <u>Learn More</u>.

We Are Hitachi Vantara

We guide our customers from what's now to what's next by solving their digital challenges. Working alongside each customer, we apply our unmatched industrial and digital capabilities to their data and applications to benefit both business and society.

Hitachi Vantara

OB-102-A BTD January 2021