

Digital Electric Utilities Success Stories

Empowering Customers. Unlocking Possibilities.

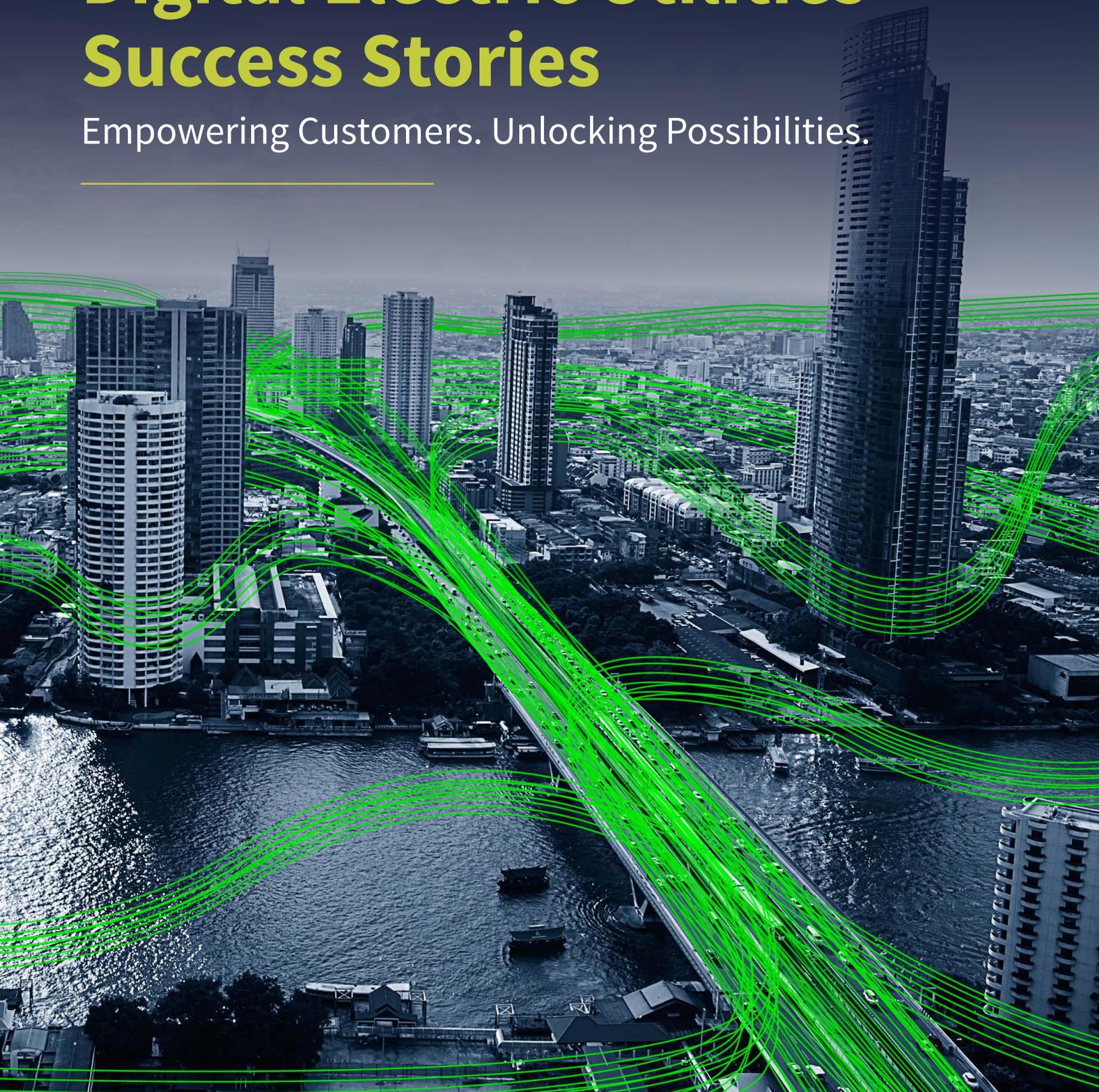


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Future, Faster, Together	

Segment:

Digital Electrical Utilities

Digital Electrical Utilities: The digital transformation of electrical utilities is reshaping the energy sector, driven by the need for more efficient, reliable, and sustainable energy solutions. This transformation involves integrating advanced technologies to optimize operations, enhance customer experience, and support the transition to cleaner energy sources.

Components of Digital Electrical Utilities

Smart Grids:

Smart grids use digital technologies to monitor and manage the flow of electricity from all generation sources to meet the varying demands of end-users. They enhance efficiency and reliability by enabling real-time monitoring, fault detection, and automated responses to grid conditions.

Advanced Metering Infrastructure (AMI):

AMI involves deploying smart meters that provide detailed, real-time data on energy consumption. This technology enables utilities to offer dynamic pricing, improve billing accuracy, and empower customers with insights into their energy usage, promoting conservation.

Distributed Energy Resource Management Systems (DERMS):

DERMS are crucial to integrate and manage distributed energy resources (DERs) such as solar panels, wind turbines, and battery storage systems. These systems optimize the use of DERs, enhance grid stability, and support the transition to a more decentralized energy grid.

Virtual Power Plants (VPP):

VPPs aggregate the capacities of various DERs and flexible loads to provide grid services. By orchestrating these resources through technology platforms, VPPs enhance grid reliability, reduce peak demand, and support the integration of renewable energy sources.

Microgrids:

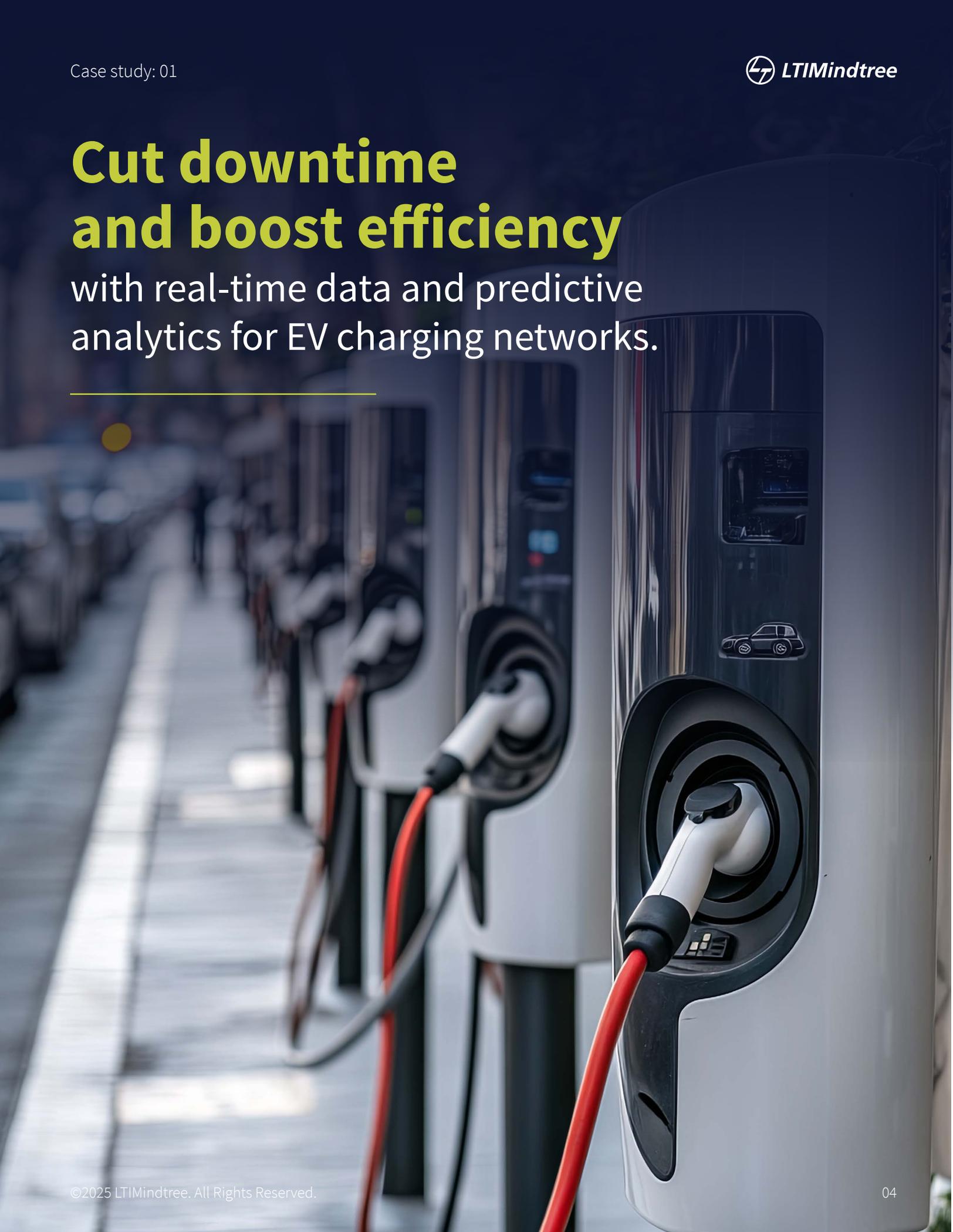
These are localized grids that can operate independently or in conjunction with the primary grid. They enhance resilience, especially in remote or disaster-prone areas, by providing a reliable power supply even when the primary grid is down.

Cybersecurity:

As utilities become more digitized, they are increasingly vulnerable to cyber threats. Robust cybersecurity measures are essential to protect critical infrastructure, ensure data privacy, and maintain the trust of customers and stakeholders.

Cut downtime and boost efficiency

with real-time data and predictive
analytics for EV charging networks.



Client

The client is an American Fortune 500 company and is one of the largest utility companies in the United States. The company provides natural gas and electric service to millions of residential and business consumers.

Business Challenges

- **Modernizing Tech Stack:**
The client needed to update their technology infrastructure to support an innovative outage management system.
- **System Integration:**
Increasing adoption across various systems was essential for seamless operation.
- **Cost Reduction:**
Reducing overall infrastructure costs was a significant goal for the client.

Our Work

- **Improved User Experience:**
The solution focused on enhancing the user interface and overall experience for the end-users.
- **Optimized Performance:**
Efforts were made to streamline processes and improve the efficiency of the system.
- **Accelerated Feature Release:**
The new system allows for faster deployment of new features and updates.
- **Cost Reduction:**
The modernization of the tech stack helped in reducing overall infrastructure costs.

Business Benefits

- **Improved User Experience:**
Enhanced system usability led to a **20%** increase in user satisfaction.
- **Optimized Performance:**
System performance improvements resulted in a **30%** reduction in outage resolution time.
- **Accelerated Feature Release:**
The modernization efforts allowed for a **50%** faster deployment of new features.
- **Cost Efficiency:**
Infrastructure costs were reduced by **25%**, leading to significant savings.

Discover how a Fortune 500 utility achieved 30% improved grid efficiency

by empowering consumers with net metering and renewable energy solutions.

Client

The client is an American Fortune 500 company and is one of the largest utility companies in the United States. It provides natural gas and electric services to millions of consumers.

Business Challenges

With the rise of electric vehicles (EVs), the client faced increasing pressure to ensure their EV charging infrastructure was reliable, efficient, and consumer-friendly. However, the growing complexity of managing data from multiple vendors presented significant roadblocks. Key challenges included:

- Fragmented data formats from various EV charging station vendors.
- Lack of actionable insights to identify patterns in working and non-working charging sessions.
- Time-intensive troubleshooting of malfunctioning stations and ports.
- Inefficient tracking of long-standing issues, leading to delays in resolution.

The client needed a robust, automated solution to address these challenges, streamline processes, and ensure optimal performance of their EV charging infrastructure.

The key features:

- Identifying the status of the stations by analyzing the charging session through data science.
- Interactive reporting through the Tableau dashboard.
- Requirement to cover multiple vendors.

Our Work

- Built an automated framework to analyze the charging sessions and organize them as 'Working' and 'Non-working' based on various parameters like payment codes and reason for session termination.
- Exported data into snowflake tables and views
- Combined data from different vendors into a generic format for use on Tableau.

ENRICH:

The Tableau report showcased the following:

- Occurrence of the Working and Non-working sessions with the ability to filter by site, stations, and programs.
- Ability to drill down further to charger and ports and view details of each session.

Business Benefits

- 100+ charging stations, 200+ chargers and 300+ ports tracked.
- Streamlined processes.
- Collated session data from various vendors.
- Identification of trending issues (charger, payment modes).
- Easy recommendation at the program level.
- Better tracking and faster resolution of issues.

Discover how our Virtual Power Plant solution

delivered 2,000 MW capacity, cut outages, and paved the way for 25% peak usage offset by 2030



Client

The client is a leading utility company committed to providing reliable and sustainable energy solutions to its customers. Focusing on innovation and sustainability, the client aims to integrate advanced technologies to enhance grid operations and customer experience.

Business Challenges

- Needed to shift their power usage from peak times while providing clean, reliable, affordable energy.
- Needed to achieve 25% peak usage offset while serving customers' energy needs
- Needed to achieve 2,000 VPP-enabled megawatts by 2030 .
- Grid modernization foundation to establish a bi-directional power flow platform.

Our Work

- Implemented VPP grid services
- EDERMS is an enterprise platform to manage Distributed Energy Resources (DERs). As part of EDERMS, a Distributed Energy Resources Registry (DER-REG) is being developed to store all DER characteristic information.
- VPP (Virtual Power Plant) operators will use EDERMS, enabled by the DER-REG, to visualize, group, manage, and dispatch DERs to provide grid services, such as capacity or reserve requirements, within the PGE's distribution network in real-time.

Business Benefits

- Reduced greenhouse gas (GHG) emissions.
- Prevent customer minutes interrupted.
- Increased electricity usage, affordability, and earnings.
- Unified DER System: Enhanced the distribution network by improving DER visibility and controls. Ensured system flexibility, reliability, and resilience, reducing customer outage times.

Discover how a Fortune 500 utility company achieved 15-20% annual productivity gains

with a 24/7 AI-powered NOC for seamless operations.



Client

The client is an American Fortune 500 company and is one of the largest utility companies in the United States. The company provides natural gas and electric services to millions of consumers. The client has been a key partner in various innovative projects aimed at enhancing their operational efficiency and customer satisfaction.

Business Challenges

- Needed a flexible partner to enable the client to create Network Operations Centre (NOC) for proactive monitoring.
- To improve the stability, availability, and scalability of the existing environment.
- Insights-driven to improve customer satisfaction.

Our Work

- NOC was created with cross-skilled resources, adept at monitoring alerts and managing events/incidents.
- Higher % of tickets resolved without escalation to SME pool.
- Service management with metrics to drive efficiency and productivity, such as the number of automation ideas submitted/KPI's impacted.
- ServiceNow ITOM for AI-based event correlation, de-duplication, and anomaly detection.

Business Benefits

- Outcome-based reliable NOC operations, and commitment to Service Level Agreements (SLA) from Day 1.
- Leverages existing tools/scripts to automate more than 15% of the tickets.
- 15 – 20% YoY productivity through operational transformation and automation.
- 24x7 dedicated converged NOC for L1 operations.

Discover how a Fortune 500 utility company achieved 25–30% call automation and a 20% reduction in MTTR

with our 24/7 SmartOps converged operations solution

Client

The client is an American Fortune 500 company and is one of the largest utility companies in the United States. The company generates electricity from natural gas and geothermal sources and services millions of consumers.

Business Challenges

- To drive efficiency and improve the total cost of operations.
- Needed a flexible partner to enable the client to build NOC for proactive monitoring.
- To improve the stability, availability, and scalability of the existing environment.
- To improve visibility by improving user experience monitoring and automation.

Our Work

- Cross-skilled SmartOps resources adept at monitoring alerts and managing events/incidents .
- Higher % of tickets resolved without escalation to the SME pool.
- Service management with metrics to drive efficiency and productivity, such as the number of automation ideas submitted/ KPI's impacted.
- ServiceNow IT Operations Management (ITOM) for AI-based event correlation, de-duplication, and anomaly detection.

Business Benefits

- Leverages existing chatbots/tools/scripts to automate ~25-30% of calls.
- 15 – 20% improvement in MTTR (Mean time to resolve).
- ~10-25% efficiencies through shift-left.
- 24 x7 dedicated converged NOC for L1 and L1.5 operations.

Discover how a USD 4.7B utility eliminated

1,500+ false truck rolls, saving USD 430K and boosting outage response by 20% with our AMI Gold Source Solution.



Client

Our client is a USD 4.7B public utility giant that generates, transmits, and distributes electricity and serves a major metropolitan area in the Pacific Northwest of the United States. Renowned for its commitment to grid reliability and customer satisfaction, the client sought a modern solution to streamline outage response, reduce operational costs, and enhance customer experience during critical events like storms.

Business Challenges

The client faced significant operational hurdles:

- **Fragmented Data Access:**
Dispatchers spent precious time navigating at least 17 disparate screens to verify the meter status for each customer outage complaint, slowing response times.
- **Error-prone Processes:**
Manual processes were prone to mistakes, leading to false truck rolls, delays, financial losses, and frustrated customers.
- **Storm-driven Losses:**
During storms, these inefficiencies increased, costing up to USD 2 million monthly in unnecessary expenses and reputational damage.

Our Work

Our solution combined advanced technologies with deep utility expertise to revolutionize outage management.

- **AMI Gold Source Solution:**
Developed a unified, near-real-time platform to consolidate meter status data, eliminating siloed systems.
- **Scalable, User-centric Design:**
Built a modern product with a Google-inspired user interface, enabling business users to access accurate, actionable insights at the click of a button. We integrated data from multiple source systems and embedded an analytics algorithm to provide near-instant meter status and insights into power quality event causes.
- **Enhanced Operations:**
Enabled dispatchers and call centers to deliver real-time customer feedback, slashing truck rolls and boosting customer satisfaction.
- **Outcome-tracking:**
Designed an intuitive dashboard for business users to monitor key metrics, ensuring continuous improvement and accountability.

Business Benefits

- USD 430K saved: Eliminated costs from false truck rolls.
- 5,000+ sours saved: Freed up field resources for higher-value tasks.
- 1,500+ false truck rolls eliminated.
- 20% increase in dispatcher closeout: Accelerated resolution times.
- 66% Reduction in false reports: Minimized errors, enhancing customer trust and operational accuracy.

Conclusion

The adoption of new energy sources presents a unique opportunity to establish a secure, reliable, and sustainable energy ecosystem. Coupled with the accelerated pace of disruptive technology, LTIMindtree's diverse offerings, built with our engineering DNA, can unlock quick wins and strategic transformation opportunities.

These case studies help spark innovation by building a digital foundation to deploy data, AI, and sustainability projects to propel your digital energy transition journey.

Ready to revolutionize your utility value chain with innovation and AI led transformation?
Reach out to us at eugene.comms@ltimindtree.com

Let's get to the future, faster together.

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 83,000+ talented and entrepreneurial professionals across more than 40 countries, LTIMindtree — a Larsen & Toubro Group company — solves the most complex business challenges and delivers transformation at scale. For more information, please visit <https://www.ltimindtree.com/>.