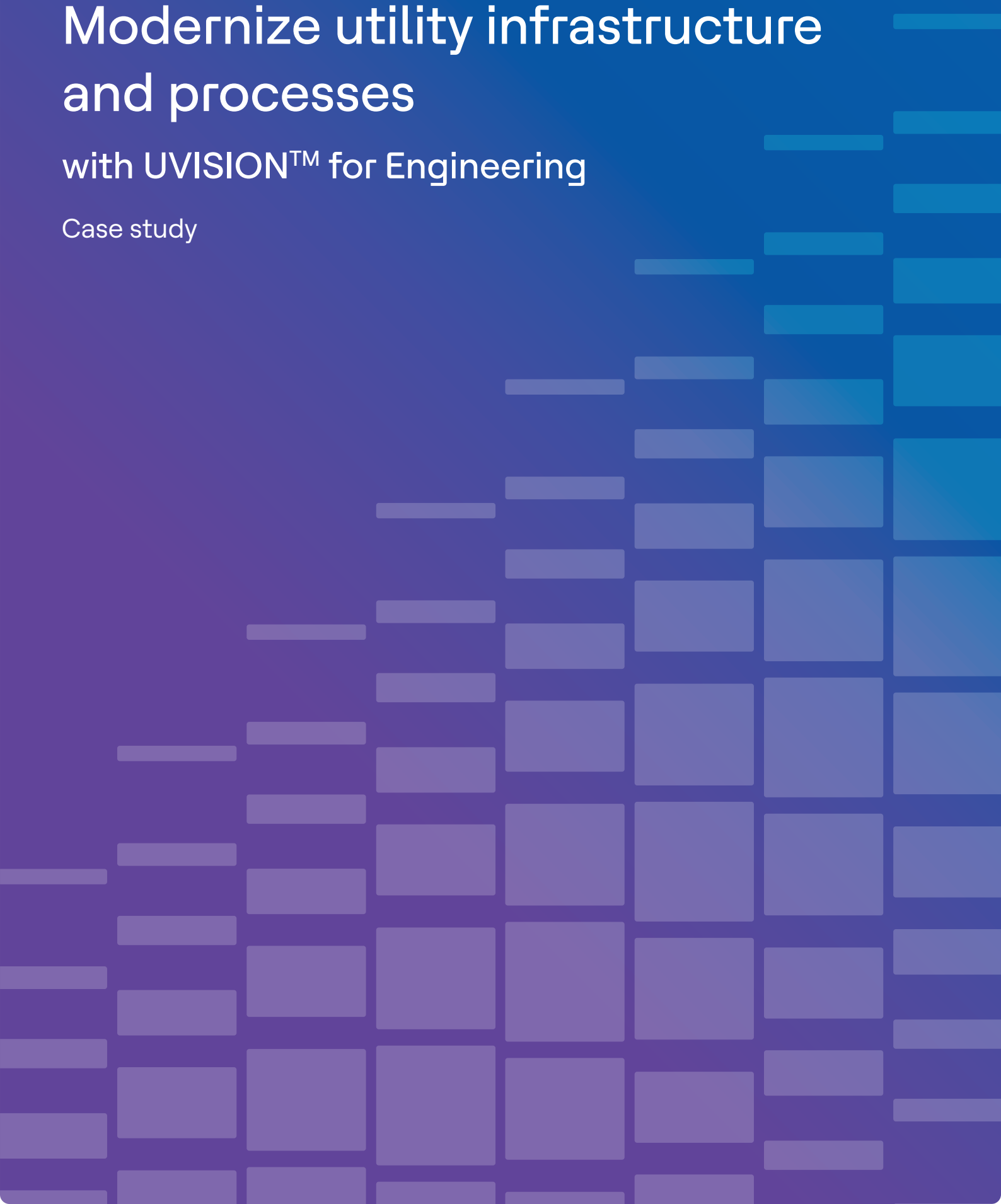# HCLTech | Supercharging Progress™

Modernize utility infrastructure and processes

with UVISION™ for Engineering

Case study

Leading Danish manufacturer, seller, and service provider of wind turbines with manufacturing plants in parts of Europe, Australia, the US and the UK having more than 29,000 employees globally.

The Challenge

The client's business objective was to do a root cause analysis for a wind turbine drive train failures as the failure rate of drive trains in the field was more than anticipated which resulted in increasing downtime

• Increasing maintenance and warranty costs

The Solution

HCLTech did the RCA of the client's problem and implemented the Digital Twin solution. It enables key online parameters such as operational status, production, wind speed, various temperatures and to view historical data. In addition, authorized users can acknowledge alarms and warnings as well as stop and start wind turbines. In effect, the solution included the following:

• Connected the turbine and drive shaft sensors to Kepware Gateway

• Aggregation and normalization of drive train performance data

• Superimposing field conditions on the simulation models to replicate field behavior

• Identification of failure cause and validation w.r.t product specifications

The Impact

- Ability to replicate the behavior of a physical product

- Reduced turnaround time to fix field issues and thus downtime reduced by ~10%

- Improved product performance by 10–15%

- Improved the next-generation of turbine products

- Reduced warranty costs by 5%

Leading electric utility in the state of Texas providing transmission and distribution services in the US with 4000+ employees.

The Challenge

The legacy technology then deployed was not very intuitive and did not engage well with the end user. The objective was to address the following challenges in the business functions and delivery of the application interface:

- Application mobility issues and slowness in daily transactions of meter read and billing cycles

- Legacy network systems on the data center (DC) distribution layer

- Frequent timeout of critical applications, due to lack of load-balancing functions

- Impacting the field office's productivity of the delivery service center and transmission services

The Solution

HCLTech replaced the legacy data center distribution design by Cisco ACI (application-centric infrastructure) to meet the client's requirements. We deployed the industry-leading software-defined networking (SDN) solution to facilitate application agility and data center automation. Instead of managing many different data center switches, the entire ACI solution functions like a giant switch and router combined into one logical device that is controlled by a separate APIC controller as well as application layer functions of SPINE and LEAF architecture.

The key highlights of the implemented solution were:

- Automation through common policy for DC operations

- Business continuity and disaster recovery with pervasive security

- Seamless connectivity to any workload, anywhere, from on-premises to cloud

- Compatibility with AppDynamics integration that correlates application health and networks for optimal performance, deep monitoring, and fast root-cause analysis

- Reduced IT effort and maintenance-based outages

- More capacity at the network security layer

- One single dashboard for all the faults on the fabric to check if a change has brought additional faults on the fabric

The Impact

- ~**40%** reduction in infrastructure network maintenance costs

- **20%** reduction in service running and hardware maintenance costs

- **30%** more time for IT transformational projects and innovations

- **60%** reduction in CAPEX and OPEX hardware costs

- **97%** reduction in incident ticket counts

- The field office's bandwidth increased from 1.54 Mbps to 10, 50, and 100 Mbps

Leading utility managing water, wastewater, natural gas, and electricity distribution systems in Canada and the USA with more than 3600 employees

The Challenge

The client is planning to evolve its current advanced meter reading (AMR) technology with advanced metering infrastructure (AMI) communication modules, leveraging an existing Landys+Gyr AMI system and communication network.

EWSI goals were to define and deliver efficiency in their operation through:

- Support water AMI communication modules transformation

- Update asset management and customer billing on AMI water reads using the existing SAP platform

The Solution

- Design, development, testing and implementation of system changes and integration necessary to support the field deployment of water AMI communication modules and enable the "AMI Meter-to-Bill" process

- Delivered a wide scope of use cases and their respective deliverables through HCLTech's global delivery organization, leveraging leading class and best-of-breed talent locally and offshore.

- Ensured precise alignment of a technical work product against the EWSI business leadership and their goals.

The Impact

- Enhanced inventory and device management for water AMI communication modules

- Achieved dynamic validation, estimation and editing to AMI reads through changes to the SAP system

- Faster billing cycle due to auto-alignment of billing process configurations with the AMI deployment schedule

- Improved and optimized field order management

- Enhanced communication between system modules due to integration with third-party vendor systems like, (eScheduler, GeoFIT, AMI, Azure MDR, MVRS, MRO, and My Account)

- Dynamic route and process optimization, enabling deployment of enhanced AMI communication modules

- Enhanced customer experience through automated inquiry read, dynamic reports and customer journey mapping (move-in/move-out)