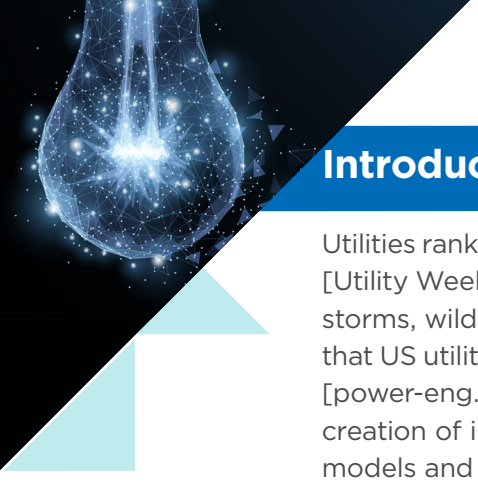
IoT WoRKS™ by HCL Technologies

HCL

Utilities Operational Intelligence solution

Apply advanced analytics for real-time insights



Introduction:

Utilities ranks second worst in customer experience and worst in terms of reputation. [Utility Week report]. Ageing infrastructure, poor asset health, downtimes, frequent storms, wildfires, floods, and rapidly increasing and fluctuating load patterns mean that US utilities organizations spend up to USD 51 Bn on T&D infrastructure, annually [power-eng.com report.] Despite efforts to ramp up usage of data and insights, creation of information silos hamper utilization of OT-insights in building predictive models and effective decision making. According to McKinsey, less than 1% of data being generated is used in decision-making [CNBC]. On the other hand, increasing data implies greater vulnerability to cyber incidents – 32% of the incidents – the highest – were targeted at the utilities sector [IEEE Xplore].

Why secure, real-time, AI/ML driven insights:

This makes it critical to securely bring IT, metering and IoT insights, utilize unified intelligence and correlate with actual loads from grids into predictive models, by leveraging underlying Big Data analytics platforms and Artificial Intelligence (AI) and Machine Learning (ML). As a result, utilities can optimize asset investments, accelerate the development of new digital solutions, create new business models and realize significant cost savings.

70% power transformers > 25 years old, 60% circuit breakers > 30 years old and 70% transmission lines > 25 years old

Average annual investment by US utilities organizations have increased from 31 USD Bn to 54 USD Bn in the last two decades

The utilities industry scores 571 out of a 1000 point scale – the lowest, according to the Centric Digital DIMENSIONS™ score

Old infrastructure (50%), grid reliability (22%), distributed generation (30%), current regulations (33%) are major challenges faced by this sector

*Power Engineering *PR Newswire *IEEE Xplore

About the solution:

Utilities Operational Intelligence (UOI) solution by IoT WoRKS™ leverages Onesait Utilities Intelligence – a multi-service platform aimed at accelerating the development of new digital solutions, creating new business models and helping utilities customers to establish a roadmap towards digital success. The underlying platform enables advanced analytical capabilities and is a powerful tool for monitoring insightful business KPIs and early detection of deviation from optimal conditions. It leverages a blend of Operation Technology (OT), Metering and IoT data which in combination with Enterprise IT Data can be used to generate insights and discover new patterns that lead to improved efficiency and enhanced flexibility. The solution uses a rich collection of prebuilt predictive models and algorithms specific to utilities sector, which is leveraged to accelerate development of analytics use cases to optimize grid operations, improve reliability and enhance customer satisfaction.

Tools and Capabilities

- **Capture:** Ingestion of Real-Time, Historical data, Industrial and IoT standard protocols (OPC, IECs, Modbus, ICCP, DNP)
- **React:** Process live streaming data for immediate action – alerts and warnings, data filtering, automate actions
- **Organize:** Real-Time and historical long-term asset-centric database
- **Improve:** Web-based tools to create, configure dashboards, synoptic screens, reports. Allows end users to trigger alerts based on self-defined formulas, data processing algorithms
- **Learn:** Framework of data science multi-language tools for the application of Artificial Intelligence and Machine Learning

Solution Highlights:

Help minimize vendor lock in, while enabling maximum usage of capabilities

Hybrid model that allows deployment of solutions in both private and public cloud

Based on open components and is open source in itself

Flexible price depending on needs: on-premise, as a cloud service, by module, with or without infrastructure, with support and without risk

Features:

Real-time Convergence: IT/OT based on Ontology models for semantic integration. The model describes the meaning of entities, relationships, and data

Dynamic Dashboards: Web-based dashboards displaying KPIs leveraging real-time and historical data – can trigger alerts in case of deviations from defined conditions

Powerful Toolset: Rich set of tools and applications covering data ingestion, storage, transformation, analysis, ML modelling and output visualization

Digital Twin: Integration between physical and virtual worlds, flexibility in use of components, with possibility of replacing them without business impact

Integrated Governance: Enables integrated governance of elements that make up the platform

Benefits:

Generate Intelligent Value: Utilize analytical, operational and process intelligence to accelerate development of analytics use cases using prebuilt solutions, reduce time to market

Enhance Flexibility: Based on CaaS technologies and containers, introduce operational simplicity under unified console. Balance compute capacity and storage across Cloud and devices

Improve Service Reliability: Monitor asset health and predict downtimes, cascade older, less used assets to highly loaded areas to improve reliability and minimize outages

Streamline Operations: Leverage insights and KPIs based on AI/ML-driven models to optimize operations, improve efficiencies and bring in cost savings, introduce interoperability and self-discovery

Introduce Robustness, Scalability: Scale rapidly, enable development of solutions securely. "Think Big, Start Small". Bring agility in application of latest technologies cohesively

Recognitions, IPs + Accelerators

LEADER
IDC MarketScape, IoT Consulting and Systems Integration Services, 2020
IDC

LEADER
Zinnov Zones for Connected Assets & Connected Logistics, 2019
Zinnov

LEADER
ISG Provider Lens™ for IoT managed services, USA 2019
ISG

LEADER
ISG Provider Lens™ for IoT consulting and services, USA 2019
ISG

LEADER
ISG Provider Lens™ for IoT in Manufacturing, USA 2019
ISG

LEADER
ISG Provider Lens™, ISG Research Quadrant for Overall Iot Services, Usa Market 2018
ISG

LEADER
The Forrester Wave™, Global IoT Services For Connected Business Operations, Q4 2018
Forrester

Winner Circle
HfS Blueprint Guide: Industry 4.0 Services, 2017
HfS

LEADER
IoT Services Peak Matrix™ assessment, 2017
Everest Group

DDX
Accelerator for device IoT-ization

PANGEA
Data Analytics platform

IDEA GATEWAY
Reference Design for an intelligent device

PLATFORM ACCELERATION SUITE
Build next generation cloud services

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