Ecologic Analytics and IBM: Making meter data work harder

Comprehensive capture, management and analysis of smart meter data designed to help utilities create a single version of the truth, improve efficiency and reduce operating costs

Highlights:

- Proven, user-friendly MDMS platform consolidates multiple data streams

- Stakeholders gain access to accurate, validated AMI data in user-friendly formats and views

- Manage interval data cost-effectively and efficiently using a scalable database architecture

- Manage smart meters and related work orders throughout the asset life cycle

- Unprecedented expertise in utility systems integration, security and compliance

Successful smart grid implementations rely on exceptional data management. The smart grid generates volumes of data that are orders of magnitude larger and more granular than anything utilities have managed previously. After the data is captured and stored, utilities must find a way to validate it, organize it and distribute it quickly — so all lines of business can analyze it and transform it into decisions that improve efficiency, profitability and performance.

This is a complex and demanding task. Meter reads occur multiple times every hour for millions of meters. Each read includes meter data along with information such as power status notifications, time stamps, boot counts and tamper flags. Different advanced metering infrastructure (AMI) systems deliver the data in different ways. Accuracy is critical for both regulatory compliance and customer satisfaction now that so many consumers are interested in their own efficiency.

To help utilities take on this challenge, Ecologic Analytics (EA) and IBM are teaming up to deliver a comprehensive, user-friendly solution that creates a single version of the truth across smart meter digital assets, improves visibility and helps reduce operating costs.

Solution Overview

The central point of connection for all of the data collection points, interfaces and systems in the smart grid is the meter data management system (MDMS). Ecologic Analytics provides one of the most widely used MDMS solutions available. This powerful hub consolidates multiple data streams, giving stakeholders across the utility enterprise access to AMI data that is validated, stored and available in the format they need.

The Ecologic MDMS offers important capabilities for utilities who are moving toward the smart grid. It stores all meter reads and interval data as the system of record. It synchronizes data among the MDMS, AMI databases and master systems, creating a single, powerful information source. It also validates the accuracy and performance of meter reads and outage event data.

Ultimately, the software integrates disparate AMI and back-office systems, so that relevant data can reach the right decision makers at the right time. To streamline this process, it translates the data into common formats for outage management, revenue/billing, customer service and other lines of business. It streamlines workflow, sending alarms to connected systems when user action is required. It also enables advanced analytics for other applications supporting the smart grid.

The Ecologic MDMS user experience relies on intuitive interfaces and dashboards that can be configured to allow anyone — from C-suite executives to customer service representatives — to visualize meter data in meaningful ways. Role-based security protects sensitive data. Yet this MDMS has a straightforward architecture that can be implemented quickly. It is also standards-based to improve interoperability with AMI systems, back-office systems and other existing IT infrastructure.

IBM integrates with and augments the Ecologic MDMS, adding innovative tools for managing smart meter assets and maintaining a smooth flow of captured meter data into the central hub, along with world-class servers and storage.

IBM Informix® software enables utilities to manage interval data cost-effectively and efficiently using a scalable database architecture. It can dramatically accelerate data load and process times, decrease data storage requirements and improve both operational and analytical performance. In addition, Informix offers high availability and security to ensure data is easily and quickly accessed without being compromised.

IBM Tivoli® Maximo® provides a platform for managing smart meter assets and related work orders throughout the asset life cycle. Maximo integrates with fixed-asset accounting, mobile workforce management and design tools. It also supports map-based user interfaces built on the latest ESRI ArcGIS Server technology.

Of course, IBM also delivers expertise in IT integration that is specific to energy and utilities. IBM experts understand the smart grid, how to implement it, and how to make sure the MDMS integrates seamlessly with AMI components and all the other systems that use meter data to improve revenue, efficiency and service. IBM also provides design and implementation of data security provisions for smart meter devices, as well as extensive testing services.

With the combination of Ecologic Analytics and IBM, utilities can implement a proven, end-to-end solution that starts at the consumer's smart meter and ends when accurate, validated interval data is delivered to any line-of-business (LOB) system in the utility enterprise. There are numerous examples of how this approach gives utilities a competitive advantage:

- Providing validation, estimation and editing values for 15-minute interval data creates a strong foundation for all workflows and ensures that utilities and third-parties (such as retail electric providers) have accurate, timely data for billing.
- Billing determinant extraction supports variable pricing models and effectively supports management of time-stamped usage data.
- Usage patterns and load profiles create a near-real-time picture of individual consumer demand that allows utilities to compare unusual readings to actual history, estimate missed reads with greater precision, and enable better demand planning to optimize energy utilization.
- Brokering command-and-control messages for meter reconnect and disconnects reduces truck roll expense.
- On-demand meter reads empower customer service representatives to resolve customer billing issues more quickly.
- Customer portals powered by validated meter data provide unprecedented visibility into actual usage, creating opportunities for consumer education and self-service.

Solution Benefits

By establishing a single version of the truth across all smart meter assets and related systems, the solution from Ecologic Analytics and IBM delivers three significant benefits for utilities:

- **Lower operating costs.** Effective meter data collection and management reduces operating costs by improving efficiency, reducing duplication of effort and capturing consumer charges accurately. This maximizes revenue while reducing time spent resolving customer issues. The solution also improves exception management and workflow across utility operations and service management.
- **More efficient response to energy outages and service disruptions.** The solution enables consistent, end-to-end visibility across all transmission and distribution smart meter assets with real time command-and-control. It also accelerates and automates the retrieval of usage and outage readings from smart meters. With access to this data, utilities can better locate and diagnose pain points, monitor and reallocate electric loads and reduce outages.
- **Better audit, compliance and security management.** Consistent, accurate data greatly reduces the risk of errors. The solution synchronizes back-office data with advanced billing data. It also provides audit trails for system configuration changes, relevant meter and service point configuration changes, and meter readings.

EA and IBM: a closer look

Ecologic Analytics and IBM are thought-leaders and IT innovators for the energy and utility market. Together, they give utilities an opportunity to work with one team that is capable of implementing an end-to-end smart metering solution that manages the meters, the flow of incoming data, the validation of the data, and integration to other LOB applications across the utility. IBM components in the solution may include:

- **IBM Tivoli Maximo** — supports work management and asset management for transmission and distribution, helping to increase asset and resources effectiveness by providing a platform to support typical asset classes and work performed in utilities.
- **IBM Informix Time Series database software** — the foundation of information management, this relational database management system (RDBMS) handles online transaction processing (OLTP) in integrated solutions.
- **POWER6® Servers running AIX® with PowerVM® virtualization** — deliver unprecedented performance for transactional and throughput computing, while PowerVM server virtualization consolidates workloads onto fewer systems, increasing utilization and reducing cost.
- **IBM WebSphere® DataPower® Accelerators and Integration Appliances** — offload work from other devices to improve efficiency and enhance security.

Ecologic Analytics and IBM solution architecture
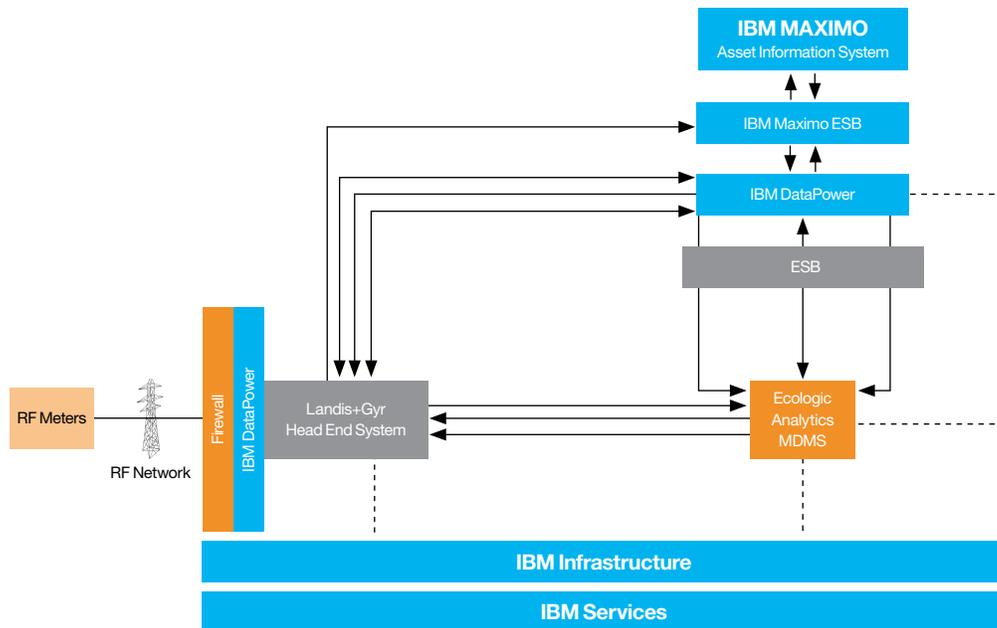
- IBM XIV® — proven, high-end disk storage, designed for growth with ease of use. IBM XIV eliminates the complexity of managing enterprise storage.

The solution from Ecologic Analytics and IBM helps utilities realize the advantages of smart metering through powerful meter data management combined with robust asset management, information management, servers and storage.

EA and IBM: energizing the future

Ecologic Analytics

Ecologic Analytics, a Landis and Gyr company, is the leading provider of meter data management applications based on international standards serving electric, gas and water utilities. The Ecologic MDMS validates more than 500 million meter reads every day for leading utilities, transforming the data consumed from AMI/smart meter endpoints into accurate, timely and actionable information for decision making across the utility. Ecologic Analytics supports more than 15 million smart meters, including the largest and longest running MDMS production operations, the fastest MDMS production implementations and the most rapid deployments of smart metering.

IBM

Through hardware, software and service offerings, IBM provides a rich portfolio of solutions to help energy and utility companies adapt business processes for power generation optimization, transmission and distribution operations, customer operation transformation and corporate support services. As part of its Smarter Energy efforts, IBM works with energy companies and utilities around the world to deliver electric power, gas and water more efficiently and responsibly. This work combines IBM's experience and expertise in the energy industry with an ecosystem of IBM Business Partners whose applications enhance the SAFE framework.

For more information

To learn more about IBM in energy and utilities, contact your IBM sales rep or visit: **ibm.com**/grid

To learn more about Ecologic Analytics, please visit: www.ecologicanalytics.com

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EUS03033-USEN-01