

OPTIMIZING METER-TO-CASH OPERATIONS AT AMERICAN ELECTRIC POWER

Improving meter-to-cash processes is commonly used for justifying the investment in smart meters and meter data management (MDM) platforms at utilities. Because meter-to-cash (M2C) is easy to remember, tied to a critical outcome via revenue, and well-suited for an acronym, this term has become a frequent catchphrase in the utility industry. In practice, streamlining the collection, verification, analysis and application of meter data reaches beyond bills and into every aspect of utility operations. Energy giant American Electric Power (AEP) proved M2C's pervasiveness with their recent revamp of four AEP operating companies' meter data infrastructure.

AEP serves more than 5 million Americans across 11 states, and a 40,000-mile transmission network. Each day, they manage millions of data records tied to usage, billing, asset health and outage response. In 2014, nearly half of AEP's holdings, represented by four companies, operated on legacy systems that required intrusive reconciliation processes to validate data quality for billing as well as market daily market settlement. Efficiency and precision are critical at any company, but is especially important in our industry as more data pervades energy systems. In this age of increasing data and interconnectivity, AEP enhanced their M2C operations by upgrading the software that controls it all: the meter data management system.

THE SOLUTION

Each of the companies undergoing the upgrade previously used Lodestar 1.6, a legacy meter data management solution operated by Oracle. Though functionally dynamic and highly-customizable in many respects, Lodestar lacked critical features inherent in newer systems like Oracle Utilities Meter Data Management. One of the primary needs was ensuring data quality when balancing daily consumption data for customers in preparation for market settlement and reconciliation. In addition, Lodestar calculations did not include critical elements, such as the ability to balance scalar and interval consumption on a daily basis and further display and estimate customer usage based on customer type and tariff.

To meet consumers' demands, AEP mandated that their revamped system draw on various streams of information to fill gaps and increase accuracy. Red Clay, AEP's software integrator for this endeavor, deployed data migration tools to enhance the out-of-the-box functionality of Oracle Utilities Meter Data Management to achieve this goal. These tools leverage preconfigured transfer processes, data files and tests to enhance system operations. Using Red Clay's accelerator SmartGridONE (SG1), Red Clay successfully converted data from AEP's legacy MDM Lodestar 1.6 to Oracle Utilities Meter Data Management 2.1 to broaden the scope of determinants used to generate estimations.

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This change led to the creation of a daily market settlement engine that drives more accurate data reconciliation each day for two of AEP's Texas holdings. To date, these settlements have led to AEP's highest data quality ever sent to the ERCOT settlement market.

Beyond improving system accuracy and automation, AEP sought to leverage the power and value of a single system across multiple companies. Implementing a single system required balancing the compliance and performance measures of each individual entity to ensure continuous service and a smooth transition. To accomplish this, Red Clay worked closely with teams from each operating company to understand their operation, priorities, and overarching goals. Discussions resulted in the development of a master processing schedule to optimize system batch processing and operations. Oracle Utilities Meter Data Management 2.1 yielded higher quality data and more precise calculations, all while meeting or exceeding data processing service level agreement standards for each organization.

By the Numbers

- 18.5 million records converted
- 1.5 million meters migrated to Oracle Utilities Meter Data Management
- 2 time zones
- 4 operating companies impacted which comprised nearly 1.9 million meters including:
 - 1.2m in Texas
 - 550k in Oklahoma
 - 130k in Ohio
 - 10k in Indiana and Michigan

Beyond the improvement in data quality, this implementation offered AEP a consolidated and scalable enterprise platform to service existing and future AMI deployments, as well as enhanced outage management to prevent customer-facing issues.

ABOUT AEP

American Electric Power is one of the largest electric utilities in the United States, delivering electricity and custom energy solutions to nearly 5.4 million customers in 11 states. AEP owns the nation's largest electricity transmission system, a more than 40,000-mile network that includes more 765-kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP also operates 224,000 miles of distribution lines. AEP ranks among the nation's largest generators of electricity, owning approximately 31,000 megawatts of generating capacity in the U.S. AEP also supplies 3,200 megawatts of renewable energy to customers. AEP's utility units operate as AEP Ohio, AEP Texas, Appalachian Power (in Virginia and West Virginia), AEP Appalachian Power (in Tennessee), Indiana Michigan Power, Kentucky Power, Public Service Company of Oklahoma, and Southwestern Electric Power Company (in Arkansas, Louisiana and east Texas). AEP's headquarters are in Columbus, Ohio.

ABOUT RED CLAY

Red Clay, a leading consultancy for utilities, delivers seamless integrations of leading software systems. Industry experience, technical expertise and an unyielding commitment to client success combine to deliver turnkey solutions that maximize value. As a Gold Level member of the Oracle Partner Network (OPN), Red Clay Consulting is the preferred choice for software integration and managed services among utilities. Their unparalleled experience, expertise and execution fuels project success. To learn more about Red Clay, visit: www.redclay.com.

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