

EXCERPT

IDC MarketScape: Meter Data Management in the EMEA Utilities Industry, 2011, Vendor Analysis

IDC Energy Insights: European Utility IT Strategies

VENDOR ASSESSMENT #EIOS02T

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IN THIS EXCERPT

The content for this excerpt was taken directly from the IDC MarketScape: Meter Data Management in the EMEA Utilities Industry, 2011, Vendor Analysis (Doc # EIOS02T). All or parts of the following sections are included in this excerpt: IDC Opinion, In This Study, Situation Overview, Future Outlook, Essential Guidance, and Synopsis. Also included is Figure 1.

IDC ENERGY INSIGHTS OPINION

This IDC Energy Insights study uses the IDC MarketScape vendor assessment model to evaluate vendors supplying meter data management (MDM) applications to the utility market across Europe, the Middle East, and Africa (EMEA).

- MDM is an application for processing metering data collected from any customer type through varying communication methods from different meter systems. It rationalizes, cleans, and manages data to establish a "system of record" of meter data, which can then be used in a variety of billing, analysis, and operational applications.
- With the deployment of smart metering, the MDM market is growing at a faster pace than other applications. IDC Energy Insights forecasts the EMEA market to have a 26.5% CAGR, growing from \$173 million in 2010 to \$349 million by 2013.

The IDC MarketScape vendor assessment represents IDC Energy Insights' opinions on which vendors are well positioned today with current capabilities and which vendors are best positioned to gain market share over the next few years. IDC Energy Insights divided key measures for potential success into two primary categories: strategy and capabilities. Evaluated vendors are positioned in one of four areas: leader, major players, contenders, and participants.

The vendors are very diverse and belong to different market categories. The vendors evaluated range from global integrated players

to global software players providing utilities applications spanning the entire industry value chain, to international and regional MDM solution providers, to meter manufacturers moving toward end-to-end AMI solutions by offering MDM.

After reviewing vendors' MDM offerings in the utility market in EMEA, IDC Energy Insights selected applications by the following vendors: Alcatel-Lucent, eMeter, EnergyICT (Elster Group), Ferranti Computer Systems, HP, Itron, Landis+Gyr, Oracle, OSIsoft, Powel, Process Vision, Robotron, and Telvent. In This Study

This IDC Energy Insights study uses the IDC MarketScape vendor assessment model to evaluate vendors supplying meter data management (MDM) applications to the utility market across Europe, the Middle East, and Africa (EMEA), and supporting smart metering initiatives.

This research presents an analysis of quantitative and qualitative characteristics to provide metrics and context for utilities evaluating solutions in this area, and also to help analyze vendors' current comparative success in the marketplace and anticipate vendors' offering evolution. The evaluation is based on a comprehensive and rigorous framework that assesses vendors relative to the criteria and highlights the factors expected to be the most influential for success in the market in both the short and long term.

This study comprises four key sections. The first is a Situation Overview of the market factors driving and challenging MDM adoption. It provides an MDM definition, as well as a description of major business processes impacted by the solution.

The second section provides the criteria considered and their respective weighting, which IDC Energy Insights analysts believe enable MDM to respond to user needs and future demands. These characteristics are based on buyer and vendor surveys and analyst observations of the evolving market and industry practices.

The third section, the Future Outlook, is a visual representation of the resulting vendor analysis in a single bubble chart. This shows the quantified scores of the 13 reviewed vendors along two axes — strategy and current capabilities — which determine if a vendor is a leader, a major player, a contender, or a participant. The fourth and final section provides additional vendor summaries that discuss IDC Energy Insights' positioning of each vendor in the market, along with commentary on strengths reflected in the scoring and opportunities for improvement.

The document concludes with IDC Energy Insights' Essential Guidance, providing support for users in setting evaluation criteria with the perspective of their needs and organizational maturity. It also includes directions for MDM project planning and execution.

Methodology

The IDC MarketScape selection criteria, respective weighting, and vendor scores reflect IDC Energy Insights' assessment of the EMEA MDM market and specific vendors. IDC Energy Insights analysts tailored the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. IDC MarketScape weighting is based on user interviews, buyer surveys, and input from an internal review board of IDC Energy Insights experts. IDC Energy Insights analysts base individual vendor scores, and ultimately vendor positions, on the IDC MarketScape, on surveys and interviews with the vendors, and publicly available information and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Defining Meter Data Management

MDM is an application for processing metering data collected from any customer type through varying communication methods from many different meter systems. It rationalizes, cleans, and manages data to establish a "system of record" of meter data, which can then be securely used in a variety of billing, analysis, and operational applications.

SITUATION OVERVIEW

Introduction

With the progressive introduction of smart metering in the mass market, the metering practice is changing: two-way communication allows not only for the collection of periodical measurements, but also allows for the execution and management of events. Consequently, the scope of metering "devices" is enlarged from the original purpose of serving meter-to-cash processes. The amount of data to be collected and handled by these systems is also changing: moving to daily, hourly, or even 15-minute interval measurements, which means having 2,920 records per month per customer instead of just one.

Together with smart meters and communication, meter data management software is a key component of smart metering, or advanced metering infrastructure (AMI). MDM sits between the head-end systems on the front-end and the many back-end or downstream applications that use metering data in the back-end. Among them, the most important are of course billing and customer relationship management applications, but also outage management systems, distribution management systems, and work and asset management systems, including meter asset management, distribution planning, and demand forecasting.

MDM plays a major role in the two-way communication of data between the customer premises and the utility (be it the metering company, the distributor, or the retailer). It functions as:

- A data repository for interval and registry meter data
- An application for processing meter data
- A source of near-real-time information about metering points

The EMEA MDM market is still fairly immature. Of course, MDM is not new as a concept, and utilities have traditionally been collecting interval data for large commercial and industrial (C&I) customers. What is new is the domain of applications for MDM in the mass market, and the variety of business processes it serves. These processes might be performed by different legal entities in the European unbundled context (distribution companies, metering companies, and retail companies).

A Growing Market

With the deployment of smart metering, the MDM market is growing at a faster pace than other application areas. IDC Energy Insights forecasts the EMEA market to grow at a CAGR of 26.5%, from \$173 million in 2010 to \$349 million by 2013.

The average value of contracts is dependent on the size of the utility and the number of meters to be managed, ranging from a few hundred thousand dollars to many millions of dollars for the largest implementations. The pricing structure is generally based on license fees per number of meters or readings, and in a few cases also by users. It is scalable by number of meters and by features and functionalities enabled. Some vendors offer special pricing for small pilot projects. In addition to the on-premises installations, vendors offer MDM with the option of software as a service, cloud architecture, hosting, and managed services.

The Role of MDM

MDM supports customer-facing operations as well as meter operations and operational intelligence.

Customer-Facing Operations

MDM's key role is to support customer-facing operations. The MDM solution processes data to deliver to other applications or directly to users. Primary functions include:

- **Validation, editing, and estimation (VEE).** VEE routines are used to clean the data by such methods as filling in missing values based on comparison with historical "like day" data or other means, discarding outliers, and identifying unusual patterns.
- **Billing determinants.** MDM provides billing determinants to the customer information system that is used for billing calculations.

- **Presentment.** MDM provides data to customer-facing systems for presentment. Typically, this data is provided to customer service representatives so that they can respond to high-bill complaints, but many utilities also provide the data directly to customers via Web portal or other means. Utilities differ in whether data delivered has been processed, how much data is delivered, and how soon the data is available for viewing. Some vendors offer presentment modules that include energy-saving tools, while others offer up the data for presentment for customer-facing personal energy management applications provided by others. Presentment can be through a customer Web portal or an in-home device.
- **Market transactions.** In unbundled markets, MDM needs to be able to process transactions within the market.
- **Aggregation.** MDM can aggregate consumption data for use by other applications.

MDM providers offer or are developing functionalities in the area of emobility to support electric vehicle charging stations (meter connect/disconnect, pole control, rating).

In customer-facing activities, applying analytics to MDM data can provide valuable decision support in the following main areas:

- **Load analysis and rate/pricing design.** Meter data can be paired with customer data to easily examine customer classes and subsegments of those classes. Retail energy providers will find subsegments especially useful in designing new pricing packages for customers.
- **Demand response, energy efficiency program design.** Customer data combined with billing data can be used to develop more targeted marketing for energy efficiency programs. Meter data, combined with customer class, location, and network, can help utilities design demand response programs tailored to delivering expected responses.
- **Revenue assurance.** Utilities are looking at various sources of revenue leakage, including unbilled meters, inaccurate reads, and theft, using reporting and analytics applied to meter data. For example, most utilities have a group of meters that may not be regularly billed due to excessively high or low readings. Instead of having to send out a field service crew, a billing exception clerk can issue an on-demand read and quickly resolve the issue in time for billing.

Meter Operations

Meter management is important, and not only in the beginning stages of an AMI rollout. Functions include:

- **Provisioning.** Some MDM solutions provide provisioning services, also known as commissioning. Once the meter is installed, data such as meter type and data collection protocol are sent to the head-end data collection servers to process, and to back-end systems such as customer information system. Provisioning may also include data validation upon meter installation to determine if the meter is working properly.
- **AMI integrity.** MDM data can be used to assess the integrity of the AMI network. In effect, many companies use analytics applied to aggregated meter data to identify weaknesses in the communication infrastructure. The data may also be used to identify poorly performing meters by model number or manufacturer.
- **Work and asset management.** As the meter moves from inventory to installation to operation, some MDM solutions have capabilities for tracking the process. These often include integration with back-end systems such as enterprise asset management (EAM). Some MDM solutions support workflow and initiation of work orders.
- **Initial or final reads.** MDM provides the interval data from initial reads upon installation or reconnect. It also provides the final reads upon disconnect.

Events Management

Device communication is an area where utilities take different approaches. Some will use MDM as a message broker for all communication between back-end applications and head-end systems, while others establish a separate message broker for most message traffic. Functions performed by some MDM solutions are:

- **On-demand reads.** Utilities can use MDM to send a message to the head-end system for on-demand reads. Not only is the message itself sent, but the handshakes between the meter and the head-end system — on-demand request sent, on-demand request received, data sent, and data received — go through the MDM solution.
- **Change in collection orders.** Some MDM solutions are used to process alerts to the head-end system that there will be a change in how the customer is billed that might impact collection. Some systems even send the new collection orders to ensure that the correct data for the bill is being collected. For example, billing might switch from monthly register read to dynamic pricing based on hourly intervals.
- **Connect/disconnect.** In some cases, the MDM solution acts as a broker for messages to connect a customer that has just moved in or disconnect a customer that has moved out or failed to pay after sufficient warnings.

- **Demand response command.** The MDM solution can be used to support direct load/device control and indirect control on user consumption behavior based on pricing schemes.

Operational Intelligence

While a significant portion of the business case for AMI can be made from operational efficiencies (reduced labor costs for meter data collection, reduced truck rolls, etc.) and enhanced revenue (more accurate billing data, quicker move in/move out, prepayment, thief detection), the MDM solution provides a wealth of data that can be analyzed for network management operations and to improve short-term decision-making and long-term planning:

- **Outage detection and analysis.** The little-known secret of outage management is that it has largely depended on using incoming customer calls reporting outages to locate potential outage fault location. With interval data and the ability to aggregate data based on location, there is more information to pinpoint the location of the fault so that workers can go directly to the source of the problem more quickly.
- **Power quality collection and analysis.** Voltage information available from an AMI meter could be used as part of a volt/VAR control optimization application.
- **Load profiling.** Load research uses subsets of the MDM data to profile consumption patterns of customer classes and for demand forecasting.
- **Capital investment planning.** Network operators can use the MDM data to support plans for additional lines, sizing for substations, and additional feeders.

FUTURE OUTLOOK

IDC MarketScape: IDC Energy Insights' EMEA MDM Market Vendor Assessment

The MDM market vendor assessment represents IDC Energy Insights' opinions on which vendors are well positioned today with current capabilities and which vendors are best positioned to gain market share over the next few years. For this discussion, IDC Energy Insights divided key measures for potential success into two primary categories: strategy and capabilities.

Positioning on the y axis reflects the vendor's current capabilities, menu of services, and how well the vendor is aligned to its customer needs. The capabilities category focuses on the capabilities of the company and its product today, here and now. For this category, IDC Energy Insights analysts looked at how well a vendor is

building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x axis, or strategy axis, indicates how well the vendors' future strategy aligns with what IDC Energy Insights believes customers will require in three to five years. The strategy category focuses on high-level strategic decisions and underlying assumptions about offerings, customer segments, business, and go-to-market plans for the future, in this case defined as the next three to five years. Under this category analysts look at whether or not a supplier's strategies for various areas are aligned with customer requirements (and spending) over a defined future timeframe.

Positioning on the grid is broken down into various groupings that reflect the combined view of a vendor with respect to both strategy (x axis) and capabilities (y axis). The groupings are generally defined as follows:

- **Leaders** are companies that have led, and continue to lead, the market in both breadth of offering and strategic intent. These companies have made investments in offering portfolios, go-to-market enablement, and delivery capabilities that set them apart from other vendors.
- **Major players** are companies that have established and proven their offerings in the market, and have demonstrable success in delivering to customers. These companies are "shadowing" the leaders, and are exerting competitive pressures with new capabilities, channel initiatives, and other differentiable capabilities that raise the bar for all vendors in this market.
- **Contenders** are companies that have a limited offering, which is also very country-focused. As contenders, they are investing to meet the product demands to enlarge their customer base.
- **Participants** are companies that have initiated limited MDM releases and are still not very well organized in capabilities and strategies.

Figure 1 shows each vendor's position in the IDC MarketScape vendor assessment chart. The relative presence, depicted by the size of the bubble, is not based on software market shares, but rather in terms of the vendor's customer base in the EMEA MDM market (examined in the capabilities criteria), while the (+) (-) or (=) icons indicate whether the vendor is growing faster or slower than or at the same level as overall market growth.

As the figure shows, the vendors evaluated in the IDC EMEA MDM MarketScape are very diverse in nature and belong to different market categories. The vendors evaluated range from global integrated players that include an MDM solution in their offering portfolio (like HP and Alcatel-Lucent), to global software players providing utilities applications spanning the entire industry value chain, including MDM (like Oracle), to international MDM solution providers (like eMeter),

to meter manufacturers moving toward end-to-end AMI solutions and offering MDM as part of their portfolio to support their growing strategy (such as Itron and Landis+Gyr), and to more regional players (such as Process Vision, Powel, and Robotron).

After careful analysis, Figure 1 emerged with no vendor currently being recognized as a market leader. This is because of the intrinsic nature of the EMEA MDM market, which is still too immature to designate a market leader, and not because the evaluated vendors do not have suitable capabilities or adequate strategies for the future.

From IDC Energy Insights' evaluation, the Oracle Utilities' Meter Data Management solution has a very solid strategy in place to gain market share in the future, and it is also well positioned in terms of current offering capabilities. Following Oracle, there is a cluster of major players which all have comparable capabilities and strategies in place; these are eMeter, EnergyICT, Ferranti Computer Systems, and HP. HP is slightly smaller in size in this cluster, due to its still limited market references in the EMEA MDM market, but it scores slightly better in terms of future strategy.

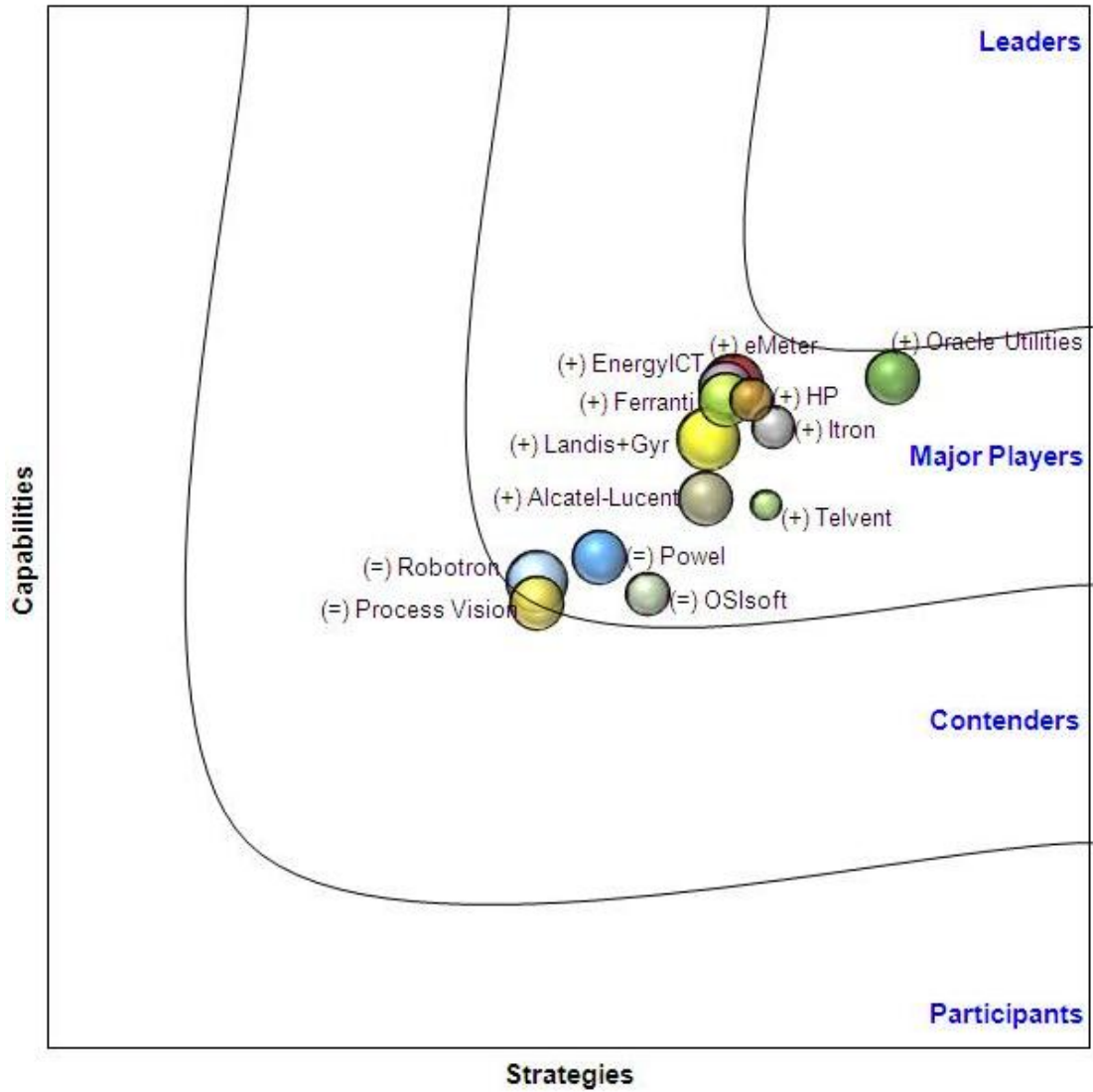
Following this first cluster, there are two meter manufacturers, Itron and Landis+Gyr. IDC Energy Insights found Itron to be less present in the EMEA market, depicted by the size of the bubble, but also better positioned in terms of strategy for the next three to five years. On the other hand, Landis+Gyr is a very large MDM player in EMEA.

Alcatel-Lucent and Telvent, two extremely different players, are located right in the center of the "major players" area. Telvent, one of the major players in the AMI managed services EMEA market, also has very strong strategy for its MDM product.

The other four vendors in the chart are Powel, OSIsoft, Robotron, and ProcessVision. While still positioned in the "major players" area, they are significantly closer to the "contenders" area of the chart than the other vendors evaluated. OSIsoft is well positioned in terms of strategy for the near future. Powel's offering has solid capabilities. Robotron has a vast MDM presence, especially in the German market, while Process Vision's footprint is primarily in the Scandinavian market.

FIGURE 1

IDC MarketScape: EMEA Meter Data Management, IDC Energy Insights' Assessment



Note: Bubble sizes are not representative of MDM software market shares, but rather of vendors' customer base.

Source: IDC Energy Insights, 2011

Vendor Summary Analysis

Oracle

Oracle is a global provider of integrated business software and hardware systems (for more information, refer to *2010 Competitive Analysis of the Top 15 IT Vendors in the EMEA Utilities Industry*, IDC Energy Insights #EIOS06S, November 2010).

Oracle offers a full spectrum of utility core business process applications, including customer care and billing, meter data management, mobile workforce management, network management and load analysis, work and asset management, and business and operational analytics.

As part of its Smart Grids portfolio suite, and supported by the new Oracle Utilities Smart Grid Gateway (a middleware product that provides standard integration between applications and third-party AMI head-end systems), Oracle offers Oracle Utilities Meter Data Management.

Oracle Utilities Meter Data Management had its roots in the LODESTAR MDM offering, but version 2.0 has been completely re-platformed on an open Java technology: Oracle Utilities Customer Care and Billing, Oracle Utilities Meter Data Management, and Oracle Utilities Mobile Workforce Management are currently on Oracle's Service Oriented Architecture (SOA) technology stack. This 100% standard platform is service enabled and consumable by Web applications, allowing enterprises to quickly adapt to changes in their business and IT environments. The platform also provides a common look and feel among Oracle Applications. Oracle Utilities Meter Data Management Version 2.0 also includes additional features and functionalities, like expanded VEE capabilities, consumption correlation (theft) functions, bill determinant extensions, aggregations, meter asset management, and a device portal.

Concerning billing determinants, Oracle Utilities Meter Data Management 2.0 provides standard calculations for items like consumption, peak demand, time-of-use consumption, critical peak pricing periods, and net metering (including negative consumption). The product includes sophisticated usage rules and user interfaces that allow users to build complex usage transactions (bill determinants, usage exports, etc.) with no programming. Additionally, utilities can configure custom bill determinants rules as needed.

Oracle Utilities Meter Data Management 2.0 features a centralized Device Portal that contains all device data, including measuring components, installation and service point information, and the applications that use its data. With Device Portal, field technicians can see the details of metering activities and customer service representatives can review current and historical usage.

The application can also support other types of customer-premises equipment like smart thermostats and load control units. It can also accommodate unmetered devices, like streetlights.

Oracle Utilities Meter Data Management application is purposely built to leverage the optimized performance of Oracle Database. It is important to note that several of the other vendors' MDM solutions are also built on Oracle databases.

Scalability and performance testing are available for previous versions of Oracle Utilities Meter Data Management (published for version 1.5). The results of version 2.0 are being elaborated, but are expected to significantly enhance the previous product edition. Overall, the product roadmap is very clearly defined.

Oracle has a very comprehensive network of partners, especially in the system integration area as well as in the meter and communication area. Oracle Utilities Meter Data Management implementations have been carried out in Europe and in the Middle East (especially for water).

ESSENTIAL GUIDANCE

In this IDC MarketScape of the EMEA MDM market, IDC Energy Insights assesses and compares various vendors' offerings. Utilities should use it to support their MDM solution evaluation process to:

- Get a first independent assessment of MDM solution capabilities
- Integrate the list of companies they might request proposals from
- Leverage criteria in their own individual software evaluation process

Utilities start from different levels of maturity and priorities, so they should consider reweighting the criteria that are most important to their specific company or local market context. Utilities' individual decisions must be made in the context of their specific organizational and process maturity, and in consideration of the IT enterprise architecture and application strategy.

Actions to Consider

- An MDM implementation needs to be evaluated in the context of each company's IT enterprise architecture. Utilities should leverage their need to invest in or modify their existing MDM solution to reconsider their entire master data management solution and to support the short- and long-term needs of business processes to reduce duplication and interfaces.
- Utilities should evaluate the possibility of adopting the software-as-a-service/cloud option as a valid alternative to on-premises

installation. Vendors' MDM cloud value propositions are improving.

- MDM is the workhorse of smart metering. The amount of work performed by MDM and capacity required will depend on the rest of the smart metering technology stack — configurable meters, network bandwidth, and CIS and other back-end application capabilities. Utilities should select the MDM solution within the context of the stack.
- Do not forget analytics. Utilities should try to get the best from their AMI and sensing technologies. An abundance of data (consumption, voltage, alarms, and events among others) will be available to support better operational processes and decision making.

More broadly, utilities preparing for a smart metering implementation should consider the following:

- There is no single magic recipe for smart metering. Each utility needs to clearly formulate its own strategy, its own business case, and consider smart metering within the broader scope of smart grids. This does not mean reinventing the wheel. On the contrary, creating a framework for cooperation with peer companies, and all stakeholders, is highly recommended. From an installation-process perspective, a geographic approach to rollout, if applicable, is clearly preferred.
- Look at smart metering holistically. The field apparatus and communication aspects are key, but how to interface and integrate metering infrastructure with back-end IT systems also needs to be considered from the very beginning of the project, including how to deal with very large volumes of data processing. Also, do not forget that smart metering also brings business process change.
- Abandon the silo approach, and bring all the parties to the table. Keep the cross-departmental work going, either through the regular program management office or through an IT steering committee type of mechanism. This will help mainstream smart metering projects, and help build cooperation and teamwork for future projects, such as for smart grids.
- Pilots have proven that the correct execution of field installation is a critical step. It needs to be addressed properly to ensure success, especially for large-scale rollouts. Improper installations require additional field visits, which translates into additional costs.
- The rollout needs to be managed as a "project within a project." Automated business processes need to be put in place to plan and monitor preparatory works, to schedule procurement, meter installations, and coordinate the progressive rollout of the meters.
- Smart metering is not just about billing. From the start, utilities should design a scalable AMI infrastructure able to support either

smart customers or smart distribution grids. This should also be reflected in the elaboration of the business case.

Synopsis

This IDC Energy Insights report evaluates the vendors supplying meter data management (MDM) applications to the utility market in Europe, the Middle East, and Africa. This report covers vendors providing MDM applications to the utility industry to support smart metering initiatives. Smart metering is delivering exponentially greater volumes of data that can be used to support a whole range of offerings to customers. At the same time, this wealth of data can be mined for operational and business intelligence. Meter data management is a must-have technology for energy companies implementing advanced metering infrastructure (AMI).

According to Roberta Bigliani, research director for IDC Energy Insights Europe, Middle East, and Africa, "Meter data management implementations need to be evaluated in the context of each company's IT enterprise architecture. Utilities should leverage their need to invest in or modify their existing MDM solution to reconsider their entire master data management architecture and to support the short- and long-term needs of business processes in order to reduce duplication and interfaces."

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