PikeResearch
Cleantech Market Intelligence

Research Report

Pike Pulse Report: Meter Data Management

Assessment of Strategy and Execution for 11 Leading MDM Vendors

Published 3Q 2011

Excerpt prepared for Oracle Corporation

Bob Lockhart
Senior Analyst

Bob Gohn
Research Director

Section 1

EXECUTIVE SUMMARY

1.1 Introduction

Meter data management (MDM) systems are nearly a decade old, yet where they will end up is still very much undecided. The current market faces an inflection point, with changes in focus from billing systems to grid operation efficiencies and more effective business processes. Market approaches to MDM range from minimalist to full-feature. Minimalist solutions are those where the MDM vendor simply captures data and provides a system of record for other application vendors to use. Full-featured MDM solutions, on the other hand, include a wide range of applications under a single umbrella. Meanwhile, the competitive landscape is changing due to acquisitions such as Toshiba's purchase of Landis+Gyr and Schneider Electric's purchase of Telvent.

This report follows closely on the heels of Pike Research's market forecast, *Meter Data Management*. Whereas that report forecasts global investment in MDM through 2018, with many drill-downs, this Pike Pulse report presents our analysis of which current MDM vendors are best positioned for the future.

Because this is a mature market with well-established vendors, the scores are clustered higher rather than lower on the Pike Pulse Grid. The weighted averages assigned to the rating criteria listed below reflect the status of the MDM market. For example, we expect all viable MDM players to already have an established offering that has been installed and is in use. In addition, we expect geographic reach to be relatively strong. Innovation is less important in this market because the architectures are well established and the utilities that purchase MDM are looking for improvements to their business and operations, not technology hooks.

The criteria on which the MDM vendors were scored include:

- Vision
- Go-to-Market Strategy
- Partners
- Product Strategy and Roadmap
- Technical Innovation
- Geographic Reach
- Market Share
- Sales and Marketing
- Product Performance and Features
- Product Portfolio
- Ecosystem
- Staying Power

Conspicuous by its absence from the above list is pricing. During research for this project and for the report *Meter Data Management*, several vendors told us that MDM pricing is highly negotiable. In fact, MDM is sometimes "thrown into the deal" at no charge in very large advanced metering infrastructure (AMI) procurements. Moreover, Pike Research anticipates that quite a bit of MDM business will be generated via pull-through business from alliances and partnerships. Therefore, based on the extreme variability of MDM pricing, we do not see it as a valid metric by which to differentiate MDM vendors. More important is the ability to withstand or respond to competitors' pricing moves, which is perhaps best indicated by staying power.

Oracle attained the highest overall score in this report due to its massive scale, geographic presence, technical innovations (including those of Sun Microsystems), and integration of MDM with other well-known Oracle products. Joining Oracle in the Leaders category of the Pike Pulse Grid are eMeter and Itron. Each attained their Leader status through slightly different approaches to the same issues. All three Leaders share the common characteristic of consistently high scores across the board in all 12 of the rating categories listed above.

Table 1.1 Vendor Overall Scores

Rank	Vendor	Total Score
1	Oracle	87.8
2	eMeter	81.3
3	Itron	78.0
4	Ecologic	70.9
5	EnergyICT	70.1
6	OSIsoft	60.1
7	Aclara	57.7
8	North|Star	50.2
9	Powel	47.5
10	Ferranti	43.8
11	Telvent	43.2

(Source: Pike Research)

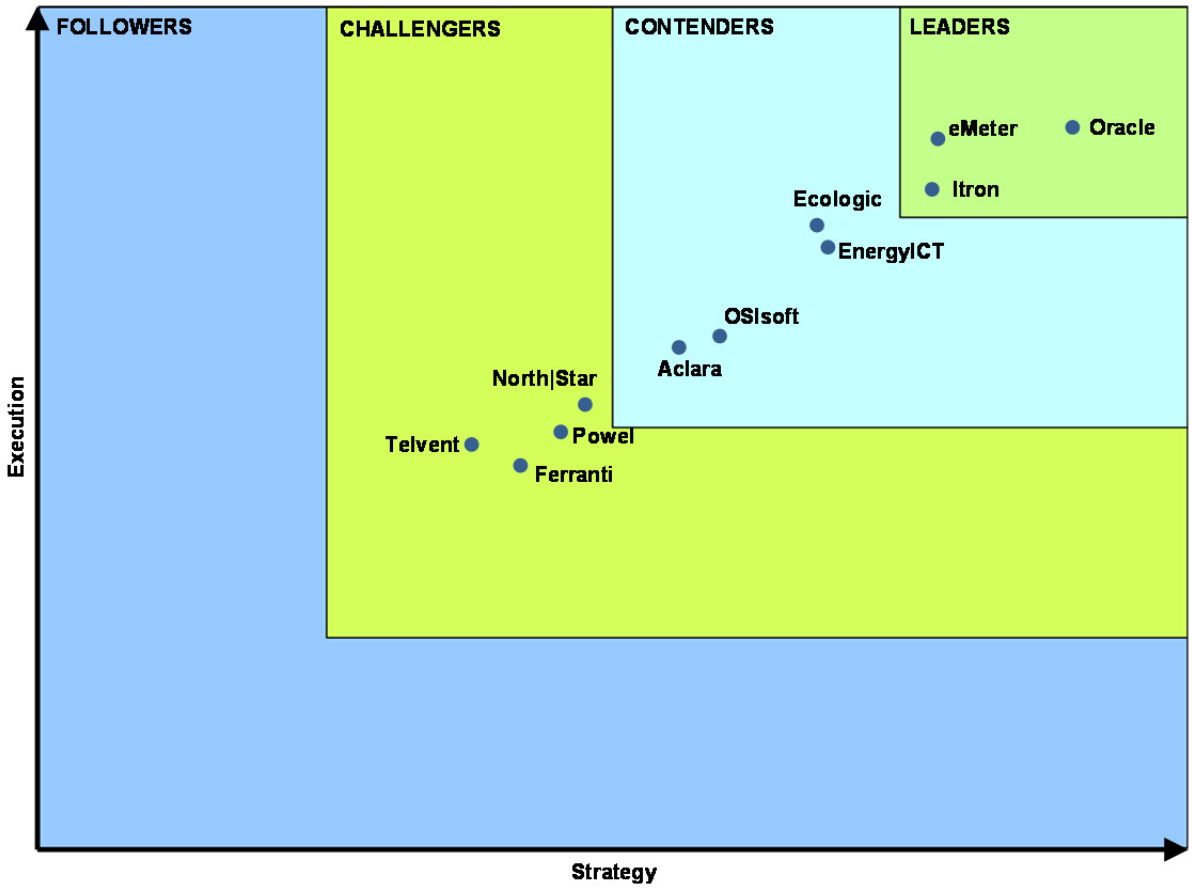
Alliances and partnerships abound in the MDM market. In our research, it appeared that nearly everybody is working with everybody. The recent announcement that Itron and Landis+Gyr will natively support each other's communications technology shows the extent to which leading smart grid players will go to ensure that they are not locked out of business. Specialists such as eMeter and Ecologic Analytics depend heavily on partnerships to bring in MDM business because they have no AMI of their own. In contrast, Itron and EnergyICT (owned by Elster) benefit from a significant amount of pull-through revenue from their in-house AMI offerings. However, even those vendors with AMI in-house still aggressively pursue relationships with other AMI vendors, including their direct competitors. This is a fascinating market to watch.

Oracle and OSIsoft are not MDM specialists per se, but have attained their market mass by applying technologies that have been successful in other markets. Oracle is obviously leveraging its enterprise resource planning (ERP) suite, plus its ability to apply existing applications to this market. For example, utilities are quite interested in improving customer engagement using data collected in the MDM system. Oracle already has a mature customer relationship management (CRM) offering that it has directly applied to

this requirement. Meanwhile, OSIsoft has taken its three decades of experience with time-series data and applied the same approach to capturing AMI data. In addition, it is making use of existing strong relationships with utility operations teams.

Pike Research also observed some more targeted go-to-market strategies. North|Star Utilities states bluntly on its website that it pursues business at utilities with between 8,000 and 120,000 customers. Eliminating the very large investor-owned utilities (IOUs) from a company's market scope can pay benefits by driving large amounts of variance out of the required solution set. Smaller utilities understand that they cannot demand or afford the near-custom solutions required by the multimillion meter IOUs. An approach such as North|Star's may negatively impact scores in ratings categories such as Global Reach because the approach immediately eliminates large utilities from consideration (including national monopolies), but that does not diminish its legitimacy.

Chart 1.1 The Pike Pulse Grid



(Source: Pike Research)

Several MDM providers have a limited geographic reach that seems intentional. North|Star focuses mainly on North America, while Ferranti and Powel have little presence outside of Europe. Aclara also appears to be mainly focused on North America.

As noted in *Meter Data Management*, Pike Research expects some regions to see slow uptake of MDM through the end of 2018. That is especially true in countries where many of the smart meter deployments are not replacements, but first time meter installations for given locations. In those cases, the emphasis may simply be on getting paid for the electricity consumed. Getting fancy with more efficient operations and better accounting will come later, especially in India and China. It is also worth noting that Africa, with a population in excess of one billion, is projected to have a very low smart meter population for the foreseeable future.

There is no question that the MDM market will remain with us for the long term. However, it is less clear which approach will prevail – minimalist or full-feature – and to what degree the current vendors will be consolidated. It may change names away from "Meter Data Management" but Pike Research sees a solid future for the business of analyzing data from AMI systems to produce better run utilities that are also more efficient users of their commodities.

Section 2

MARKET OVERVIEW

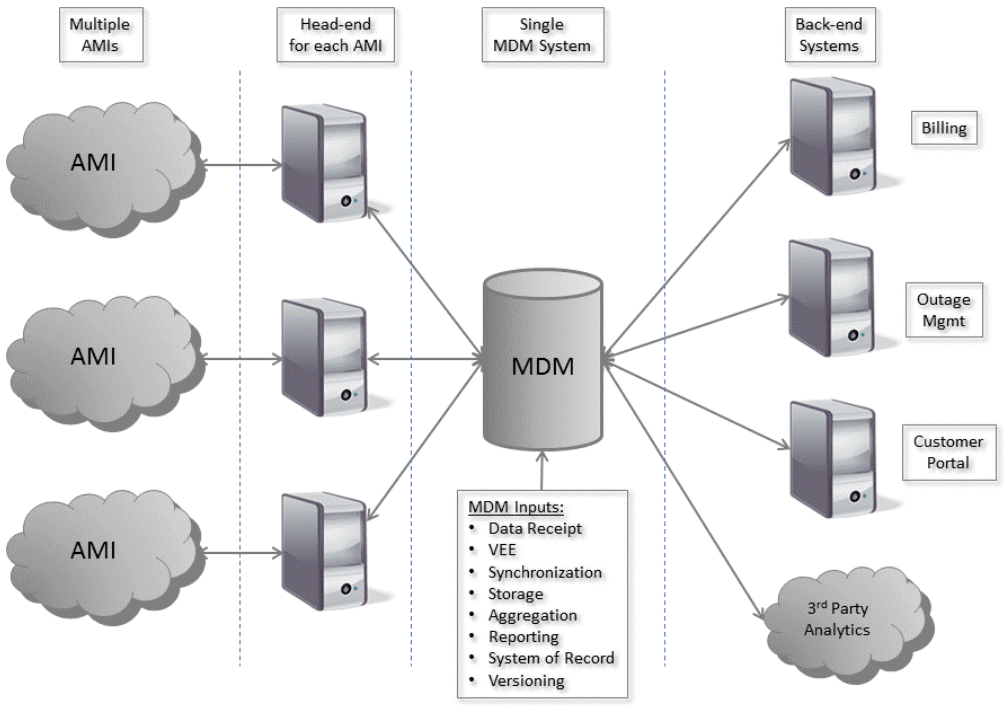
2.1 Market Definition

2.1.1 MDM Scope

MDM systems vary considerably in scope and approach. Pike Research defines an MDM system as containing the following three components, illustrated below in Figure 2.1:

- Interface to collect meter data from one or more AMI head-ends. The head-end itself is considered to be part of the AMI system, not part of the MDM system.
- Software to standardize the received meter data through functions such as validating, editing, and estimating (VEE), synchronization, storage, and versioning.
- In most cases, back-end applications receive and use the standardized meter data. These applications can enhance many of the business and operational aspects of a utility. Some MDM products do not themselves include the back-end applications, but enable interface with other utility applications.

Figure 2.1 MDM in Context of AMI and Back-End Systems



(Source: Pike Research)

2.1.2 Key Features of an MDM System

AMI systems generate large volumes of meter data that MDM systems collect. The data can include interval data, register reads, and meter events. The key features of an MDM system determine how effectively a utility can analyze and use these large volumes of data.

2.1.2.1 Base MDM Capabilities

Base MDM capabilities condition the AMI data for use throughout the utility. Pike Research believes that an MDM system must have all of the following capabilities to be a viable competitor in the MDM marketplace:

- Data Receipt
- Data Validating, Editing, and Estimating (VEE)
- Aggregation and Affiliation
- Storage
- Official Record Keeping
- Interfaces to the Enterprise
- Reporting
- Relationship Management

The first job of any MDM system is to produce a solid system of record for all AMI data that is available to any utility business or operational application that needs it. Although not necessary for success, Pike Research believes it is highly desirable that an MDM implement at least one of these AMI common data specifications:

- IEC 61968 Common Information Model (CIM)
- NRECA MultiSpeak
- SAP Meter Data Unification and Synchronization (MDUS)

Using a common data specification greatly increases the number of utility applications that can be interfaced with a given MDM. This, in turn, provides the utility with greater flexibility in choosing its back-office and operational applications, including a mix-and-match approach with applications from multiple vendors (if desired).

2.1.2.2 *Extended MDM Capabilities*

Beyond the base MDM capabilities, a utility may choose to implement just a few of the back-office applications that are listed in this section or all of them plus more, such as in-house applications or ad hoc analytics. Regardless, all of the applications rely on the MDM as a system of record for AMI metering data in order to produce useful deliverables for the utility. Extended MDM applications include:

- Asset Management
- Customer Billing Information System
- Commercial & Industrial Customer Web Portal
- Energy Theft
- Workforce Management
- Financial Management
- Outage Management
- Settlements
- Credit and Collections
- Demand Response and Load Curtailment
- Load Research and Forecasting
- Customer Engagement
- Geographical Information Systems
- Power Quality
- Rate Design
- Line Loss Analysis

2.1.3 MDM Business Case

Utilities typically have multiple business justifications for deploying an MDM. In the past, the most important business case was improved accuracy of data used for billing and presented to customers. The capability to improve accuracy is now expected of an MDM; it has become less of a differentiator and more of a required feature.

The prevailing MDM differentiators that emerged from our research include:

- Improved customer engagement abilities
- More efficient grid operations
- Immediate access to operational data
- Compliance with regulations and legislation

All of these can be enabled when an MDM system is coupled with AMI to produce a system of record for metering data. Current and planned uses of these data demand an authoritative, time-versioned source for the information. As yet unplanned uses of the data (e.g., from data mining) further reinforce the need for an authoritative data source.

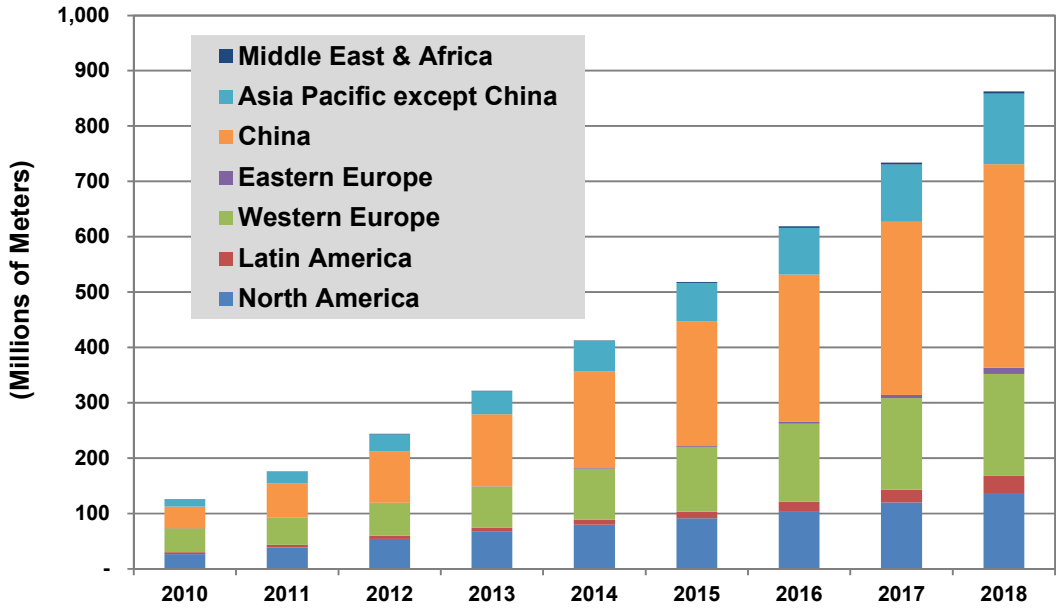
2.2 Market Trends

Pike Research encountered quite a wide range of opinions on approach and market drivers in our research, but there was consensus on two points:

- The MDM market is at an inflection point, poised for profound change within the next 12-24 months
- The steadily increasing pace of smart meter deployments globally will drive a stronger need to manage the data coming from AMI systems

Chart 2.1 shows Pike Research's forecast of the smart meter installed base through 2018. The number of smart meters deployed globally is expected to grow from 126 million at the end of 2010 to 862 million by the end of 2018 at a CAGR of 27%.

Chart 2.1 Smart Meter Installed Base by Region, World Markets: 2010-2018



(Source: Pike Research)

Given this ongoing growth in the number of smart meters installed, it is likely that the market for MDM systems will grow in similar fashion. However, in some regions, the AMI deployments are rolling out smart meters as the first-ever meter at many locations. In those situations, Pike Research has noticed a greater emphasis simply on getting meters deployed so that the utilities can be paid for the energy consumed. This focus can result in a lowered emphasis on managing the data, which may decrease the immediate desire to deploy MDM in some locations.

The three market trends described in the following subsections will likely affect which vendors are most successful.

2.2.1 Utility Operations Moves Toward Center Stage

Historically, MDM has existed to capture usage data from manual or automated systems and then produce accurate statements. While still very important to utilities, the market talk

and interest from utilities is moving from billing to stronger operational control enabled through AMI data. In market parlance, billing capabilities have become "table stakes" for getting into the MDM game.

Utilities are now looking beyond billing toward a diverse set of capabilities enabled by a reliable system of record for metering data. Such capabilities include:

- **Workforce management**, which can reduce expenses by minimizing the number and duration of field service visits through more effective scheduling and combining tasks. This can lead to a smaller workforce to support the same number of customers, or more proactive work to protect grid reliability because technicians are making fewer field calls.
- **Customer engagement**, whereby MDM enables energy management initiatives through interface with other applications such as rate design and through its two-way capabilities to pass information back to consumers via the AMI system. Time-of-use and demand response can be used to manage future energy requirements such as electric vehicle recharging. Thus, MDM enables consumers to play a role in utility load balancing.
- **Power quality** systems produce reports and charts to help utilities understand where they have potential problems, such as over- or under-voltage. The outputs can be generated at regularly scheduled periods or ad hoc as power quality events occur. MDM remains a system of record for data input to the power quality application.
- **Outage management systems** can be linked to AMI, MDM, and distribution management systems (DMS) to provide operators and field personnel better information on where faults in the system may be, as well as an accurate picture of how major restoration activities are proceeding. These systems may also integrate directly with workforce management systems to assist in the efficient dispatch of field workers.

2.2.2 The Winning Architecture Remains Unclear

Pike Research observed two distinct approaches from MDM vendors during our research:

- Full-feature MDM systems with as many specialized applications as possible for diverse departments of a utility
- Minimalist MDM systems that are excellent at receiving and conditioning data from one or more AMI systems, then creating a metering data system of record that is openly available to specialized utility applications from many vendors

Several MDM vendors are planning to offer both approaches. Our research was marked by the amount of change that vendors' offerings are currently undergoing. All of the vendors we spoke with understand the move toward an operations focus, but not all have completed the product enhancements yet.

Proponents for full-featured solutions argue that their greater integration and needing only a single vendor are advantages. Meanwhile, proponents of the minimalist approach argue that the greater flexibility afforded by this method enables a utility to assemble an MDM system that best fits their needs. Moreover, single applications can be swapped in or out with little effect on the rest of the MDM system.

We detected no clear preference for one approach over the other. This suggests that the winners may be those vendors with the strongest marketing capabilities, or perhaps those with the most impressive list of reference clients. With so many similar strategies, the victories may accrue to those companies that best execute their business plans.

2.2.3 Interoperability Is Key

MDM vendors appear to be hedging their bets by interfacing in many directions. This suggests uncertainty as to which company will prevail in the MDM market, or even which approach. A typical leading MDM product will support data receipt from many AMI head-ends. Even those MDM vendors that also make and sell their own AMI systems, such as Itron and Elster, support feeds from their competitors' AMI systems. Itron and Landis+Gyr have recently announced an initiative to natively support each other's network communications in their smart meter radios. Pike Research believes that interoperability will be necessary to remain a viable player in the MDM market.

Casting the MDM nets even wider, eMeter makes and sells a wide-ranging and diverse suite of MDM applications, which in theory could meet a large percentage of any utility's application needs. However, eMeter also supports full integration of its MDM with the SAP MDUS specification, which allows a utility to use SAP's utility applications in addition to (or in place of) eMeter's own applications. Another vendor that supports the MDUS specification is Itron. It makes and sells its own Itron Enterprise Edition MDM, which is also an SAP-qualified application.

Pike Research does not, however, believe that increased interfaces among competitors means that these MDM systems will congeal into one unrecognizable blob. The market is large and diverse enough to support the players in it today. Yet, it is possible that some of the players will be acquired. One example is Schneider Electric's announced acquisition of Telvent.

2.3 MDM Market Drivers

MDM represents a curious market. It is a highly competitive market with many well-established and well-respected players. At the same time, though, the vast majority of the potential market has not been tapped because MDM relies on AMI deployments as its source of business.

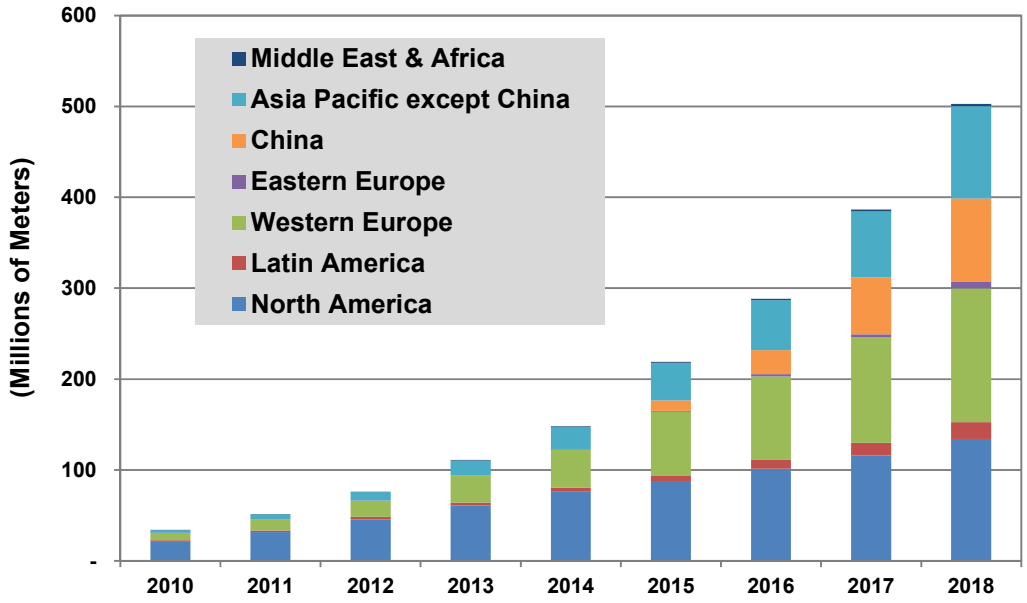
Note that all of the major players state nearly the same vision of MDM – a central system of record that enables greater efficiency in many departments of a utility, with operational improvements currently in vogue.

2.3.1 Smart Meter Deployments Will Accelerate

The most important driver of the MDM market is likely to be the sheer pace of new smart meter deployments. Chart 2.1 above shows Pike Research's forecast of the smart meter installed base through 2018.

Even with that steep growth curve, we forecast that by end of 2018, only 503 million, or 58%, of smart meters will be supported by an MDM, as shown in Chart 2.2. Smart meter deployments through 2018 should therefore continue to drive MDM investment – even beyond the forecast period – as the remaining 42% of meters come under MDM coverage.

Chart 2.2 Total Smart Meters with an MDM by Region, World Markets: 2010-2018



(Source: Pike Research)

Smart meter deployments after 2018 are also likely to drive additional MDM investment. For example, Pike Research forecasts about four million smart meters installed in the Middle East and Africa region by the end of 2018. This region has a population in excess of one billion.

2.3.2 Improved Operational Efficiencies

Utilities without an MDM will be hard-pressed to implement some of the business process enhancements by which MDM can improve their operational efficiency. Pike Research has observed a strong desire from utilities to move from reactive to predictive actions in managing their business. In grid operations, improvements could occur via near real-time availability of data such as power quality. In business operations, improvements could result from the ability of collections departments to spot loss scenarios as they occur, rather than at the end of the month.

Such improvements will most likely (in time) drive nearly all utilities with an AMI system to also deploy MDM. In some cases, the result of improved operations may be reduced costs due to decreased collection write-offs or more efficient scheduling of field service visits. In

other cases, the result may be prevented outages, which are difficult to quantify but highly prized by utilities.

Smaller utilities may also be able to reap the benefits of improved operations through Managed Services implementations of MDM. The managed services MDM market is yet nascent, but it is poised for growth when smaller utilities begin considering MDM implementations. Those managed services may enable the smaller utilities to afford many of the same benefits as their larger brethren. In return, the smaller utilities will most likely have to accept some tradeoffs, such as having the MDM hosted at a data center or in a cloud rather than at their location.

2.3.3 Governance, Regulatory, and Compliance (GRC)

MDM systems can decrease the cost and complexity of compliance efforts by providing a central collection point for the data and transaction audits necessary to satisfy auditors that controls are in place, being monitored, and being followed. Without a centralized collection point, demonstration of compliance can become an extremely labor-intensive process that involves manually collecting and correlating data from many diverse sources. In addition, the pre-defined reports of an MDM system save a utility the work of developing and maintaining its own reports once the data have been manually collected.

Pike Research does not expect GRC to be nearly as strong a force for MDM investment as the other market drivers listed in this section. However, improved efficiencies in GRC activities could draw additional stakeholders into the fray, possibly resulting in earlier approval of MDM expenditures within some utilities.

Section 3

THE PIKE PULSE

3.1 Pike Pulse Grid

The MDM market is nearly a decade old now. Such longevity is reflected by the scores and placements in this Pike Pulse Grid, which demonstrate that there are no immature players. In some areas such as market share and product portfolio, there was no clear leader, so several vendors are clustered around similar scores.

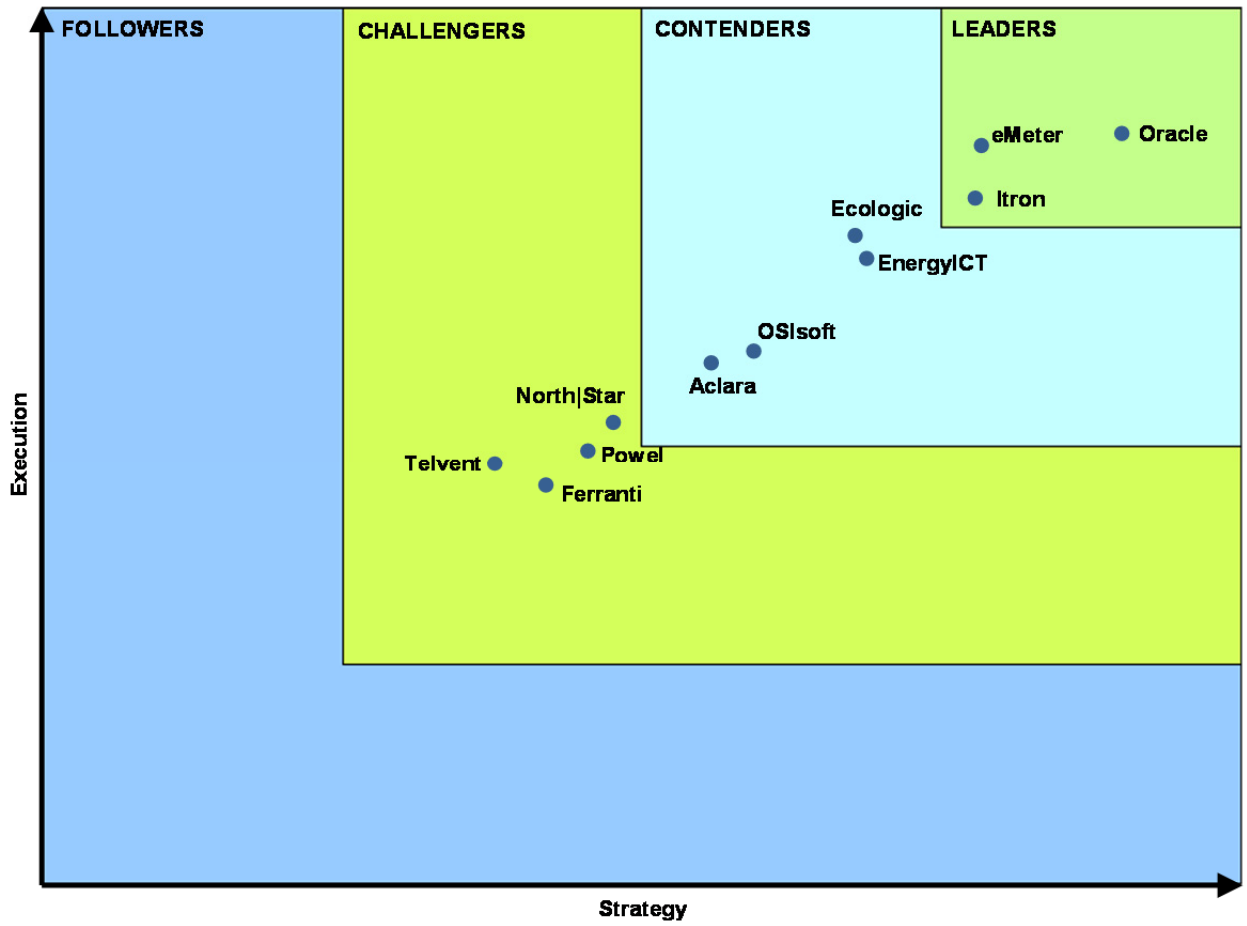
Pike Research has included individual charts of scores for each vendor below to more fully illustrate our view of the strengths and weaknesses of each. Several vendors have scores that could best be described as inconsistent – strengths in some areas, weaknesses in others. In several cases, this is the result of a chosen strategy. However, it can also indicate that a vendor has chosen to emphasize some aspects of running their business – at the expense of other aspects.

Table 3.1 Vendor Overall Scores

Rank	Vendor	Total Score
1	Oracle	87.8
2	eMeter	81.3
3	Itron	78.0
4	Ecologic	70.9
5	EnergyICT	70.1
6	OSIsoft	60.1
7	Aclara	57.7
8	North|Star	50.2
9	Powel	47.5
10	Ferranti	43.8
11	Telvent	43.2

(Source: Pike Research)

Chart 3.1 The Pike Pulse Grid



(Source: Pike Research)

Note that we have not included SAP among the vendors covered in this Pike Pulse report. SAP lacks the ability to collect meter data from AMI head-ends and perform data conditioning functions such as VEE and versioning to create a meter data system of record. We consider these capabilities an essential requirement of any product that is categorized as meter data management.

3.2 Company Rankings

3.2.1 Oracle

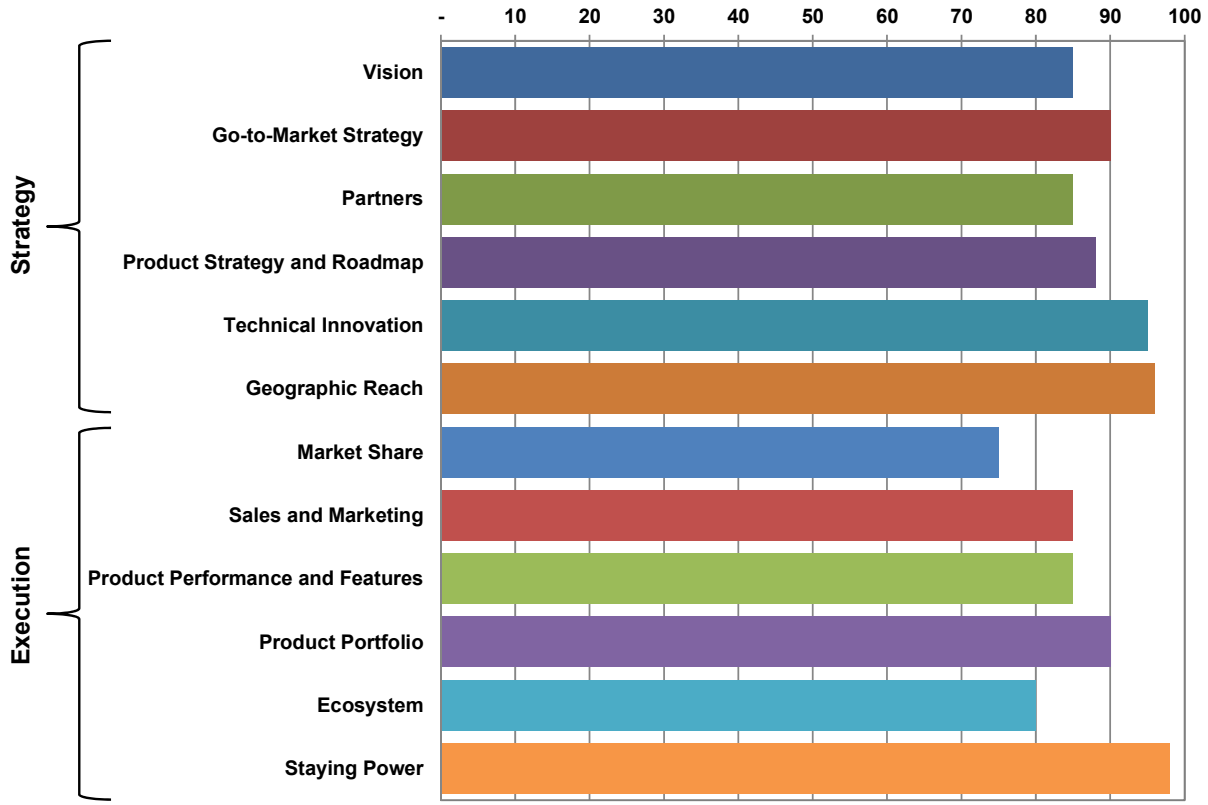
Overall Score: 87.8

Strategy: 90.0

Execution: 85.6

Oracle scored at the top of all the MDM vendors Pike Research profiled in this report, solidly in the Leaders category. Oracle's MDM product suite is as wide as any in this industry, and features integration into other Oracle products that are already found at many large enterprises. The Oracle MDM integrates with most major AMI systems. Oracle's sheer size gives it staying power in this market, though this does not automatically assure a commitment to MDM support. Oracle also has a strong geographic reach. Oracle's technical innovation over several decades, including those of Sun Microsystems (e.g., Java), is well known. Several other MDM vendors in this survey base their MDM upon Oracle database technology. Oracle also has strong political capital with most large corporations since it is already present for other IT deployments, which can be an advantage at the beginning of an MDM pursuit. In addition, due to the integration between Oracle MDM and other Oracle offerings, such as CRM, it may sometimes be in the position of proposing software the clients already have in-house.

Chart 3.2 Oracle Strategy & Execution Scores



(Source: Pike Research)

Section 4

VENDOR PROFILES

4.1 Leaders

Leaders are vendors that scored 75 or above in both Strategy and Execution. These companies consistently have higher scores across all 12 measurement areas in this Pike Pulse report. As a result, they are in the strongest position for long-term success.

While the MDM market is well established today, it is at an inflection point. As a result, past success is not in itself a guarantee of future success. Therefore, Pike Research has appropriately weighted the Strategy scores to reflect the importance of planning for an uncertain future.

4.1.1 Oracle

Oracle is a leading provider of integrated software and hardware systems. The company entered the MDM market through its 2007 acquisition of Lodestar. Today, it makes and sells a full suite of MDM functions, including a common meter data repository (system of record), VEE, usage subscriptions, aggregations, billing determinants, revenue protection, auditing, and reporting. Oracle Utilities' Load Profiling and Settlement application supports load profile creation and utilization, data aggregation, and load and financial settlement. The Smart Grid Gateway provides productized interfaces to communicate with AMI head-ends and is directly integrated with Oracle's MDM.

Oracle Utilities provides integration to its Customer Care and Billing application as part of its offering. This offering enables customer portals and also includes customer care modules, meter reads, rating, billing, payment processing, credit and collections, field service, and meter management. The Work and Asset Management for Utilities application provides tracking of utilities' assets, plus scheduling of maintenance tasks. Oracle Mobile Workforce Management provides scheduling and routing of field resources for any type of work a utility needs to perform.

Oracle's Business Intelligence capability is the basis for Oracle Business Intelligence for Utilities, which can pipe MDM data through to the business intelligence engine for data analytics, periodic reporting, and ad hoc queries. OBIU includes predefined schema for often used reports and queries.

Oracle's key MDM clients include Baltimore Gas & Electric, American Electric Power (AEP), Duke Energy, and Los Angeles Department of Water and Power.

Section 5

COMPANY DIRECTORY

Aclara Software
16 Laurel Avenue
Wellesley, MA 02481
www.aclaratech.com
+1.781.694.3300

Ecologic Analytics
8011 34th Avenue South, Suite 205
Bloomington, MN 55425
www.ecologicanalytics.com
+1.952.843.6000

eMeter
2215 Bridgepointe Parkway
San Mateo, California 94404
www.emeter.com
+1.650.227.7770

EnergyICT
208 S. Rogers Lane
Raleigh, NC 27610
www.energyict.com
+1.800.558.1789

Ferranti Computer Systems N.V.
Noorderlaan 139
B-2030 Antwerpen
Belgium
www.ferranti.be
+32.3.540.49.11

Itron
2111 North Molter Road
Liberty Lake, WA 99019
www.itron.com
+1.509.924.9900

North|Star Utilities
1 Antares Drive, Suite 400
Ottawa ON, K2E 8C4
Canada
www.northstarutilities.com
+1.613.226.5511

Oracle Corp.
Oracle Parkway
Redwood Shores, CA 94065
www.oracle.com
+1.650.506.7000

OSIsoft
777 Davis Street
San Leandro, CA 94577
www.osisoft.com
+1.510.297.5800

Powel AS
Klæbuveien 194
NO-7037 Trondheim
Norway
www.powel.com
+47.73.80.45.00

Telvent
4701 Royal Vista Circle
Fort Collins, CO 80528
www.telvent.com
+1.970.223.1888

Section 6

ACRONYM AND ABBREVIATION LIST

Advanced Metering Infrastructure ..... AMI

American Electric Power ..... AEP

Automated Meter Reading ..... AMR

Business Process Management ..... BPM

Commercial Off the Shelf ..... COTS

Common Information Model ..... CIM

Compound Annual Growth Rate ..... CAGR

Customer Information System ..... CIS

Customer Relationship Management ..... CRM

Distribution Management System ..... DMS

Enterprise Resource Planning ..... ERP

Geospatial Information System ..... GIS

Governance, Regulatory, and Compliance ..... GRC

Information Technology ..... IT

International Electrotechnical Commission ..... IEC

Investor-Owned Utility ..... IOU

Itron Enterprise Edition Meter Data Management ..... IEE MDM

Landis+Gyr ..... L+G

Meter Data Management System ..... MDMS

Meter Data Management ..... MDM

Meter Data Unification and Synchronization ..... MDUS

Meter Transmission Unit ..... MTU

National Institute for Standards and Technology (U.S.) ..... NIST

National Rural Electric Cooperative Association (U.S.) ..... NRECA

Oracle Business Intelligence for Utilities ..... OBIU

Pacific Gas and Electric Company ..... PG&E

Power Line Communications ..... PLC

Radio Frequency ..... RF

Software as a Service ..... SaaS

Supervisory Control and Data Acquisition ..... SCADA

Systems Integrator ..... SI

Two-Way Automatic Communications System ..... TWACS

United States ..... U.S.

Validating, Editing, and Estimating ..... VEE

Section 7

TABLE OF CONTENTS

Section 8

TABLE OF FIGURES

Section 9

METHODOLOGY

9.1 Scope of Study

Pike Research has prepared this report to provide stakeholders in the meter data management space, including utilities, systems integrators, software manufacturers, hardware manufacturers, third-party service providers, MDM vendors, AMI vendors, and others, with a study of the landscape of the major providers of MDM products.

This Pike Pulse report covers the key global MDM vendors. According to Pike Research's definition, an MDM must at least be able to capture data from AMI head-ends and perform basic functions such as VEE, storage, and data aggregation to create a meter data system of record. Whether an MDM vendor also provides applications for utility use did not affect the decision to include it in this report. However, Pike Research does consider a broader vision of the MDM market to be an advantage.

The report's major objective is to provide a timely overview of the companies involved, as well as their strategy and execution in a marketplace that is mature yet changing rapidly. Note that the company ratings capture the vendor's standing at the time of the report and are not a retrospective of past accomplishments or an indication of future success. The ratings for any given vendor may change quickly in this evolving market.

9.2 Sources and Methodology

Pike Research's industry analysts utilize a variety of research sources in preparing Research Reports. The key component of Pike Research's analysis is primary research gained from phone and in-person interviews with industry leaders including executives, engineers, and marketing professionals. Analysts are diligent in ensuring that they speak with representatives from every part of the value chain, including but not limited to technology companies, utilities and other service providers, industry associations, government agencies, and the investment community.

Additional analysis includes secondary research conducted by Pike Research's analysts and the firm's staff of research assistants. Where applicable, all secondary research sources are appropriately cited within this report.

These primary and secondary research sources, combined with the analyst's industry expertise, are synthesized into the qualitative and quantitative analysis presented in Pike Research's reports. Great care is taken in making sure that all analysis is well-supported by facts, but where the facts are unknown and assumptions must be made, analysts document their assumptions and are prepared to explain their methodology, both within the body of a report and in direct conversations with clients.

Pike Research is an independent market research firm whose goal is to present an objective, unbiased view of market opportunities within its coverage areas. The firm is not beholden to any special interests and is thus able to offer clear, actionable advice to help clients succeed in the industry, unfettered by technology hype, political agendas, or emotional factors that are inherent in cleantech markets.

9.2.1 Vendor Selection

The vendors selected for inclusion in this Pike Pulse report are those that Pike Research profiled in our recently published market forecast, *Meter Data Management*. Note that we have excluded SAP from this report because – as stated in Section 3.1 – SAP does not have the ability to capture data meter data from AMI head-ends and create a meter data system of record through functions such as VEE. These are functions that Pike believes are basic requirements for an MDM.

9.2.2 Ratings Scale

Companies are rated relative to each other using the following point system. The ratings are a snapshot in time, showing the current state of the company, and are likely to be fluid as new competitors enter the market and customer requirements evolve.

- Very Strong 91 - 100
- Strong 76 - 90
- Strong Moderate 56 - 75
- Moderate 36 - 55
- Weak Moderate 21 - 36
- Weak 11 - 20
- Very Weak 1 - 10

9.2.2.1 Score Calculations

The scores for Strategy and Execution are weighted averages based on the subcategories. The Overall score is calculated based on the root mean square of the Strategy and Execution scores.

9.2.3 Criteria Definitions

9.2.3.1 Strategy

- Vision: Evaluates the company's stated goals in designing market solutions against the actual needs of customers based on the entire environment in which they will operate. Clear and compelling visions that are effectively communicated to the industry result in higher scores.
- Go-to-Market Strategy: Evaluates the company's strategy for reaching the target market, including the sales and marketing channels to be used, as well as the processes established for informing the target market about the brand differentiation and unique product value.
- Partners: Measures the company's established partnerships with key organizations that will provide an advantage in sales, business, and product development, as well as assist in the implementation of the “whole product” for the customers. Affiliations with smart grid companies, IT and infrastructure providers positively impact scores.
- Product Strategy and Roadmap: Evaluates the long-term competitiveness of the product plan, both as an effective solution that satisfies market requirements and as a profitable line for the company to merit continued product development investment.
- Technical Innovation: Evaluates whether the company has developed and/or patented technology that provides a significant business advantage over competitors that is likely

to have an enduring impact on its success. Higher scores are given if the company's technology creates functionality that enables customers to solve problems and enhance operations in new ways. Additional points are scored if the products are compatible with other technologies that customers are likely to also implement.

- Geographic Reach: Gives higher scores to companies with national and international networks of distributors and resellers and sales in multiple regions. Scores are lower if the company's products are not designed to be suitable for multiple regions.

9.2.3.2 *Execution*

- Market Share: Evaluates the company's current share of the MDM market as defined above, including recent sales agreements and key customer accounts that are likely to impact sales during the next calendar year.
- Sales and Marketing: Evaluates the capabilities of the company's existing sales and marketing resources, the company's understanding of the most suitable target markets, and its ability to successfully influence customer perceptions and purchases.
- Product Performance and Features: Addresses the products' relative competitiveness and suitability for the business requirements of enabling utilities to improve their business and operations via meter data. Points are awarded for connectivity, communications, and interface with other products in the smart grid ecosystem.
- Product Portfolio: Evaluates the completeness of the company's portfolio based on customer needs. Higher scores are given if the product lineup includes more AMI interfaces and more applications. In addition, a slightly higher score is given for interoperability with other MDM systems.
- Ecosystem: Agreements with proven suppliers and product compatibility with related product categories (such as smart grid and home energy management systems) lead to higher scores.
- Staying Power: Evaluates whether the companies have access to capital for long-term investment in product development. Also evaluates companies' ability to withstand competitors' tactical or strategic moves, such as price discounts. Higher scores are given to companies with management teams with experience and proven track records of success.

Published 3Q 2011

1320 Pearl Street, Suite 300
Boulder, CO 80302 USA
Tel: +1.303.997.7609
http://www.pikeresearch.com