Magic Quadrant for Meter Data Management Products

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Selecting the right technology partner in a rapidly maturing MDM market continues to be a challenge for buyers of smart metering solutions. To help clients understand vendors' capabilities and MDM deployment risks, we provide an update of vendors' product positioning in this emerging market.

Market Definition/Description

Gartner bases the concept of a Magic Quadrant on a customer-oriented market analysis. Consistent with the approach espoused by Geoffrey Moore, noted business author of "Crossing the Chasm," a market is "a set of actual or potential customers for a given set of products or services who have a common set of needs or wants, and who reference each other when making a decision."

The market segment considered for this Magic Quadrant consists of utility companies seeking software solutions for managing metered consumption data, which can be used across the enterprise and shared with customers, partners, market operators and regulators. For the purpose of this Magic Quadrant assessment, meter data management (MDM) products are IT components of the advanced metering infrastructure (AMI) responsible for cleansing, calculating and providing data persistency, as well as for the dissemination of metered consumption data, which can originate from a variety of sources. However, as we discuss in the Context section of this research, in some instances, companies can justify MDM implementation, even if they do not have or do not plan to implement AMI. MDM can contain a subset of meter asset information, or even some premises or customer information. However, the key metrics being tracked deal with consumption and meter-related events, regardless of what meter is installed, or what meter data collection device (aka headend) is used. Although implementations may vary, here are the key functions that MDM should support:

- Data collection (input from headend devices)
- Command management (such as remote connect/disconnect)
- Validating, editing and estimating (VEE) meter reads
- Exception management
- Event management (such as "last gasp" outage notification)
- Estimating invalid or missing reads
- Profiling scalar meter reads
- Bill determinant calculation
- Aggregating meter reads
- Tracking meter inventory (but not managing the entire meter asset management life cycle)
- Providing data to downstream systems, such as customer information systems (CISs)
- Providing information directly to end users (utility personnel and end customers alike)
- Supporting additional functions, such as revenue protection analysis, distribution planning support and prepayment

MDM products should be of interest to all subsectors of the utility industry (electricity, gas and water), because each provides a metered commodity at the customer’s premises and needs to manage metered consumption data. However, as an IT component of AMI, MDM adoption and requirements are shaped by needs in the electric power utility segment, which has higher complexity in managing commodities (because electricity cannot be stored), as well as numerous mandated AMI deployment programs, compared with other utility subsectors. Consequently, MDM requirements for water and gas utilities are subsets of MDM requirements for power utilities from functional and performance/scalability standpoints.
Magic Quadrant

Figure 1. Magic Quadrant for Meter Data Management Products

Source: Gartner (December 2013)
Vendor Strengths and Caution

**Cuculus**

Cuculus ([www.cuculus.net](http://www.cuculus.net)), a privately held company formed in 2007 with a telecommunications industry background, markets its Zonos offering as an MDM product and a platform for advanced meter and communications management (replacing or working with meter-vendor-dependent headends). Zonos can also be used by utilities and other providers to manage smart home energy-efficiency programs.

Zonos is offered on Linux and Windows platforms with an Oracle and MySQL Enterprise relational database management system (RDBMS). Cuculus claims that 14 Zonos MDM implementation sites are in operation (mostly small-scale pilots), with more than 86,000 meters in total. The largest implementation site is RheinEnergie with 30,000 meters, where it is interfaced with the SAP IS-U solution.

**Strengths**

- Clients have reported a high level of satisfaction with Cuculus' responsiveness to meeting their changing needs.
- Zonos supports 60 different types of meters, and can address the needs of network operators and energy retailers in unbundled markets.
- Zonos can be used as a multipurpose platform addressing utility company needs for meter-to-cash, market settlement and home energy management (smart homes).

**Cautions**

- Cuculus customers have given Zonos a low rating for its ability to be configured out of the box to meet a specific client’s needs.
- Cuculus has not demonstrated Zonos’ scalability in production, as the largest implementation site has 30,000 monthly read meters.
- Cuculus has a small installed base and relatively narrow geographic focus, and hasn’t proven its capability to address the needs of different energy markets.

**ElectSolve**

ElectSolve ([www.electsolve.com](http://www.electsolve.com)), a privately held software vendor, markets its solutions to municipal utilities through its relationship with the American Public Power Association’s (APPA’s) Hometown Connections, and to the cooperative market through the National Rural Telecommunications Cooperative (NRTC).

ElectSolve’s uCentra MDM product (which the vendor dubs Operational Data Management System) offers several additional functions (settlement, load profiling and loss analysis), as well as the
CentraVU customer energy portal and utility dashboard for automated meter reading (AMR)/AMI performance. uCentra is based on the Microsoft technology stack.

ElectSolve has 1.2 million electric/water/gas meters in production as part of 30 MDM accounts, with 78% being interval meter reads. The largest implementation site in production is Danville Utilities in Danville, Virginia, with 80,000 electric/water/gas meters.

**Strengths**

- ElectSolve is an early entrant into the MDM area that has leveraged the domain expertise of its staff to devise a good fit for its target markets (U.S. municipal utilities and co-ops).
- uCentra provides an operational view of multiple field devices, including distribution supervisory control and data acquisition (SCADA), and can be used as an integration platform for multiple utility systems (CIS, GIS and OMS).
- Clients report satisfaction with the ElectSolve team’s understanding of MDM business requirements, and with its responsiveness.

**Cautions**

- uCentra’s use as an operational data store that goes beyond MDM needs may be a deterrent to large utilities that may be seeking a product with a tighter AMI focus.
- The company has not developed a formal system integrator (SI) partnership program.
- The largest implementation site in production is too small to demonstrate product scalability outside its target market.

**Elster EnergyICT**

Elster EnergyICT ([www.energyict.com](http://www.energyict.com)) is focused on providing advanced energy monitoring, and control hardware and software. EnergyICT was acquired by Elster Group in 2009 to add MDM capability to its multiutility advanced metering solution.

Elster EnergyICT’s MDM product EIServer was developed to collect, store and process energy consumption data with specific modules for validation, estimation and editing. It supports multiple functions, including calculation of complex billing determinants, demand response, load forecasting, load research, workflow management, consumption Web presentment and consumer energy management. EIServer runs on Oracle Database and Unix/Linux or Windows operating systems.

The largest EIServer MDM implementation site is the Salt River Project, with more than 1 million interval meters. About 22 million meter points are stored in the Elster EnergyICT MDM product across different markets/utilities, as well as large commercial and industrial (LC&I) customers, which use it as an energy management platform. Eighty-five percent of meters in the Elster EnergyICT installed base are interval meters.
Strengths

- EIserver can be coupled with the Elster EnergyICT headend solution that supports more than 150 meter protocols.
- Elster EnergyICT can be deployed as a toolbox or commercial off-the-shelf (COTS) software. It also can be offered as a hosted solution (with prepaid license fees) or as a fully managed SaaS offering.
- Clients have given high ratings to Elster EnergyICT implementation services.

Cautions

- Some clients have reported concerns with product usability.
- Elster EnergyICT’s MDM pricing includes additional fees for external user access, such as end consumers for energy usage presentment.
- Although EIserver runs on multiple operating systems, it currently supports only Oracle Database.

eMeter

eMeter, A Siemens Business (www.emeter.com) — acquired by Siemens in 2011 — delivers an MDM product, EnergyIP, which is used for energy and water consumption data management and enables process automation and control of utility business processes related to advanced metering.

EnergyIP operates in a Unix/Linux- or Windows-based environment, with an Oracle Database. In addition to EnergyIP Analytics Foundation running on an Oracle Database, it also offers the analytics package on the IBM Netezza analytical appliance for clients with very large data volumes or intensive analytical needs.

eMeter has 44 installations in production (with more than 23 million meters under contract and nearly 12 million in production). The largest installation site is The Independent Electricity System Operator (IESO) in Ontario, Canada, with 4.5 million hourly meters.

Strengths

- Clients consistently rank eMeter’s integration architecture, product functionality and performance among the highest in this product category.
- Clients using eMeter in conjunction with SAP IS-U report satisfaction with out-of-box integration with SAP for Meter Data Unification and Synchronization (MDUS).
- eMeter’s viability, global reach and delivery capability have improved following the Siemens acquisition.
Cautions

- eMeter has a strong SI partnership program, but the majority of implementations have been done by Siemens. The recent announcement of the Siemens and Accenture joint venture in the smart grid area will most likely additionally reduce the number of viable SI options for clients.
- Clients planning to achieve smart grid infrastructure-related benefits using a Siemens offering (including eMeter) should press the vendor for a clear integration strategy, and preferably a road map.
- eMeter leverages Siemens’ global presence, which requires sales and delivery activities in multiple markets with diverse functional requirements. Consequently, this can stress internal eMeter resources.

Enoro

Enoro ([www.enoro.com](http://www.enoro.com)) is an IT product and service provider that has been focused on liberalized energy markets in the Nordic countries and Central Europe. Enoro’s product Generis is a modular application suite containing MDM, meter asset management, device events management and control, settlement, contract and portfolio management, energy trading and risk management (ETRM), billing, fuel and emissions management, and business intelligence (BI) and reporting.

The Generis MDM product is offered on the Microsoft application server platform with Oracle Database, and can also run on a Unix/Linux platform. Its workflow control integrates MDM into business processes for commodity management and settlement, with support for customer and meter change activities.

According to Enoro, 486 companies use Generis (including partial or complete MDM functionality), with a total of 13 million meters — 35% being interval meters. The largest Generis MDM implemented site in production is at Fortum Distribution Finland, where it collects hourly meter reads for more than 500,000 meters.

Strengths

- Enoro is recognized as a relevant MDM product and service provider in the Nordic and Central European energy utility markets.
- The Generis modular architecture enables Enoro to support the needs of market operators, distribution network operators (DNOs), energy retailers and other market participants.
- Clients have reported high levels of satisfaction with the product configuration capability, which has helped them avoid custom development during implementation projects.

Cautions

- Generis has not been tested yet in production instances for large companies with small meter reading intervals.
Enoro’s MDM product has not been implemented outside its current markets (the Nordic region and Central Europe). Consequently, its functionality or configurability has not been proved in other markets.

Some clients have expressed concerns with Enoro’s implementation services.

Ferranti Computer Systems

Ferranti Computer Systems (www.ferranti.be) is a privately held software company that offers a metering and billing product called Metering and Contract Management System (MECOMS). MECOMS provides an integrated solution for customer information and billing systems, MDM, enterprise asset management (including service management) and market-related process support modules.

MDM is the foundational component of MECOMS, which is built on top of the Microsoft Dynamics AX solution. The product contains the Smart Metering Communication Bus (SMCB), which provides the integration infrastructure for two-way communication and the handling of the large data volumes created by AMI. MECOMS also offers the UI for utility personnel access to meters for meter management and configuration.

The largest implementation of the MECOMS MDM product is Indexis, with 10 million meters; however, only 2% are 15-minute interval meters, with the majority (9 million) being annually read meters. The total number of installation sites is 41 (including those that use MDM as part of the MECOMS CIS), with a cumulative number of 23.5 million meters (10% being interval meters).

Strengths

- MECOMS (and MDM as its component) is built on top of the Microsoft Dynamics AX platform, and makes use of .NET orchestration and integration capabilities.
- Since May 2013, MECOMS has offered support for big data on the standard hardware platform, leveraging Microsoft large data-handling technologies (such as Reactive Extensions and HDInsight).
- Ferranti leverages Microsoft’s network of implementation partners, such as Accenture (and Avanade), CGI-Logica, Wipro and Tata Consultancy Services (TCS), as well as a number of regional partners, to extend its presence outside its native market.

Cautions

- MECOMS MDM has a relatively limited number of off-the-shelf plug-ins (off-the-shelf headend integration) for metering systems compared with other MDM vendors.
- MECOMS MDM has not been sold yet or proven in production in the more advanced and functionally more complex North American AMI market.
- MECOMS requires a Microsoft Dynamics AX platform for a relatively narrow MDM functionality.
Gruppo Engineering

Gruppo Engineering ([www.eng.it](http://www.eng.it)) is an Italian IT product and service provider. The utility sector contributes approximately 12% of the company’s revenue, mostly from SI and consulting activities.

Gruppo Engineering’s MDM product, Net@SIU-MDM, is offered as a stand-alone module of its large, meter-to-cash offering, Net@Suite. In addition to supporting billing and settlement function consumption data needs, the Gruppo Engineering MDM product supports consumption data needs for network operation and planning. It is offered on Unix, Linux, Windows and Oracle Database.

The largest installation site is Genova Reti Gas, with 350,000 monthly read meters. Although Net@SIU-MDM has been implemented in more than 80 utilities, with 12 million cumulative meters (in all cases, as a part of an overall meter-to-cash solution), only 1% of meters are interval meters.

**Strengths**

- Gruppo Engineering's focus on the Italian utility market (particularly gas and water) makes Net@SIU-MDM well-positioned to address specific regional market requirements.
- Net@SIU-MDM’s upgrade process has been ranked highest and takes the shortest time among rated MDM vendors according to their references.
- Gruppo Engineering’s MDM product performance scores very high for most of its features according to its references.

**Cautions**

- Because the majority of Net@SIU-MDM clients are gas and water utilities, the product does not support the event management functionality required for outage management and revenue protection through tamper analysis.
- More than 99% of Gruppo Engineering MDM installations use handheld-based meter data collection. The product does not support common AMI/AMR vendors’ data collection systems out of the box.
- The vast majority of Gruppo Engineering MDM implementations are using Net@SIU-MDM as a part of their overall meter-to-cash suites, rather than as a best-of-breed product.

Harris Utilities

Harris Utilities ([www.harrisutilities.com](http://www.harrisutilities.com)) is the utility-sector-focused part of Harris Computer Systems, a division of Constellation Software. Through several companies, Harris Utilities offers a portfolio of products in the utility billing and metering space, targeting mostly municipal, cooperative and smaller utilities.

Harris Utilities’ MDM product, MeterSense, was developed originally by its NorthStar Utilities Solutions company, and is now offered via a separate business unit — SmartWorks. The MeterSense MDM — offered on Unix/Linux and Windows platforms and Oracle Database —
manages, processes and stores meter data and events, tying them into the utility's business with configurable workflows.

Harris Utilities' SmartWorks claims 79 MDM customers. The total aggregated number of meters supported by MeterSense in production is 2.5 million, with 90% being interval meters. The largest MeterSense site in production is the Albuquerque Bernalillo County Water Utility Authority, with 203,000 water meters.

**Strengths**

- Harris Utilities has a sharp focus on municipal utility companies with less than 250,000 meters, addressing sector needs for lower total cost of ownership and challenges with access to technical resources.
- In addition to providing persistency for consumption data, MeterSense stores a variety of AMI communication data, power quality, outage statistics and weather data.
- MeterSense customers ranks Harris Utilities' implementation and support services very high — particularly its responsiveness.

**Cautions**

- MeterSense hasn't been used by large utilities using interval meters for their residential customers. Thus, product scalability hasn't been proven in production.
- MeterSense’s current deployment has been primarily in conjunction with Harris Utilities’ CIS solutions. The use of MeterSense in a best-of-breed environment and its ease of integration have not been proven in the field.
- Product configurability and analytical capabilities continue to be rated lower than the rest of MeterSense’s features.

**Itron**

Itron ([www.itron.com](http://www.itron.com)) is a publicly traded company that provides solid-state meters for electricity, water, gas and heat, as well as data collection/communication systems, including AMR (handheld, drive-by and fixed-network) and AMI technology.

Itron Enterprise Edition Meter Data Management (IEE MDM) is a data management solution for interval, register and event data for residential, commercial and industrial customers. It is available on Unix/Linux and Windows platforms, and Oracle and SQL Server. IEE MDM is part of the IEE suite of products, which also includes IEE Revenue Protection Suite for theft analytics, IEE Customer Care for customer engagement, and IEE Curtailment Manager for LC&I.

Itron has 64 utility companies using IEE MDM in production, with 33 million cumulative meters, with 70% being interval meters. The largest implementation site is Southern California Edison, with 5 million interval meter reads in production (4.9 million meters read daily, for a total of 5.7 billion reads per month).
Strengths

- Itron IEE MDM is a mature software product with a rich set of functions and robust VEE capabilities with a library of configurable and extensible estimation routines.
- Itron is an active participant in numerous AMI-related standards activities that address interoperability and the capabilities of AMI and MDM.
- Clients referenced for this study that have been using prior versions of IEE (7.0 and earlier) have reported a significant improvement in product performance and quality.

Cautions

- Most Itron clients (which tend to be large North American investor-owned utilities) reported long implementation times. In fact, Itron’s IEE MDM product had the largest implementation duration of all the products reviewed for this Magic Quadrant.
- Some clients outside North America continue to report concerns with product configurability to their regional market requirements and access to resources.
- Some clients reported concerns with Itron support organization rigidity and slow response times.

Landis+Gyr

Landis+Gyr (www.landisgyr.com), owned by Toshiba, is one of the leading global providers of metering and energy management solutions. It entered the MDM market through the acquisition of Ecologic Analytics in 2012. The Landis+Gyr Gridstream MDM system supports needs for event analysis to improve outage detection, as well as utility needs to reduce theft and support prepayment rollout.

Gridstream Meter Data Management Solutions (MDMS) runs on Unix and Linux platforms, using Oracle 11gR2 RDBMS or IBM Informix for data management. It is also offered in the cloud, hosted and as SaaS, using virtualization technology.

Landis+Gyr has 14 Gridstream MDMS implementations with 15.8 million meters cumulatively in production (55% being interval meters). It has one of the largest production instances (based on the total number of meters) at Pacific Gas & Electric, with more than 10 million meters (gas and electric) and 201 million meter reads per day. It also has one of the largest production instances (based on the number of meter reads per day) at Oncor Electric Delivery, with more than 355 million meter reads per day, indicating good scalability.

Strengths

- As a pioneer in MDM hosting with required infrastructure and skills, Landis+Gyr can be an effective provider of MDM service in the cloud.
Following the Landis+Gyr acquisition of Ecologic Analytics, clients have reported a significant improvement in product development process, performance and delivery capabilities.

Landis+Gyr's acquisition of Ecologic Analytics and the subsequent Toshiba acquisition of Landis+Gyr improved company viability and provided access to resources and new markets.

Cautions

- While Landis+Gyr has been addressing product quality and factory testing, some clients continue to report concerns with these issues.
- Concerns have been voiced about adequacy of the training offered by Landis+Gyr.
- The Gridstream MDMS product is offered in conjunction with Gridstream AMR/AMI. Although it can be offered as a stand-alone product, it may be more appealing to clients looking for an end-to-end, bundled solution.

Oracle Utilities

Oracle (www.oracle.com) is a large publicly traded IT provider that offers an MDM product via its utility-industry-focused organization Oracle Utilities. Oracle’s Utilities MDM is a Java-based application (as of v.2.0), designed as a stand-alone product, but it is frequently sold bundled with Oracle Utilities CIS.

Oracle Utilities MDM is offered on Oracle DBMS and Unix, Linux and Windows platforms, with Web services that facilitate integration with other enterprise applications. Its Web tier and application service tiers can be deployed in clustered environments to provide high availability.

The largest installation site is a U.S. utility with more than a million meters. Gartner estimates that Oracle Utilities MDM is in production in almost 40 utilities globally (mostly on the legacy product — pre-v.2.0 release) — totaling almost 20 million meters, with approximately one-third being interval meters.

Strengths

- Oracle Utilities Meter Data Management uses Oracle Utilities Smart Grid Gateway integrated with leading AMI vendors via productized adapters, as well as a generic MultiSpeak adapter.
- Oracle Utilities MDM is also offered via partners such as Red Clay Consulting and Infosys as an appliance (preconfigured with hardware and third-party software).
- Oracle Utilities offers adjacent products, such as Oracle Utilities Metering Solution, that address meter asset process life cycle and MDM BI to meet meter data analytics needs.

Cautions

- Some references provided by Oracle have rated Oracle implementation, support and training services as very low.
Some clients have reported a long duration of upgrade from the legacy (Lodestar) MDM solution to Oracle MDM v.2.

Oracle has developed integration to SAP for Meter Data Unification and Synchronization (MDUS) via a partner. However, for obvious reasons, SAP has not formally certified that interface (nor will it likely do so in the future).

**Robotron**

Robotron ([www.robotron.de](http://www.robotron.de)) is a privately held German software company that provides data management applications and services in multiple sectors, including utilities, where it offers energy data management products and implementation services. Robotron’s MDM product, robotron*ecount, is part of a larger suite that includes robotron*ecollect (for AMR/AMI data collection) and robotron*esales applications, which can be assembled to address the needs of retailers and network operators in unbundled energy markets.

Its robotron*ecount product is architected as an n-tiered application running on Unix/Linux and Windows platforms with Oracle Database. Robotron claims that 232 companies use its MDM product (most of them being LC&I customers using it for energy management, and smaller German municipal utilities referred to as *Stadtwerke*), with 13 million total meters but only 6% interval meters. The largest implemented site is RWE Netservice with 4.5 million meters; however, only 120,000 are interval meters.

**Strengths**

- The robotron*ecount MDM product can be assembled with adjacent products (robotron*ecollect and robotron*esales) to address the different needs of market participants (including metering service providers).
- Clients praise robotron*ecount’s product stability and reliability, as well as the ease of dealing with the company.
- Clients gave Robotron’s MDM product high marks for product performance.

**Cautions**

- Some clients have expressed concerns with product usability and lack of functionality — particularly for supporting operational processes (such as meter swap-outs).
- Robotron offers support for command management (turn on/off) functionality in robotron*ecount 4.4 — which is compatible with the PRIME (PoweRline Intelligent Metering Evolution) standard. As this standard is not used in some countries (such as Germany), customers voiced concerns about a lack of command management functionality until the next release, robotron*ecount 5.0, which is not bound to the PRIME standard, comes out.
Robotron’s MDM product has not been proved outside its native markets in EMEA (particularly outside Germany) for the ability to support a diverse set of regional requirements globally, as well as scalability requirements for large, multimillion-meter AMI deployments.

Vendors Added and Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor’s appearance in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

No vendors have been added to this year’s Magic Quadrant for Meter Data Management Products.

Dropped

Aclara has been dropped from this year’s Magic Quadrant for not meeting our inclusion criteria (failing to reach the new product license revenue threshold of $500,000 since last year’s MDM vendor/product evaluation).

Inclusion and Exclusion Criteria

To be considered for inclusion in this research, vendors need to offer MDM software products that support all key components of energy consumption data life cycles (such as cleansing, calculation, persistency and dissemination). In addition to supporting the traditional use of metering data for billing, load research, market data exchanges/settlement and network asset analysis, the MDM solutions must be scalable to support the interval meter reading required for the deployment of economic demand-response programs and energy-efficiency programs in residential markets. Additionally, to be included in this research, vendors:

- Must have at least one implementation in production
- Must have an estimated license fee revenue threshold of at least $500,000 generated during the previous 12 months from MDM product sales

For this assessment, 12 "top of mind" vendors met our inclusion criteria, and clients most often consider them potential solution providers in the MDM space.
Evaluation Criteria

Ability to Execute

This axis evaluates MDM software application vendors on the quality and efficiency of the processes, systems, methods or procedures that enable their performance to be competitive, efficient and effective, and to positively affect revenue, retention and reputation. Software application providers are judged on their ability and success in capitalizing on their vision. Our evaluation of a vendor’s Ability to Execute is based on the following criteria:

- **Product:** The breadth, strength and availability of the vendor’s products that compete in and serve the MDM market

- **Overall Viability:** Product quality and consistency, as well as the vendor’s financial strength, including the likelihood of the continued investment in MDM software for the energy and utility market

- **Sales Execution/Pricing:** Capabilities of presales structures and management activities, including pricing and negotiation, as well as the overall effectiveness of sales channels

- **Market Responsiveness and Track Record:** Ability and responsiveness to meet changing market dynamics

- **Market Execution:** Market share (and mind share) of a vendor’s MDM product in the global energy and utility market

- **Customer Experience:** The ability to provide technical and relationship support and services that drive customer satisfaction during the initial implementation and software upgrades

- **Operations:** A structure that is put in place to effectively meet organizational goals and commitments, including personnel, as well as the ability to scale to respond to market dynamics

Table 1 lists the relative weighting of various criteria in terms of a vendor’s Ability to Execute in this market. For utilities seeking MDM software, a vendor’s Ability to Execute is primarily a combination of factors driven by product functionality, architecture and performance, and the ability to meet customer expectations during product delivery and operation.
Table 1. Ability to Execute Evaluation Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product or Service</td>
<td>High</td>
</tr>
<tr>
<td>Overall Viability</td>
<td>High</td>
</tr>
<tr>
<td>Sales Execution/Pricing</td>
<td>Medium</td>
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<tr>
<td>Market Responsiveness/Record</td>
<td>Medium</td>
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<tr>
<td>Marketing Execution</td>
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</tr>
<tr>
<td>Customer Experience</td>
<td>Medium</td>
</tr>
<tr>
<td>Operations</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Source: Gartner (December 2013)

Completeness of Vision

This axis evaluates MDM application vendors on their ability to convincingly articulate logical statements about current and future market directions, innovation, customer needs and competitive forces, in addition to how well they map to the Gartner position. MDM application providers are rated on their understanding of how market forces can be exploited to create opportunities for the provider. Our evaluation of Completeness of Vision is based on the following criteria:

- **Market Understanding**: Competitive differentiation, market knowledge and mechanisms for customer feedback, combined with the ability to articulate market direction and aligned product direction
- **Marketing Strategy**: The ability to articulate market direction, and a product and service offering aligned with market requirements, combined with a succinct, go-to-market strategy and messaging
- **Sales Strategy**: The ability to work with customers through its sales force, channel partners and sales tools
- **Offering (Product) Strategy**: Strength of R&D, capability in product design and the ability to offer image stability
- **Business Model**: Soundness and logic of the underlying business model and value proposition
- **Vertical/Industry Strategy**: The ability to provide a product and service for markets with a different market structure and core focus
- **Innovation**: The ability to have investment resources, expertise or capital for consolidation, defensive or pre-emptive purposes to address emerging market needs
**Geographic Strategy:** Having an established presence and market approach, both in home markets and globally

For an emerging software market such as MDM, Completeness of Vision is determined through the combination of a good market understanding and the right go-to-market strategy, innovation and level of R&D investment to meet the emerging needs in diverse energy markets. Table 2 lists the relative weighting of the various criteria regarding each vendor's Completeness of Vision in this market.

Table 2. Completeness of Vision Evaluation Criteria

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
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</thead>
<tbody>
<tr>
<td>Market Understanding</td>
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<tr>
<td>Marketing Strategy</td>
<td>Medium</td>
</tr>
<tr>
<td>Sales Strategy</td>
<td>Low</td>
</tr>
<tr>
<td>Offering (Product) Strategy</td>
<td>High</td>
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<tr>
<td>Business Model</td>
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<tr>
<td>Vertical/Industry Strategy</td>
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<tr>
<td>Innovation</td>
<td>High</td>
</tr>
<tr>
<td>Geographic Strategy</td>
<td>Low</td>
</tr>
</tbody>
</table>

Source: Gartner (December 2013)

**Quadrant Descriptions**

**Leaders**

Leaders in this market are normally included on shortlists for MDM products for all types of utilities worldwide. They should perform profitably, grow their revenue and have a presence in all major markets. Their functionality has to be above average, and their technology and scalability must be leading-edge. They must offer an MDM product that supports the functional needs of utilities operating in multiple market structures (integrated and unbundled) and focuses on customer-, asset- and market-related consumption data use. Because of the diverse drivers for AMI and MDM deployments (see "Innovation Insight: Metering Innovation Powers Energy Grid Transformation via Information Infusion"), buyers across the globe continue to have a wide-ranging set of needs and wants, which challenges providers to come up with a single product that is equally appealing to buyers in different regions.
Leaders in this market must pair advanced technology with broad offerings, rich functionality, and the capability to configure their solution to different needs as well as to offer their solution both on premises and in the cloud. They should also be able to demonstrate the financial viability needed to fuel R&D to support new technology requirements (such as Web services and service-oriented architecture) and to enable business process integration across functional silos in utilities.

This year is the first time that two vendors have attained leadership status in this market. Although coming from a different background and having different go-to-market approaches (Itron’s MDM product is a part of an overall AMI solution, while eMeter’s MDM offering is an example of a best-of-breed product and an IT component in the predominantly operational technology [OT]-centric Siemens application portfolio), both vendors have managed to develop viable and functionally rich products that have enabled them to replicate their initial home market success globally.

**Challengers**

Challengers in this market show good execution, but may lack a focus on functional or technological innovations, which restricts their desirability. Although they have a good capability and performance (in sales and growth), they may not be targeting all segments or geographies of the energy utility industry, or they may have a more limited vision of their functionality or technology. Clients with a conservative approach to business will find lower-risk options in this sector. With Itron moving into the Leaders quadrant, there presently are no Challengers in the MDM Magic Quadrant.

**Visionaries**

Visionaries have unique functional or technical offerings, but they also have constrained capabilities in geographic or financial terms. Visionaries are characterized by their ability to anticipate market transformation, such as increased analytical functionality or integration, and by their optimization of commodity management, energy efficiency or network business processes. Clients that have a tolerance for risk and are seeking a differentiating product should consider vendors in the Visionaries quadrant.

Oracle Utilities has achieved Visionary status primarily for its understanding and anticipation of market direction (such as its focus on consumption data analytics).

**Niche Players**

As a consequence of MDM being an emerging technology market and most vendors not having had enough opportunity or time to establish themselves outside of their native markets, the majority of vendors are clustered in the Niche Players quadrant. Vendors are classified as Niche Players because of one or more factors, including:

- Relatively small installed base
- Relatively narrow functional footprint
- Lack of global presence
- Inability to assess long-term viability because of nontransparent or poor financial performance
Nine Niche Players are clustered into two groups. The upper cluster is made up of more viable global vendors that are either part of larger metering technology providers, such as Landis+Gyr and Elster EnergyICT, or a part of the ecosystem of a large technology vendor, such as Ferranti Computer Systems (a member of the Microsoft technology ecosystem). These vendors continue to demonstrate market success and are well-positioned for future growth by leveraging the established presence of their metering business or technology partner networks to reach global markets.

The lower cluster is made of players with predominantly limited geographic reach (Gruppo Engineering, Robotron, Enoro and Cuculus), or a limited geographic reach and market segment focus (ElectSolve and Harris Utilities). Vendors in the lower cluster are challenged by a narrow market focus, a small installed base, low market traction or, in some cases, product and corporate viability.

Context

The market segment considered for this Magic Quadrant consists of utility companies seeking software solutions that can be used across the enterprise — and shared with customers, partners, market operators and regulators — for managing metered consumption data.

Supply security concerns, combined with a need to address the utility industry’s environmental implications, are heightening the demand for solutions that provide better visibility in energy consumption. The increased visibility into consumption data can support better network infrastructure utilization, and help include consumers in energy-efficiency and conservation programs, such as demand response. At the core of these initiatives is better access to end-user consumption data. Consequently, in the past decades, metering technologies have gained more attention, driven by policymaker initiatives on the national level and by the perception that new metering approaches are an effective way to promote energy efficiency, thereby deferring investment in the generation and delivery infrastructure. However, it appears that consumers — and regulators as their proxies — are increasingly questioning the value gained from the added cost, which is partly a consequence of poor regulatory affair management and a lack of proper communication programs from utilities in educating consumers about the potential benefits for them as individuals and for society as a whole.

Utilities use meter data primarily as an input to the monthly billing and settlement process. Energy companies planning to use metering data to support business improvement initiatives in the commodity management area — from load forecasting to generation scheduling and optimization — as well as to optimize distribution asset utilization, must significantly extend the functionality of traditional revenue-cycle-oriented metering systems. Getting higher-resolution data and distributing it more quickly require a new breed of technical solutions. These solutions include methods of disseminating consumption information to internal and external users or to applications, with ever-shorter data acquisition sampling intervals. These new requirements elevate metering from being a component of the revenue-processing life cycle (meter-to-cash) to becoming an enterprise function. Metering systems now must support multiple uses of consumption data in other key process life cycles, such as asset management (optimal network configuration and loss minimization, and
transformer sizing), commodity management (load profiling and forecasting) and CRM (customer segmentation based on daily load profiles and the response to variable pricing signals).

Gartner started covering the MDM market in 2007, with an initial vendor/product assessment of what was then an embryonic software market. Increased industry interest in AMI led to its faster adoption and, consequently, to the maturation of AMI's IT component, MDM. Consequently, in 2008, we started to use a more formal vendor assessment framework — the MarketScope — for this emerging market.

The MDM market continued to mature rapidly in 2009 and 2010, driven predominantly by a significant level of capital investment in the U.S. utility sector through the U.S. government's Smart Grid Investment Grant (SGIG) program. With MDM now in an adolescent phase, this is the fourth year we are continuing to use Gartner's Magic Quadrant framework to position vendors in this increasingly important utility IT application market.

AMI and MDM play major roles in supporting energy-efficiency programs and power-sector decarbonization — both of which are important issues for the energy utility industry, impacting consumers and society as a whole. In the past two years, policymakers' focus on financial recovery, austerity measures and economic improvement has diverted political interest from the "energy sustainability" topic globally. With stimulus funding and government subsidies for sector decarbonization and energy-efficiency initiatives drying up, utilities are left with no choice but to raise end-user tariffs to meet the costs, postpone AMI projects or scope them down to components that provide traditional, tangible, utility-centered benefits. Consequently, this is driving AMI and its IT component MDM from being core, smart grid technologies that enable energy-provisioning transformation (see "The Utility of the Future: The Information Utility"), to being enabling technologies used to provide improvements to existing utility processes, such as meter-to-cash, customer service, outage restoration and asset utilization, or to become an enabler of more efficient retail markets in the competitive environment.

Concerns about the direct impact of AMI rollouts on the cost of energy (because the significant capital expenditure required for AMI must be recovered through rate cases) and customer backlash in some markets (particularly in California and Texas) — driven by perceived issues of accuracy (higher bills), data privacy and the health effects of smart meters — have slowed down the pace of AMI deployments globally. However, this slowdown has not been reflected equally on the number of MDM deployments. Many utility companies continue to lead AMI deployments with MDM, because it is perceived as being less costly and risky, further from the consumer’s areas of concern, and the most mature component of AMI (see "Hype Cycle for Smart Grid Technologies, 2013").

Market Overview

MDM Market Drivers

The structure of energy markets differs globally. As a result, utility companies have different business focuses and are exposed to diverse regulatory drivers. This creates different flavors of metering systems that are focused on providing asset-related benefits (for integrated and network
companies), customer/market-related benefits in competitive retail markets (such as the Nordic region) or commodity-focused benefits in markets driven by energy sustainability and supply security concerns (mostly the U.S.; Ontario, Canada; the U.K.; Australia; and New Zealand).

The intense focus on metering technology is pushing AMI market adoption globally. As an AMI IT component and separate IT product category, MDM is leading AMI adoption, because many utilities perceive MDM as being a more mature, less expensive and, consequently, less risky technology selection than, for example, AMI communications or meter technology. For that reason, entering the AMI area "MDM first" appears to be the prevailing strategy for utilities. MDM can be used as a metering data consolidation platform that can reduce integration complexity between multiple metering and billing systems under the following conditions:

- The utility company has multiple metering technologies and vendors as a result of mergers and acquisitions (M&As).
- A diverse service territory requires multiple metering providers because of different communication technology needs, such as a mesh network for high-density service areas, and a power line carrier for low-density service areas.
- Utilities end up with multiple billing systems because of M&As.

In these cases, MDM can provide immediate tactical business benefits while utilities wait until technology, interoperability and regulatory risks related to AMI are reduced to enable them to achieve more strategic smart grid benefits.

In addition to these consolidation needs, some utilities go with MDM-first deployments if they seek a platform outside of legacy CISs to support energy-efficiency initiatives, including economic demand-response (such as critical peak pricing) or advanced end-user consumption presentment and notification functions. As a consequence of MDM pulling ahead of the rest of the AMI components, we see it moving out of the Trough of Disillusionment and ascending toward the Slope of Enlightenment (see "Hype Cycle for Smart Grid Technologies, 2013"). This is a phase when successful implementations start to appear, followed by case studies that can attest to some benefits realization. Additionally, more mature service offerings for product delivery are being developed (in many cases, by external partners), which consequently reduces the risk of product failure.

**The MDM Market's Diverse Customer Needs**

Utilities across the globe are realizing that access to consumption data can play a significant role in improving multiple business process life cycles beyond its traditional use in the revenue cycle (meter-to-cash). As a result, the increased importance of energy consumption information has made AMI (aka smart metering) and its IT component MDM among the hottest innovation areas in vertical utility technologies. As emerging technologies with the highest anticipated growth in utility spending, AMI and MDM have attracted a large, diverse set of vendors.

Gartner tracks several dozen vendors that market MDM offerings in their solution portfolios:
- Vendors offering purpose-built, stand-alone, energy-consumption repositories (such as eMeter or Landis+Gyr-acquired Ecologic Analytics)
- Vendors with legacy abilities in automated meter-reading areas (such as Itron)
- IT vendors from a variety of adjacent areas that are trying to componentize their internal meter data repository and repackage it as a stand-alone MDM software product:
  - A CIS (such as Ferranti Computer Systems, Gruppo Engineering and Harris Utilities)
  - Load research and commodity management (such as Oracle Utilities)
  - LC&I energy management (such as Elster EnergyICT)
  - Retail and wholesale operations (such as Enoro, ElectSolve and Robotron)
- Vendors with a telco background specializing in machine-to-machine edge devices and data stream management (such as Cuculus)

The diversity of vendors offering MDM products is also an indication of wide-ranging customer needs and the early stage of the market. As previously mentioned, according to Geoffrey Moore, a market is "a set of actual or potential customers for a given set of products or services who have a common set of needs or wants, and who reference each other when making a decision" (see "Modern Technology Markets Defined"; note: this document has been archived; some of its content may not reflect current conditions). Therefore, the emergence of a market requires a converged or current need or want, and viable products. A condition of need is the result of a specific want or requirement from a similar, well-defined set of buyers. A viable product or service may only partially meet the requirements of a set of buyers, but it can become the basis for evolution within a market. In a developed market, it is important that potential buyers reference each other when making a decision. Within high-tech markets, the ability to reference other enterprises is important for buyer assurance. Broad market acceptance implies — although sometimes incorrectly — independent software vendor support, vendor viability, professional services and supporting products.

Although some of the requirements are showing up consistently (such as the need for VEE, data persistency and interface to billing), a common set of needs and wants that are presented through a common set of features and functions that show up in most RFPs has not emerged yet, and buyers cannot fully reference each other because their needs differ. Such diverse and broad needs make MDM’s functional scope ill-defined, as we see utilities approaching MDM from different directions expecting to realize different business benefits or to meet different regulatory drivers.

Consider the following:

- Some utilities are looking at MDM as a unifying platform for multiple metering environments, which can result from M&A consolidation or as a result of diverse service areas with multiple meter-reading technologies.
- Some companies, primarily in the U.S., are exploring MDM as a platform for economic demand-response programs.
Other companies are looking at MDM as part of an overall smart grid initiative, driven by government incentives, that is intended to optimize the network, improve asset utilization, reduce losses and improve reliability by leveraging access to fine granularity consumption data.

Some competitive retail markets, where the metering function (or component) is in a domain of market intermediaries (such as Ontario, Canada; and Texas), are considering MDM as a unifying metering platform among all market participants.

Energy markets in which metering is a competitive service (such as the U.K.) look at MDM as a platform from which meter service companies can act as MDM agents and offer commercial metering services for market participants.

Lately, we also see a need for a consumption data platform that can be used to host (or at least aggregate data for) new consumption calculations or billing routines, such as time of use to support demand-response or end-user, energy-efficiency initiatives outside the incumbent CIS.

Additionally, there are different expectations as to how much of the meter asset information should reside in an MDM system (versus a CIS or enterprise asset management system), or what level of billing determinants and consumption information should be provided by MDM versus a CIS.

Following AMI rollouts in some markets, utilities are looking for a platform that will feed their analytical applications, such as asset utilization and failure prevention or theft prevention.

In some cases, utilities are looking for a platform for supporting customer engagement for energy-efficiency programs or other customer-facing initiatives such as prepayment, or event processing as a part of outage management.

Vendors Are Challenged in Addressing Diverse Requirements

The diverse needs and changing scope of the MDM market are challenging product vendors. In most cases, vendors have developed their solutions to address a particular aspect of metering data and are trying to extend functionality during the implementation by custom development that addresses the new requirements. Adding to an ill-defined scope issue are other factors that make this market challenging, both for users looking for a solution that meets their needs and for vendors trying to develop a solution that will be a universe of all commonly agreed-on needs:

Skalability/performance issues arising from data volumes (switching from once-a-month consumption reads to 15-minute interval consumption reads increases data volume almost 3,000 times). Multiple vendors have run scalability testing, but without common, generally acceptable industry benchmark criteria. Therefore, users should not rely on them or use them to compare different products’ scalability. Several implementations are in production that handle more than one million endpoints, and several implementations in production handle 15-minute interval data, although only for a small percentage of customers. However, there are not enough implementation sites in production that handle multimillion endpoints with less-than-an-hour interval data to prove product scalability for many vendors.
A lack of commonly agreed-on business rules/practices and data standards. However, we are seeing increased vendor participation in standards-setting activities, driven by vendors (such as the SAP AMI Lighthouse Council), by standards organizations (such as IEC CIM 61968-9 or MultiSpeak) or, lately, by national government-sponsored initiatives (such as the U.K. smart metering program). Some MDM vendors (such as Itron, eMeter and Landis+Gyr) should be credited for driving metering sector interoperability activity.

A significant number of MDM implementations have helped leading SIs focused on the utility sector build MDM implementation practice — particularly in the North American market, which has experienced the most activity. Capgemini, IBM, Accenture and SAIC in North America, and Atos and Siemens in EMEA, have leveraged partnerships with upper-tier MDM vendors, such as eMeter, Itron, Oracle Utilities, Landis+Gyr and Elster EnergyICT. However, during the process of checking vendor references for the 2013 edition of this Magic Quadrant, we received a resounding message regarding MDM implementations: A majority of the 50-plus utility companies we interviewed globally shared their concerns about the duration of MDM implementations. The length of MDM implementation times point to the growing pains of an emerging technology market:

- In several cases, the length of implementation could have been attributed to users not having a clear idea from the beginning of the type of additional services that would be offered based on the consumption data, or the additional systems outside of meter-to-cash that must be interfaced with MDM, consequently creating project "scope creep."
- In some cases, the change in scope was a consequence of changing and/or evolving regulatory directives.
- In many cases, the product could not support some of the required functionality, nor could it be configured to support this functionality. This required custom development, which impacted the cost and duration of the implementation.
- In some cases, the problem was caused by vendors extending their offerings in new regions and not having enough resources (and, in some cases, management attention) to address local requirements.
- In several cases, the problem was attributed to the lack of access to skilled resources, because many vendors didn’t have enough resources or didn’t set up SI vendor partnerships to enable them to scale up delivery channels.

In addition, responding to the cost and technology complexity concerns — in particular, by midsize utilities, as well as municipal utilities and electric cooperatives — some service providers are considering alternative ways of bringing MDM to the market, either offering it as a preconfigured appliance (as in the case of the Red Clay and Infosys partnership with Oracle Utilities) or offering it in the cloud (such as Landis+Gyr, Capgemini or CSC).

We advise clients to take these factors into consideration when making MDM project implementation plans or considering alternative MDM deployment models.
Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"How Gartner Evaluates Vendors and Markets in Magic Quadrants and MarketScopes"

"The Utility of the Future: The Information Utility"

"Innovation Insight: Metering Innovation Powers Energy Grid Transformation via Information Infusion"

"Hype Cycle for Smart Grid Technologies, 2013"

Evaluation Criteria Definitions

**Ability to Execute**

**Product/Service:** Core goods and services offered by the vendor for the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

**Overall Viability:** Viability includes an assessment of the overall organization’s financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization’s portfolio of products.

**Sales Execution/Pricing:** The vendor’s capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel.

**Market Responsiveness/Record:** Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor’s history of responsiveness.

**Marketing Execution:** The clarity, quality, creativity and efficacy of programs designed to deliver the organization’s message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional initiatives, thought leadership, word of mouth and sales activities.

**Customer Experience:** Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary
tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

**Operations:** The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

**Completeness of Vision**

**Market Understanding:** Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those with their added vision.

**Marketing Strategy:** A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

**Sales Strategy:** The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

**Offering (Product) Strategy:** The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

**Business Model:** The soundness and logic of the vendor's underlying business proposition.

**Vertical/Industry Strategy:** The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

**Innovation:** Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

**Geographic Strategy:** The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.
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