The Smart Meter Technology Value Chain (Strategic Focus)

Description: This report looks at the advanced metering infrastructure value chain. It covers what is driving utilities to adopt smart meter technology, what technology makes up the infrastructure, how the technology benefits a utility, key players in the ecosystem and the competitive landscape for these players.

Scope

- Discusses the drivers for adoption of smart metering technologies in Western Europe and North America
- Provides insight into what technologies comprise advanced metering infrastructure
- Describes how different utilities will benefit from different elements of the smart metering infrastructure
- Provides recommendations for technology vendors and services companies

Highlights of this title

A full analysis of the current performance of technologies is included, as well as Datamonitor's opinion on future take up of the various technologies underpinning advanced metering infrastructure.

The geographic and utility-specific drivers for adoption are detailed in length, providing insight into what technologies will be adopted where and for what reason.

Key reasons to purchase this title

- Gain a deep insight into the advanced metering infrastructure
- Understand why utilities are adopting advanced metering infrastructure technologies
- Learn where the current bottlenecks lie in advanced metering infrastructure

Contents:

Overview
Catalyst
Summary

Key Messages
Ageing electricity infrastructure is based on centralized generation
Current industry pressures drive AMI adoption
AMI adoption will vary across geographies
There are many barriers to the adoption of AMI technology
Differentiation amongst meter manufacturers is difficult
Meter Data Management systems are core to AMI functionality
A great deal of the value of AMI lies beyond the MDM

Market Opportunity
Scope of report
Ageing electricity infrastructure is based on centralized generation
Current industry pressures puts the centralized generation model under strain
Cost to serve
Electricity theft is exacerbated by time to detection
Widely dispersed renewable energy generation causes problems on the distribution network
The intermittency of wind power increases the potential for large scale energy storage investment
Improve interoperability
Demand management
Customer usage data
Mismatches in the settlement process
AMI, as a part of the smart grid, can address many of the current industry pressures
The functionality made available through AMI addresses many of the current industry pressures
Smart grid technologies address issues surrounding distributed generation
AMI adoption will vary across geographies
There are many factors that drive the type of AMI and smart grid investment
AMI is more likely to gain funding than other capital projects
Not all AMI roll outs are driven by logical decision-making
The drivers for adoption varies across geographies
There are many barriers to the adoption of AMI technology
The technology remains unproven at scale
Open standards
To gain full functional benefit of AMI, much of a utilities back office and applications need upgrading
The recession and subsequent economic stimulus package have both caused delays to AMI investments in the United States
European regulations will probably insist on minimal technological requirements
The AMI Value Chain
Meters
Meter functionality is diverse
Technological innovation is only a temporary differentiator among meter manufacturers
The frequency of meter readings will drive huge investment in data center hardware
Communications
Home area network communications
Last mile to home - the network linking smart meters to the outside world
Power line carrier
Wireless mesh
Cellular
WiMax
Wide area network - transmitting meter data to the utility
Meter data management systems
Meter data management systems become the core of AMI-enabled functionality
The functionality of MDM systems varies from supplier to supplier
MDM systems are all adaptations of products designed for different applications
All MDM systems are struggling with scalability issues
Beyond the MDM
Smart delivery
Smart customer
Customer Impact: The Benefits of AMI
Customer side
AMI provides accurate automated meter reading, cutting field force costs
AMI improves the efficiency of processing customer churn
AMI enables the efficient conversion to prepay
AMI helps mitigate losses through theft
AMI will change the face of a utility's contact center, but may not help reduce costs
Improved customer visibility of energy use
AMI data improve knowledge of the customer
Delivery side
AMI improves the accuracy of load forecasting
AMI allows utilities to manage demand by controlling end user's appliances
AMI can also help utilities to manage demand through time-of-use tariffs
AMI promotes microgeneration of renewable energy
AMI assists in detecting outages much faster

Competitive Landscape

Meter manufacturers
Itron
Landis + Gyr
Elster
Echelon
Communications manufacturers
Trilliant
Silver Spring Networks
Ambient
Aclara

Telecommunications companies
MDM vendors
OSIsoft
Ecologic Analytics
Itron
EnergyICT
eMeter (EnergyIP)

Enterprise software companies
Oracle
SAP

Systems integrators and outsourcers
IBM
Accenture
Capgemini
Logica

Partnerships and alliances
Smart Energy Alliance
AMI Lighthouse Council

Go to Market
Understand your clients' specific needs
Don't rely on technology to differentiate
Provide strong ROI cases and proofs of concept for applications beyond the MDM
Work around utilities' inherent conservatism
Services companies should focus on the customer side for AMI-driven opportunities

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Disclaimer

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