Scaling it up
HPE Internet of Things Smart Metering

Hewlett Packard Enterprise
Leverage advanced smart metering solutions to serve the fast-growing energy utility marketplace.

Review the situation

Smart metering is changing the energy and utilities marketplace. Driven by regulation requirements, millions of residential electricity, gas, water, and heat meters are becoming “smart”—they can be monitored, controlled, and managed in near real time, benefiting users and utilities.

At the same time, utilities are considering the entire meter-to-cash process as a communications challenge. And powerful forces—including miniaturization, computing advances, and the near-ubiquitous connectivity of machines, devices, and sensors—are transforming the industry landscape. Machine-to-machine (M2M) communications, in particular, are disrupting and reorganizing long-established industry value chains, including the utility sector.

Deploying and operating an ever-growing number of smart meters is complex and expensive. To scale up, you need to optimize your operational environment with multivendor capabilities, and deliver end-to-end service level agreements (SLAs) encompassing devices, networks, and processes. At the crossroad between utilities and communications, and in line with Internet of Things (IoT) trends, new operator roles are emerging to efficiently manage end-to-end devices, networks, and processes—inside and outside traditional utilities operations.

Use a smart metering solution

Now there’s an end-to-end solution that helps you optimize your value and footprint in the smart metering delivery chain. It also helps you maximize the efficiencies of your processes, tools, assets, and basic business models.

With the HPE Smart Metering Pack solution, you can get help meeting your most demanding data acquisition and management challenges—today and into the future.

The HPE Smart Metering Pack provides:

Control and configuration—Payment information, service connects and disconnects, tariff units of measure, load control signals, and fraud detection

Data collection—Readings and status, transmission of meter readings, power reliability, and other variables

Meter data management—A common repository and management point for all meter data

Network interworking—Device and application controls, standard protocol support

Inventory management—Such as meters, concentrators, repeaters, translators, and subscriber identity module (SIM) cards

Monitoring and diagnosis—For alarms and events, connectivity-related issues, and remote meters and concentrators status

Smart meter management—Automation of the main processes linked to meters discovery, provisioning, and lifecycle management

Workflows—Provisioning engine for orchestrating services and metering asset lifecycle management

Fault management—Operating support system (OSS) applications, enabling end-to-end fault management for meters, gateways, and communication layers

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**M2M facts**

- The installed base of cellular M2M devices will approach 500 million modules by 2018 as focus shifts to the Internet of Things.
- There will be 19 billion connected meters by 2024.
- Smart meter roll out is planned in many EU countries.
- The market for Advanced Metering Infrastructure in 2014 is estimated to be $9,319.0 million. This market is expected to reach $20,029 million by 2019, at a CAGR of 16.5 percent between 2014 and 2019.

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1 Juniper Research, October 30, 2013, http://www.juniperresearch.com/press-release/m2m-pr1
The HPE Smart Metering Pack solution is built on top of the HPE IoT Platform, which provides the core IoT services and infrastructure. Our platform enables different IoT applications from different verticals, toward Smart Cities. The HPE IoT platform provides the supporting and horizontal functions to support IoT applications.

It is aligned with oneM2M standard: Device and Service Management, Network Interworking Proxy, Data Acquisition and Verification, Data Analytics, Data Service Cloud, and a set of events, alarms, and correlation tools.

Applications are the Central Acquisition System (CAS) and smart Meter Data Management (SmartMDM) components. These two components have been designed, based on International Electrotechnical Commission standards description, to serve the electricity market. They have been extended to gas and water markets.

The architecture inherently supports different communications channels, such as WAN/LAN, radio frequency networks, data communication over 2G/3G/LTE, and SMS. The HPE IoT Platform provides the required scalability through its distributed message queue-based architecture for interfacing and collecting metering data from a large number of deployed meters.

**Metering applications**

**CAS**
- Provides functionalities of universal head-end systems that are meter and network agnostic
- Acquires information provided by the smart meter
- Supports managing and monitoring of meters and concentrators
Key business needs
- Operations must be optimized to deliver end-to-end SLAs, encompassing devices, networks, and processes.
- HPE offers scale, skills, and operational capabilities.
- Smart metering leads to smart grids, homes, and cities as sensor networks.

Fulfill your business needs
Look to HPE IoT Smart Metering. With it, you can meet your key business requirements, including:
- Providing a reliable and scalable meter network infrastructure for supporting smart meter end points
- Enabling efficient, end-to-end, self-management of smart meters
- Managing standard and proprietary vendor smart meters across different energy types
- Analyzing energy-consumption patterns, enabling demand forecasting

The HPE smart metering approach can be particularly valuable in fragmented markets where smaller utilities can’t afford the infrastructure and expertise needed to manage such complex networks. Let us manage the large network of connected devices so you can focus on delivering water, gas, electricity, and other services.

Residential smart metering services, offered by service providers and utilities, can be one of many other future home services—such as street-lighting, traffic management, and energy efficiency. This makes it an area where service providers, like you, have valuable assets to provide and long-term interest to develop.

SmartMDM system
- Transforms data acquired from meters into billable information
- Exports data for reports and analytics to support energy efficiency and a positive return on investment, for OSS tools

OSS applications
Telecommunication Management Information Platform (TeMIP)
- Helps service providers achieve automation and prioritization of key operations tasks
- Consolidates an end-to-end view of meters, gateways, and network information into an integrated operations support system

Unified Correlation Analyzer (UCA)
- Addresses infrastructure and network problem identification, assesses impact on services, and resolves it
- Drives operational efficiency and service reliability in multiple ways:
  - Correlation—Identifies problems quickly through automated problem correlation and root-cause analysis across multiple infrastructure domains, and determines impact on services
  - Automation—Automates major steps in the problem-resolution process, reducing service outage time

Unified OSS Console (UOC)
- Provides a fully configurable dashboard customizable to any service provider’s business rules, metering environment, and organizational role

Get value
Benefit from partnering with Hewlett Packard Enterprise (HPE) to pursue IoT smart metering solutions. We have more than 30 years of experience in energy and utilities, and are one of the leading IT providers. Specifically in smart metering, HPE has been involved in some of the largest smart metering deployments to date.

For example, HPE helped Enel in Italy install and remotely manage 30 million meters, improving cash flow and customer satisfaction, and reducing fraud. Other examples of large deployments are Pacific Gas & Electric in the United States for gas and electricity; Detroit Water in the United States for water; and CE in the Czech Republic for electricity. We’re also instrumental in driving smart metering deployments in the UK.

HPE is one of the leading suppliers of communications solutions globally. For more than 20 years, we have provided services including device management, networks management (OSS), data management and analytics, provisioning, business support systems, and cloud.

Learn more at hp.com/go/IOT4CSP