



e-Metering Solution

ConnectM
a Sasken and IDG Ventures company

Need

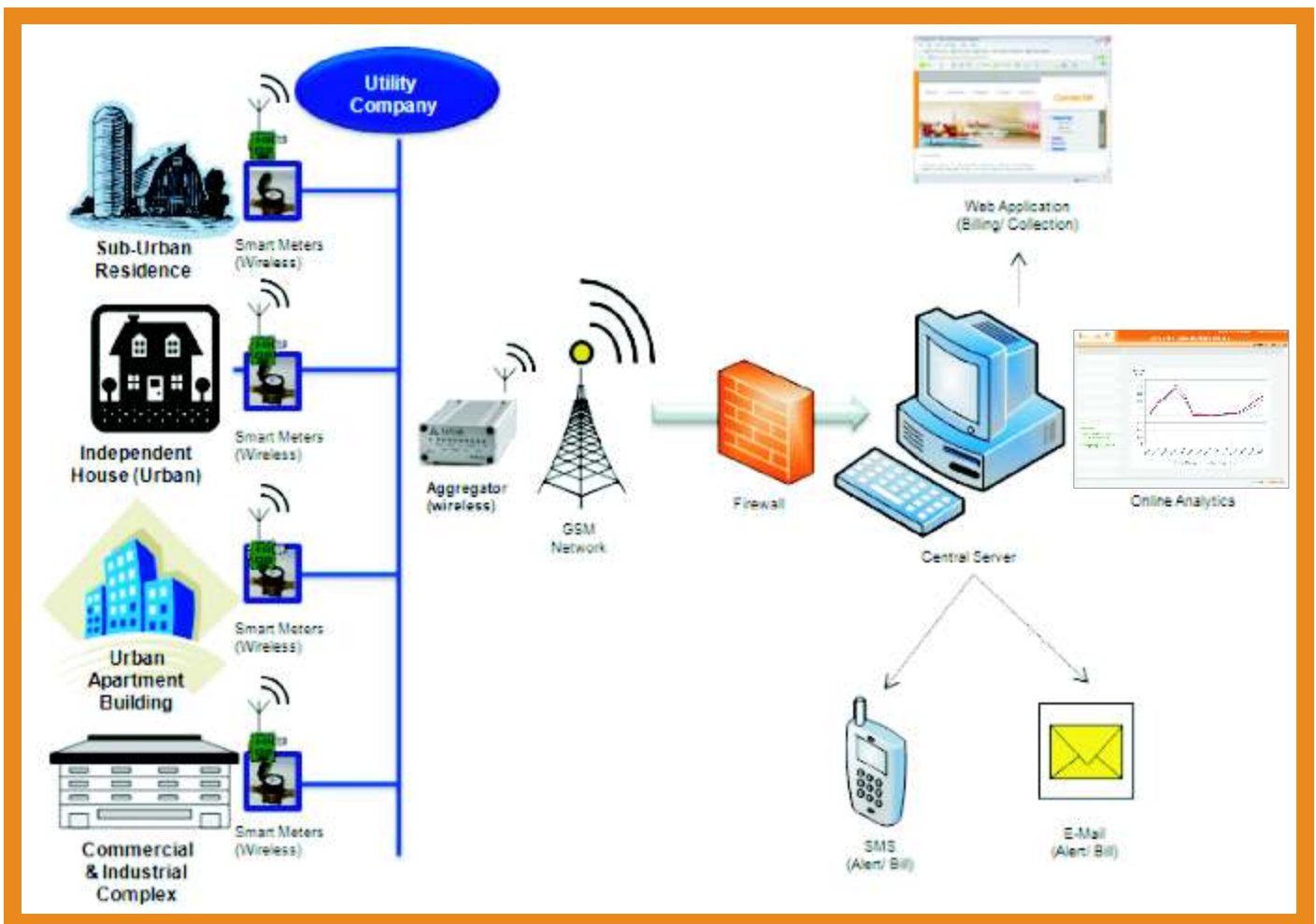
Utility companies distribute essential Energy, Gas and Water to households and industries across their networks spanning Urban, Sub-Urban and rural areas. Each of these are critical resource keeping in mind the present focus on environment protection, reduction of green house gas emissions and conservation. Added to this, is their objective of ensuring continued and equitable supply to every section of the society.

Increasing population has widened the gap between demand and supply. Most utilities have a large and aging installed base of equipment which include conventional and legacy metering systems. Conventional methods involve manual meter reading, manual collation in semi-automated billing systems, bill distributed by hand or through posts and payment across a counter or kiosk. Manual processes introduce in-efficiencies and human errors.

Most utilities today are challenged by the need to improve profitability and plugging revenue leaks. For this they must manage and maintain the distribution networks efficiently, introduce reliable methods for metering & meter reading and efficient billing and payment collection systems.

Concept of e-Metering

Most meter manufacturing companies provide pulsed enabled meters. In the e-metering concept, pulsed enabled meters are equipped with sensors that are able to measure amount of Energy (Gas or Water) supplied through them. The sensors are capable of communicating this reading using wireless (RF) technology. Refer schematic given below:



The meters are installed in the form of a meshed network. The network aggregates and stores consumption data in local aggregators which transmit the data to the central server at pre-defined time intervals using the GSM/GPRS network. The data is integrated into a billing system which distributes them by electronic means.

Integrated e-Metering

Utilities engaged in combined distribution of Energy gas & water are able synergistically leverage common hardware and network component platforms using the integrated e-metering concept. This optimizes the cost of technology implementation.

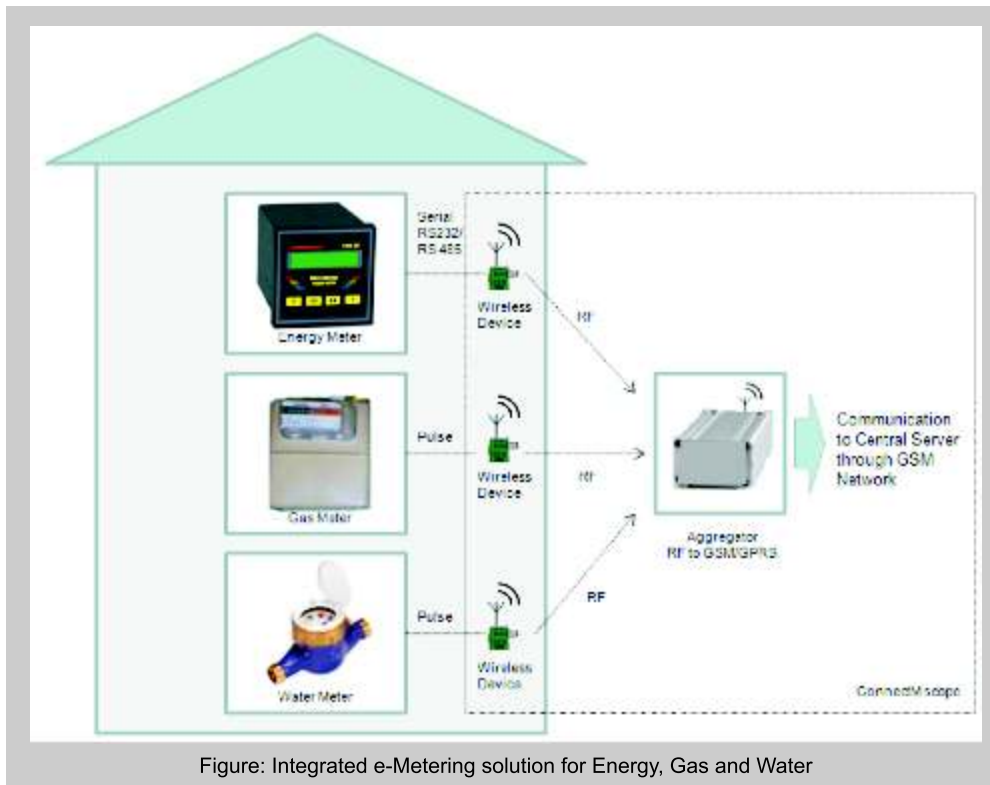


Figure: Integrated e-Metering solution for Energy, Gas and Water

Solution Features

- A) **Wireless Technology:** e-Metering leverages advancements in wireless communication technology. Data collection is highly reliably normally using existing infrastructure thereby reducing cost of implementation.
- B) **Secured web interface:** A standard and secured web-interface is provided to utilities and consumers. Both can access information using standard web-browsers. There is no need of investing in proprietary software.
- C) **Integration to billing system:** ConnectM e-Metering solution can integrate the consumption data to client billing system.
- D) **Programmability:** Operational parameters can be programmed over-the-air providing operational flexibility to the utility. Application features and reports etc. are upgradeable based on the growing needs.
- E) **Analytics**
 - 1) **Alerts:**
The solution generates alerts whenever a parameter deviates from defined thresholds (Min / Max values).
 - 2) **Reports:**
Standard reports are provided along with the solution to monitor the daily/weekly/ monthly/ yearly consumption of Energy (or Gas & Water).
 - On-line bills for consumers
 - Actual consumption data plotted against forecasted demand
 - Maintenance related reports such as faults or periodic calibration requirements as specified by the meter manufacturer.
 - Customized reports based on specific needs
 - 3) **Benchmarking:**
Performance benchmarking studies are conducted as a method to introduce continuous improvement.



4) Demand Forecasting

Demand forecasts based on historical trends can be made by the utility. Forecasts also take into account seasonal and other fluctuations that are predictable in nature.



Benefits

A) Revenue Impact

Published case studies and research findings prove that utility companies have a potential to reduce un-accounted for distribution by 20-25% that creates revenue impact of 7-12%. This is achieved through operational improvements in meter reading, detection and reduction of leakages and elimination of human error.

Utilities can drastically reduce average age of debtors due to better account tracking, fewer instances of disputes and convenient bill receipt and payment options provided to consumers.

B) Demand forecasting

The utility company is able to forecast demand more accurately by using historical trends of consumption. Factors such as population increase, demographic changes, seasonal fluctuations etc. can also be accounted for in the forecasting models.

C) Operational improvements

• Reduced cost of maintenance:

Maintenance activities can be scheduled accurately based on actual condition of installed equipment. Fault localization ensures that prompt corrective action can be initiated in an effective manner. This contributes to a 5-10% reduction in operational expenses.

• Spare part inventory optimization:

The solution enables spare parts planning and releases investments locked in maintaining inventory. This can reduce investment by up to 10-15%.

• Real time monitoring of consumption:

Utility companies and consumers can monitor consumption in real time. Data capture directly from the meter ensures reliability. This reduces instances of disputes and resulting defaults. Utilities can redress disputes speedily due to timely availability of authentic data.

About ConnectM

ConnectM is a global solutions provider for the Automotive, Railroad, Aerospace, Industry, Utilities and Enterprise markets. We help customers improve profitability, enhance productivity and reduce cost using Analytics based on Remote Monitoring. Our proven solutions deliver significant, sustained and measurable business impact for our customers. ConnectM is backed by Sasken and IDG Ventures.

Our solutions portfolio also includes:

- Remote Asset Management
- Remote Monitoring and Diagnostics
- Fleet Management
- Energy Management Solution
- Automated Cathodic Protection
- Intelligent Street Lighting Control

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