Expectations From Smart Meters - A Utility Perspective
Flow of the presentation

- Introduction - Energy meter, the cash box
- AMI Infrastructure and Expectations
- Classification of Smart Energy meters
- MDMS & Consumer profiling
- Conclusions and Recommendations
Energy Meter: Cash Box of the Utility

- Touch point b/w utility and consumer
- Most critical equipment as entire revenue is dependent upon performance of Energy meter.
- Records/monitor energy consumption pattern which vital implications in Utility Analysis-viz. load forecasting, network management etc.
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AMI Infrastructure

**Utility Head-End**
- Collection
- Configuration
- Management
- Security

**Utility Wide Area Network**

**Edge Routers/Collectors**

**Neighborhood Area Networks**

**Embedded Networking (Smart Meters)**

**Home Area Networks**
AMI : Control Applications

Smart metering

Distribution Automation

Automatic Street Light Controller

Renewables / Local Energy Generation

Demand response : Commercial, Domestic & Industrial
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Type of Smart meters

- Standard Smart meter
- Basic Smart meter
- Advanced Smart meter
Standard Smart meter

- Two Way communication

- OTAR – Pre Paid(X), Post paid, Net metering, Firmware upgrade etc.

- Automatic data uploading at predefined internals.

- Push facility for abnormal conditions

- First Breath and Last gasp
Basic Smart Meter

- This meter will have all the functionality of Standard Smart meter
- Connect disconnect – feature
- Load limiting and Prepaid facility through relay
Advanced Smart Meter

The meter will have complete functionality of Basic Smart meter.

The utility will be able to manage consumer load for Load side management.

Consumer will be assisted through SMS about consumption and TOD tariffs and other latest information for consumer delight.
Advance Smart Meters

DEMAND SIDE MANAGEMENT
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MDMS: In a Nutshell

Consolidate
Metering, consumption and related data from all read sources in a centralized system of record

Standardize
Data for use according to utility specified rules

Alert
Meter-based conditions of interest (usage patterns, events, system performance)

Enable
Use of current, validated data for a wide range of utility operations

Interconnect
Metering systems with a broad range of enterprise applications

Enterprise System to Control and Apply Smart Grid Data
Meter Data Management System

Event and workflow Management

Customer Information System
Billing System
Asset Management System
Network Information System
SCADA

India

AMI

Web Reporting
Business Intelligence
Communication

with you Non-Stop
Consume Profiling

- Sanctioned load
- Consumption Pattern
- Home appliances type
- Payment History

Energy Intensiveness
Idea: Revenue Generation through Consumer profiling

Special Service needs:
- ToD tariff
- Non-sheddable time schedules
- Preferential treatments
- Extended services

Additional Equipment needs:
- Energy Saving equipments
- New product types
- Customized equipment

Revenue Generation

Smart meter

Consumer profiling / consumption pattern

Data Analytics

Provide special need services and to tie-up equipment needs
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Business Need Alignment

Time and Technology Complexity

Basic Business Needs
- Billing;
- Prepayment;
- Meter reading;
- Theft detection;
- Plant Maintenance;
- Asset Management;
- Network automation;
- Outage management.

Business Efficiency
- In-home displays;
- Mobility Solutions;
- Net metering/ solar;
- Online Energy Audit;
- Spatial technologies;
- Integrated disconnect;
- Advanced Asset Mgmt.
- Predictive maintenance;
- Advanced fault monitoring;
- Demand Mgmt. (DSM & DR).

Extensive Customer Interaction
- Real time pricing;
- Integrated outage mgmt.;
- Business Analytics.
- Home energy mgmt.;
- Gathering structured and unstructured data;
- Separation of carriage and content;
- Field Force Automation
- Extensive roof-top solar integration;
Thank You

Nilesh Kane, Subhadip Raychaudhuri, Anil Kumar