

PCMA

POWER-C METERING AFRICA

REVENUE ENHANCEMENT SYSTEM: SMART GRID NETWORK FOR IMPROVED REVENUE SECURITIZATION



Agenda

PCMA - Introduction

Challenges for Utilities

Benefits of Smart Grid

Success Stories

Workforce Automation

Outage Management

Mobile Money

Demand Side Management

Smart Metering

Micro Grid

Loss Reduction

STS Vending management

Asset Management



Challenges for Utilities

- Funding to implement revenue enhancements projects
- Reliable communications to each customer meter
- Tariff structures - Time of Use (TOU), block/step tariffs assigned to individual customer
- Enhance Revenues - Reduce tampering
- Protect network assets in overload situations
- Selectively reduce load during peak demand
- Support smart grid applications as Outages, Collection, and more...
- Reduce customer service calls and disputes
- Flexibility to remotely switch meters between post and prepayment
- Interoperability and Flexibility

Utilities which purchased **hundreds of thousands** of cheap prepayment meters found that they failed to provide enhancement of revenue, and therefore have left a substantial stock of meters in their warehouse.

Project Financing

- Many municipalities face a prohibitive financial scenario, imposing significant challenges to the development of infrastructure projects.
- Support of Private Sector Partners may be needed to implement smart grid programs.
- A full vendor financed project model leverages the knowledge gained from experience in similar projects, which have demonstrated the significant underlying value which can be realized to all parties.
- The relatively large initial investment of a smart meter solution, compared to that of an outdated simple prepayment system, is minuscule to the savings that will be realized in the short and long term.

Municipalities can benefit from an immediate improvement in cash flow, from the first meter that is installed, without any capital outlay.

Customer Engagement

Empowering Consumers

Smart Phone App

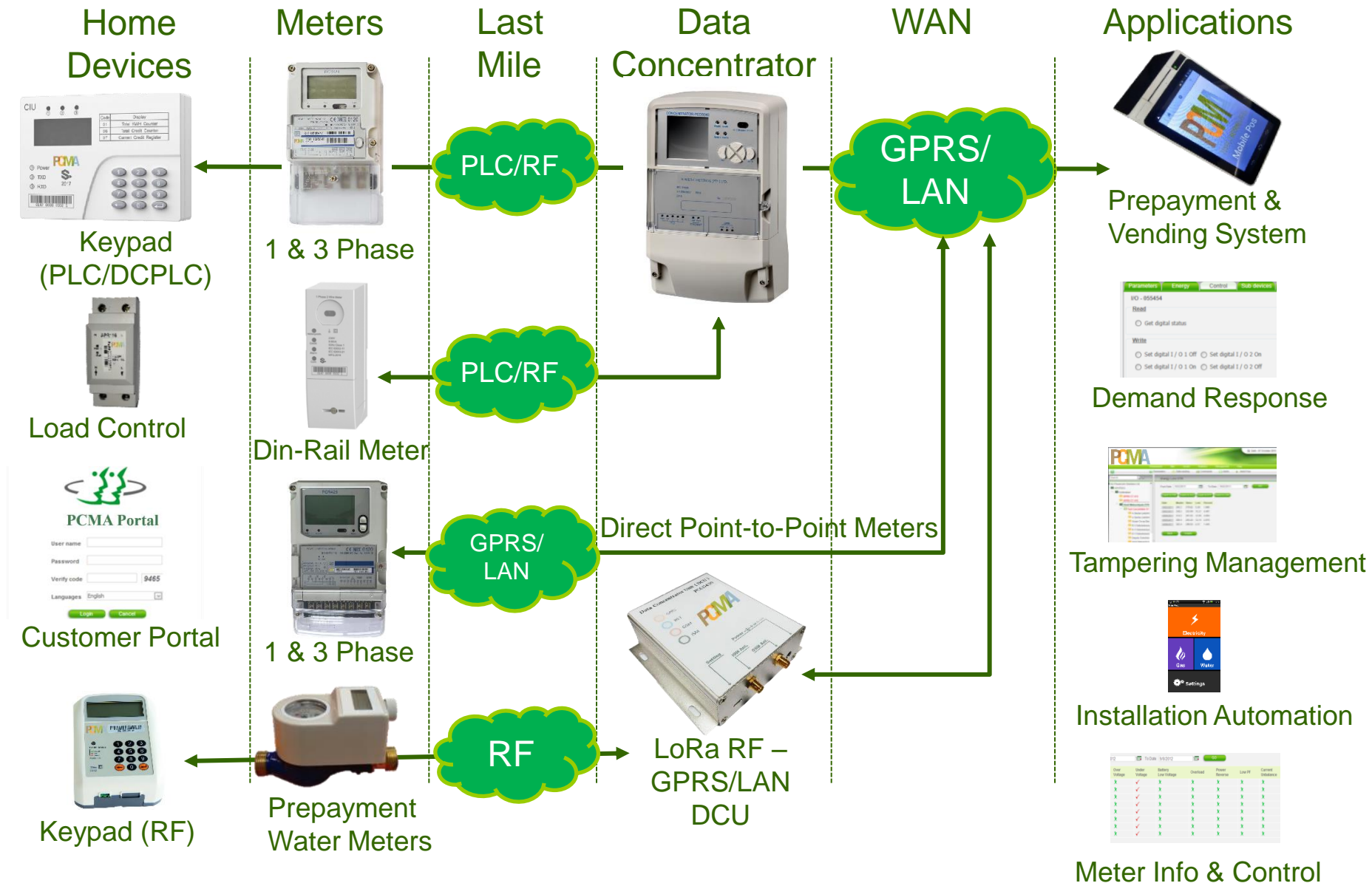


- Configure automatic alerts – Email or SMS, triggered when user specified events occur or alerts from the utility (planned power outages).
- News from the utility.
- Consumption and cost data (in user selected intervals and a variety of forms including export); compare consumption to prior periods and against comparable consumers; forecasted monthly cost.
- Tariff prices.
- Net metering (consumer generated energy) information.
- Online bills.
- Purchase credit.

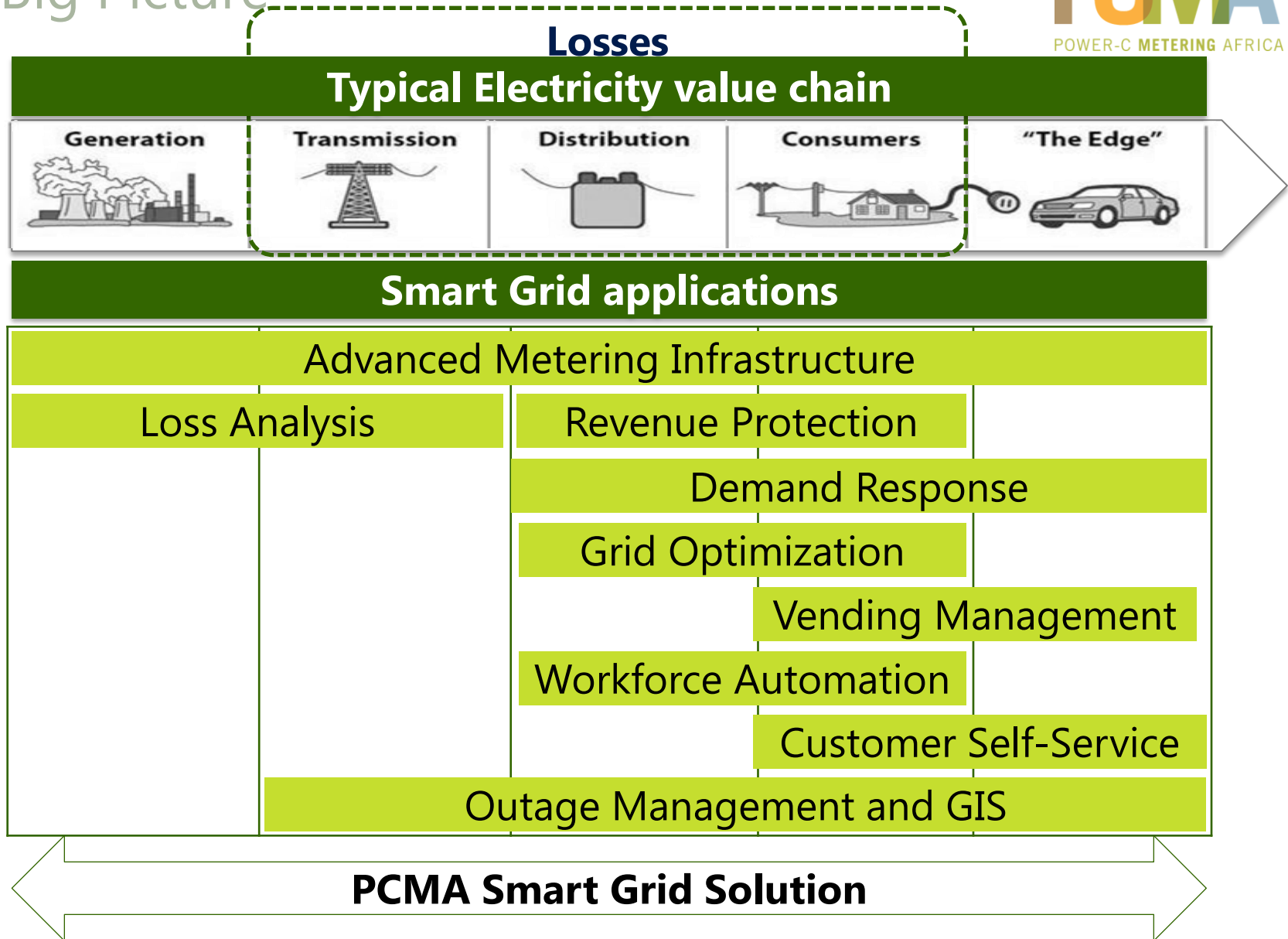
Community Engagement

- Communication of benefits
- Community consultation
- Empowering local community

Smart Grid Hardware Elements



The Big Picture



Energy Fraud Management Loss Analysis



1000 Kwh



Concentrator
And Master
Meter



100 Kwh



130 Kwh



220 Kwh



190 Kwh



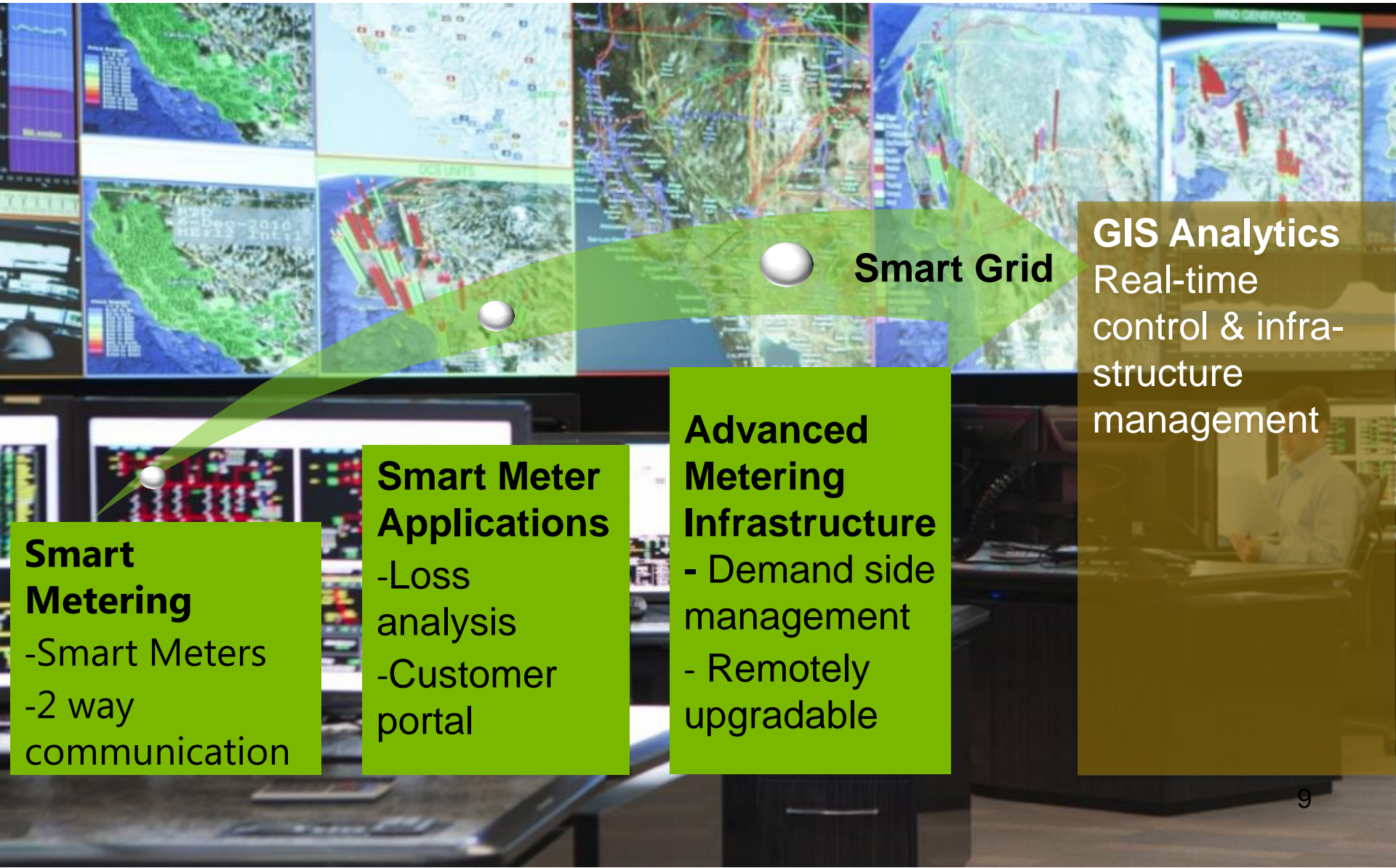
160 Kwh

=

Total of 800
Kwh

Total Loss of
200 Kwh

GIS Analytics Evolution



Smart Metering

- Smart Meters
- 2 way communication

Smart Meter Applications

- Loss analysis
- Customer portal

Advanced Metering Infrastructure

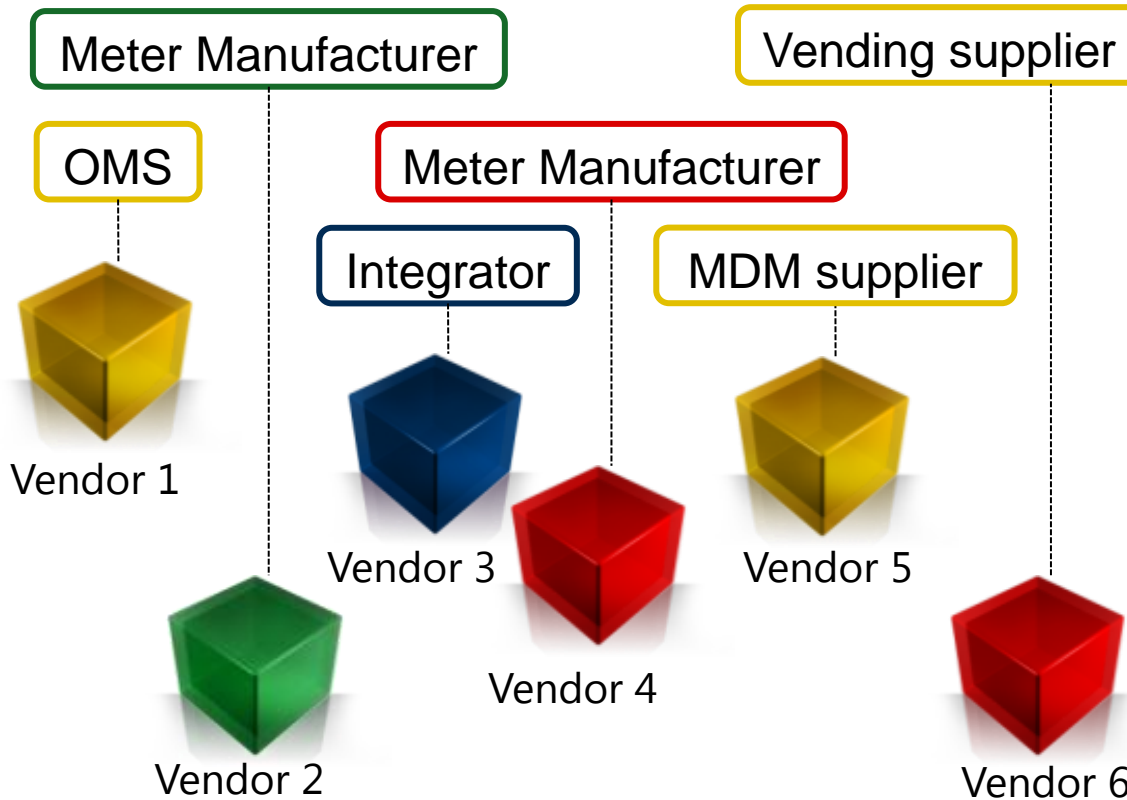
- Demand side management
- Remotely upgradable

Smart Grid

GIS Analytics
Real-time control & infrastructure management

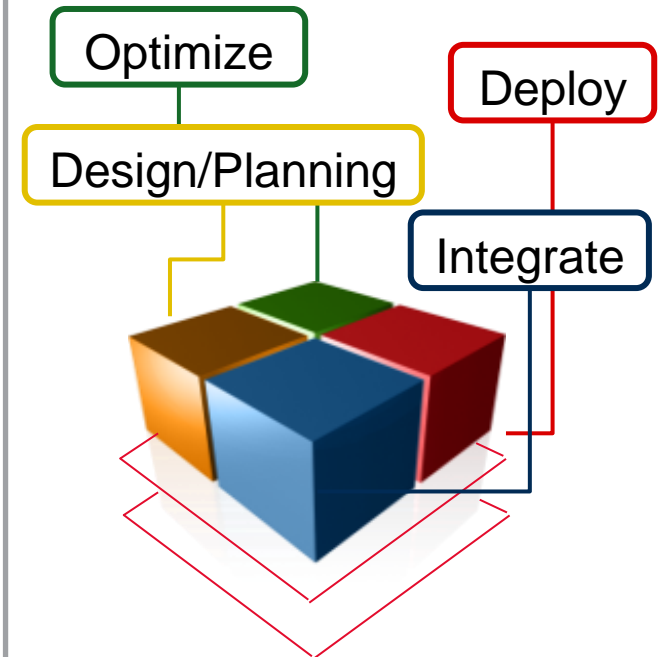
End to End Solution

Dependency on Many Vendors



- Responsibility issues
- Time to completion
- Additional cost

End-to-end, turn-key



PCMA Advantage

- Single vendor
- Seamless delivery
- Bound by SLA
- Option – fully funded



PCMA Control Center (MDM, OMS, DSMS, VMS, WFAS)

Based on Microsoft platforms, PCMA offers a Meter Data Management software which is a powerful solution supporting a suite of smart grid applications delivering improved utility operational performance. It is offered as a commercial off the shelf (COTS) software, or hosted (SaaS) solution.

Success Story

Jerusalem District Electric Co. (JDECO)



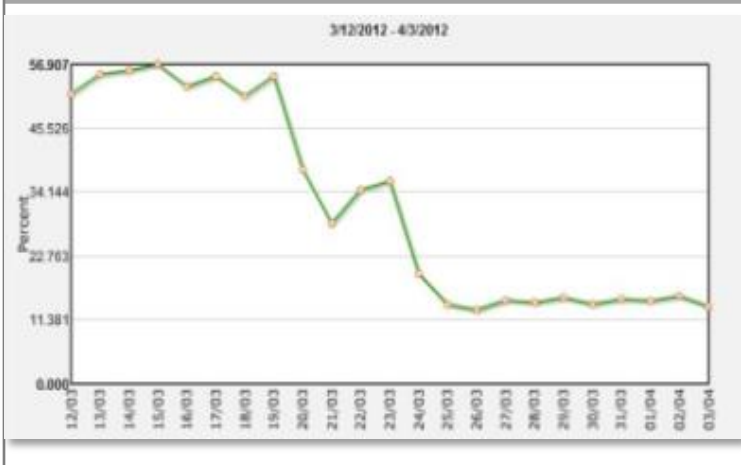
Utility Profile

- Providing electricity for more than 280,000 customers in West Bank

Challenges

- Simple prepayment used to increase collection, however tampering was still high.

Loss Reduction



Solution

- Smart meters using Dynamic PLC technology;
- Meter data management (MDM); and
- Integration with billing software

Benefits

- Non- technical losses reduced from 65% to 8.8%.

Success Story

Tripura State Electricity Corporation



Utility Profile

- State Power utility in the state of Tripura, India with 1M customers.

Challenges

- High non-technical losses
- Poor experience with simple prepaid meters

Solution

- Meter Data Management System.
- Smart Meters with Dynamic Power Line Communications.
- Loss Analysis and tamper detection.

Benefits

- Commercial losses were brought down by 25% by monitoring the data continuously and identifying the pilferage areas.

Success Story

Thabazimbi Local Municipality



Challenges

- Previously billing only 36.33% of the potential revenue.

Solution

- Full smart platform involving all consumers, with: Smart meters; Meter Data Management System (MDMS); Vending Management System (VMS), Outage Management System (OMS), Asset Management System (AMS).

Benefits

- Collections have increased to 95% plus - three times the amount compared to prior project implementation.
- Eskom has ceased load shedding owing to non-payment.

Success Story

Mogale City



Challenges

- The municipality could not collect revenue due to tampering and it was impossible to properly meter and read electricity consumption.

Solution

- Smart grid platform using meters, communication and Meter data management (MDM).
- Installation for 60,000 customers.

Benefits

- Residents who never paid for electricity in the past are paying diligently and without complaint. The fact that the metering is accurate and that the system is online 24/7, is conducive to fostering a payment culture.
- The municipality is enforcing payment of rates and taxes, with remote disconnections.

Success Story

City of Johannesburg



Challenges

- Revenue Enhancement. Low income customers with high unpaid bills. Embarked on a search for a transparent and scalable solution to control utility services by upgrading the metering infrastructure. Reviewed many service providers and manufacturers over many months, and many were found lacking.

Solution

- Fully integrated smart metering solution, with web-based access; 100% collection of revenue; user friendly and powerful real time reporting; diagnosis and data retrieval remotely; high degree of security; and load management.

Success Story

Uganda Electricity Distribution Company (UEDCL)



Utility Profile

- Privatized utility in Uganda
- 100,000 customers

Challenges

- High non-technical losses
- Poor experience with simple prepaid meters

Solution


- Smart meters (PLC and GPRS); keypads
- Meter Data Management
- Mobile Money and POS Vending
- Integration with billing software

Benefits


- Plug & play installation
- Significant improvement in collections



Closing Summary

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- Comprehensive, end-to-end solution
 - Accurate data in real-time
 - Rapid response to unauthorized usage
 - Capacity management - running whole system of 30,000 consumers with 4 people.

Capitalize on proven
experience and
latest smart grid
innovations





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