Building a real smart solution
Topics

Context:

Project drivers:

The players:

The tools:

Technology:

Getting it together:

The solution:
Local context

> Smart meters in households consuming > 1,000kW per month

> Infrastructure projects
  > Rural electrification 2.2 million
  > 1.2 million informal settlements

> Issues related to skills retention and training
Our customers

> **High income / high consumption**
>   > In excess of 50kWh per day
>   > Multiple geysers, pool pumps, air conditioning, appliances
>   > 3 phase, maximum demand 70kW
>   > Revenue more than R 1,500 pm

> **Lower income / Lower consumption**
>   > Less than 7kWh per day
>   > Lights, two plate cooker, kettle, radio, TV, (possibly) a bar heater
>   > Single phase, maximum demand 5kW
>   > Average revenue R 170 pm
Topics

Context:

Project drivers:

The players:

The tools:

Technology:

Getting it together:

The solution:
More bang for your buck

> Optimised cost per connection

> Use the existing infrastructure (build on the installed base)?

> Sustainability of the prepayment revenue management model

> Use appropriate technology

> Cost / benefit optimised

> Appropriate functionality

> System simplicity
Topics

Context:

Project drivers:

The players:

The tools:

Technology:

Getting it together:

The solution:
Stakeholders / beneficiaries

- Utilities / Municipalities
  - Finance
  - Engineering / Maintenance
  - IT / Customer services

- Value added service suppliers
  - GSM network providers
  - Internet service providers
  - IT infrastructure

- Third party vendors

- End users / consumers
Topics

Context:

Project drivers:

The players:

The tools:

Technology:

Getting it together:

The solution:
Utility toolbox

> Remote meter reading / meter status updates

> Alarm enunciation

> Remote token loading

> Energy balancing

> Consumer load profiling

> Remote supply connection / reconnection

> Demand side load management

> Asset traceability
Topics

Context:
Project drivers:
The players:
The tools:

Technology:
Getting it together:
The solution:
The right stuff

> Standards
  > STS / IEC
  > DLMS / COSEM
  > Secure communications

> Functionality
  > System complexity
  > 10mW transmission power
  > Intrinsically compatible with NRS049
  > ESKOM DSP34-1635 compliance
Operational requirements

> Field proven prepayment technology supplying redundancy

> Local communications infrastructure based on field proven RF technology

> Flexible connectivity into the web using a variety of communication technologies

> Servers and back-end scalable from hosted to large customised systems
Topics

Context:

Project drivers:

The players:

The tools:

Technology:

Getting it together:

The solution:
System elements

- Customer’s premises
  - Customer interface unit / keypad

- At the point of supply
  - Conventional split configuration “smart” prepayment electricity meter
  - Low power 433MHz ISM licence free band
  - Ability to manage up to four load control devices (control the appliances at the source)
  - Configurable either as prepayment or conventionally billed
System elements……

> Last mile communications
  > Data concentrator unit (DCU)
    > Low power 433Mhz ISM licence free band
    > Flexible backhaul communications
      – GSM technology
      – Ethernet
      – PLC
      – Zigbee
      – Fibre Optic
      – RF wireless
  > OTAP upgrades

> Field service terminal (FST)
  > Drive by data collection
  > GPS aware
  > System backup
System elements…….

> Head End Infrastructure
  > Network management servers
  > Data collection servers
  > Data management and reporting clients

> Value added services
  > Demand side load management
  > Asset management
  > Consumer notification / web services
  > Maintenance and engineering services
Topics

Context:

Project drivers:

The players:

The tools:

Technology:

Getting it together:

The solution:
It all comes together

- Build on the existing infrastructure and investment
- A business model that has stood the test of time
- Built in system redundancy
- Technology that is appropriate to our reality
- A cost effective solution that caters for low consumption customers
The final analysis

> Revenue protection and management from the comfort of your office
> Scalability and sustainability are guaranteed
> System is appropriate and justifiable to every level of consumer
> Utilisation of existing knowledge, training and expertise
Thank you

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