



Revenue and Network Protection in River Park, Alexandra

ASSOCIATION OF MUNICIPAL ELECTRICITY
UTILITIES OF SOUTHERN AFRICA

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City Power



Introduction

- World
 - Africa
 - South Africa
 - Gauteng
 - » Johannesburg
 - Greater Alexandra
 - River Park



History of Alexandra



- One of the oldest townships - 1912
- eight square kilometres and has an estimated population of 470 000 people
- Alexandra Renewal Project (ARP) has introduced new townships with clearly demarcated stands
- River Park Township project
 - located just across a tributary of the Jukskei River from the "established" suburban area of Lombardy East and on the east bank of the river opposite traditional Alexandra Township

Challenges

- Social
 - Population of 4.4million
 - 10000 people every year
 - Shelter, Food, Clothing, *Services...*
- Revenue
 - Low LSM, non payment culture
 - Middle LSM, mixture on non payment culture and unsophisticated cheating
 - High LSM and Industry, Highly sophisticated way of cheating
- Infrastructure
 - Thermal loading
 - vandalism

Deployed Solution

- Resources
- Technology
- Enablers

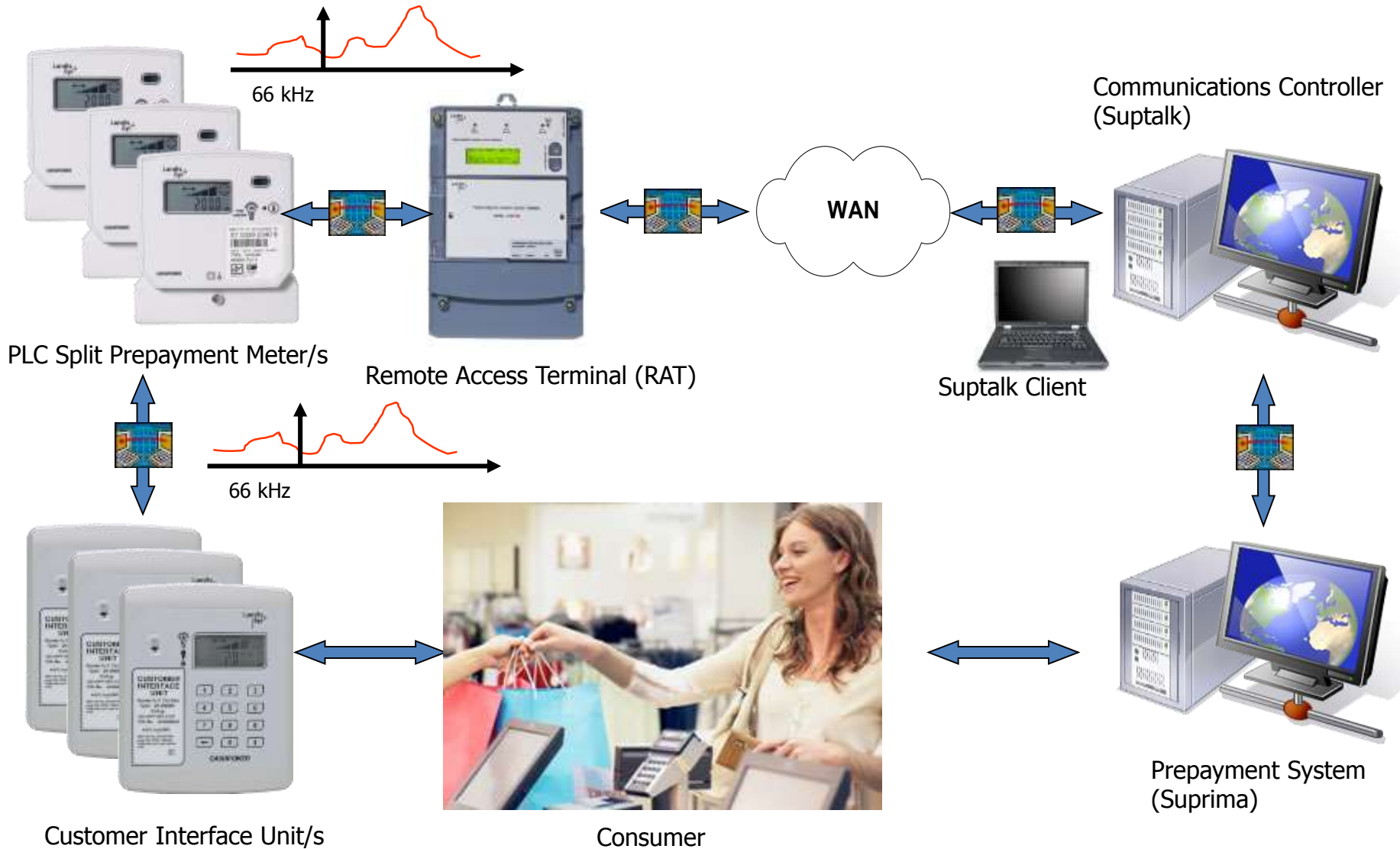


Resources - *Critical Role Players*

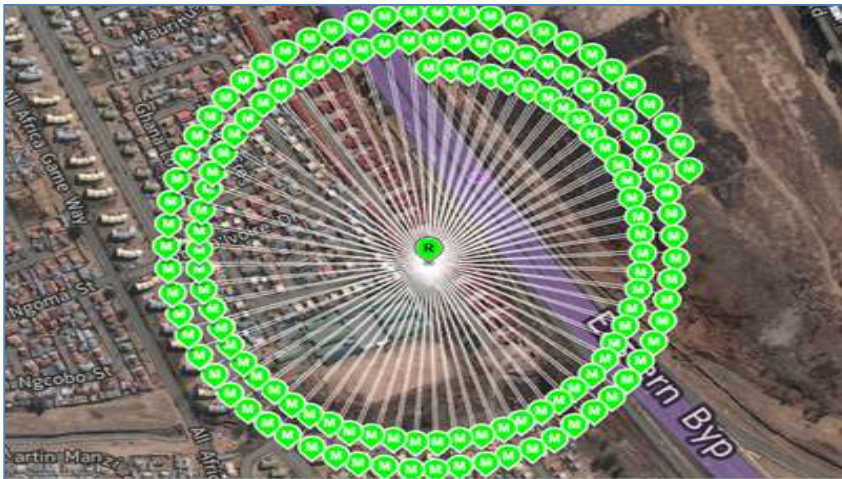
- Community
- Energy Ambassadors
- Employees
 - Project
 - Field
 - Back Office
 - Customer Service
- Politicians
- Service Providers

- Community
 - Door to door engagement on:
 - Electricity safety
 - Electricity tariffs (Domestic and Business)
 - Energy saving tips
 - Public Meeting to:
 - Introduce the project
 - Project benefits
- Energy Ambassadors
 - Continuous education on electricity safety and consequences of electricity theft
- Politicians
 - Engage with local political structures to engage community on responsibilities of utilities
- Service Providers
 - Coordination of activities
 - Respect working arrangements between utility and community
 - Minimise technology frustration to community

Technology Overview – Power Line Carrier (PLC)

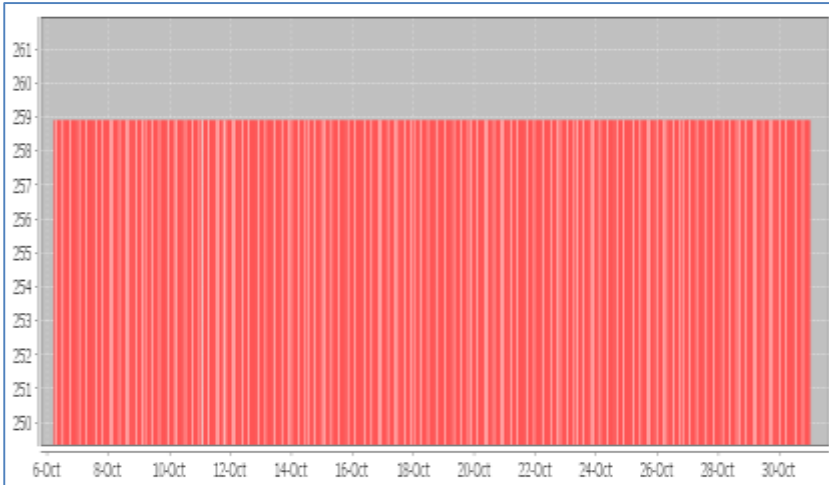


Normal Metering System



- Two figures represent a healthy system
 - Peaks indicating purchase dates and deeps indicating consumption patterns
- The green ring indicate number of meters visible to the RAT
 - This particular ring indicates all meters are healthy and are visible to the RAT

Metering Anomalies



- The first figure indicates a meter stuck a certain value
- This meter is either faulty or been tampered with
- The meter raises alarm for investigation
- On Figure blow, the RAT has picked up an anomaly in 1 of the meters
- This will raise an alarm for analyst at the back office to interrogate further

Access Control



- To control access to the meters, a number of utilities have resorted to thick protective enclosures
- Access is electronically controlled and logs history of individuals who had access
- The system uses any form of communication
- Boxes come in different sizes, depending on the township layout and network configuration

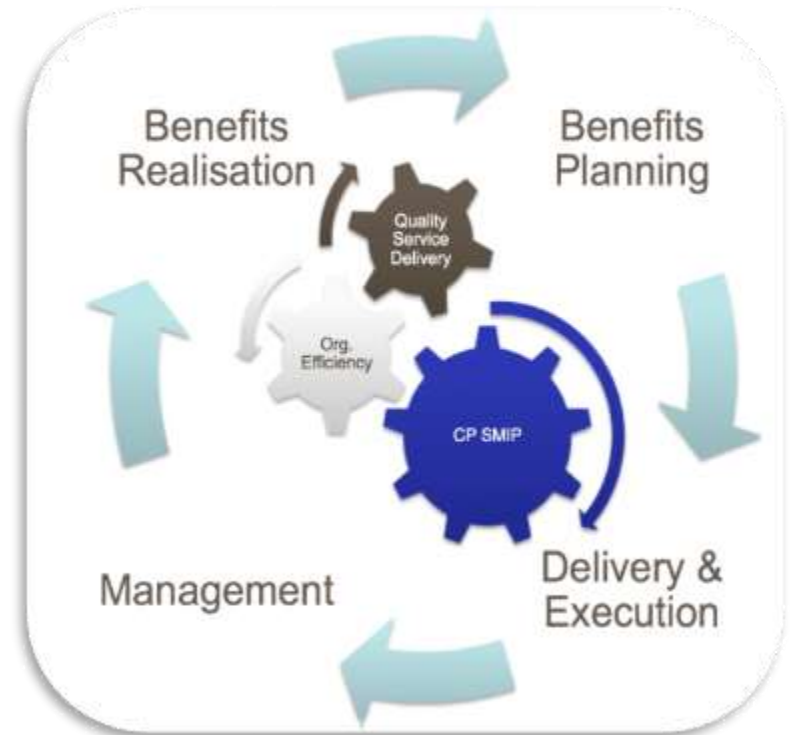
Enablers

- Processes
- Skills
- Dashboards
- Management

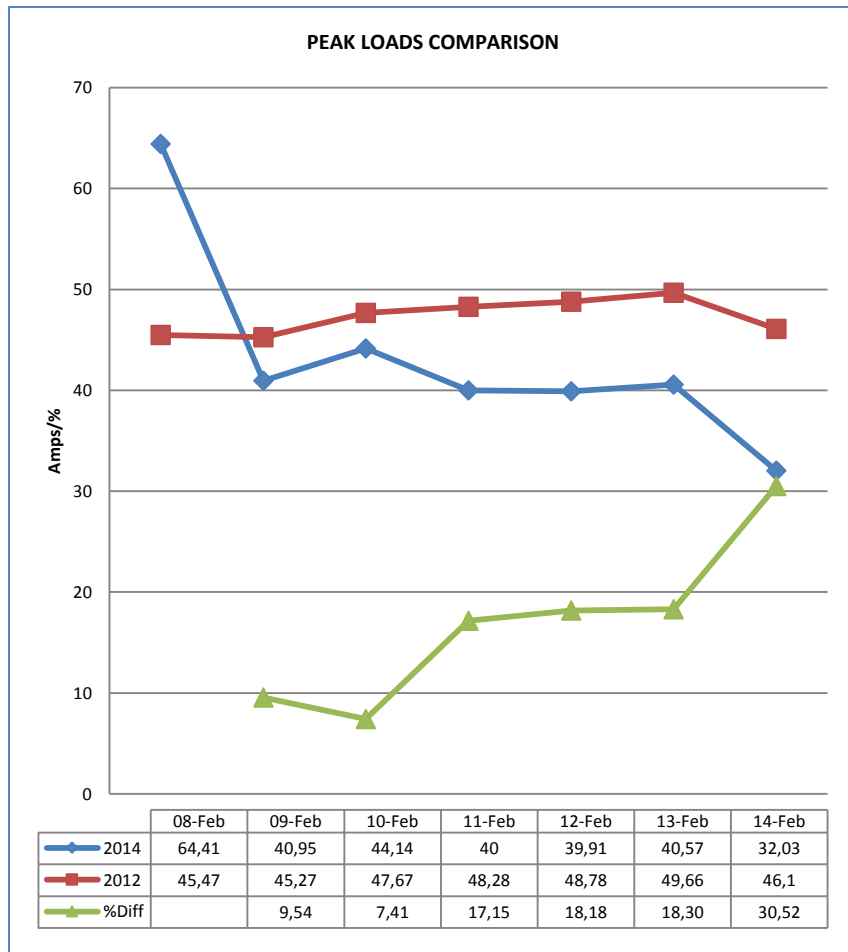
- Processes
 - Broken processes leads to frustrations and collapse of great initiatives
- Skills
 - Right skills for the right job
- Dashboards
 - Relevant dashboards for the ease of monitoring
- Management
 - Management buy in, support and monitoring
 - Clear KPI's to all relevant stakeholders

Observations and Experience

- Revenue
- Network Loading
- Benefits/Challenges

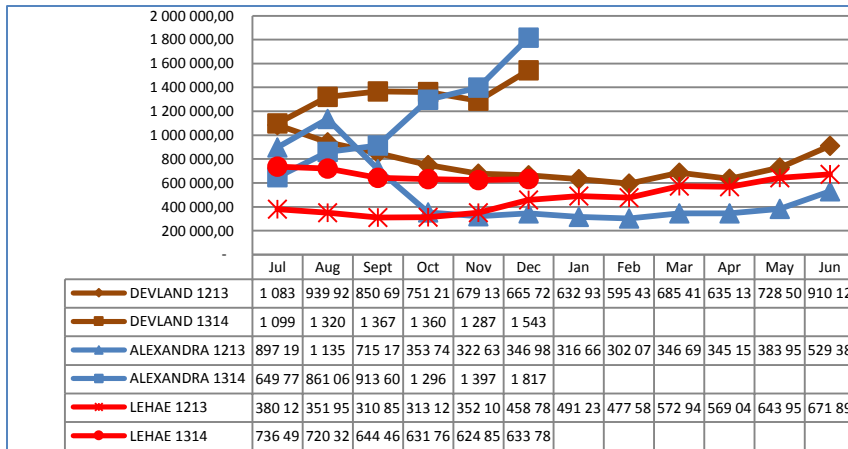


Load Profiles before and after the project

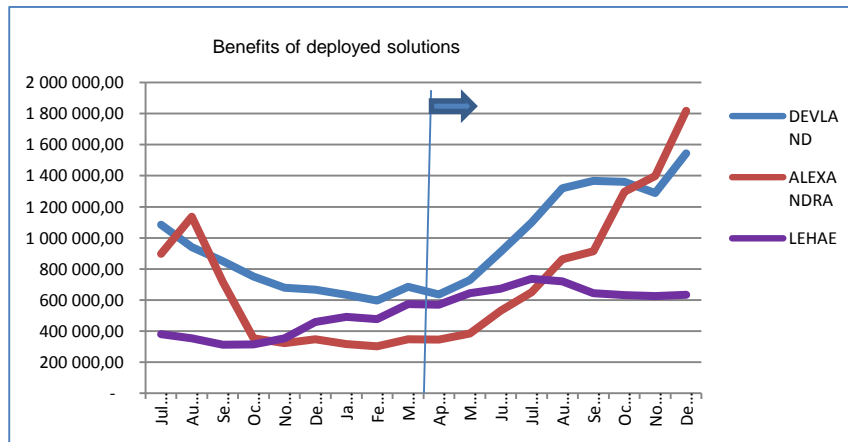


- The brown and blue graphs indicate the load profiles of the feeder supplying the study area in 2 different years
- Green graph indicate the percentage difference of load in two different profiles
- It is clear, the project is bearing fruits through the behavioural change on the consumers

Revenue Benefits in Different Areas



- The top graph shows comparison on revenue collected in two financial years in 3 different townships
- Significant changes on revenue due to intervention
- Bottom graph shows continuous revenue performance from 2013 to 2014



Challenges and Benefits

- Period
- Input Cost
- ROI

- Revenue Collection
- Network Stability
- Customer Data Clean-up
- Local Employment Opportunities
- Community Safety
- Less call outs

Conclusion

- Time
- Consultation
- Implementation

- Time
 - Invest time on consultation to help reduce execution time
- Consultation
 - Consult as wide as possible
- Implementation
 - Implement as fast as possible
- Monitoring
 - Continuous monitoring is key