Technical Solutions for our changing business model (Maintenance)

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“... looking after both old and new infrastructure is a challenge and an opportunity ...”

“... we have tended not to put maintenance high on the agenda ... not only are we putting it high on the agenda now ... we can launch it as an industry in its own right.”

Deputy President Phumzile Mlambo-Ngcuka

November 2005
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To create a safe environment for the employees and surrounding communities

To ensure that assets are operated within their limits and thus extending the reliable life span

To deliver quality of supply to the customers

Enhance service delivery and reduce community unrest.

Why do Maintenance and Refurbishment??
TYPICAL CHALLENGES

- Limited Maintenance Budgets and Funding
- Lack of Resources
- Lack of Knowledge and skills
- Bias of funding new assets and projects
- Negligence to O&M practices
- Theft and Vandalism
## CASE STUDY

### Battery Charger Maintenance:
- Quarterly Maintenance = R 3 750
- Total annual maintenance cost = R 15 000

### 40 MVA Transformer:
- CAPEX = R 8.5m
MAINTENANCE COST VS POTENTIAL LOSS

Maintenance = R 15 000 p.a

Asset = R 8.5m
ASSET LIFE EXTENSION THROUGH REFURBISHMENT

- Maintenance
- Refurbishment

Graph showing the failure rate over time with three phases:
1. Decreasing Failure Rate
2. Constant Failure Rate
3. Increasing Failure Rate

Event labels:
- Early "Infant Mortality" Failure
- Observed Failure Rate
- Constant (Random) Failures
- Wear Out Failures

Axes:
- Y-axis: Failure Rate
- X-axis: Time
O & M BEST PRACTICES

- Increase lifetime value
- Increase Utility
- Decrease total cost
- Enable O&M best practices
Less power failures

Control over the grid

Less energy losses

Increased Revenue

Improved Occupational Health and safety and therefore less injuries

Increased Simplicity
Increase Operational Efficiency

- Take advantage of the benefits of a unified automated communication network to increase efficiency while lowering the costs.

Improve Power Safety and reliability

- Use the real-time information shared across the single Network to inform the decision making process and quickly avoid and contain Power disruptions.

Protect past Investment and make new ones cost effective

- Converge the network on your own timeline by leveraging your current infrastructure and ensure future investments are maximized to future-proof operational communication.
KEY RECOMMENDATIONS

Identify areas where 20% money spend can have an 80% reliability and cost saving impact.

Improve utilisation and longevity of existing infrastructure.

Embrace and capitalize on new Technologies to monitor the condition of assets and to predict when assets will fail.

Ensure training and development talent and attach this staff for longer time.

Ensure asset management planning.

Identify areas where 20% money spend can have an 80% reliability and cost saving impact.

Improve utilisation and longevity of existing infrastructure.