

EKURHULENI'S PRACTICAL EXPERIENCE WITH A FULL SCALE CUSTOMER AUDIT AND DATA CLEAN-UP PROJECT

INTRODUCTION

The Ekurhuleni Metropolitan Municipality realize due to various indicators at the end of 2002 that the integrity of its Financial and Meter Database is at risk. Meters are not linked to the correct stands, all the stands is not on the financial system , illegal and tampered connections exists and the Councils tariffs is not applied correctly. There exist large numbers of damaged meters and suspicions of non-technical losses in electricity. Illegal land use could be documented and fair billing to customers been introduced. Unacceptably large percentage of non revenue water was experienced. It was therefore necessary to implement a full scale customer audit and data cleanup project to address the shortcomings. In short , it made just good business practice.

The Ekurhuleni Metropolitan Municipality appointed a consulting engineer during September 2003 to compile tender documents for a full scale customer audit (water and electricity), to manage the project as well as for the management of a project to repair all the broken/dysfunctional meters and to install meters for stands without meters.

PURPOSE OF THE PROJECT

The first objective of the project was to ensure that:

- ❖ All the improved stands in Ekurhuleni were metered
- ❖ All the installed meters were captured on the financial database
- ❖ All the meters/connections were in a good working condition
- ❖ The new meters/connections were linked to the correct property/accounts
- ❖ All the meter particulars (make, size, digits, numbers, location) were correctly captured
- ❖ The location of every meter was determined and documented (GPS Coordinates)
- ❖ All the gallon type water meters were replaced
- ❖ All the illegal and tampered connections were removed and rectified
- ❖ The promulgated tariffs were applied correctly
- ❖ The financial database was cleaned up
- ❖ Illegal land use was documented

The second objective was to develop and implement a Water and Electricity Meter Management System (WEMM), which would ensure that the integrity of the verified data, as well as new meters added, remains high.

The purpose of the WEMM was to manage all the service calls for Water and Electricity, the meter database, as well as the meter reading function. Council resolved that the responsibility of meter reading be transferred to the Municipal Infrastructure Services Department (Water and Electricity Divisions), and that the Finance Department would only be responsible for the billing function. The WEMM will be an intranet based system.

COSTING OF PROJECT

The following amounts were paid to the various contractors:

- Full scale Customer Audit Project-R14.6m
- Repair & replacement of Water Meters-R13.7m
- Repair & replacement of Electricity Meters-R2.8m
- Development of the WEMM-R2.8m
- Project Management Cost-R12.8m

If one place the Audit and Project Management cost in perspective it costs Council about R50 per stand (Repair and Replacement costs of Meters excluded). The WEMM cost was R5 per meter.

BENEFITS CLAIMED BY THE PROJECT

Potentially, the following quantity of possible new stands and meters were identified during the audit and database reconciliation process:

Summary 2005/08/31			N	E	S	
			North	East	South	Total
Properties Reconciled:			138147	176550	177600	492297
New Properties:			4551	6789	23646	34986
% New Properties			3.29	3.85	13.31	7.11
Water Meters Reconciled:			109122	123046	148509	380677
New Water meters:			11758	28919	24983	65660
% New water meters			10.78	23.5	16.82	17.25
Elec meters reconciled:			61753	47560	53663	162976
New Electricity meters:			3023	6012	8224	17259
% New elec meters			4.9	12.64	15.33	10.59

Possible Business use on Residential Properties-3710

Council is still busy with the verification process. So far 25% of the stands identified by the Contractor were confirmed as Business use on Residential Properties.

PROBLEMS EXPERIENCED

Council experienced various problems with the project. They can be described as follows:

- ❖ The appointed Consulting Engineers and Project Managers, as well as Council, under-estimated the size and complexity of the project
- ❖ The customer audit contractors under-estimated the complexity and education level of staff to successfully complete the project
- ❖ Lack of experience of Consulting Engineers, Council Officials and the Contractors to successfully complete such a project within the set timeframe of six months
- ❖ Lack of resources from Council to manage the project, verify findings and upload data on the Council's financial system
- ❖ Unwillingness from Development Planning and Finance Departments to assist (no buy-in)
- ❖ Field data obtained was not reliable enough to update without verification by Council
- ❖ Timeframe too short
- ❖ Project was just too big to be handled by the available resources
- ❖ Difficult to implement without the WEMM being operational

PROJECT RE-ENGINEERING

It was soon realized during the verification phase, that Council needed to implement a Plan B to ensure the successful completion of the project. The first step then was to analyse the problems and to address them. It was then realized that the following issues needed to be addressed to ensure the successful implementation of the project:

- ❖ Council should allocate an address to every stand to ensure that service teams and meter readers could locate the stand in the field
- ❖ Stand addresses should be standardized.
- ❖ Stand numbers should be normalized. (27 digit Venus code should be applied uniformly over the Metro.)
- ❖ A policy and procedure should be developed and implemented to ensure that the data related to low cost housing schemes be captured on the Council's systems
- ❖ The Customer Audit data should be verified, uploaded and a final report should be submitted to Council

- ❖ All improved stands on the Council's database without meters should be re-audited and addressed, if necessary
- ❖ All stands with more than one meter should be attended to
- ❖ The policy regarding Business Use on residential properties should be refined, aligned with Council's tariffs and the revised policy should be implemented
- ❖ Uniform policies and procedures should be developed and implemented with regard to ea. the number of connections supplied to a stand, procedure to apply for meters, procedure to handle low cost housing projects etc.
- ❖ A paperless system should be implemented for ea. the creation of new stands on a database, handling of application for new meters etc.
- ❖ The various databases must be linked on real time base to ensure compatibility and synchronization (GIS, Financial, WEMM, IMQS, Suprima, etc)
- ❖ Clear project plan with time frames, resources, funding, etc. should be developed
- ❖ Set-up of dedicated project teams to finalize the project
- ❖ Strict project monitoring principles to be applied
- ❖ Compilation of a completion report to inform all the stakeholders regarding the outcome of the project
- ❖ Implementation of a daily meter reading process
- ❖ Management of inaccessible meters
- ❖ Ensure sustainability of results through policies, procedures, training and an audit trail
- ❖ Provide adequate training to staff
- ❖ Ensure that the WEMM be fully operational

EXISTING PROJECTS

The Ekurhuleni Metropolitan Municipality is presently busy with a number of projects to finalize the Full Scale Customer Audit Project and the Member of the Mayoral Committee for Finance is overseeing the project. The following departments form part of the team that meet once a month:

Finance, Development Planning, Housing, Water Services, Electricity, and ICT. The target date to complete the full exercise is December 2007.

The main focus of the existing project is as follows:

- ❖ Re-auditing of all the Low Cost Housing projects to ensure that the meters on the stands are captured on the financial system.
- ❖ Verify and upload all the new meters and stands identified by the Customer Audit Contractor, calculate and pay the incentives
- ❖ Linking of Venus (Financial System), IMQS, GIS and WEMM online
- ❖ Re-audit large consumers

- ❖ Consolidate connections to a stand (aim : only one connection per stand)
- ❖ Implement a paperless system with a audit trail (New water and electricity connections completed)
- ❖ Check every vacant stand with improved value without a meter
- ❖ Implement daily meter reading
- ❖ Implement a Regionalised Meter Office consisting of Water Services and Finance Staff to ensure close co-operation and speedy finalization of consumption and meter related queries.
- ❖ Enhancement of the WEMM system to cover all the Operational needs

TYPICAL FINDINGS FROM THE RE-AUDIT OF BULK CUSTOMERS

Total number of investigations	173
Fire connection unmetered	28
Vacant stands	2
Average date of manufacture	1997
Meter numbers misaligned	3
Meter numbers illegible	6
Meters not working	10
Meters noisy	4
Meters erratic	1
Number of meters on accounts	17
Number of meters in field	173
Number of meters not on accounts	156
% Meters not on accounts	90%
Number of meters faulty	15
% Meters faulty	9%

DAILY METER READING

The main objective with this intervention is the following:

- Billing of customers within 30 days after reading
- Spreading of the workload over the available working days of the month
- Checking of fault codes and deviation formula rejections before billing
- Attending to mechanical problems before the next reading cycle starts
- Increase cash flow
- Obtain check readings before billing

LESSONS LEARNED

It is important to take note of the lessons learned from this project. If an authority would like to implement a similar project, it is important to attend to the following issues:

- ❖ Do not underestimate the complexity of such a project
- ❖ Set up a dedicated project team with a clear terms of reference
- ❖ Second experienced and dedicated staff to the project
- ❖ Divide the project into manageable components
- ❖ Run a pilot project to determine shortcomings and adjust plans if necessary
- ❖ Finalize business rules and procedures beforehand
- ❖ Ensure adequate resources for the project
- ❖ Provide appropriate training to staff and project team
- ❖ Project not to be handled as a once-off
- ❖ Ensure that engineers and finance staff work as a team

FUTURE WATER SERVICES PROJECTS

Ekurhuleni planned the following future projects in the Water Services Division:

- ❖ Water Balances
- ❖ Ensure Zone Integrity
- ❖ Indigent Leak Fixing
- ❖ Pressure Management

Consultants have been appointed to assist staff with these type of projects. Contractors have also been appointed. It is envisaged that the projects will commence on 1 August 2007.

CONCLUSION

This paper just touched on the elements of the project and due to the timing of the conference it was not possible to supply the financial benefits to the audience. The Council can however observe from the substantial increase in budgeted income that the project is already a success, although all the verification and upload phases are not completed yet. It is clear that a full scale data cleanup and customer audit project is worthwhile on condition that it be efficiently managed, adequate resources and funding be allocated to the project and that it be divided into manageable phases.