



Knowledge to Shape Your Future

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Revenue Protection in eThekwini

Reflecting on a Winning Strategy

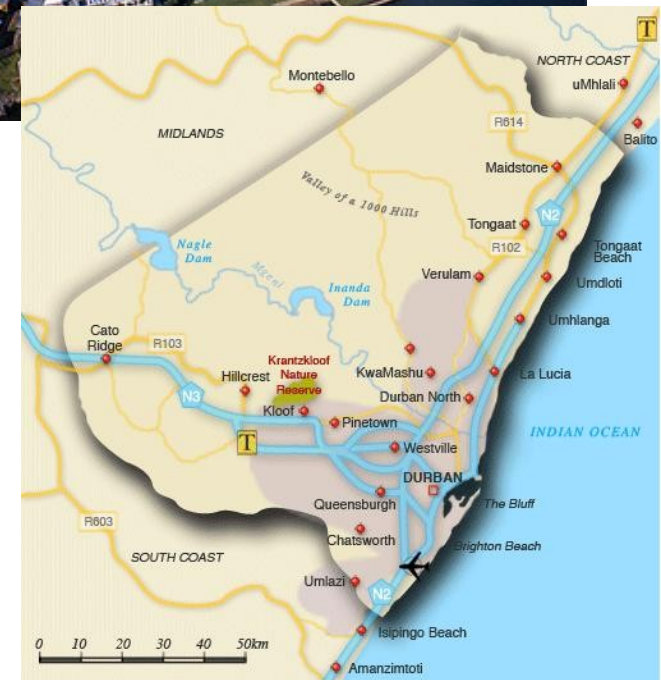


- **eThekweni Municipality**
 - > Located in Kwa-Zulu Natal
 - > Encompass the City of Durban
 - Large Economy
 - Busiest Harbour in Africa
 - Popular Tourist Location
 - Good Credit Rating



■ Statistical Overview

Size	2297 km ² (1.4% of the province of KZN)
Municipal Budget	More than R 24 billion
Population	3 million people
Demographics	African 68%, Asian 20%, White 9%, Rest 3%
Electrified Households	632 700 (rounded)
Pre-Payment	287 000 meters



■ Primary Drivers

- > Reduce Peak Demand
- > Energy Conservation
- > Optimize Financial Return

■ Revenue Protection Objectives

- > Prevent non-Ferrous Theft
- > Reduce C&I Losses
- > Ensure Secure Vending Channels
- > Reduce Fraud on Pre-Payment Installations



Focus of this
Case Study

■ Lack of Proper Addressing

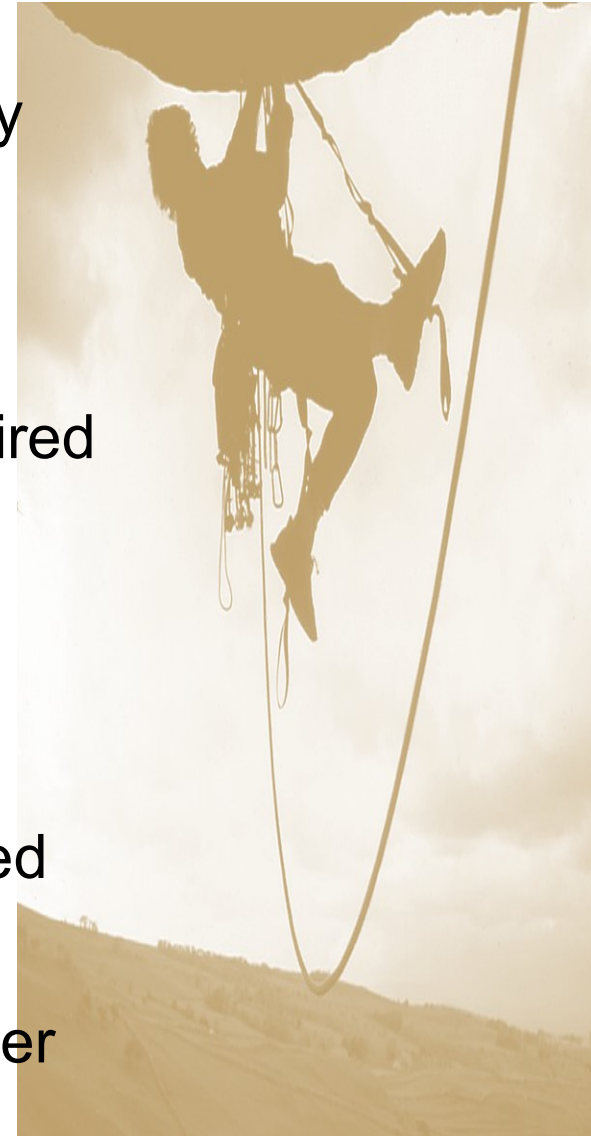
- > Incorporated new areas not historically under their control
- > Must manage informal areas without proper address references
- > Changes in area & street names required regular updates

■ Blind Vending

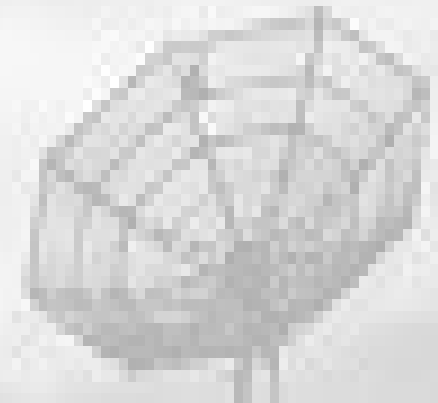
- > Limited validation on vending Transactions
- > Analysis of purchase patterns restricted

■ Many Data Systems in Play

- > The information may be distributed over more than one database system



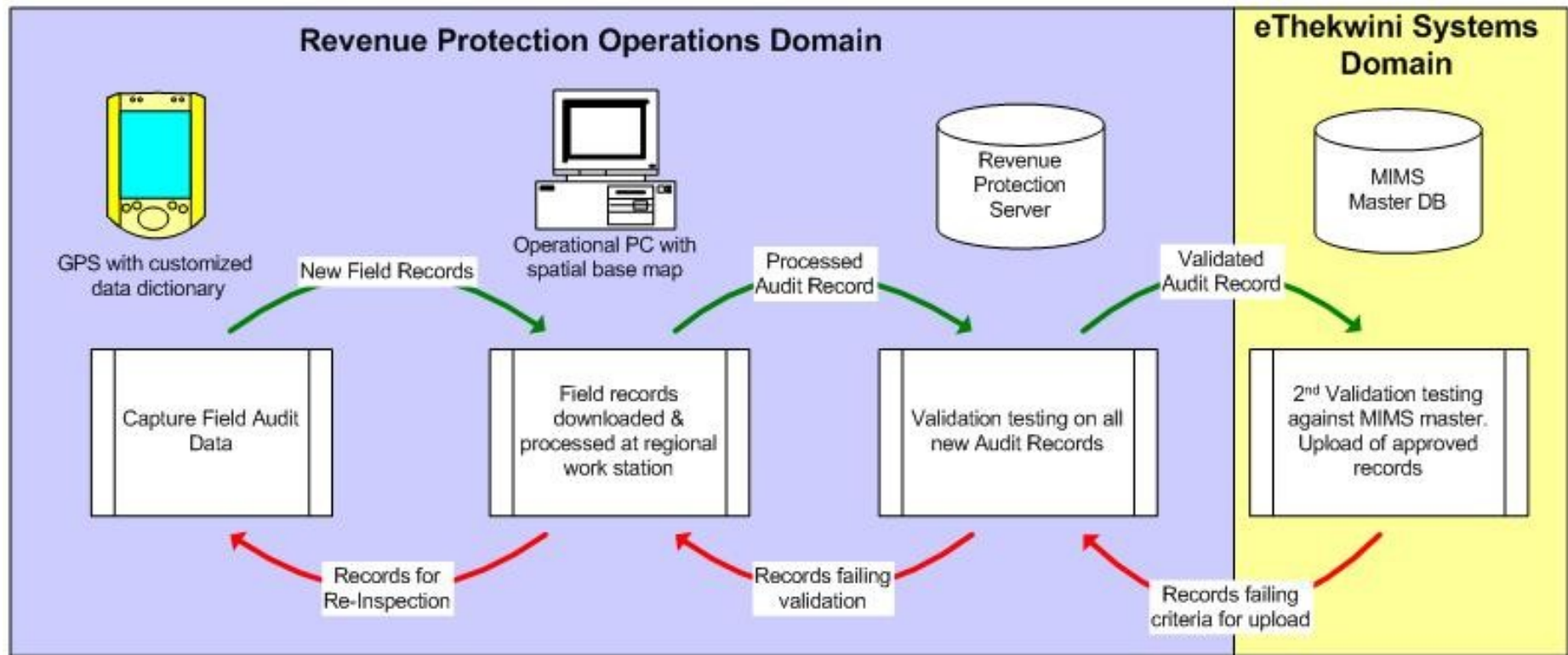
- **Central System to Reconcile all Records**
 - > MIMS-Elipse will be designated database
- **Structured Field Audit**
 - > Aim is to normalize the central meter record
 - > Must capture an accurate GPS coordinate
 - > Field records must be validated
- **Central Management for Remedial Work**
 - > Work orders from MIMS-Elipse with field execution on integrated HHU
- **Reporting**
 - > Regulars reports to indicate the progress and impact of the operations



- **The Audit Process must Proceed a Revenue Protection Program**
 - > The Focus must be data acquisition
 - > Effectiveness of audits are hampered when disconnections are started
 - > Better control and limits fraud
 - > Different skill sets required
 - > Validation of “new” field records must pass a high level of integrity

- **Aim is to move towards Targeted Revenue Protection Program**



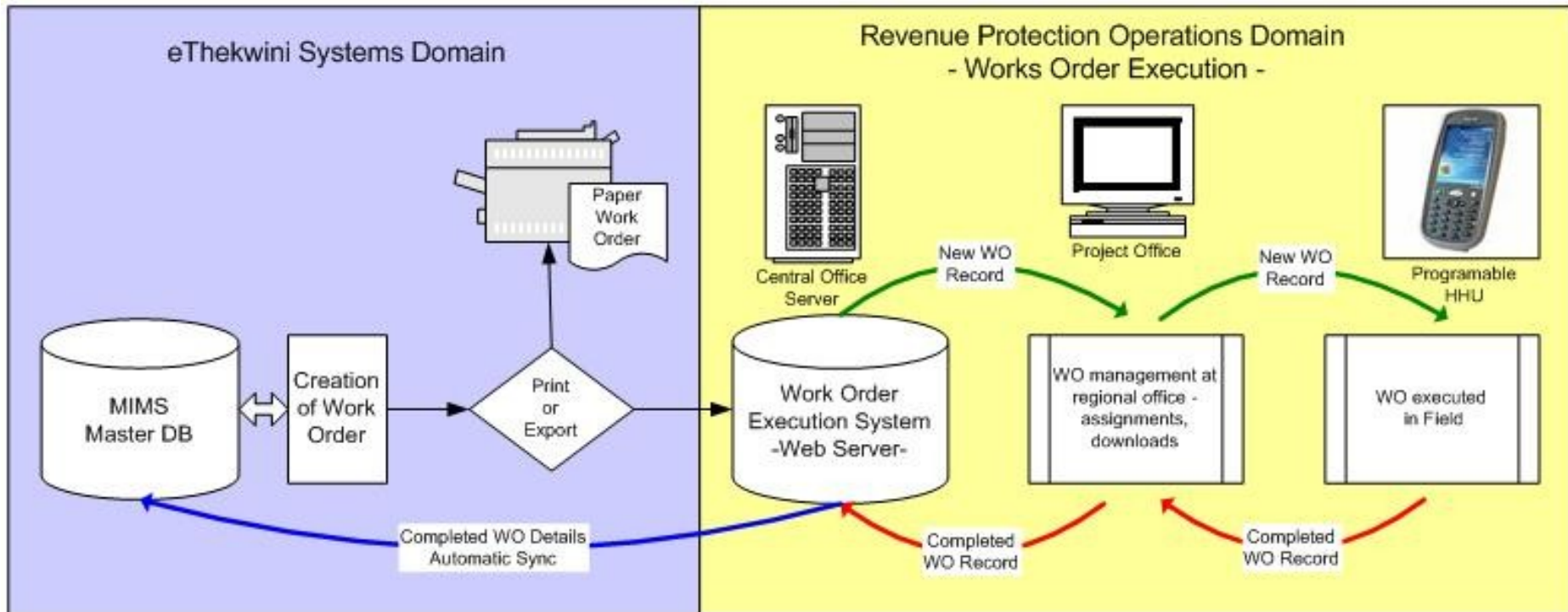


- Important Features
 - > Validation Testing at each step
 - > Automatic Feedback to handle exceptions
 - > Fully Integrated System

“Raw” Field Records must pass high level of Validation to Protect Central Data System - Including:

- Meter Serial Number Check
- Account Number Check
- First “No Access” Control
- Street & Area Library
- Spatial Validation





- The Remedial work will follow the initial audit
- WO created from central database & submitted to mobile execution system
- Full traceability through life cycle with link to original record
- Changes to original record updated with synchronization

- **The coordinate captured with initial audit may be used to navigate to a specific location**
 - Utilized inexpensive GPS hardware & software
 - Custom build interface builds GPS waypoints for all records on system
 - Search on MSNO or waypoint reference to lookup location
 - Technician navigates directly to installation with voice prompts
 - Very effective in areas where operator does not know area



High level results after first year

Re-Audit Recommended	Credit Meters Flagged for Replacement	Credit Meters Successfully Audited	Prepayment Meters Flagged for Replacement	Prepayment Meters Successfully Audited	Other (meter removed etc)	Total
40766	28	11412	171	87415	4776	144568

- Teams have been deployed in three regional areas
- Focus was on pre-payment, but credit meter details also captured when encountered in audited area
- Location and details of LV transformers logged
- 103 802 records passed preliminary validation for upload to MIMS-Eclipse
- Records failing validation or first No-Access results will be returned to be re-audited

- Constitute about 8% of pre-paid meters audited
- Focus of audit was primarily data normalization
- Impact of exceptions gauged by cross-referencing with the purchase history

Pre-paid findings breakdown

Finding	Total
Faulty Meter	1066
Free Supply	2130
Meter Damaged	103
Tampered Meter	2229
Disconnected	1515
Total Exceptions	7043

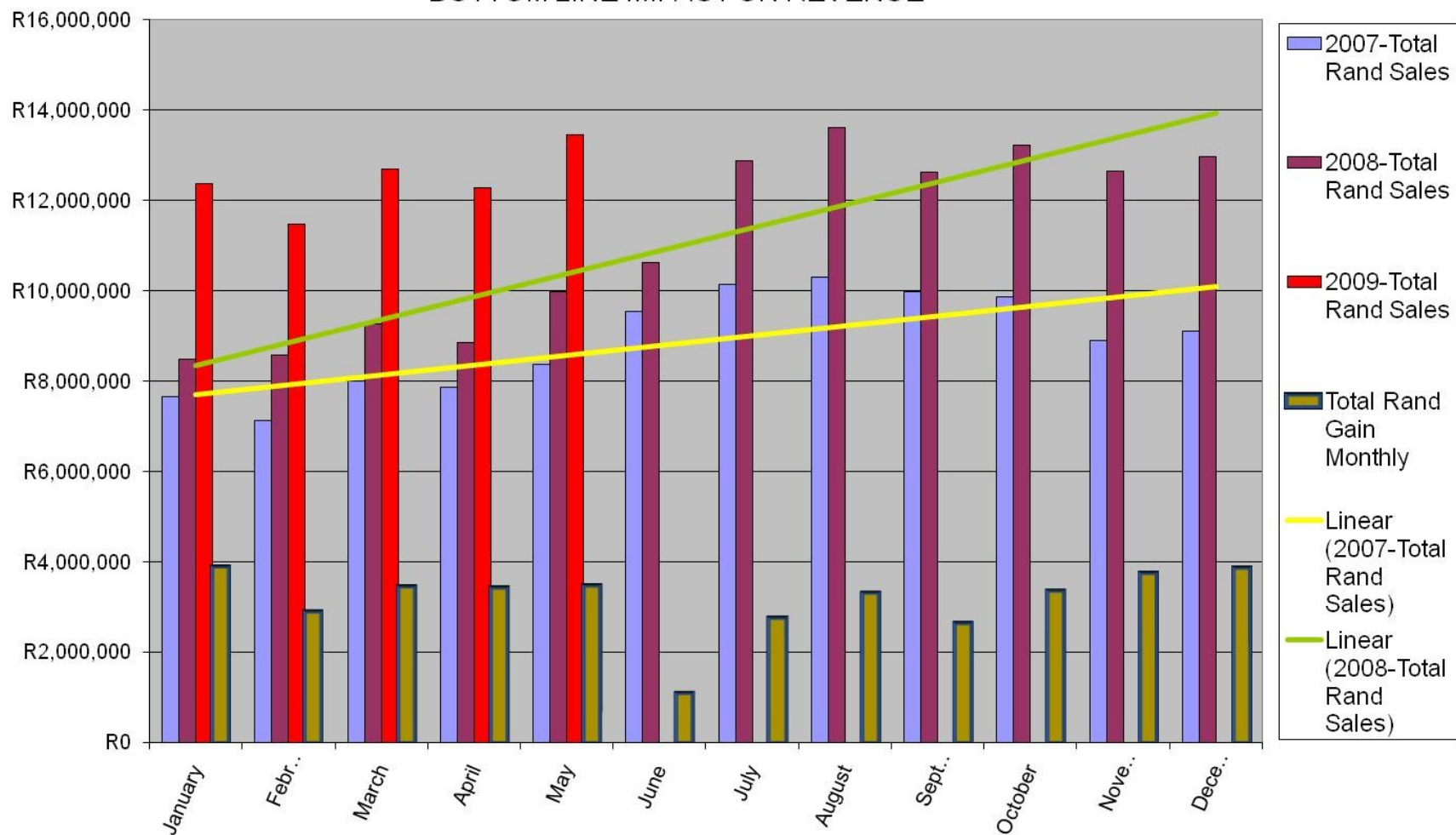
Potential Financial impact of identified Exceptions

Description	Number of Points	Potential Loss Extrapolated from Vending History
Tamper / Free Supply	1887	R 2,073,780
No Purchase for at least 3 months	4207	R 3,936,022
Total	6094	R 6,009,802

Area	Record not on MIMS - No Vending History	Record not on MIMS - Blind Vending	Record on MIMS - No Vending History	Record on MIMS - Normal Vending History
Central Region	1598	4152	2949	21956
Northern Region	1857	2994	2066	31650
Southern Region	2098	5733	6036	19323
Total	5553	12879	11051	72929

- **Not on MIMS/No Vending History**
 - > No record of this meter exists anywhere
 - > Detailed investigation must be launched
- **Not on MIMS/Blind Vending**
 - > Record will be updated and blind vending eliminated
- **Record on MIMS/No Vending History**
 - > Meter account configured – but NO vending history
 - > Detailed investigation must be launched

BOTTOM LINE IMPACT ON REVENUE



- **People**
 - > Trained & Committed Recourses
 - > Identify Roles and allocate staff
- **Processes**
 - > Follow best practices
 - > Accountability & Responsibility
- **Technology**
 - > Will only succeed if other legs are in place
 - > Improve efficiency & accuracy, but is not a magic bullet

