DATA CLEANSING AND PROTECTION TO ENHANCE REVENUE

CIGFARO ANNUAL CONFERENCE
OCTOBER 2019
1. Revenue Maturity Model
   - 5 levers including Revenue Analytics

2. Introduction to Data Cleansing and Protection
   - The Process

3. Importance of Right Data
   - Revenue Value Chain

4. Case Studies
   - Metros and Munics

5. Conclusion
   - Future Considerations
THE FIVE MAJOR LEVERS TO MEASURE MUNICIPALITIES...

- Municipalities’ ability to efficiently generate income
- Municipalities’ ability to realise cash flows from billing customers
- Municipalities’ organisational ability to administer the revenue management function
- Extent to which the municipality has integrated data analytics to Revenue Management
- Extent to which distinct action has been taken towards customer engagement and management.
5 ARCHETYPES OF MUNICIPALITIES

1. Lagging municipalities “Beggars”
2. Emerging municipalities “Snoozers”
3. Developing municipalities “Hustlers”
4. Optimising municipalities “Darlings”
5. Innovating municipalities “Super Heroes”
‘HUSTLERS’ MUNICIPALITIES

Distribution of the overall 2018 Municipal Revenue Maturity Benchmarking results (%)

- Majority of utilities fall under ‘Hustlers’: Stable and repetitive revenue collection approach, with decent revenue sources but poor revenue conversion rates

- We did not find municipality that is performing at the highest level of revenue maturity- in line with global standards.

- South African municipalities have not yet began innovating in areas such as:
  - revenue coverage and enhancement,
  - advanced data analytics,
  - dynamic pricing packages and
  - fully functional e-government service delivery
REVENUE ASSURANCE DELIVERY MODEL

- Customer centricity
- Technology value delivery
- Data accuracy and completeness
- Organisational operating model and culture
- Management support and capability building
- Research, insights and innovation
- Revenue management and enhancement

Revenue targets, Tariff modelling, Metering, Billing, Credit Control, Debt Collection, Loss Management
REVENUE PILLARS

Revenue Pillars

Valuation of properties and assets
Tariff Determination
Metered services
Non metered and Sundry Services
Billing (all services)
Debt Collection
Credit Control

Revenue Operations Platform
INTRODUCTION TO DATA CLEANSING AND PROTECTION

Dimensions of Data Quality:
- Completeness
- Consistency
- Conformity
- Accuracy
- Integrity
- Timeliness

“Users of data typically spend 80% of their time cleaning and manipulating data and only 20% of their time actually analyzing it.”

Raw Data (Inconsistent and Inaccurate)

Analysed Data Sets (Consistent and Accurate)
WHAT DOES DATA CLEANSING ENTAIL?

Identifying and removing (or correcting) inaccurate records from a dataset, table, or database

Ensuring uniformity with other related datasets in the operation

Recognising unfinished, unreliable or non-relevant parts of the data

Restoring, remodelling, or removing the dirty or crude data

May be performed as batch processing through scripting or interactively with data wrangling tools
IMPORTANCE OF RIGHT DATA?

Data
- Aggregate
- Analyse
- Segment

Facts
- Customer analytics
- Detailed facts and figures

Insights
- Patterns and trends
- Extrapolation

Strategic Direction
- Decision Making
- Budget and resource allocation

Track & Monitor
- Monitoring and Control
- Management reporting

To ascertain facts in order to obtain insights that assist in determining the strategic direction.
IMPACT OF RIGHT DATA ON MUNICIPAL REVENUE?

- State of ‘data’ at the municipality
- Clean data plays a vital role through the revenue value chain of the municipality
- Data sets across revenue value chain are interrelated
<table>
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<th>Impact of Right Data on Municipal Revenue?</th>
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<td>Municipality’s Cost of Supply data</td>
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<td>Tariff categories and customer segmentation</td>
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DATA CLEANSING AND PROTECTION

- Data Cleansing involves a desktop and field exercise in parallel
- ‘Not to regress’ is the key to data cleansing by implementing robust and continuous monitoring and updates
- Importance of data protection (or safeguarding) increases as the amount of data created and stored continues to grow at unprecedented rates
CASE STUDY – DATA CLEANSING

To provide the communities the opportunity to be rehabilitated through education on municipal services and making payment arrangements.

1. Obtain access to premises
2. Initiate Audit - Process on the electronic device
3. Determine existence of meter against local database e.g., Link to Venus or Workflow
4. Complete audit sheet
5. Photographic evidence of property / meters
6. Data quality control and data cleansing
7. Development of validation rules

Master data mining and asset (meter) audits

Master data mining
Field work asset audit
Analytics

Billing Data cleansing

Door-to-door Survey
FIELD WORK AUDIT

High technology oriented devices issued to each fieldworker, as well as the identity cards for usage at all times.
FIELD WORK AUDITS (CON’T)

Key features

- Photos
- GPS Deviation
- Reading History
- Meter Location
- Meter No
- Meter Reading
- Penalties
CASE STUDY – RESOLVING SMART METERING ASSETS DATA ANOMALIES

Advantages:
• Metering is Next Gen ‘smart’
• Control / Monitor via remote system @ utility premises
• Enables load limiting and monitoring NMD
• Better utility & customer control; Mock Billing
• Bi-directional metering (PV)

Theoretically, smart meters are intended to ready the utilities for the business of tomorrow (including adoption of distributed generation)

Old Meters
(manual reading, once in a month)

Smart Meters
(real time / 30 min data)
‘MERIT’ SOLUTION PREVIEW

Provides an overview of the consumption trends

Categorises consumption for the City, Region, Suburb and Market value

Provides analysis of consumption (actual and estimated) per consumer

Categorises consumption per household - heat maps
CASE STUDY – AGEING BOOK ANALYSIS

Breakdown of handover ageing book
As at September 2017

- Total Debt excl. Vat: R7 000 M
- All Excluded Debtor Groups: R6 000 M
  - (208572)
- Top Business and Residential accounts: R5 776 M
- Court Orders for Business and Residential: R253 M
- Total less exclusions (125117): R1 209 M
- Total less exclusions below 60 days (555): R10 M
- Realistic Total Target: R4 304 M
- Total less exclusions above 60 days: R365 M
- Pensioners with debt: R3 939 M
- Accounts with low collectability with debt: R1 171 M
- Accounts with high collectability with debt: R4 000 M
- Accounts with low collectability with debt above 60 days: R2 505 M
- Accounts with high collectability with debt above 60 days: R263 M
FUTURE CONSIDERATIONS?

• Smart Cities

• 4th Industrial Revolution

• The common data model

• Economic Outlook
CONCLUSION

• Data Cleaning is a critical requirement for any municipality to ensure Revenue sustainability
• Vital to have correct information of residents and businesses
• Such projects help tremendously in analysing your debt book – identifying inactive debtors, deceased debtors, even indigents if the scope requires it, etc.
• It helps the municipality to create confidence in their residents if their information is correct.
• It helps enormously with debt collection process – you have less disputes, less wasted expenditure in chasing wrong debtors (or finding the responsible debtor)
About Ntiyiso

OVERVIEW

- Management consulting firm
- 100% black owned and managed
- Over 10 years in existence
- Over 70 consultants
- 15 projects across 9 municipalities just in 2018

LOCATIONS

- Centurion
- Bedfordview
- Durban
- Malamulele

SERVICES

- Revenue enhancement and management
- Data Management and Analytics
- Governance and strategy
- Performance and Risk Management
- Organisation Design
- Business Process Engineering
- Fundraising and development of catalytic projects
THANK YOU

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