



Technology led innovations for Revenue Protection

A NEW APPROACH TO REVENUE PROTECTION



Southern Africa
Revenue Protection
Association



PRESENTATION OUTLINE



Utility sector overview & their challenges

Dependency on Energy sector

What needs to be addressed in 2018 & beyond

Business Case: - How utilities can maximize revenue protection by adopting technological strategies?

Cost Benefit Analysis

Concluding Remarks

PROBLEM STATEMENT

Municipal revenues are declining due to unaffordability, technology mis-alignment and slow economic growth which in turn is negatively impacting service delivery

UTILITY SECTOR MARKET OVERVIEW



Municipalities of SA are financially unstable and require ZAR22.4 billion government bailout.

Out of 100 municipalities, 78 have incurred losses amounting to ZAR15.3 billion.

Municipal debt has increased from ZAR 211,4 billion in 2015/16 to ZAR 225,8 billion in 2016/17.
Up by 6.8%

43% of Municipality debt is owed to Eskom.

Households owe municipalities R83bn;
businesses owe them R27bn and organs of state owe them R7.4bn. (as on June 2017).

CHALLENGES REMAIN



External Challenges such as slow economic growth, non-payments, urbanisation, theft and vandalism, political instability continue to dominate budget allocations

Internal inefficiencies – Employee costs, process inefficiencies, data integrity, technology mis-management, high staff turnover adds to total losses.

**So, how do we maximize revenue protection
and revenue recovery to curb losses and
support service delivery?**

DEPENDENCY ON ENERGY SECTOR



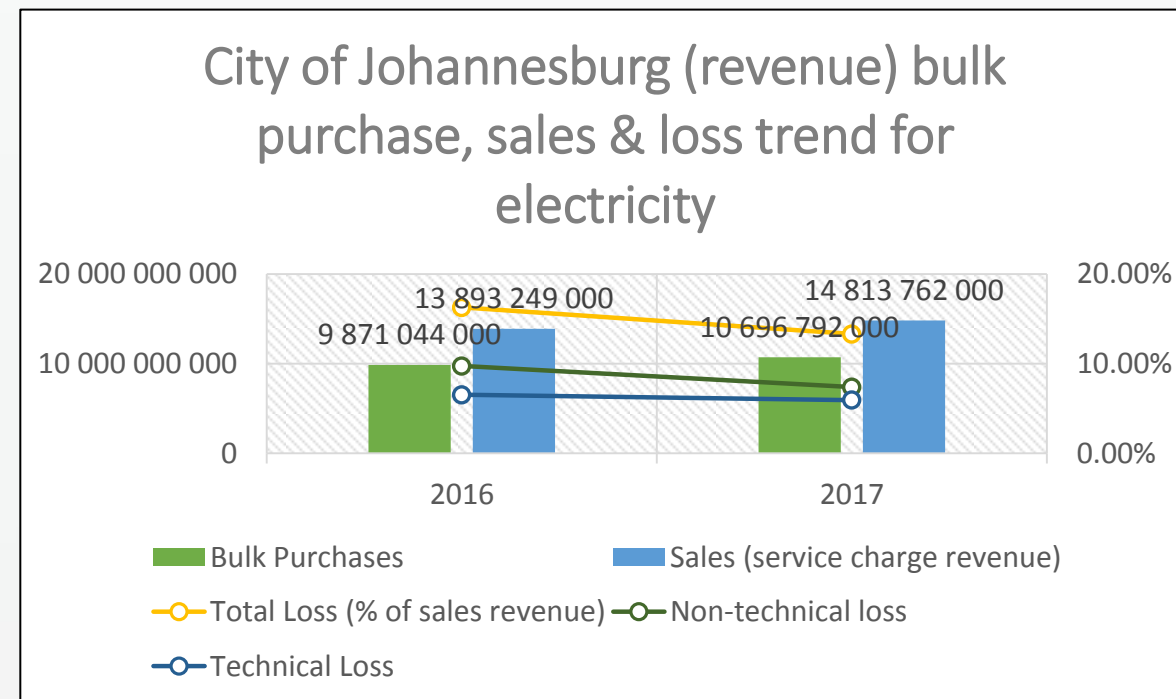
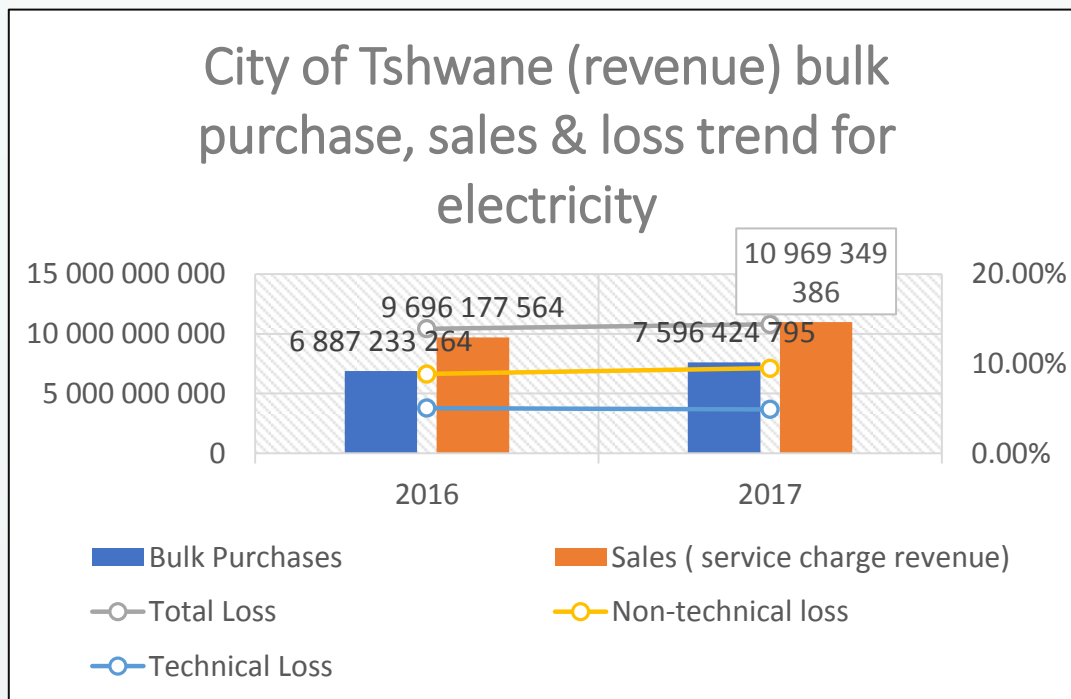
257 SA municipalities earn a quarter of their total income from sale of electricity.

Municipalities earned ZAR22.5 billion in Q1 of 2017 from sale of electricity.

Of the total income ZAR15.7 billion spent on purchase of electricity from Eskom. Only ZAR 7 billion surplus available for other expenses.

City of Johannesburg contributes to 15% of the national sale of electricity followed by City of Cape Town at 13%.

NON-TECHNICAL LOSSES – THREAT TO REVENUE



Source: 2016/17 City of Johannesburg Annual report, City of Tshwane Metropolitan Municipality. Consolidated Annual Financial Statements for the year ended 30 June 2017



Non-technical losses are losses due to energy theft, illegal connections, by-passed meter, inaccurate billing, etc



City of Tshwane, **non- technical losses** have gone **up by** almost **2%** by the end of June 2017.



City of Johannesburg, despite decline in **non-technical losses** at the end of June 2017, the quantum of non-technical loss is **R 1092, 71 million**.

NON-TECHNICAL LOSSES – IMPACT ON REVENUE



Non-technical losses have a dramatic effect on the revenue curve and how much each metering point can support in terms of costs associated to it.



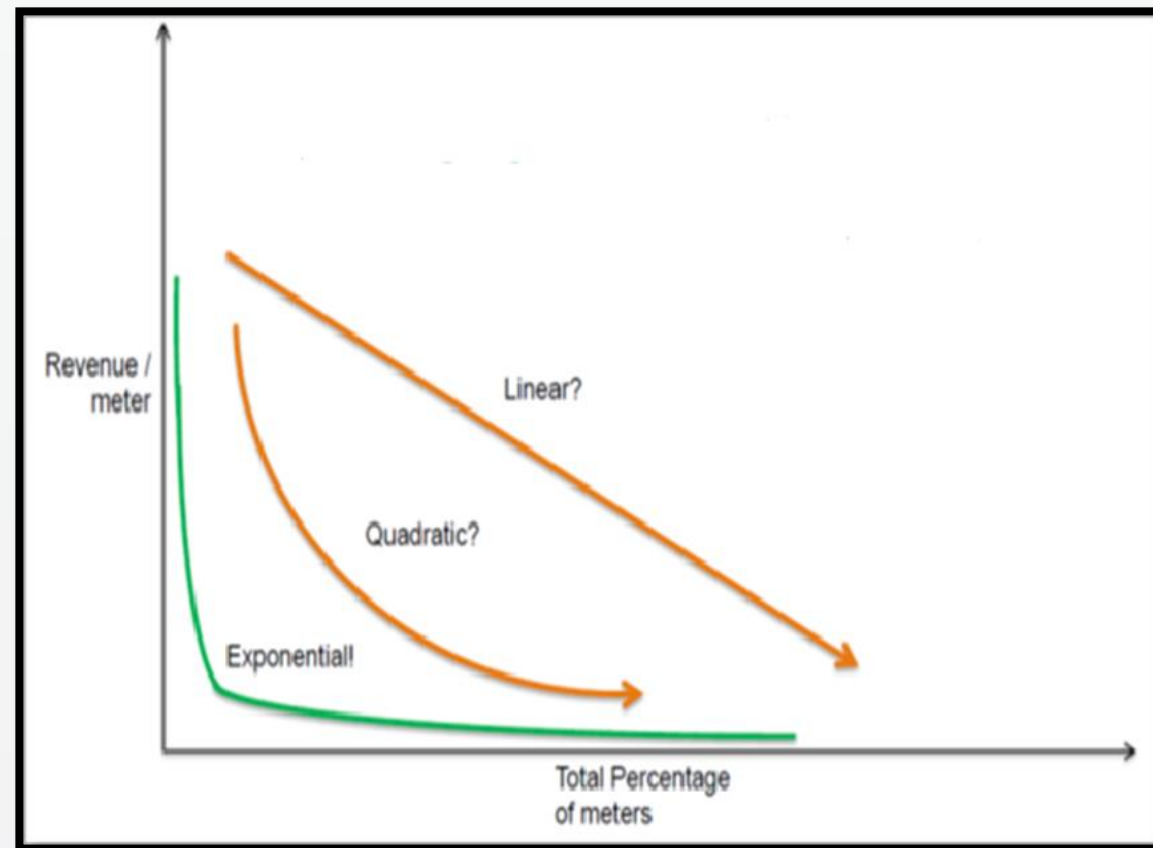
Revenue per meter decreases with every increase in number of meter/ customers.



This is caused by an increase in operating costs of utilities, which is currently increasing at a rate higher than the **% decline** in non-technical losses.



To maintain losses at a sustainable level, utilities will be required to implement **key strategic initiatives** rather than depending upon tariff increases.



WHAT NEEDS TO BE ADDRESSED IN 2018 AND BEYOND



Understanding external macro **challenges** as well internal system inefficiencies in terms of **revenue and costs**.



Addressing internal inefficiencies by deploying only those services that **impact positively on revenue**.



Discontinuing **redundant technology** and **restructuring IT** infrastructure.



Entering into **shared service agreements** with **key stakeholders** to positively impact the City / Municipality Revenue.



Deploying only **Revenue Protection** services.

How can utilities leverage on technology to assist in curbing losses and maximizing service delivery?

BUSINESS CASE – INPUT DATA ERROR

Non-technical loss due to in-accurate meter reads

Single Phase 60A Residential Conventional						
Account Number	Meter Number	Meter Number Found	Reading Date	Reading (Kwh)	Physical Address	QC Status
200200000	CCCC60000	CCCC60000	2018/01/20	61621,00	XXX	Accepted
200200000	CCCC60000	CCCC60000	2018/02/19	61814,00	XXX	Accepted
200200000	CCCC60000	CCCC60000	2018/03/21	619648,00	XXX	Accepted

Domestic Meter Read Input data error: -
Before decimal digits = 6 instead of 5

Based on 2017/18 tariff for Single phase 60A

Incorrect Usage (in kWh)				557834 kWh
	Max. Size	Usage	Tariff(c/kwh)	Amount (ZAR)
Block 1	500	500	110,65	553,25
Block 2	1000	500	126,98	634,9
Block 3	2000	1000	136,35	681,75
Block 4	3000	1000	143,86	719,3
Block 5	300000	554834	150,91	754,55
Sub-total				3343,75
DSM Levy (c/kwh)			2	11146,68
Service Charge				114,57
Capacity Charge				337,52
Total charge for the month				R14 942,52
Average Tariff (c/kwh)				0,03

Incorrect
Bill
Amount

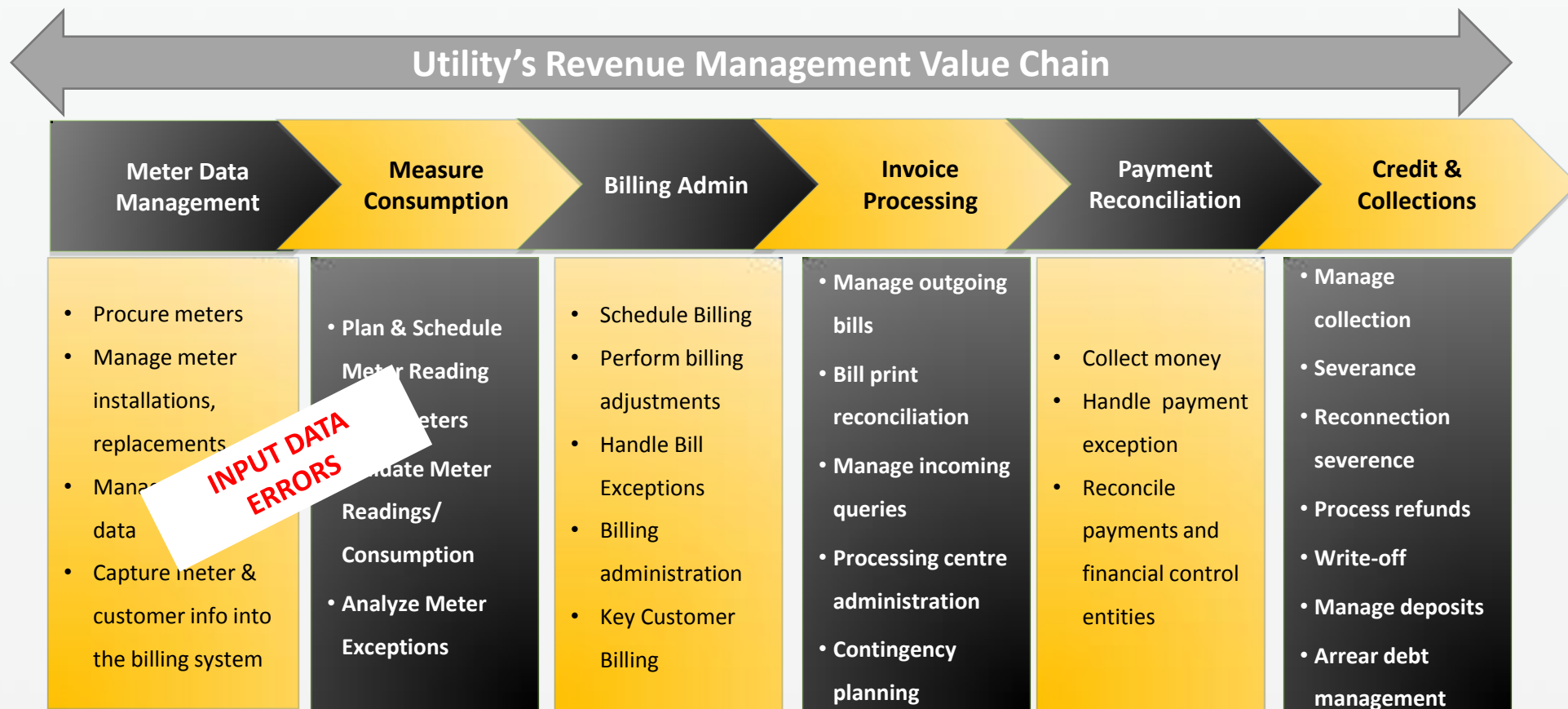
Based on 2017/18 tariff for Single phase 60A

Correct Usage (in kWh)				134 kWh
	Max. Size	Usage	Tariff(c/kwh)	Amount (ZAR)
Block 1	500	134	110,65	148,271
Block 2	1000		126,98	
Block 3	2000		136,35	
Block 4	3000		143,86	
Block 5	300000		150,91	
Sub-total				148,271
DSM Levy (c/kwh)			2	
Service Charge				114,57
Capacity Charge				337,52
Total charge for the month				R600,36
Average Tariff (c/kwh)				4,48

Correct
Bill
Amount

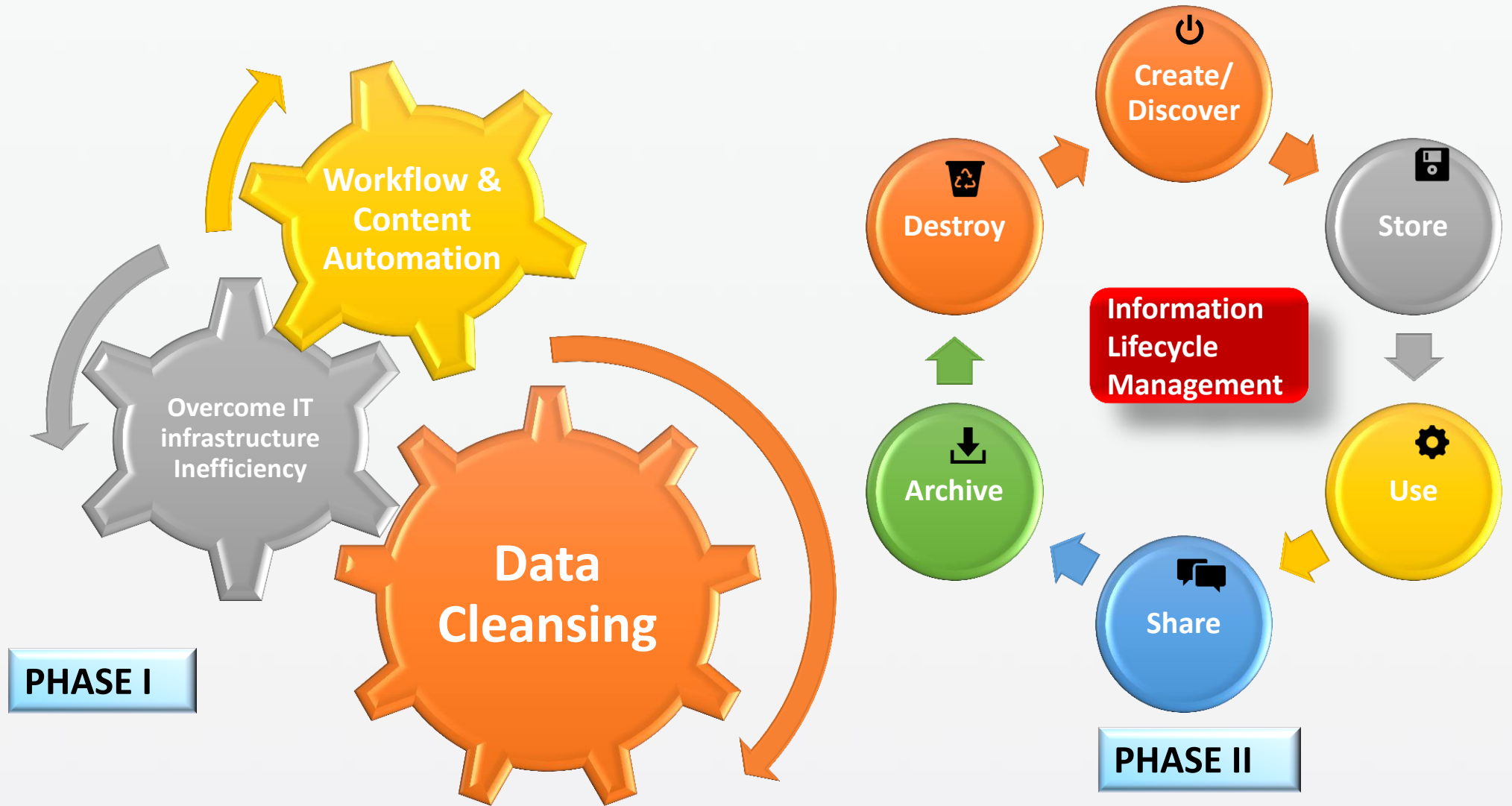


HOW METER READS IMPACT REVENUE ?



- ✓ Utility's operating cost increased by almost 11% year on year from 2014 to 2017.
- ✓ In contrast revenue increased by ~ 6%.
- ✓ To curb costs increase, key initiatives are required.

KEY INITIATIVES FOR MINIMIZING LOSSES



TECHNOLOGY DRIVEN STRATEGY FOR MINIMIZING LOSSES



Arrest upward energy loss trend, stabilise revenue base and recover additional revenue



Data Cleaning

- ⑩ Data Auditing
- ⑩ Consolidating Data
- ⑩ Feedback
- ⑩ Repeat

Overcome IT infrastructure inefficiencies

- ⑩ Data storage
- ⑩ Update technology
- ⑩ Network upgrade
- ⑩ Network optimization
- ⑩ Standard framework for data transfer
- ⑩ Improved Analysis

Workflow & Content Automation

- ⑩ Standardize processes
- ⑩ Software upgrades
- ⑩ Optimum utilization of resources
- ⑩ Manage virtual operations
- ⑩ End to end visibility

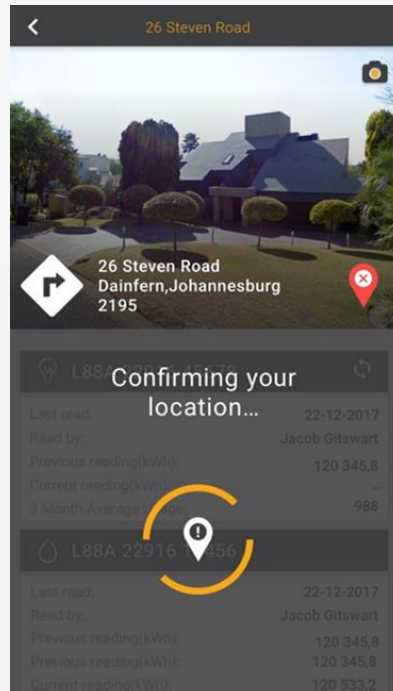
Information Lifecycle Management

- ⑩ Business interface
- ⑩ Business value integration
- ⑩ Storage management integration
- ⑩ Information placement
- ⑩ Physical infrastructure

COMBATING ENERGY LOSSES BY USING WFM APPS

Cloud computing

- ✓ Cloud based mobile and web applications for managing big data analytics for consumption data and billing collections.
- ✓ With built-in QA validations these apps can restructure "Consumption Data" for utilities.



*Auto- confirmation of
GPS location*

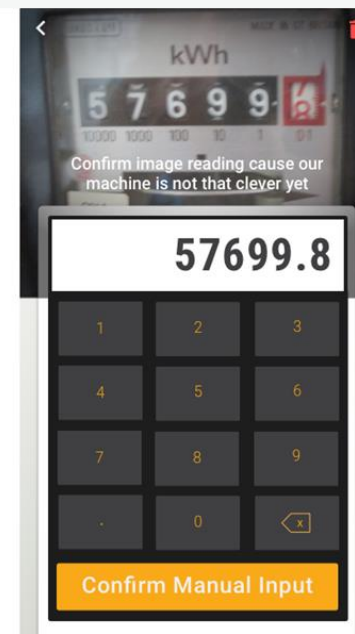
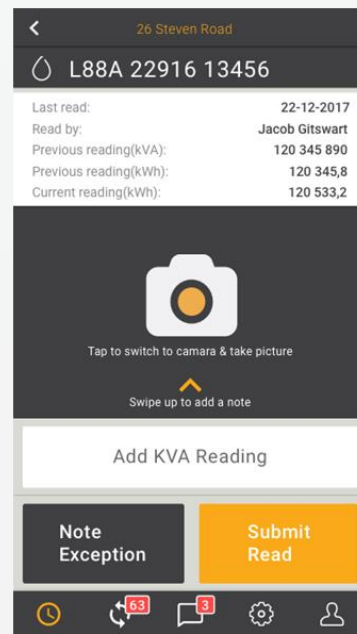


Image recognition for read capture

- ✓ Built-in validations
- ✓ Image capturing data input validation
- ✓ Enhanced reporting and analytics
- ✓ End to end visibility to users

Powered by;



COST BENEFIT ANALYSIS: TANGIBLE BENEFITS



Data Storage

- ✓ Hosted server (fixed cost) = R1400 to R14000 a month.
- ✓ Cloud hosting = usage = R 98 a month for 1 TB of stored data.



Data Cleansing

- ✓ Average rate of R4000/hour ~ R 3 million (requiring 4 Data Analyst to work on any size of data).
- ✓ Cost is 0,2% of amount of non-technical losses accrued.



Workflow & Content Automation

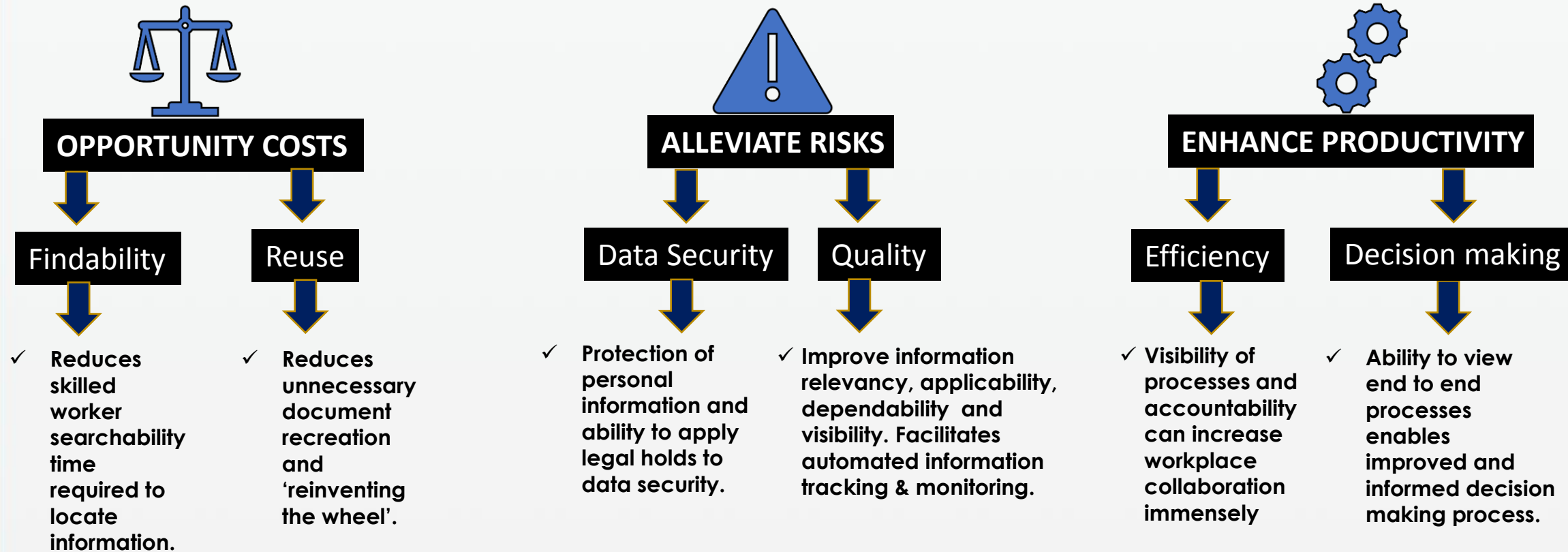
- ✓ Basic project task management automation tool costs = R 8400 a year as licensing fee.
- ✓ Cloud based workforce management tool = R 3,5 million to R 11 million a year.

1 , 2 and 3

- ✓ Pay as you go model = R6 per account per month (includes meter reading, billing, data management, CRM with no costs for infrastructure and extra software licenses)

Spending on each of these services could be accrued by leveraging on tool benefits and improved service delivery.

COST BENEFIT ANALYSIS: NON-TANGIBLE BENEFITS



LESSONS LEARNED



Joint Effort -
Revenue management requires joint effort from different areas;

- ✓ Technical
- ✓ Business
- ✓ Government



Imperative to follow standard business processes.



Defining KPI's to objectively measure success of strategies implemented.



Critical elements for workflow automation -

- ✓ Analytics –
 - ✓ defining user journey for each workflow, identifying data assets and mapping data items to each asset.
- ✓ Development
 - ✓ Development to commence only after analytics completed to avoid redundancy.
- ✓ Testing
 - ✓ Testing end to end workflow automations.



Key stakeholder involvement is highly critical.



Adaptability to changing business models.

CONCLUSION



Digital solutions are available to utilities for their entire value chain. Due to budget constraints, it is imperative for utilities to invest in low cost, high return technologies.



Globally Industrial Development Corporation (IDC) predicts that utilities will utilize 40% of earnings using new business models and services. Key areas of digital landscape are;

- ✓ **Cloud** – Cloud services will make up half of the IT portfolio for over 60% of utilities.
- ✓ **Integration** – Utilities will invest over a quarter of their IT budgets on integrating new technologies with legacy enterprise systems.
- ✓ **Analytics** – 45% of utilities' new investment in analytics will be used in the operations and maintenance of plant and network infrastructure.
- ✓ **Mobility** – 60% of utilities will focus on transitioning enterprise mobility to capitalize on the consumer mobility wave.
- ✓ **Smart systems** – Cognitive systems will penetrate utilities' customer operation to improve service and reduce costs.



Social, Mobile solutions, Analytics, Cloud, and IoT will be the building blocks for digital transformation in utilities.

THANK YOU!!!