REVENUE MANAGEMENT - INCLUDING REVENUE PROTECTION - IS KEY TO IMPROVING THE FINANCIAL HEALTH OF MUNICIPALITIES

By Ben Dorfling and Daniel J de Lange

1. Introduction

Extracts from reports published by National Treasury and the Auditor General reveal that local government is in a state of financial crisis, although there are also pockets of excellence.

On 30 June 2017, metropolitan municipalities recorded water and electricity losses amounting to R3,6 billion (R2.8 billion in 2016) and R6,5 billion (R7.2 billion in 2016) respectively.

National Treasury (NT) reports that municipal consumer debts amounted to R128.4 billion as at 30 June 2017 (compared to R128.3 billion reported in the third quarter). Government accounts for 5.8 per cent or R7.4 billion of municipal consumer debt. The largest component relates to households, which account for 64.8 per cent or R83.1 billion (67.1 per cent or R86 billion in the third quarter). A total amount of R1.7 billion has been written off as bad debt.

According to NT, if consumer debt is limited to below 90 days, then the actual realistically collectable amount is estimated at R24.9 billion, which is 19, 4 percent.

Overall, municipalities are not adequately prioritising expenditure on asset management, which is impacting negatively on service delivery and cash flows.

National aggregate spending on repairs and maintenance as a percentage of property, plant and equipment averages 3.4 per cent while the norm is 8 per cent.

The AG in his MFMA audit outcomes report as at 30 June 2017, reports that the inability to collect debt from municipal consumers is widespread. In these circumstances, it is inevitable that municipalities will struggle to balance the books.

In total, 31% of the municipalities disclosed a deficit – the total deficit for these municipalities amounted to R5, 6 billion. The financial woes of local government also weighed heavily on municipal creditors. The impact of this inability to pay creditors was most evident in the huge sums owed for the provision of electricity and water to Eskom and the water boards respectively. A combination of various factors, including poor revenue and budget management and the non-payment of creditors, led to 31% of the municipalities disclosing in their financial statements that they might not be able to continue operating. Although they have to continue to do so, they were reporting that they were in a particularly vulnerable financial position at the end of the financial year

This paper will highlight the following:

- the negative impact of the deteriorating financial position of municipalities on service delivery
- past reforms to address poor performance
- the National Treasury plans to address the financial distress of municipalities, and
- reasons for failures.

The importance of addressing gaps in the revenue management value chain and keeping track of the developments regarding smart meters, and the Internet of Things to deal with water and electricity losses, are also focus areas.

2. Negative Impact of Accountability Failures on the lives of Citizens

The Auditor General reports that local government accountability failures result in municipalities not achieving their objectives, which in turn has a negative impact on the lives of citizens. The AGSA's audits highlighted three key areas of impact, namely:

- Financial health of municipalities
- Fruitless and wasteful expenditure
- The delivery and maintenance of municipal infrastructure

The AG points out that the poor economic climate does play a role in the deterioration of municipalities' financial health. However, many are just not managing their finances as well as they should.

The AG also highlights the poor financial health of municipalities and indicates that one of the main contributing factors is **POOR REVENUE MANAGEMENT.**

It is clear that the many gaps which exist in the Revenue Management Value Chain, absence of effective Revenue Protection measures, and poor internal controls, are also contributing significantly to the current poor financial health of many municipalities.

3. Past Reforms

South Africa's local government financial management system has undergone a number of reforms and there has been considerable progress.

However, there is still a long way to go before all municipalities are fully functional and sustainable. It is internationally acknowledged that South Africa has some exceptional financial management legislation and practices but these must be institutionalised if overall performance objectives are to be achieved.

The financial management reform agenda for local government is an evolutionary process and needs to be nurtured to maturity. Government has initiated a number of capacity building initiatives to support municipalities in achieving this:

- Capacity building grants-FMG (Since 2004)
- Municipal Finance Improvement Programme (MFIP) Phase II
- Province-specific strategies
- Cities Support Programme (CSP)
- Standard Chart of Accounts for Municipalities (mSCOA)
- The Back to Basics approach (in September 2014, the President launched the Back-to-Basics Programme (B2B))
- Financial Management Capability Maturity Model (FMCMM) (An assessment was conducted in all municipalities and their entities in 2015)

So far, none of these important support programmes have been able to make a significant impact on the overall performance of municipalities, which is a cause for concern.

4. Reasons for the Accountability Failures

The AG's report singles out the following as some of the major contributors to the accountability failures and the regression in audit outcomes:

- Vacancies and instability in key positions slowed down systematic and disciplined improvements. Inadequate skills led to a lack of oversight by councils (including the mayor) and insufficient implementation and maintenance of financial and performance management systems by the administration.
- Political infighting at council level and interference in the administration weakened oversight, hindered dealing with consequences and made local government less attractive for professionals to join.
- Leadership's inaction, or inconsistent action, created a culture of 'no consequences', often due to inadequate performance systems and processes.
- At some municipalities there was a blatant disregard for controls (including good record keeping) and compliance with key legislation, as it enabled an environment in which it would be easy to commit fraud.
- Leadership did not take repeated audit recommendations and warnings of risks for which they needed to prepare seriously.
- Municipalities focused on obtaining unqualified financial statements at a great cost by using consultants and auditors, which was to the detriment of credible performance reporting and compliance with key legislation.
- Provincial and national role players did not sufficiently support municipalities.

The AG has placed the staff turnover at the senior management at the top of his list of reasons for failures at municipality. There is no doubt that no institution can perform without skilled, dedicated and committed leaders with vision and the ability to do the job.

It may be time that municipalities appoint their departmental heads, who should be career professionals, on permanent employment contracts to promote certainty regarding employment and stability at senior management level.

5. National Treasury Measures to Deal with the Financial Distress at Municipalities

In the NT's State of Local Government Finances and Financial Management report as at 30 June 2017, the following measures are proposed to deal with the financial distress at municipalities:

5.1 Short Term Measures

- Initial focus is on the top creditors (per the s71 report), which in all probability include Eskom and water boards debt, but is limited to those municipalities with liquidity challenges. This means that each province will identify municipalities in financial crisis to prioritise for support.

- Provincial Treasuries, in collaboration with the National Treasury, should undertake a robust budget assessment of the adjusted 2017/18 budget, and tabled and adopted 2018/19 budgets for prioritized municipalities to ensure that:

    - The budgets are funded
    - the budget includes adequate provision for realistic payment arrangements entered into with any creditors. In this way, the municipality will be in a better position to structure affordable payment arrangements that will be honoured. This must be a pre-requisite before the budget is adopted by the respective councils.

- National Treasury will facilitate discussions with the government departments that owe these municipalities so that settlement can be linked to the DPW debt verification process.

- It is proposed that a committee comprising National Treasury and the relevant provincial treasuries (including other relevant stake holders) be constituted for each province to support these municipalities to implement financial turnaround strategies (action plan) until there is measurable cash flow improvement. The current debt forums in the province may provide a platform for monitoring.

- This initiative should be formalised by its inclusion in updated and prioritised provincial-specific municipal support strategies of the provincial treasuries.

- To ensure success of this approach, resilient monitoring and oversight of the 2017/18 budget implementation by provincial treasuries will be required.

- National Treasury will work jointly with provincial treasuries to implement other initiatives to assist municipalities to address weaknesses in specific financial management discipline, including budgets and revenue management. This will include engaging with other stakeholders such as DCoG to address matters of governance, service delivery, institutional and human resources challenges that are eminent in these municipalities.

- National Treasury emphasises the need to improve revenue and to reduce expenditure not aligned to core services, through the introduction of an action plan that will culminate into a holistic financial recovery plan in the longer term.

5.2 Medium Term Measures

In cases of failure of the municipality to honour this arrangement, National Treasury will support the relevant provincial treasury to enforce financial recovery measures in terms of chapter 13 of the MFMA by invoking section 216(2) of the Constitution against any defaulting municipality which consistently fails to honour its credit obligations, thereby undermining the measures prescribed in section 215(1) of the Constitution. Alternatively, provinces can also choose to invoke section 139 of the MFMA in the failing municipalities.

Invoking section 216(2) will also send a strong message to defaulting municipalities that maladministration, financial mismanagement, corruption and fraud will not be condoned at the expense of service delivery

5.3 Long Term Measures

Since there are existing areas in the MFMA and MSA that are not clear, and these areas impose confusion on roles and responsibilities and duplication of effort in certain instances during the implementation of the Acts, National Treasury and DCoG must endeavour to resolve these differences for a more conducive operational environment.

Opportunities to bring about alignment by clarifying roles, responsibilities and accountability and enabling these changes into legislation will require ongoing engagements at provincial and national department level as well as legislature levels. The strengthening of collaboration, coordination and sharing of information between the departments will form a basis upon which the above changes can be practically implemented. Such forums and engagements must be regularized to ensure coherent actions.

The financial recovery services of National Treasury will participate to prepare a recovery plan that incorporates the action plan for finance mentioned above.

Reports will be prepared and presented to Parliament and Legislatures by National Treasury and provincial treasuries. Such reports will be enhanced with measures that will be included arising from the alignment and amendment of the MFMA and MSA.

Provinces and National Treasury will report to the MSCOA on progress on a quarterly basi,s and when required.

The National and Provincial support programmes are valuable in the building of institutional capacity and the identification of root causes of the challenges facing local municipalities. It is however a concern that the turnaround strategies implemented are not having the desired effect. It is therefore important that municipalities focus on addressing the gaps in the Revenue Management value chain.

6. Revenue Management Value Chain (RMVC)

A combination of factors could contribute to financial distress, resulting in a situation where a municipality is unable to meet its financial commitments and service delivery mandate.

It is therefore important to identify the factors that may give rise to the current situation and to undertake a detailed RMVC assessment (AS IS) and provide detailed process and action plans for the future (TO BE). These issues are summarised below and demonstrate the complexities to be considered.

6.1 Revenue Management Value Chain Analysis (RMVCA)

The gaps identified in the RMVCA should be categorized and grouped in the Revenue Management Plan and should be based on the following premise:

Revenue generation is everyone’s responsibility, not just that of the revenue management unit. Municipalities must effectively manage all functions that impact on protecting and growing their revenue base. The implementation of internal controls along the revenue value chain will aid effective data handovers. Utilizing system data validation mechanisms and ensuring service level standards are fundamental to maintaining the integrity of billing data. Municipalities tend to neglect these basics and opt for costly ‘data cleansing’ exercises; however it is protecting the data integrity at source that will yield longer term benefits.

The following are fundamental to maximizing the potential of existing revenue sources and debt collection programmes:

- The billing system must correctly reflect all billing data and customer data that is required to issue an accurate invoice on time to the relevant customer;
- All properties within the area of jurisdiction of the municipality must be correctly valued, whether in the General Valuation Roll or Supplementary Valuation Rolls, and the billing system must be updated with any change in property ownership. This is necessary to grow and protect the property rates base of the municipality;
- Effective business processes to ensure that new property development and improvements to existing properties are valued as required and that billing records are updated accordingly; this requires good working relations between the town planning, valuations and revenue management functions of the municipality;
- Correct categorisation of properties in terms of the Municipal Property Rates Policy. This impacts usage and property rates tariffs applied to the properties;
- Property usage must be correctly recorded so that the relevant property rates tariff is applied to the property. Changes to property usage must also be communicated to the revenue function so that the debtor's system is updated;
- Water and electricity meter numbers must be recorded correctly and linked to the corresponding property on the debtor's system (specifically pre-paid electricity meters);
- Water and electricity meters must be adequately maintained to minimise losses due to leakages or incorrectly measured consumption;
- Water and electricity meters must be read regularly and accurately so that the correct consumption information is recorded on the billing system. Meter reading estimates must be minimised or at least undertaken in accordance with the Credit Control Policy prescriptions of the municipality;
- Refuse and sanitation service charges must be included in the billing records. These services are often neglected as a source of revenue. In fact, some municipalities operate refuse removal services at a loss;
- Billing records must be routinely reconciled to the source of the billing data and customer data;
- Billing queries must be resolved within reasonable timeframes;

- Debt collection and debt management methodologies and technologies need to be updated to ensure that long outstanding debt is recovered, and that debt outstanding for 30 days is prevented from moving into the 90 days and 120 days categories

Municipal functions must be adequately staffed with skilled individuals who understand the job requirements and how to deliver on them.

A Revenue Management Plan should be implemented to ensure sustainability of the municipality, which should inter- alia include targets for debt collection, distribution losses and cash flow management which should be included in the performance contracts of senior management.

6.2 Revenue and Cash Flow Management

Revenue and Cash Flow Management is based on four legs:

- Revenue management;
- Revenue Growth;
- Revenue protection; and
- Cash Flow Management (Debtors)

The focus of the paper will be on revenue protection.

6.2.1 Revenue Protection

The term "Revenue Protection" is a colloquialism used to refer to the prevention, detection and recovery of losses caused by interference with water, electricity, gas and other supplies.

Losses can occur as follows:

- Omissions of valuations;
- Omissions of water and electricity meter numbers on the debtors' file;
- Omissions of tariff codes in the debtors' ledger;
- Non-existent or broken water meters;
- Non-existent or broken electricity meters;
- Illegal connections for water and electricity;
- Tampering with water and electricity meters; and

- Bridging of water and electricity supply.

7. Revenue Protection Measures - Multi Disciplinary Task Teams (MDTT), Smart Meters and the Internet of Things

It is a fact that municipalities should be looking into the future to adopt smart revenue protection solutions. However, due to financial constraints confronting municipalities, there will always have to be a plan B to deal with the current problems and losses of revenue. One of the approaches adopted by municipalities is the Multi-Disciplinary Task Team (MDTT) to undertake asset verification and remedial action.

7.1 Multi-Disciplinary Task Teams (MDTT)

The establishment of Multi-Disciplinary Task Teams to audit sites is an effective means of asset verification, combatting electricity and water losses as well as identifying properties where owners are not complying with town planning and land use regulations.

It may be advisable to adopt a phased approach to creating the MDTT's. The first step is to identify a project area for a pilot project. The pilot project should test the viability of the proposed solution and can also act as a blueprint to update and optimize the operational processes.

It may be advisable for the field operations to consist of two separate but sequential actions. The first action is the physical meter audits. The primary aim of the audit is to update the meter records and to identify each meter position with an accurate GPS coordinate. There are many software solutions available in the market to facilitate the audit and asset verification processes. The audit teams should finish the work in a designated area and the next action would be to initiate rectification of any tampering or replacement of meters. The follow up action addresses the remedial field work identified by the initial audit, therefore processes and systems should be in place to coordinate these actions and ensure that all transactions are recorded in the financial and billing systems. These operations should be executed by a specialised remedial team responsible for the remedial actions. The advantages of this approach includes:

- The audit team should focus on the data acquisition.
- There is negative impact in terms of access when tamper disconnections are started. By completing the audit sweep, the level of access to the installations will be much better.
- The normalization team's skill set should be selected to contribute towards the remedial tasks to be performed. It should be tested how the audit and remedial teams will work together to promote efficiencies.

A structured Revenue Protection Division in municipalities should ideally consist of regional offices and field teams reporting to each office. The focus should be on reducing losses over the entire meter base.

Operating from a Command and Control Centre to coordinate and manage activities should also be considered.

The audit must be conducted by a team consisting of at least the following;

- Team Leader (Managerial level);
- Finance Officers
- Electricians
- Plumber
- A Plumbing Assistant
- A Building Inspector
- Law Enforcement Officers
- Other Protection (If the situation dictates)

The responsibilities of the team members are as follows;

Team Leader

- Keep the team together and make decisions on reported matters
- See that all documentation is completed
- Sign off on all documentation

Finance Members

- The legal use of the property. If residential and rooms are let, it must be rated as a business (Building Inspector must assist)
- Evaluate the outcomes of the audit
- Complete the documentation
- Change of meters, final readings etc.
- Calculate the immediate amounts to be charged
- Indicate the charges that need to be made on the account (including fines)
- Indicate the change of meter numbers.

Electricians

- Check whether the property has a pre-paid meter for electricity
- Check whether the pre-paid meter is bridged or not
- If the meter is bridged remove the pre-paid meter immediately

- Cut the Electricity to the premises
- If the pre-paid meter is not bridged, indicate the credit on the metering device to the Finance members
- If Not Pre-paid, check the conventional meter to ascertain whether it is operational or not
- If not operational, take reading
- Replace conventional meter and indicate new number to the finance member
- If operational, take reading and indicate to the Finance member
- Remove any illegal connection in the meter boxes or around the premises.

Plumbers

- Check whether the property has a pre-paid meter for Water
- Check whether the pre-paid meter is bridged/bypassed or not
- If the meter is bridged/bypassed, correct the bridging/bypass immediately
- Restrict the water to the property
- If the pre-paid meter is not bridged, indicate the credit on the metering device to the Finance members
- If not pre-paid, check the conventional meter to ascertain whether it is operational or not.
- If not operational, take reading
- Replace conventional meter and indicate new number to the finance member
- Remove any illegal connection.

Building Inspector

- Check for any irregular land use or buildings that deviate from approved plans.

The Revenue Protection Unit responsible for the MDTT operations should report to the Municipal Manager and should operate independently from other departments.

7.2 Smart Meters and the Internet of Things (IoT)

Existing electricity billing systems have major drawbacks due to the manual work involved, such as meter reading and transferring data into the billing system. Systems have been developed which are based on wireless networks. The client and server relationship through IOT and the municipal office can monitor the energy meter of all consumer homes on real time basis.

The prepayment industry came about through the convergence of electronic measurement technologies and low voltage switchgear technologies. It is increasingly apparent that these technologies are now converging with public communication infrastructures, thereby spawning a new generation of “Smart Theft Detection” using IoT.

7.2.1 IoT Based Tamper or Theft Prevention System for Electricity Energy Meters

So what is the future?

An embedded system to prevent electricity theft with the use of Internet of Things is the future.

This embedded system consists of a Wi-Fi module attached to the electricity meter for the purpose of connectivity, and a microcontroller for controlling the major functions. The Passive Infrared (PIR) sensor is being used for the purpose of sensing the tampering attempt and Solid State Relay is used for the purpose of detecting the tampering attempt. In addition to this, there is an additional facility for sending the GPS location of the meter to the distribution company portal or Electricity Board server. Thus, the proposed system will reduce electricity theft and make the electricity system smart.

8. Change the Payment Culture to Improve Revenue Assurance

Industry conversations refer more and more to smart grids and positive energy, but finally time has come to focus on the most interesting technology and energy efficiency.

Energy as well as water should be seen as a treasure and a rare resource, and should be used and managed in a clever way: to minimise and optimise consumption, while securing the metering device and associated payment solution.

It is recognized that improved revenue protection requires more than mere technological improvements. There is no substitute for proper, independent audits.

The common practice of supply disconnection upon detection of (probable) tampering should be avoided in favor of "a detect and alert strategy". This minimizes consumer frustration and aggression arising from inadvertent supply interruptions.

These are some of the ideas and developments that are taking place to enhance the Revenue Management Value Chain. Municipalities should be able to collect all revenue due to them and to apply the revenue protection technologies and methodologies to produce the cash flows necessary for them to perform their mandates.

9. Conclusion

Water and electricity losses have reached levels where municipalities need to take immediate action. The establishment of Revenue Protection Units to coordinate the activities Multi-Disciplinary Task Teams responsible for asset verification and identification of meter tampering, will reduce water and electricity losses.

It is a fact that new technologies will make it possible to achieve the objectives of improved revenue management and reduction of water and electricity losses, but it is the people who will make it happen.

Technology and systems can only be used effectively when people have the will and knowledge to do so. The implementation of smart grids and smart technologies and systems will require effective training as well as an educational component so that users and customers understand and grasp the value of the system and the role they need to play.

The improvement of metered consumption and billing systems can change the attitudes and willingness of customers to pay for services. The introduction of smart technologies and other revenue protection measures should therefore be aimed at changing the attitudes and behavior of the customers to a willingness to pay municipal accounts. This will only happen when customers experience good service delivery standards priced fairly and when they are presented with accurate and efficient billing and collection processes.

A Revenue Management Plan should be implemented to ensure sustainability of the municipality to perform its mandate and should inter- alia include targets for debt collection, distribution losses and cash flow management which should be included in the performance contracts of senior management.

The day when municipal customers prioritise their municipal bill in their wallets is the day when cash flows of municipalities will improve significantly.

References

1. National Treasury section 71 reports published in their website.
2. The State of Local Government Finances and Financial Management as at 30 June 2017
3. Extract from AG'S comments on 2016/2017 AUDIT REPORT
4. ARE YOU READY FOR THE PREPAID METER REVOLUTION? All you need to know about the benefits of prepaid meters - A Frost & Sullivan
5. Theft Detection and Disconnection in Automated Electricity Energy Meter: A Survey Dr. S.S. Sayyed1, Roshani Choudhari2, Prashant Tribhuvan3, Sagar Salvi4, Anuradha Amte Computer Engineering Department, Savitribai Phule Pune University, Pune, Maharashtra, India