A phased approach to efficiency improvement in low-income countries: the case of the National Water and Sewerage Corporation in Fort Portal town, Uganda

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Abstract Most water and sewerage utilities are faced with the challenges of improving efficiency and will pass on gains to their customers. The challenges are more in low-income countries especially those in Africa. There has been a lot of on-going debate and studies about approaches and options to water utility efficiency improvement in these countries to meet the Millennium Development Goals (MDGs). About ten years ago the emphasis was on private sector participation (PSP). Consequently, most development partners propagated this approach and even went to the extent of conditioning PSP implementation to funding. The option delivered varied degrees of successes contingent on the operating contexts in those countries. Attempts to mitigate the wrong contexts and conditions to suit the PSP have proved to be more expensive than potential benefits from the option itself. As a result, many low-income countries have been compelled to be more innovative and widen the scope of solution search. The debate currently is, therefore, about performance improvement other than PSP options. This paper presents a phased approach to efficiency improvement taken by National Water and Sewerage Corporation (NWSC) of Uganda in the last seven years. We discuss mechanisms that NWSC has used to achieve significant efficiency gains. Managerial incentives and autonomy are at the centre of the successes registered. We also draw conclusions on how private management principles can be introduced into the public sector to improve efficiency.

Keywords Efficiency gains; IDAMCs; incentives; monitoring; public-public partnerships; public utility; reforms

Introduction

The National Water and Sewerage Corporation (NWSC) is a public parastatal, wholly owned by the Government of Uganda. It was initially established by Decree No. 34 of 1972, following an earlier study on the need for improvement of water and sanitation services in the large urban centers of Uganda. In 1995, the Corporation was re-established by the NWSC Statute, with the primary aim of revising the objectives, powers and structure of the Corporation and to enable it to operate on a commercial and viable basis. In 2000, the NWSC Statute was incorporated into the volumes of the Laws of Uganda to become the NWSC Act of 2000. The mandate of the Corporation as defined in the NWSC Act is to operate and provide water and sewerage services in areas entrusted to it, in a more cost effective and efficient manner.

Presently, the NWSC operates in 15 towns namely: Kampala (capital city of Uganda), Jinja, Entebbe, Tororo, Mbale, Masaka, Mbarara, Gulu, Lira, Fort Portal, Kasese, Kabale, Arua, Bushenyi/Ishaka, and Soroti. The Corporation is in the process of effectively adding four new towns of Iganga, Mukono, Malaba and Lugazi on to its operational frame, bringing the total number of towns under its jurisdiction to 19. As of June 2004, the population in the NWSC’s 15 towns was estimated to be about 2.2 million, representing about 75% of the population in large urban centers, which are defined as those with
The population served in the NWSC 15 towns is estimated to be 1.4 million, translating into service penetration of 65% and 10% for water and sewerage, respectively. The total number of connections is 100,475 and the average water production stands at 150,944 m$^3$ per day. Other indicators include total annual water sales of 34.2 million m$^3$ and annual turnover of Ushs. 42.6 billion (US$ 24.3 million).

The Government of the Republic of Uganda has rightly placed itself and is on track to achieve better water and sanitation coverage. Only well-managed utilities and a well-run sector will be able to meet the global challenge of expanding water and sanitation services in a sustainable manner, and ultimately achieve UN Millennium Development Goals of halving the proportion of people without access to water and sanitation services by 2015.

In the 1980s and early 1990s, the performance of NWSC was largely inadequate. The political instability in the country during the period 1970s to 1986 contributed significantly towards running down the corporation. Frequent breakdowns in the ageing distribution network, coupled with lack of maintenance, made tap water an increasingly scarce commodity in Kampala city and other towns of Uganda. Sewer overflows on the streets was a common feature. Cash flow problems became acute, resulting into huge budget deficits due to poor revenue collections and high operating costs. There were no incentive activities available for managers to optimize revenues and contain costs. As a result, employees were very unproductive with an attendance-based culture, non-revenue water was over 60%, and weak customer service orientation together with bad management was running down the corporation.

In the meantime, the wind of privatization in the early 1990s had reached Uganda and the Government was under donor pressure to undertake structural economic reforms. Private sector participation was seen as a solution to improve efficiency in water and sewerage utilities worldwide and NWSC was clearly ready for this management option in the face of development partners and the Government of Uganda. Consequently, in 1997, NWSC entered into a three year management contract with JBG Gauff, a Ugandan based Germany consulting firm, to manage water and sewerage services in Kampala city. This specific improvement programme was called Kampala Revenue Improvement Project (KRIP). The project was procured through single sourcing and this approach ultimately resulted in significant loss of advantages normally associated with a competitive and transparent bidding process.

Towards the end of 1998, it was apparent that KRIP would not deliver expected efficiency gains without carrying out organizational changes within NWSC. This led to revolutionary changes in NWSC that brought in a new Board of Directors, who subsequently appointed a new Managing Director to run the utility. The task of the new Managing Director (MD), Dr. William Tsimwa Muhairwe, was to turnaround the Corporation by strengthening both the commercial and customer orientated activities, which were never emphasized before. The new MD was expected to implement significant internal reforms aimed at delivering the same efficiencies that privatization would have otherwise brought. As a first task to make the utility financially solvent and even profitable, Dr. Muhairwe launched a 100-day programme to turnaround the Corporation by aggressively decreasing operational costs and increasing billing and revenue collection. By end of 100 days in May 1999, it was clear that NWSC was in a turnaround mode. The cash position had significantly increased and continued financial strength was ensured. The success of the 100-day programme was a key ingredient into subsequent change management

1 Collection efficiencies of less than 60% were very common in all NWSC towns.
programmes that increasingly turnaround NWSC performance. All these programmes have been carried out under public–public partnership settings in other NWSC towns in parallel with public–private partnership setting in Kampala. As such, NWSC management has largely today remained in public hands, operating under continuous internal performance improvement programmes. This arrangement option has produced good results so far that have turned around NWSC from a loss-making public utility to a profit-making utility and promises better long-term results. The approach of using internal reforms, deriving heavily from private sector management principles, is the first of its kind in the region and involves getting a publicly owned and operated utility to match or exceed what the private sector can deliver. It also encompasses separation of operations from the monitoring/regulatory activity but maintaining a strategic guidance role. Similar options have been tested in the United States of America and found to be successful and more so in Washington DC’s District of Columbia Water and Sewerage Authority (WASA). The latter is a publicly-owned semi-autonomous utility serving the World Bank, the most influential institution that was at the heart of promoting water privatization (Gutierrez, 2003).

This paper draws from the authors own experiences as operational and performance monitoring managers in NWSC for over ten years. More and particularly the authors share their own experiences in the last six years where they were involved, as key champions, in implementing the change management programmes in NWSC operational business units (Mugisha et al. 2004a, b). We present a detailed analysis of the continuous improvement programmes carried out to maximize efficiency gains under public-public settings that many economists argue only competitive markets can provide.

**Continuous internal performance improvement initiatives since 1998**
The year 1998 is known as the magic year in NWSC. As already pointed out above, during this year, NWSC got a new Board and Managing Director who initiated the first strategy to turnaround the corporation from loss-making to profit-making under the wind of change management. Since then, a lot of short-term initiatives have been undertaken. These include a 100 day programme (February–May 1999) and a Service and Revenue Enhancement Programme (SEREP I&II), August 1999 to August 2000. The efficiency gains resulting from these programmes prompted the Government of Uganda and other stakeholders to develop confidence in NWSC performance improvement initiatives. To allow the initiatives to continue in a rational manner, the Government of Uganda (GoU) entered into a performance contract with NWSC’s management for a period of three years starting from September 2000 to June 2003. This contract provided for a temporary freeze of NWSC long-term debt until the year 2003. The debt relief was aimed at enabling NWSC to further consolidate its efficiency gains, and generate adequate revenues to meet its internal cash flow needs, before embarking on loan repayments. As a means of operationalizing the GoU performance contract, Area-Performance Contracts (APCs) were formulated for all NWSC areas of operation, and the service delivery arms of the corporation. The APCs formed the basis for implementation of the activities of the overall GoU performance contract (Mwoga, 2003). The one-year renewable rolling APCs became effective on 1st October 2000 and were designed to:

- increase managerial and financial autonomy of area offices;
- promote commercial orientation through business plans development;
- create result and performance-oriented management and performance;
- increase accountability and clear separation of roles between business units utilities (agents) and headquarters (principal);
- introduce and enhance cost optimization;
introduce incentives and disincentives as drivers of performance.

In a bid to accelerate achievement of corporate and Government of Uganda performance targets, the ‘Stretch-out’ programme was initiated during the implementation of the APC. The programme was designed to tackle all operational constraints encountered during APC implementation. Specifically, the programme was designed to address the following organizational facets:

- Increased autonomy to areas of operation.
- Simplicity: reduction in bureaucracy.
- Motivation: increase in speed of work.
- Worker involvement: all workers involved in the whole exercise total picture of identifying opportunities to improve efficiency throughout the stretch-out workshops and actively participated in business planning (setting SMART targets/doing SWOT analysis) by bottom-up approach. Every worker developed his own goals to achieve agreed upon targets.
- Transformation: removing organizational boundaries.
- Incentives: rewarding performance and penalizing non-performance (one-minute praise and reprimands).

NWSC is currently implementing the Internally Delegated Area Management Contracts (IDAMCs) as part of its 2003–2006 corporate plan. The Corporation embarked on the transformation of APCs into IDAMCs in December 2003 to be able to meet the more stringent corporate and the second Government of Uganda contract targets. The second GoU/NWSC performance contract signed in December 2003 builds on successes of the first contract; consolidates efficiency gains and is aimed at enhancing sustainability of operations. The principal objectives of the IDAMCs include increased managerial accountability and performance-based pay that assigns more operating risks to the operating entities. In addition, payment of core partners under IDAMCs is partly based on the achievement of key performance indicators.\(^2\) The obligations of the contracting parties are more clearly defined to avoid conflicting responsibilities of either party. The IDAMC award process to a successful operator incorporated a significant internal competition activity, unlike other previous contracts where there was no competition. Furthermore, there is strong customer-driven management at all levels of the Corporation and more autonomy regarding personnel, managerial and financial matters.

The other key feature distinguishing IDAMCs from conventional management contracts involving private operators is that IDAMCs are litigation-free partnerships. The NWSC board is the final arbitrator in disputes. In addition, the NWSC headquarters performs the contract management (performance monitoring/regulation) and asset holding roles. In other words, the IDAMC is a quasi-Private Sector Participation (PSP) or public–public partnership (PPP) management model. This strategy is in line with the wider sector reform tenets of increased PSP management and the separation of asset holding and regulatory functions from operations.

The IDAMC model was initially implemented in seven pilot towns of Jinja, Entebbe, Mbarara, Mbale, Masaka, Fort Portal and Kasese. The model has since been extended to cover all the NWSC towns because it proved to be a good efficiency driver in those towns where it was first implemented.

As an alternative performance improvement strategy, NWSC has also encouraged PSP in Kampala, the capital city of Uganda. Kampala is NWSC’s largest area of operations, accounting for more than 70% in terms of revenue, water production and infrastructure.

\(^2\) The IDAMC key performance indicators include: non-revenue water; collection period; connection efficiency; cash operating margin; and working ratio.
The first management contract, called Kampala Revenue Improvement Project (KRIP) was with JBG Gauff Ingenuire — a Uganda-based Germany Consulting Firm. KRIP was a three-year contract that ran from 1997 to 2001. The second management contract was a two-year programme that ran from March 2002 to February 2004. In this case, the Operator was Ondeo Services Uganda Ltd. (OSUL), a French water firm registered in Uganda. When the OSUL contract expired in February 2004, NWSC took over Kampala water and sewerage operations under the IDAMCs framework in March 2004.

**Fort Portal town’s experience in improving efficiency in operations**

As already mentioned, Fort Portal town is one of the nineteen towns under NWSC. It is located in the western part of Uganda, about 300 km from the capital city of Kampala. The population in the town is about 42,000 people. The source of water is the River Mpanga that flows from the Rwenzori Mountains and has seasonal quality and quantity fluctuations.

Until 1997, responsibility of managing water and sewerage service delivery was directly under the Directorate of Water Development of the Ministry of Water, Lands and Environment. Water supply was very unreliable with residents getting supply for about six hours a day. More than half of the water supplied was unaccounted for (high system losses, illegal connections and non-functioning meters). It was a typical state-ran water utility, with high levels of inefficiency and mismanagement. Its water supply and sewerage system was rehabilitated and extended using funding from the Germany Government under KFW. Consequently, the town was handed over to NWSC in 1997.

**Key reform achievements**

The wider over-arching internal change management programmes in NWSC since 1998 have already been described above. These continuous internal performance improvement programs have been implemented by NWSC with Fort Portal area as a pacesetter of change management. Fort Portal’s specific reform objectives included reduction of operating and maintenance costs thereby and generating savings while providing a better quality service. Others are reduction of non-revenue water, increasing sales and revenue collection, enhancement of service penetration and customer care, in addition to strengthening the capacity of employees to take on bigger challenges.

Seven years down the road, significant efficiency improvements have been realized in Fort Portal. These include reducing and sustaining non-revenue water at 10% of system volume input, increasing service connections by 133% from about 900 to 2,100 as at end of December 2004 and, achieving accounts 100% meter coverage. In addition, water service coverage has increased from about 30–70%; annual turnover has improved by over 50% from about Ushs. 276 million (million US$ 158,000) to Ushs. 648 million (US$ 370,000). The latter has, in turn, significantly improved the financial sustainability of the utility. The billing efficiency has continued to improve and is are currently at 90%. The deliberate cost containment measures have significantly reduced electricity pumping costs from Ushs. 72 million to Ushs. 30 million annually (i.e from US$ 41,000 to US$ 17,000) resulting in energy saving efficiency of 58%. The personnel efficiency has improved from 59 to 12 staff/1000 connections, resulting into reduction in staff costs as a percentage of total operating costs from over 50% to 30%. The corporation has now stopped staff downsizing to right sizing by matching staff quality with business expansion which involves increasing the customer base. The quality of service has also tremendously improved. Fort Portal currently provides has with 24 hours a day. Response time to customer complaints, leaks/bursts, sewage blockages/overflows is less than four hours.
and appropriate technological level of service through water kiosks/yard taps is provided to the peri-urban poor.

**Critical success factors (CSFs)**

There a number of factors that have contributed towards the achievements registered in Fort Portal, and NWSC at large. We outline, hereunder, particular performance drivers that have played a leading role:

- **Commercial orientation.** The commercial focus initiated in the early day of the 100-day programme and SEREP (1998–2000) to turn the corporation around from loss-making to profit-making was the start of a new business approach in service delivery. This changed the organization from being ‘attendance- based’ to ‘performance based’ and prepared staff to respond to new challenges. Change became inevitable and a lot of staff that did not improve were laid off during this time and more competent staff willing to take up the challenges of cutting down costs, improving collections and meeting stringent targets remained. There was zero tolerance for employee inefficiency. Commercial, financial, safety, personnel and operational targets on which continuous internal improvements would be made were set as drivers of performance. Patronage for poor performers was extremely discouraged.

- **Business plans.** A ‘business approach’ introduced during the Area Performance Contracts (APCs 2002–2003) created a powerful vision of what the change will bring about; a business plan that shows light at the end of the tunnel. After a rigorous SWOT analysis of the business, improvement strategies were developed in line with stakeholders’ expectations. Performance indicators were essential parts of the business plan to keep all parties performing at high and optimal levels.

- **Customer orientation.** Paying customers are recognized on special occasions and given presents like bicycles, umbrellas, television sets and this has improved the culture of monthly payment of bills. Customer intimacy has been developed whereby not only the front-desk staff but also senior managers including the NWSC CEO talk to customers directly to inquire if they have complaints about service delivery. Customer service payment agreements have been developed to allow payments in affordable installments. Customer satisfaction survey and analysis is carried out by the performance monitoring team at head office on a quarterly basis to ensure that expectations of paying customers that drive our business are met. Internal customers (staff) are also recognized by award of performance certificates at the end of year.

- **Autonomy.** Signing of management contracts gave areas more financial and managerial autonomy with less interference from head office (performance monitors) on day-to-day operations. This has increased managerial accountability and hence enhanced service provision. The good leadership and focused top management have facilitated a dynamic and productive culture within the corporation that empowers, enables and encourages staff performance.

- **Stretch-out workshops.** An enabling environment with no ‘boss element’ was created during the workshops where all staff actively participated to identify performance constraints and suggest ways of improving performance and achieve set targets. Two main key questions that were are frequently asked included: ‘is there anything that holds us back from improving performance?’ and ‘if this was your own business, what changes would you make to improve performance?’ To achieve the required improvement in quality with the necessary cost reduction, a step change in the performance culture was vital. By giving employees responsibility for developing a set of indicators to help them meet the demanding financial and technological priorities, amazing results were achieved. Not only were the technical and cost targets achieved but also a
new dynamic performance culture emerged — staff set themselves challenging targets and significant internal comparative competition developed. As a result of this culture change other performance improvements were introduced. Effective change comes through team effort and through these workshops, it was easy to identify a core group of staff who believed in the vision and were critical for the success of the change programs.

- **Tariff review and new connection policy.** The tariff review by NWSC in 2002 which reduced reconnection fees from Ushs. 44,000 to 10,000 and reduced new connection fees by 50% was vital in increasing new connections and active accounts. The new connection policy launched in August 2004, where customer new connections (50 m from main distribution line) and service lines maintenance is subsidized by the corporation has resulted in significant increase in service access and coverage. It is also and is likely to lead in reduction of non-revenue water due to reduced leakages on customer service line.

- **Competition, benchmarking and performance review.** Competition for the market and the performance benchmarking (Gordon-Walker, 2004; Kingdom and Jagannathan, 2001; Ramsey, 2002) activity performance introduced in the IDAMC model has been key in ensuring good and sustainable performance. The monitoring team at headquarters who play a regulatory role publish performance indicators of unit utilities in the NWSC newsletter known as ‘The Water Herald’. This monthly newsletter is circulated to all stakeholders exposing the ‘worst in class’. This naming and shaming game has proven to be a powerful performer driver. Everyone competes to be among the best performers like Fort Portal, which has on several occasions been regarded as pacesetters in the utility. These performance scorecards have helped to pressure the ‘worst in class’ to improve their game and allows the ‘best in class’ to gain reputation.

- **Incentives.** To deliver the expected results, staff have incentives to maximize performance and achieve targets within the contract. Rewarding performance on target achievement has been the main driving force of performance in Fort Portal town. When all targets are met fully, the staff earn a total monthly incentive fee of Ushs. 6 million (i.e. US$ 100 to 200 per staff) in a month on top of their salaries. This fee is about 20% of total operating costs. The fee is computed using a compensation formula that relates the parent targets of cash operating margin (COM), non-revenue water (NRW), working ratio (WR), days receivable ratio (DRR) and connection efficiency (CE). It is calculated as: \[X\% \times \text{COM}(m\text{NRW}_a + n\text{WR}_a + p\text{DRR}_a + q\text{CE}_a)\], where \(X\%\) is the agreed percentage to be retained by the operator as bonus; \(m,n,p\) and \(q\) are weight factors, and subscript ‘a’ denotes incremental achievement relative to set targets (standards). In the case of Fort Portal, \(X = 48\%, m = 0.3, n = 0.3, p = 0.2\) and \(q = 0.2\). In addition to the incentive fee, the IDAMC model provides for a performance fee. With the latter, Fort Portal receives, on average, a maximum compensation fee of 5% of total operating costs. The performance fee guards against performance declines and is therefore based on weighted minimum performance standards according to average performance in one year prior to IDAMCs. This means that Fort Portal town receives an average monthly total compensation (performance plus incentive fee) of 25% of operating costs.

**Conclusions**

From the performance results of Fort Portal, it can be concluded that reforms and change management in a public utility coupled with performance improvement programs can lead to efficiency gains in service delivery. The role of the Chief Executive Officer in initiating, supporting and driving the internal reforms is a significant factor. Other key
performance drivers have included: short-term performance enhancement programs; timely provision of inputs and technologies; dedicated and skilled unit managers; competent head office staff in contract designing and monitoring performance.

Managerial incentive contracts are effective tools for reforming public water utilities. As long as contracts are well designed with adequate autonomy, incentives, role definition, performance targets and monitoring indicators, they will lead to better improvements in performance and efficient utility management. Contractual arrangements should have the right incentive arrangements to match the performance required. It is not sufficient to rely on ‘good-will’; managers and other staff need to be encouraged to operate manage commercially in a customer-oriented manner if the desired performance and efficiency improvements are to be delivered.

NWSC’s experience in implementing continuous internal improvement performance programmes and, in particular, the internally delegated management contracts (IDAMCs) provides a good reference point for debate and a review of the proposition that ‘only PSP can bring efficiency in water utility operations’. The NWSC case shows that principle, the public–public partnerships, using appropriate incentive arrangements, sector can perform as well as, or even better than, the private sector depending on the prevailing local conditions. The IDAMC model is an alternative that other low income countries that are considering PSP options in water sector should seriously consider. The model is particularly useful for countries that want to develop local private capacity to manage water utility operations, for long-term sustainability.

References