Can delegated management help water utilities improve services to informal settlements?

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Utility partnerships with small-scale providers (SSPs) are becoming increasingly important as utilities struggle to serve a growing population and the poor in particular. This article explores a delegated management approach as one type of partnership, in which ‘master operators’ purchase bulk supplies of water and are then responsible for collecting in water payments from their customers, and introduces the case study of this approach in Nyalenda, the largest slum of Kisumu, Kenya. The authors explore why such partnership innovations in service delivery are needed and what the impact has been on the Kisumu Water and Sewerage Company and on consumers. Here ‘unaccounted-for’ water has decreased dramatically as both the master operators as well as the utility share an interest in preventing illegal connections. The authors also provide recommendations for the scale-up of this approach in Kisumu and the replication of the delegated management model in other cities facing similar challenges to improve services to the poor.

Keywords: delegated management model, public–private partnership, unaccounted-for water, Kisumu, utility,

The delegated management model is an innovative solution for improving water services to the urban poor. It draws on community resources and helps improve the performance of the utility in a difficult context through a partnership for service delivery. It is a public–private (utility–small-scale operator) partnership that is not only about increasing access but also improving services in a sustainable manner. Residents in informal settlements may already have access to the network via kiosks and water vendors. The delegated management model aims at closing the gap between access and high-quality service by bringing water closer to home, making it affordable and providing options in terms of levels of service and at the same time improving the technical and financial performance of the utility.
Why are innovations in service delivery necessary?

Africa is the continent with the highest rate of urbanization – urbanization which is not accompanied by economic growth or by adequate provision of public services (Hicks, 1998). UN-Habitat estimates that up to two-thirds of African urban dwellers already live in informal settlements with inadequate basic services of water supply, sanitation and electricity. By 2020 it is estimated that more than half of Africa will reside in urban areas – increasing the present urban population by 400 million to a staggering 700 million. Much of this growth will take place in informal settlements (WUP, 2003).

Despite the fact that a major proportion of the urban population resides in informal settlements, few utilities in Africa have expanded their water supply networks into these areas. The majority of efforts to serve the urban poor have been piecemeal and limited to the provision of a few standpipes. Also, African utilities are generally plagued by weak institutional arrangements for water supply, resulting in a cycle of declining investment, deteriorating service and diminishing financial returns. This has translated into poor services for all and for the urban poor in particular, even where people have demonstrated a strong willingness to pay (Kessides et al., 2000).

So why are innovations in service delivery necessary? The answer is that the current state of service delivery to informal settlements is a lose-lose situation for both end-consumers and for the utility. The levels of unaccounted-for water are exorbitant and customers are paying high prices for low levels of service from off-network providers (Tremolet and Halpern, 2006). Very little to none of this money reaches the utility. When considering the options for improving water service delivery to informal settlements in African cities, it is essential to understand both the problems facing residents and the problems facing utilities. Addressing only one or the other is a losing game for achieving sustainable service.

The delegated management model aims to provide a win–win situation by reducing the utility’s level of unaccounted-for water and increasing its revenue while also providing improved and more affordable services to the urban poor – all critical to achieving the Millennium Development Goals for water in Africa.

Challenges in delivering high-quality services in informal settlements

Challenges facing residents

The poor face three cost-related problems. First, the poor typically pay high prices for water owing to the limited supply, the prevalence of water cartels and purchases in small quantities (e.g. one 20-litre
Rising block tariffs penalize yard connections and households that resell water to neighbours.

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jerrycan at a time). Second, when access to the network is possible, the one-time connection fee tends to be prohibitively expensive and, once connected, poor households are pressed to meet periodic water bills. Third, rising block tariffs penalize yard connections and households that resell water to neighbours, a widespread practice in African cities. In addition to these monetary constraints, time is another real cost facing the urban poor. Household surveys in Kenya reveal that poor households spend an average of 42 minutes daily collecting water, while the non-poor spend a maximum of 15 minutes (Gulyani et al., 2005).

Another challenge facing informal settlement residents is the lack of trunk infrastructure. Households willing to pay for private connections may find it difficult to do so because of the long distance to the nearest utility trunk main.

Challenges facing utilities

Water utilities throughout Africa and the rest of the developing world share many of the same challenges in reaching the urban poor. Where utilities provide piped water in one way or another to informal settlements, the level of unaccounted-for water is very high owing to the proliferation of illegal connections and substandard technical works. It is not uncommon for front-line staff to collude with customers who pay a small bribe rather than pay for total consumption, resulting in little to no revenue collection for the utility. This scenario is not sustainable for the utility.

The prevalence of vandalism in these areas is another deterrent for utility expansion to informal settlements. Vandalism of the water network may be caused by petty thieves or by those with vested interests to monopolize the water supply and maintain high prices.

Cash-strapped utilities also lack confidence in the financial returns from serving low-income settlements because of the high initial capital costs and the misguided belief that the poor are not willing or able to pay for water. Utilities in Africa tend to target other ‘high priority’ areas for expansion where the immediate financial returns are more promising and where fewer human resources are needed for tasks such as community outreach. In summary, extending service to informal settlements is ‘trickier’ than serving formal settlements and the complexity of the situation may be daunting.

Some urban utilities in Africa are undergoing internal reforms to improve their operational and managerial efficiency. While these commercial-type reforms may lead to increased efficiency in service delivery, this does not necessarily translate into geographical equity or a commitment to serve the poor. Without incentives, a clear mandate to serve the poor or a ‘champion’, companies chase markets that...
are ‘easy’, offer the highest returns and do not require subsidies. Even so, the delegated management approach introduced in the next section makes it possible for utilities to think about informal settlements in a new light – as untapped markets where partnership is feasible, financially viable and the above challenges can be tackled in partnership with the community.

The basics of the delegated management model

Delegated management for water services to the informal settlements is a model whereby the utility sells bulk water to an agent who has been contracted to operate and manage part of the network. The utility selects and recruits operators for its subnetworks through a competitive and transparent process. The utility and operator then negotiate the terms of the contract for the operator to undertake billing, revenue collection and minor maintenance, reducing the administrative costs to the utility, and providing tailored and quality services in close proximity to the customer. The operator bills its customers, pays the company for water at the bulk rate and the remaining income is profit. The model allows for the development of a range of services (private connections, shared standpipes and commercial kiosks) to match the demand of households, while keeping in mind the overall sustainability of the water company. The ‘master operators’ in Kisumu, Kenya, do not have many standpipe connections, but where they exist, they either have an arrangement with the landowner to pay the bill on behalf of tenants, or each household is given a meter.

The delegated management model for water services is a conglomeration of best practices to serve the poor. The innovative approach makes it possible for low-income households to have a private connection at reduced price in an area where paying a high price for poor service has been the norm. In addition, as rising block tariffs could be detrimental to households that resell water, this model officially recognizes and accepts resale by offering a commercial tariff that does not rise with increasing levels of consumption.

Comparative advantages of the delegated system in low-income areas

A combination of two features makes this model unique: 1) its technical design; and 2) its delegated management structure.

The technical design evades the wide-scale practice of tampering with meters by placing meters inside a locked chamber that only the operator may access. Likewise, utility staff are the only ones with a key to the operator’s bulk water meter so that the operator cannot tamper with the bulk water meter.
The design aims to rationalize the network by shifting from haphazard spaghetti lines into a formal, structured network.

The delegated management of water supply is possible in a policy context which allows for decentralization and participation of the private sector in the provision of water services. The utility may choose to allow for public-private partnership (including small-scale providers) for expansion of the network but must devise a clear policy on technical standards and the terms of infrastructure acquisition. ‘Public-private partnership’ in this case refers to the utility as the public party and the entrepreneur or community-based organization as the private party.

Another traditional challenge addressed by the delegated management model is increasing the customer-orientation of services in informal settlements. The ‘man on the ground’ helps facilitate effective communication and marketing in informal settlements. Face-to-face contact is expensive for the utility and works best after office hours when heads of households are home. The benefit of having an operator who lives in the area is simply that he or she is present and can be approached in the evening or at weekends to answer questions and build relationships with clients.

The combination of the technical and management designs makes it virtually impossible for utility front-line staff to collude with consumers. Front-line staff no longer interface with end-consumers nor do they have access to household meters.

The utility retains a dominant position even though it has committed not to provide direct connections in the area, only to provide piped water through master operators (MOs) and to align existing customers into this framework. Consumers receive high-quality, portable water that is treated by the utility. Consumers may still direct complaints to the utility if the operator’s performance is unsatisfactory. Finally, the MOs have the legal backing of the utility to deal with illegal connections and vandalism.

**Importance of the regulatory environment**

Tariff regulation is important for the following reason. In general, business theory suggests that eliminating the ‘middle man’ leads to a more direct supply chain and lower end prices. However, there may be occasions when third parties should be retained in order to decrease transaction costs, as is the case for the utility outsourcing some of its tasks to an agent in informal settlements. In this case, three key ingredients allow for both the retention of the ‘middle man’ (i.e. a private operator) and low retail prices: 1) the official recognition/licensing of the master operator; 2) the sale of water at fixed bulk rates; and 3) the regulation of the end price to consumers.
The current intermediary structure prevalent in informal settlements (e.g. kiosks) fosters high prices because these vendors do not have access to bulk water rates, they stifle competition and end prices are unregulated.

The delegated management model has been used in a few cities including Manila, Philippines; Arusha, Tanzania; and Kisumu, Kenya, because the approach results in an improvement in the performance of the utility on its own in terms of services to the urban poor.

**The experience of Kisumu, Kenya**

The Kisumu Water and Sewerage Company, KIWASCO began developing the Nyalenda Water Supply Project (NWSP) in 2004 through a partnership with the Water and Sanitation Program-Africa and the French Embassy in Kenya. The French Embassy and KIWASCO co-financed the project and Water and Sanitation Program-Africa facilitated the process and provided technical assistance throughout. The Agence Française de Développement has also begun scaling up the project through its investment programme.

Kisumu, positioned on the shores of Lake Victoria, is the third largest city in Kenya; 60 per cent of its 500,000 population reside in peri-urban settlements (UN-Habitat, 2005). Nyalenda is the largest settlement in Kisumu with an estimated population of approximately 50,000 people. Nyalenda is not an ‘informal’ settlement since landowners have freehold titles, but it is still grossly underserved by basic services and the majority of residents are poor. The Government of Kenya 1999 Census reports a population in Nyalenda of 49,375 residents (UN-Habitat, 2005). There is no data available on population growth since 1999 although some estimates are as high as 60,000 people.

The overarching goal of the NWSP was to refine a model for utilities to extend and improve services to the urban poor. The first phase of the project serves an area of 10,000 people. The second phase will serve an additional 30,000 people.

**The project environment**

Four key policy and institutional ingredients were crucial to the success of this project:

- availability of water supply;
- policy changes that recognize public-private partnerships and small-scale providers (SSPs) in the water services supply chain;
- political will of the asset holder and the water company to solve the challenge of serving the poor;
improved performance of the water company with an increased culture of learning, capacity building of staff and commitment to improving customer service, all vital to improving services to the poor.

Nyalenda was already connected to the utility mains; however, the internal connections were a spaghetti network of sub-standard pipes near the surface with leaks that increase the likelihood of water-borne diseases. The haphazard nature of the network also means that the utility lacked a clear physical map of all consumer connections, making it easy for utility field staff to collude with illegally connected customers. Some households had private connections or shared yard taps while others purchased water from kiosks or neighbours’ taps. The price of water for consumers purchasing from kiosks was high by any standards. The average price is 2 Kenyan shillings (Ksh) (Ksh1 = US$0.01, 11 July 2008) per 20-litre jerrycan and during times of water shortage the prices escalate, soaring up to Ksh5 or even Ksh10 for a 20-litre jerrycan (the equivalent of Ksh500 or US$7.50 per m³).

From the design stage, the company’s intention was to transfer all existing customers to the master operator lines. However, the company did not have the funds to do this and did not want to make existing customers pay for the new pipes and associated labour costs. The company finally managed to secure funds from the Agence Française de Développement and ran a strong marketing campaign to cut off the entire spaghetti network (legal and illegal connections) and transfer its customers to the MO lines at the company’s cost. This was an enormous task, and the company had made good headway until the 2008 post-election chaos in Kenya. The violence temporarily postponed the work to disconnect the spaghetti network. At the time of printing, the disconnection and transfer work had just been revived.

A common will to innovate

The Nyalenda Water and Sanitation Committee (NWSC) is a key component of a larger urban water and sanitation project. The Agence Française de Développement has provided €20 million to the Lake Victoria South Water Services Board (LVSWSB) to rehabilitate and expand water and sewerage infrastructure and increase services to peri-urban areas. Upon request from the LVSWSB, the Water and Sanitation Programme supported a water supply and sanitation assessment to identify management options for improving service delivery to the poor and the key policy issues to be addressed to optimize these improvements. Through a series of meetings with the community to discuss options, the NWSC was elected to liaise between the water company and the community. These meetings and the findings of
the water supply and sanitation assessment led to the idea to pilot the delegated management model. Although this project has begun with a focus on water, the committee could later become involved in sanitation improvement efforts.

Project design and cost
The pilot phase consisted of five parallel lines connected to and metered from KIWASCO’s mains (see Figure 1). Each sub-line extends 600 metres from the mains into Nyalenda. The five lines can serve approximately 10,000 residents, or 20 per cent of Nyalenda’s population. Nine additional lines and lateral extensions of existing lines are expected to be operational by August 2008, filling in the service gaps illustrated.

Following extensive consultations between the NWSC, KIWASCO and the Water and Sanitation Program-Africa to design the project, the total pilot budget was defined at Ksh7 million ($98,000) and KIWASCO’s application for financial support to the Embassy of France’s Social Development Fund was approved. KIWASCO contributed $28,000 to the project (28.5 per cent of the total budget). In December 2004, KIWASCO received Ksh1.9 million ($26,000) as the first installment of a Ksh5 million ($70,000) grant. KIWASCO was responsible for the initial secondary lines, but there are legal agreements in place that allow for the master operator to invest and expand the network.

Figure 1. Metered lines are taken off the KIWASCO main line, and customer lines are taken off these lines.
Principle stakeholders

Under the larger Agence Française de Développement funded project, the NWSP was considered as a first phase that, if successful, would serve as a blueprint for replication in other settlements within KIWASCO’s jurisdiction. The key stakeholders of the NWSP are KIWASCO; the master operators (MOs); the NWSC; the residents of Nyalenda; and the LVWSWB. The relationships range from contractual to less formal relationships. More details on each stakeholder's roles and responsibilities are provided in Table 1.

Partnering with private operators for improved service delivery

KIWASCO, with the help of the NWSC, advertised the MO positions and short-listed and interviewed the most qualified candidates. The start dates between lines 1 and 2 and lines 3 to 5 were staggered in order to analyse the performance of the first two lines and solve any teething problems before proceeding with the next three lines. After lines 1 and 2 had been operational for 6 months, a participatory assessment was undertaken to investigate why consumers were not connecting as quickly as anticipated. The assessment unearthed a variety of issues, most notably that the MO lines were still competing with illegal connections on the spaghetti network and that residents reported not knowing about the new system. As a result, KIWASCO cracked down harder on illegal connections and worked closely with MOs to implement a marketing campaign.

Table 1. Roles and responsibilities of stakeholders

<table>
<thead>
<tr>
<th>Actor</th>
<th>Roles/Responsibilities</th>
<th>Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Victoria South Water Services Board</td>
<td>Asset holding organization</td>
<td>Contractual with service providers</td>
</tr>
<tr>
<td></td>
<td>Licenses service providers in the region</td>
<td>Non-contractual with community through forums</td>
</tr>
<tr>
<td></td>
<td>Monitors and evaluates service providers</td>
<td></td>
</tr>
<tr>
<td>Kisumu Water and Sewerage Company (KIWASCO)</td>
<td>Service provider within Kisumu NWSP implementer</td>
<td>Contractual with LVWSWB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contractual with master operator</td>
</tr>
<tr>
<td>Nyalenda Water and Sanitation Committee</td>
<td>Represents community interests and promotes participation</td>
<td>Elected by the community</td>
</tr>
<tr>
<td></td>
<td>Advises in appointment of master operator</td>
<td>Non-contractual with KIWASCO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-contractual with MOs</td>
</tr>
<tr>
<td>Master operator (MO)</td>
<td>Manages water services in Nyalenda</td>
<td>Contractual with community client/service provider relationship with community</td>
</tr>
<tr>
<td></td>
<td>Potentially extends network with guidelines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contractual with KIWASCO</td>
<td></td>
</tr>
<tr>
<td>Nyalenda Community</td>
<td>Protects the assets of KIWASCO</td>
<td>Customer contract with master operator</td>
</tr>
<tr>
<td></td>
<td>Pays for water services/consumption</td>
<td></td>
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</tbody>
</table>
The fight against illegal connections has been slow going. The problem will not be fully addressed until all spaghetti network customers are transferred to the MO lines and the old individual connections are cut off from the mains. The marketing campaign has had more success. The MOs, working with KIWASCO and the Water and Sanitation Program, created informational brochures in English and Luo, the local language. The MOs went on a door-to-door campaign, this time equipped with a list of targeted messages to convince different types of customer to sign on to the network.

The MOs on lines 1 and 2 are community-based organizations. For the next three lines KIWASCO was open to selecting private entrepreneurs hoping that the individuals would be more driven by profits and outperform the community-based organizations. However, all shortlisted candidates were considered and the most qualified candidates chosen, whether individuals or groups. The results were an individual for lines 3 and 4 and a community-based organization for line 5. At the time of printing, KIWASCO was recruiting master operators for the next six lines.

Minimizing the business risk through a prepayment system is another integral characteristic of the model. The master operator pays a Ksh15,000 ($242) deposit to the utility; domestic customers pay a Ksh1,000 ($16) deposit to the MO; and kiosk customers pay a Ksh5,000 ($81) deposit to the MO. The master operator and the utility have the right to withhold these deposits in case of default.

As indicated in Table 2, the connection costs have been reduced by 63 per cent. The number of connections has been increasing steadily but the uptake has been slow owing to the continued existence of the spaghetti network and illegal connections. Nevertheless, as of February 2008, the master operator lines accounted for 23 per cent of billing in Nyalenda. The collection efficiency (i.e. revenue collection divided by billing) between master operator lines and KIWASCO direct customers is practically the same – on average 88 per cent for the latter and 89 per cent for the former between June 2006 and February 2008. The difference lies in the ‘undetected’ consumers – a consequence of the large amounts of water distributed by KIWASCO without being metered or billed. While the master operator lines had an average non-revenue water rate of 5 per cent from January 2006 to March 2008, KIWASCO is unable to even quantify the non-revenue water from spaghetti lines and illegal connections because it does not have zonal meters for Nyalenda. However, the company estimates that it fails to recover payment for approximately 60 per cent of the water pumped into Nyalenda largely because of illegal connections and leaks.

As of March 2008 there were a total of 155 connections provided through the master operator lines. The number of connections per
Table 2. Comparison of connection costs and water supply tariffs between KIWASCO and master operators

<table>
<thead>
<tr>
<th></th>
<th>Master Operator</th>
<th>KIWASCO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domestic tariffs per m³</strong></td>
<td>($/m³)</td>
<td>($/m³)</td>
</tr>
<tr>
<td>0–6</td>
<td>0.48</td>
<td>0.53</td>
</tr>
<tr>
<td>7–20</td>
<td>0.56</td>
<td>0.65</td>
</tr>
<tr>
<td>21–40</td>
<td>0.81</td>
<td>0.81</td>
</tr>
<tr>
<td>41–60</td>
<td>0.81</td>
<td>0.89</td>
</tr>
<tr>
<td>60 &amp; above</td>
<td>0.81</td>
<td>0.97</td>
</tr>
<tr>
<td>Minimum of $2.90/month</td>
<td>Minimum of $3.23/month</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial tariffs per m³</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–10</td>
<td>0.65</td>
<td>0.89</td>
</tr>
<tr>
<td>11 &amp; above</td>
<td>0.56</td>
<td>0.89</td>
</tr>
<tr>
<td>Minimum of $6.45/month</td>
<td>No minimum</td>
<td></td>
</tr>
<tr>
<td><strong>Other costs (US$)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connection fee</td>
<td>24.19</td>
<td>64.52</td>
</tr>
<tr>
<td>Deposit – domestic</td>
<td>16.13</td>
<td>29.03</td>
</tr>
<tr>
<td>Deposit – commercial</td>
<td>80.65</td>
<td>161.29</td>
</tr>
<tr>
<td>Deposit – construction</td>
<td>161.29</td>
<td>161.29</td>
</tr>
<tr>
<td>Meter rent/month</td>
<td>1.13</td>
<td>2.42</td>
</tr>
</tbody>
</table>

Note: US$1 = Ksh 62

From the consumption pattern on the MO lines, it is clear that the majority of customers are reselling water. The average consumption per connection was 33 m³ between January 2006 and March 2008. On the basis of the average national consumption for the poor segment of the population (30 litres/capita/day), one connection serves approximately 36 persons, or seven households (Gulyani et al., 2005).

Based on the per capita consumption figures and current number of connections, the cost of the pilot phase is approximately $90 per household (or approximately $18 per capita). The investment per capita figure will fall as the old lines are removed and more customers transfer to the MO lines.

Table 3. Installation costs of pipes, fittings and labour – who pays?

<table>
<thead>
<tr>
<th>Item</th>
<th>Responsible party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trunk infrastructure</td>
<td>Utility</td>
</tr>
<tr>
<td>Secondary network – trunk to chamber</td>
<td>Utility or master operator</td>
</tr>
<tr>
<td>Meter chamber</td>
<td>Utility or master operator</td>
</tr>
<tr>
<td>Tertiary line – chamber to waterpoint</td>
<td>Customer</td>
</tr>
</tbody>
</table>
The consensus thus far is that being either an individual or a community-based organization does not in itself guarantee better performance. Positive performance is linked to entrepreneurial capacity, business acumen and strong community relations while negative performance has largely been a result of undetectable leaks and vandalism. Interpersonal skills are another important success factor.

It is clear that, unlike the business-as-usual approach, the delegated management model allows for rapid detection of problems and does not make it easy for people to connect illegally. All of the water that enters the community through the MO lines is metered and billed, and if there are leaks, they are identified and dealt with in turn because the master operator is responsible for paying for all water that flows through the bulk meter. This level of control and urgency is not present in the spaghetti system.

The master operators are able to cover their expenses and one of the MOs has invested in network expansion with a combination of donor and internally generated funds to serve an extra 40 households. To facilitate the investment, the company's legal adviser developed a policy to encourage regulated private network expansion. This policy clarifies ownership and transfer issues.

In summary, the Kisumu experience has shown that the model can work if there is an adequate supply of water and if the company is committed to improving services for the poor, engaging with the community and eradicating illegal connections.

**Identified challenges and constraints**

There are two main challenges facing the delegated management model in Nyalenda: occasional vandalism of works and illegal connections on the main network, which undermine the MO’s and the water company’s business.

The incidence of vandalism does not seem to be correlated with the status of the MO as a group or an individual, although one would expect a community group to have a stronger vigilante network. Vandalism is not exclusive to the delegated management model (meters are stolen throughout the city) or even to the water sector as electricity cables are frequently stolen in Nyalenda, too. However, the approach used in the delegated management model is novel in that both private operators and the utility share the incentive to safeguard the infrastructure - since they both lose revenue when it is out of operation for repairs - and have joined forces to tackle this problem.

In addition to fighting vandalism by involving local police and increasing neighbourhood vigilance, the MOs are working hand-in-hand with the utility to identify illegal connections. Nevertheless,
The utility is sharing the incentives and risks for safeguarding the network.

illegal connections from the utility main have not yet been eradicated. KIWASCO is planning to complete the work that had been interrupted by the post-election violence to disconnect the spaghetti system and transfer approximately 600 customers by August 2008.

In summary, the major challenges facing the project are also challenges facing the utility. Through this model, the utility has broadened its partnerships and is sharing the incentives and risks for safeguarding the network.

In addition to curbing vandalism and illegal connections, the project has faced three other significant challenges: 1) building the capacity of the water company to manage the project; 2) ensuring adequate levels of community mobilization; and 3) selecting the best qualified master operators.

Low capacity – engage more people!

In the beginning, one KIWASCO employee was almost solely responsible for the NWSP but over time, the managing director, customer relations officer and the commercial and technical managers became more involved. This high-level commitment increased the momentum for implementation.

Clarity in messages and roles

Community mobilization can be tricky for a variety of reasons. Getting the right people together at the right times is difficult in an urban setting – evenings and weekends generally work best. One-to-one communication works better, but this requires high levels of human resources. The use of media such as radio is effective, but requires substantial financial resources. Also, in Nyalenda there are many absentee landlords, making it difficult to locate the decision-makers regarding household connections.

KIWASCO’s reason for mobilizing a community committee was to have a legitimate partner. In hindsight, the process undertaken by KIWASCO to elect the Nyalenda Water and Sanitation Committee was inadequate. The elected committee lacked an understanding of its roles and responsibilities and was expecting to operate the lines itself rather than focusing only on a supervisory role. From the beginning, this confusion led to a variety of problems, including the constant requests for allowances and compensation.

If this project is replicated, community mobilization should be done in advance of any implementation of the works. Considering the importance of this stage, the water company should consider contracting the mobilization to an NGO with this type of expertise or to train utility staff in community outreach methods.
Finally, when conducting community outreach it is important for the water company and the committee to have a set of clearly defined messages to present to the community. In this case, the NWSC started mobilizing the community before it was equipped with proper information, but a communication workshop was organized later with all principle stakeholders to define the benefits of the project and the community’s concerns. These findings were later used by the stakeholders to design the communication messages and channels. These messages were incorporated in all subsequent actions including the design and placement of posters, method of selecting operator applicants, and approaches for door-to-door campaigns. This participatory method of designing a communication strategy served the dual purpose of increasing awareness of the project and garnishing support for the project. However, the workshop occurred some time after the NWSC had been asked to begin its mobilization and so the new messages were often contradictory to those that the committee had earlier been advertising.

Key lessons for replication

The delegated management model may be used for water service provision in low-income areas where there is a supportive policy framework, the water supply is sufficient and the utility has access to funding for new infrastructure. A number of key points and lessons learned from project implementation might be useful when preparing and planning a similar scheme.

By reflecting on the bottlenecks, constraints and lessons of the initial phase of the NWSP, the Water and Sanitation Program-Africa developed the following methodology. This is meant to serve as a guide and the details may need to be adjusted according to local context.

Figure 2. Timeline for the implementation of the programme.
The six suggested stages for implementation are: 1) project planning; 2) community mobilization; 3) recruiting and selecting operators; 4) implementation of works; 5) revisiting communication/outreach strategy; and 6) connections and final assessment. The steps listed below within a given stage may happen concurrently or in a different order but are numbered here for ease of reference.

**Stage 1: Project planning**

A detailed action plan will ease the task ahead for the utility since a delegated management model will be new to most water utilities. The plan should include the following: a financial analysis to determine cost-recovery tariffs (for both the utility and the MO); a participatory methodology for selecting the project area; designing a process for transferring existing customers (where applicable) and dedicating funds for this purpose; defining the roles and responsibilities of the operator; and developing a strategic communications and outreach strategy.

Financial analysis. The importance of undertaking a financial analysis from the early stages is that it changes the language used to mobilize the community from ‘this project will benefit residents’ to more convincing statements such as ‘the cost of water will be reduced from Ksh x per container to Ksh y per container’.

Choosing the location of the network. Land tenure and the availability of public land are critical challenges to developing infrastructure in informal areas. Even some formal areas do not have planning standards or they are not enforced. The delegated management model moves from haphazard infrastructure for the poor to a more sustainable, planned system so it should be integrated into a larger planning framework consistent with municipal guidelines and legal procedures.

Meter chambers should be located near the service area, not at the perimeter, or inside a compound if the landowner is in agreement. These measures will help to reduce vandalism.

Transferring existing customers. Where applicable, an operational and financial strategy should be put in place to transfer existing customers to the improved network. The utility may choose to budget for the pipes and labour needed to transfer customers to the new lines where less leaks are envisaged. Also, if financial deposits need to be transferred from the utility to the master operator’s account, the administrative procedures should be in place from the early stages of the project.

Roles and responsibilities of the master operator. The role of managers and operators of the sub-network entails billing customers properly and on time, collecting payments, maintaining the network and
providing high-quality customer service. The utility decides from the beginning the expectations and qualifications of the MO, what type of training will be provided and the limits of the MOs rights, such as whether or not the MO may expand the network.

Community consultations. The next phase is an intensive community mobilization campaign but the utility should engage with local leaders during Stage 1 to ensure buy-in and ownership later.

**Stage 2: Community mobilization**

Allocating adequate financial and human resources to this effort is critical since communities may reject or support the project. Based on the experience of the NWSP, an outreach campaign should be conducted prior to any capital works. This allows the community to voice any concerns and to assist with implementation. It is likely that the community may be able to help by advising on the best locations for the lines. Also, building ownership and excitement on the part of residents is helpful when laying the lines. Residents may allow for pipes to traverse their property and help monitor the works to guarantee high-quality workmanship.

We suggest the following three steps for community mobilization: 1) forming a community committee; 2) organizing a communication strategy workshop; and 3) sensitizing the community.

**Stage 3: Recruiting and selecting operators**

The utility should organize a transparent and competitive bidding process for selecting the operators, especially in environments where nepotism and bribery regularly guide appointments. Further, as mentioned above, the MO has a huge role to play in the success of the project and strong candidates are needed to take the position.

**Stage 4: Implementing the capital works**

The detailed planning process and community mobilization campaign should be implemented before any of the lines are laid to prevent misconceptions about the project and to get feedback from the community on where to install the lines. Construction and training of the operators may happen concurrently.

**Stage 5: Revisiting communication/outreach strategy**

Although community outreach should be a continuum, a concerted effort should be made to engage with the community as the capital works are implemented. The purpose of this intensive effort is to introduce the operators to the community; remind the community of
the operator's roles and responsibilities; and reassure the community that they may complain directly to the committee or to the utility regarding grievances with the operators.

**Stage 6: Turn on the taps! ... and final assessment**

The project may finally be commissioned once the community has received adequate information about the project, the lines have been installed and MOs have been selected. Once the MOs have signed a contract with the company they may open a neighbourhood office and connect customers. At this point, a final assessment should be undertaken on what did and did not work for general evaluation purposes and as a guide for replication. Lastly, the utility should install a monitoring and evaluation system for the MO's operations, to evaluate best practices and to encourage sharing among the MOs in terms of accounting, billing, maintenance, security and any other issues of interest.

**Conclusion**

Reducing unaccounted-for water will be central to improving the performance of the water company, and the delegated management model is helping it to move in that direction. The model has also worked in other contexts such as in Manila (Inocencio, 2001). The results of this Nyalenda experiment in delegating management show that the model has its merits and should be scaled up in Kisumu as well as other cities that have a supportive policy framework and adequate supply of water. It has given the water company the confidence to move into this low-income area with the aim of engaging with the community to improve services. It has also helped the company to reduce non-revenue water and to supply water to unplanned areas in a financially viable manner. The incentives are such that it is in the operator's interest to report illegal connections and to safeguard against vandalism of the infrastructure. Although billing efficiency has improved overall in Nyalenda, the exact level of non-revenue water cannot be determined because of a lack of zonal meters.

In terms of improvement in services to the poor, the approach has improved the quality, affordability and the convenience by bringing the management of services and payment facilities closer to home. However, the overriding lesson is that it is essential for the utility to commit to the transfer of existing customers and the elimination of illegal connections that undermine the system; or to replicate this in areas that are not already served by some form of piped water supply (legal or illegal).
An ongoing tariff review will help to ensure that the tariffs are sustainable for both the company and the operators; and the full benefits of the delegated management approach will only be seen when all consumers in Nyalenda are served through the master operator lines. However, the results to date are encouraging.

References


