

Demonstrating the effectiveness of social franchising principles: the emptying of household ventilated improved pits: a case study from South Africa

K. Wall, O. Ive, J. Bhagwan, F. Kirwan, W. Birkholtz, N. Lupuwana and E. Shaylor

ABSTRACT

Having viewed the successful social franchising partnerships pilot programme that serviced sanitation facilities at 400 schools in the Butterworth District of the Eastern Cape of South Africa, the Amathole District Municipality (ADM) expressed interest in exploring how well the partnership model could empty household pit latrines in its jurisdiction. The impact and effectiveness of the model was demonstrated by the emptying, by five franchisees over a period of only six weeks, of the contents of 400 household ventilated improved pit latrines in Govan Mbeki Village, and the safe disposal of their content. The paper describes the methods and results in removal and disposal of faecal sludge. Problems were encountered, and the solutions (technical, institutional and social) are described. Not unexpectedly, the amount of effort involved in this work – including time, training required, equipment required and ingenuity – varied enormously. The main variables included the type of top structure, the nature of the pit contents, whether or not there was broad consistency of type and contents in an area, distances (between pits, from home base to work site, from pits to disposal site, from location of specialized equipment to work site), logistical delays (e.g. non-arrival of equipment) and bureaucratic hold-ups (especially payment delays).

Key words | faecal sludge, microenterprises, schools, social franchising partnerships, South Africa

K. Wall (corresponding author)
CSIR, PO Box 395,
Pretoria 0001,
South Africa
E-mail: kwall@csir.co.za

O. Ive
W. Birkholtz
E. Shaylor
Amanz' abantu Services,
PO Box 19442, Tecoma 5214,
South Africa

J. Bhagwan
Water Research Commission (WRC),
Private Bag X03, Gezina 0031,
South Africa

F. Kirwan
Irish Aid,
Dublin,
Ireland

N. Lupuwana
Independent franchisee,
Butterworth,
South Africa

INTRODUCTION

In 2009 Amanz' abantu Services, a company based in the Eastern Cape province of South Africa ('Amanz' abantu' is a Xhosa phrase which means 'Water for People'), along with their partners the Council for Scientific and Industrial Research (CSIR) of South Africa, the Water Research Commission (WRC) of South Africa and funding organization Irish Aid, launched a pilot project to test the concept of social franchising as a potential solution to the issues of Operation and Maintenance (O and M) of water and sanitation infrastructure. The Eastern Cape Department of Education provided the opportunity to undertake the servicing of rural schools in the Butterworth district, thereby developing appropriate methodologies and operating procedures and scaling them up to cover the area. Through

doi: 10.2166/washdev.2013.309

this pilot, operating procedures, quality systems and methodologies of practice were developed. With these systems in place Amanz' abantu was in a position to offer their services to other interested parties.

The Amathole District Municipality (ADM) is responsible for all water services in a large and mostly rural portion of the Eastern Cape. Within this area is the village of Govan Mbeki, which is located just outside the town of Dutywa.

THE PROBLEM

Initially the ADM estimated that there were 250 units that required the pit emptying and cleaning service; however,

based on a site inspection it was found to be 419 units. The latrines, pre-cast concrete monolithic structures (as supplied by Rocla), had been in place for over 10 years without any maintenance or servicing being conducted by the ADM and as a consequence the pits were dangerously full. At the end of 2011, the ADM decided that it needed a cost-effective and reliable service provider to carry out the work quickly.

Working with faecal sludge presented potential environmental and health risks for those conducting the work and those living in the area. For this reason the ADM wanted a service provider who could be trusted to safely handle and dispose of hazardous material taken from pits.

Amanz' abantu, having proved their social franchising model in schools, wanted to try their approach in household situations to understand how they need to adapt their business model and in order to develop the additional services or skills their franchisees might need. The ADM presented the opportunity for Amanz' abantu to do this and the ADM would get the necessary servicing done with the guarantees they needed regarding quality and safety.

APPROACH

Social franchising, defined as *'the application of commercial franchising concepts to achieve socially beneficial ends'* (Montagu 2002), is suitable for providing services to developing communities with a large poor population needing affordable municipal services and, in addition, looking for employment and an opportunity to develop their entrepreneurial and technical skills. The water services franchising model provides opportunity for linking local economic development and job creation with the provision of basic municipal services. Public service provision, which is by its nature monopolistic, needs to be structured on competitive pricing rather than allowing 'profiteering', needs to be regulated as elements of this business impact on the environment and public health and needs to be affordable to the poor communities to whom the services are provided.

Since 2001, Amanz' abantu, the WRC and the CSIR have been exploring the potential for social franchising in the water and sanitation sector in South Africa (Wall 2005; Wall & Ive 2010) and their findings prompted Amanz'

abantu Services to embark on the creation of its new business entity, Impilo Yabantu Services, with the plan to apply the principles of franchising to the business methods and processes of the new company.

The success of the pilot project for the servicing of sanitation and water facilities in schools has been widely published and presented and the issues and lessons learnt in that programme have been well documented (Wall & Ive 2010). Household servicing presents a different set of problems, issues and experiences for the franchisee and franchisor and therefore different approaches were taken as to how they conduct their services.

IMPLEMENTATION

Impilo Yabantu already had in place five franchisees, each with their own teams operating in the Dutywa and Butterworth areas, and therefore the labour needs were already in place as soon as the work was commissioned. Before work could begin a disposal area needed to be established and an operations methodology specific to the toilets in Govan Mbeki needed to be developed. The toilets in the village are ventilated improved pit (VIPs) constructed from monolithic concrete ('Rocla' brand) top structures with an access hatch in the back as shown in Figure 1. This particular unit is a single cast concrete top structure which weighs around 1000 kg, and the weight and design limited the potential methodologies for accessing the pit.

As the franchisor, Impilo Yabantu had to develop the methodology to be used by all the franchisees. Initial assessments found the pits surveyed to be full of solid sludge. The access hatch size was not deemed sufficient for long spades and other hand tools to access all the way to the back of the pit in order to remove such solid sludge. Therefore, Impilo Yabantu decided the best way to access the pit was to lift the whole unit using a crane. Such challenges are much easier to address using the franchising approach as the franchisor can draw on a wider pool of resources and expertise than that which is available to a small, standalone service provider. Impilo Yabantu was able to trial the different options and develop suitable equipment and thereby assist the franchisees with necessary equipment costs that might otherwise have been too costly.



Figure 1 | Rocla structure.

The establishment of a disposal site was straightforward as Govan Mbeki is located less than a kilometre from the water treatment plant for the area. With permission from the ADM a section of land next to the treatment plant was fenced off. Within the fencing the area was ploughed with a tractor and a pit dug for solid inorganic material that is inevitably found in pits. The site was to be managed by two local labourers who would be responsible for covering over the shallow (root zone) trenches as they were filled up and for burying inorganic waste.

Once the disposal site had been set up, on-site training for the franchisees was conducted so they understood not only the processes involved in moving the units but also the site-specific health and safety issues and procedures.

As the franchisor, Impilo Yabantu was required to provide the necessary assurance to the client that suitable precautions would be taken to ensure health and safety would be considered at all times for the workers, the

householders and the general public. In order to ensure quality and safety, a Quality Management System (QMS) and a health and safety plan were drawn up. These plans need to be adapted to the site-specific conditions of each working area, and so they involve undertaking a formal risk assessment prior to starting work. Regular site visits by an auditor were carried out during work to ensure work quality was addressed and rules adhered to. These rules apply to both the franchisees and their employees and relate to safety (e.g. how the site is secured from the general public) and environmental procedures.

In January 2012 the franchisees began working in Govan Mbeki village. The five franchisees each worked in a different part of Govan Mbeki village and Impilo Yabantu (the franchisor) placed a supervisor on site to ensure assistance and compliance (e.g. that Personal Protective Equipment (PPE) was worn), and to monitor the methodologies that were being followed and address any issues as they arose. The supervisor also coordinated with Impilo Yabantu's head office in East London, delivering paperwork and photos of work done for invoicing purposes.

OBSERVATIONS

From day one the franchisees found that the majority of pits were not filled with solid sludge as had been found during the site assessment, but with very liquid sludge. This instantly changed the approach for emptying and the franchisees found that they could empty the sludge by hand from the access hatch with their standard tools. Throughout the pilot programme Impilo Yabantu had developed and made tools specifically for emptying pits, such as long-handled spades that reached all the way to the back of the pit as shown in Figure 2. These, with buckets on rope, were used to fill 220-litre drums that could be sealed and transported to the waste disposal site.

The new approach to emptying speeded up the franchise's operation capabilities; however, the disposal process was proving time consuming with loading the full drums, driving them to the disposal site, emptying them and bringing the drums back. A member of the village took the initiative to act as a driver to speed up operations. The franchisees then paid him to drive his own vehicle with



Figure 2 | Some of the specially designed tools used by franchisees: a tractor-mounted tank; long-handled spades; drum lifting gantry.

other village-based labour being employed to dispose of the waste in the designated area. Through this method franchisees were able to empty five units a day.

As there was a greater number of toilets in the area than had been expected by Impilo Yabantu, and the pit contents were more liquid than solid, the waste disposal area soon began to fill up. Impilo Yabantu approached the ADM to enquire about direct disposal into the treatment plant. This would require separation and fine screening of the waste to limit inorganic material going into the facility. As the work progressed, it was decided to empty the toilets using a pump into a specially designed tractor mounted tank, which would then pump the sludge into the disposal site

as shown in Figure 3. By using the pump the larger inorganic material was left behind and raked out subsequently for bagging and disposal.

OUTCOMES

Within a couple of weeks, 250 units had been serviced by the franchisee teams as agreed with the ADM, thereafter a single franchisee team was requested to finish the remaining 169 and this was completed by the end of February. It was observed that the efficiency of the franchisees improved over the duration of the project; it was postulated that this



Figure 3 | Disposal site.

efficiency gain was partly due to the incentive of having owner-managed teams, as well as the other benefits relating to the social franchising arrangement of having a franchisor partner who provided ongoing support to the franchisees. The location of Govan Mbeki village in relation to the disposal site assisted greatly in reducing the travel costs for disposal of the sludge.

The biggest single influence on cost was continuity of work. To illustrate, once the franchisees were able to get into a routine, they could each empty up to five household toilets each day, and dispose of the contents. Obviously, ability to work at this pace brought the cost per toilet down substantially.

When reviewing the costs related to the approach taken by the franchisees the key cost benefits are achieved through reduced travel and disposal costs. In Govan Mbeki the disposal cost was influenced by the costs to establish the disposal area (fencing, access gate, a day's rental of a plough and two labourers) and later the rental of the tractor-mounted tank to transport the sludge. These costs were significantly lower than the cost for daily rental and transportation by a suction tanker that would be required for transporting to a disposal site remote from the village. As the franchisees are based in the local area their personal transport and travel time costs were also low. The manual emptying methodology was also found to be cost effective and promoted the use of local labour enabling each franchisee to employ between four and eight people from the village.

CONCLUSION

When servicing household VIPs it is important to adapt the emptying process to suit the type of toilet in place. Impilo Yabantu has developed simple techniques for emptying by hand and for the use of different types of pumps. The emptying procedure adopted is dependent on the type of access to the property and the pit. In some cases it is necessary to pump out the pit through the pedestal. Some units have no access hatch built in, some need to be completely moved, while others have to have the access hatch replaced as the only way to gain access is by breaking the seal or even breaking through the slab or masonry pit walls.

The disposal options also need to be carefully considered, and the manner and cost of disposal will be influenced by the location of the service areas relative to the disposal site. The nature of the Eastern Cape's topography means that large distances have to be travelled between villages over difficult roads with many accessibility problems. Impilo Yabantu found, through their schools pilot, that on-site disposal was often the best option, and this has been successfully done for schools pits by identifying a selected area in or close to the school property, which was sectioned off on the school property. However, for households the volumes of waste are greater due to the number of units being emptied and so larger disposal sites, like that in Govan Mbeki, are needed. Impilo Yabantu carefully follows the latest guidelines and research about the depth of pits and how the waste is handled and disposed of.

As the municipality is ultimately accountable for how the waste is disposed of, the ability to specify and regulate this disposal process is critical. The nature of the franchise allows the authorities to hold the service provider accountable (i.e. both the franchisees and the franchisor) if disposal or handling is done irresponsibly. This was a key motivating factor for the ADM in appointing Impilo Yabantu as the service provider as part of the sanitation plan for VIPs under development. The franchise approach also offers authorities a long-term solution for the on-going issues of maintenance of infrastructure. Assuming that sufficient ongoing work can be provided it is possible to establish franchises across the rural areas of the ADM who would then be able to contract with the ADM on the basis of three-year or longer contracts, for the emptying of pits as it is required. This will improve the environmental health of local communities and reduce the health risks posed by full pits to households.

Amanz' abantu are hopeful that through their successes using this social franchising model, other franchises will enter the market place, generating competition and ultimately stimulating price efficiencies and quality of service, as the sector is in much need of reform. A further potential advance for the sector would be to develop approved standards and procedures for disposal and servicing, thereby setting clear parameters and benchmarks against which service providers can be measured. This approach could be similar to the Green Drop initiative, which has stimulated a greater awareness of standards in South Africa.

REFERENCES

- Montagu, D. 2002 Franchising of health services in developing countries. *Health Policy and Planning* 17 (2), 121–130 [Online], available from: <http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1004&context=big> (accessed April 2012).
- Wall, K. 2005 Development of a Framework for Franchising in the Water Services Sector in South Africa. WRC Report No. KV 161/05, Water Research Commission, Pretoria, South Africa.
- Wall, K. & Ive, O. 2010 Going with the Franchising Flow; an Exploration of Partnerships for the Operation and Maintenance of Water Services Infrastructure. WRC report No. K5 1610, Water Research Commission, Pretoria, South Africa.

First received 4 January 2012; accepted in revised form 28 March 2013. Available online 19 August 2013