



DESIGNING THE NEXT GENERATION OF SANITATION BUSINESSES

A REPORT BY HYSTRA FOR THE TOILET BOARD COALITION

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Two and a half billion people still do not have access to improved sanitation. This situation has dramatic consequences on health: the World Health Organization estimates that diseases related to unsafe sanitation are responsible for 6% of global deaths. The development community has been devoting increased attention to this crisis, but the Millennium Development Goal sanitation target will likely not be reached by 2015.

Fortunately, a number of market-based models have emerged in both rural and urban areas to address the sanitation crisis. They all serve the Base of the Pyramid in a sustainable manner by offering improved solutions, at a price that the poor are willing and able to pay. In this Report, we analyze two models that combine an aspirational value proposition for low-income families and a strong potential for financial sustainability: projects that facilitate the creation of a local, sanitation market in rural areas and enterprises servicing home mobile toilets in urban areas.

Based on an in-depth analysis of 12 projects representative of these two models, the Report suggests strategies to overcome challenges to sustainability and scale. Finally, the Report explores how these models would benefit from corporate and industrial expertise and resources, opening up opportunities for large corporations to contribute to solving the sanitation crisis.

RURAL MODEL:

CREATING AND ACTIVATING LOCAL SANITATION VALUE CHAINS AND MARKETS

There are currently many projects aiming at creating local sanitation markets in rural areas. Mostly run by non-profit organizations, they work both on the demand side by increasing households' awareness and motivation to invest into sanitation, and on the supply side by identifying and strengthening local businesses to take over the different stages of the supply chain (manufacturing, delivery and installation). They aim at building entire value chains that could be self-sustained after an initial intervention period.

These projects have demonstrated that there is a large untapped and solvable demand for improved sanitation in rural areas. Low-income rural families are ready to pay for complete and aspirational sanitation solutions, in particular when they are offered a financing solution. These projects also manage to enroll and professionalize local hardware stores, so they can sustainably manufacture and deliver selected latrine components to neighboring villages.

However, the organizations that lead such market activation projects do not manage to capture enough of the value they help create, and are therefore mostly dependent on grants. In addition, their intervention is needed for much longer periods of time than initially anticipated. These projects therefore need to find ways to generate revenues in order to scale up, without requiring a large, unrealistic amount of grant support.

In addition, market activation projects face a number of challenges to achieve high penetration. First, they focus more on household needs for hygienic solutions rather than wants for aspirational ones, as they mostly offer the 'under-the-ground' latrine components but fail to address the desire of families for the 'above-the-ground' structure. Second, few market activation projects manage to effectively provide end-consumer financing solutions. Finally, projects face challenges in developing and maintaining large networks of professional-enough hardware stores.

To overcome these challenges, we recommend evolving the current models as follows:

- **Switch from the "market-activation" approach to the "social business" model**, by generating revenues out of the sale of products or services. Projects may in particular sell attractive shelters and sanitary equipment, which are not available locally but are in high demand. Another way to generate revenue is to systematically offer delivery and installation services.



Latrine shelter. Credit: Hystra

- **Evolve the relationship with local hardware stores** from that of a 'supported entrepreneur' to that of a 'preferred supplier'. Select them upon stringent criteria and propose contractual agreements that would encourage them to focus on the production of simple latrine parts.
- **Facilitate household purchases with a savings program** enabling them to phase the purchase of latrines, shelter and sanitary equipment over time.
- **Deploy a full-time dedicated sales force**, as these are generally more efficient than part-time models. Employ strategies that accelerate sales such as triggering village-based referrals by holding village events with product demonstrations.

Our analysis suggests that such a social business would be sustainable at scale, assuming it can capture a high enough margin on the sale of shelters and sanitary equipment. In that light, expertise and resources from ready-to-assemble, pre-fabricated housing and construction companies would be extremely valuable to design and lower the costs of such products.

URBAN MODEL:

SERVICING HOME MOBILE TOILETS

Home mobile toilets are compact, waterless and portable toilet units that can be used in homes. These toilets are 'rented' for a service fee, whereby the toilet provider operates a regular collection service for the waste accumulated and stored under the toilet.

Despite their novelty, mobile toilets seem to be well adopted in informal urban settlements. Firstly, households are willing to pay a relatively high service fee when the mobile toilet is modern-looking, odorless, hygienic and comfortable to use. It has been found that families, including children, use them more systematically than public toilets or 'emergency' solutions (such as night pots or bags).

However, there are a number of operational and financial hurdles to overcome before scaling up. First, more hygienic and odorless solutions need to be developed to improve customer experience, lower the cost of the waste storage solution and allow for easier and safer handling.

Second, waste collection at scale would require deploying large teams of low skilled, part-time workers circulating in informal urban settlements – an obvious operational challenge. Transport and logistics are also highly complex. As a consequence, toilet servicing requires having a certain density of customers in a given area to be profitable.

In addition, renting home mobile toilets for a service fee versus selling them implies operating frequent payment collection, which needs to be performed by an expensive dedicated team. Finally, home mobile toilets can only operate in areas where waste treatment facilities are available as the collected waste needs to be treated and disposed of properly. This is a challenge to replication as most large developing cities have either no treatment plants or poorly functioning ones.

To overcome those challenges, we recommend evolving the current models as follows:

- **Develop better waste container solutions** to improve the attractiveness of the product and reduce collection frequency and costs. Toilet units also need to be further improved.
- **Deploy innovative sales and marketing approaches to accelerate penetration** in target areas, starting operations only when a certain threshold has been reached. In order to accelerate penetration, we recommend building upon community dynamics, by leveraging local officials and community leaders and offering community-level benefits.



Home mobile toilet in Ghana. Credit: Hystra

- **Develop alternative approaches to lower payment collection costs**, leveraging mobile payment schemes or piggybacking on existing payment platforms and services (e.g. utility bills or financial agents' networks). If these are not available, an option could be to have cash collectors generate additional revenues, for instance by selling hygiene products (e.g. soap, detergent, etc.).
- **Use Information and Communication Technologies** to optimize and manage sales, payment and waste collection operations at scale.
- **Require an initial down payment** paid by new customers upon toilet installation, which would repay part of the toilet unit cost, and therefore alleviate cash flow constraints.

Our analysis suggests that a home mobile toilet social business would be sustainable at scale assuming it can charge the level of servicing fees observed in selected pilots, and reduce the frequency of waste collection. In that light, such a social business would greatly benefit from chemical and fragrance companies' expertise to design and manufacture better waste containers and toilet units. It could also leverage FMCG companies to sell and distribute hygiene-related products, as well as IT companies to develop automated management tools.

ALTERNATIVE SOLUTIONS FOR WASTE MANAGEMENT

Both models do not directly deal with the disposal of the waste. In rural areas, where the severity of the waste management problem depends largely on soil conditions (as pits may fill up more or less quickly), sanitation businesses should tailor their offering to propose work-around solutions such as double and off-flow pits to families.

The waste treatment issue is more acute in urban areas: open air gutters and lack of functioning waste treatment plants result in massive pollution issues and health risks. To address the latter issue, we looked at two groups of solutions.

First, we studied **small, decentralized waste processing alternatives** that could be coupled with waste collection schemes. These technologies process the waste with the objective of producing a by-product with a market value (e.g. biogas, animal feed, fertilizer, fuel). Our analysis revealed that although promising, existing projects do not yet generate sufficient revenues to pay for the waste processing costs and by-products often face challenges to commercialization (lack of local markets, regulatory hurdles, logistical and perception issues). Finally, the feasibility of these solutions at scale remains to be seen.

Second, we looked at **bio-toilets, a group of technologies that use living organisms in compact tanks placed directly under the toilet** to feed on and process the waste with almost no outside intervention, dramatically reducing the need for waste management. Hence, bio-toilets could offer a disruptive solution in areas where households own their house and would invest into fixed infrastructure. Bio-toilets are already widely used as public toilets in some countries but they have barely been commercialized at household level, as questions remain as for effectiveness in such an environment.

Despite these challenges, it is imperative to continue supporting the development of alternative waste management technologies. In this regard, the private sector could play a critical role in testing and improving these technologies, reducing their costs, and developing approaches to commercialize them.

CONCLUSION

While the global development community has been playing a major role in fighting the sanitation crisis for the last decade, these efforts are not enough given the magnitude and complexity of the problem. Market-based approaches could help develop more sustainable and scalable solutions to extending access to sanitation for all. To support the development of innovative business models, the private sector has a major role to play. By bringing corporate expertise, assets and resources, businesses can help unlock the potential of many innovative projects seeking new ways to offer sanitation solutions, in a more commercial way. We hope this Report will inspire business, public and development leaders to engage and support these efforts.

About the Toilet Board Coalition

The Toilet Board Coalition is a global, business-led coalition of leading public and private organizations, sanitation experts and non-profits that aims to end the sanitation crisis through scalable business approaches. This Report was prepared in close collaboration with and in order to support the work of the Toilet Board Coalition. It will feed into its work, by providing insights about promising initiatives and business models to support, and recommendations on how accelerate and replicate them.

About Hystra

Hystra works with business and social sector pioneers to design and implement hybrid strategies, i.e. innovative market-like approaches that are economically sustainable, scalable and eradicate social and environmental problems, and combine the insights and resources of for-profit and not-for-profit sectors. Hystra itself is a hybrid organization, a for-profit tool for social change. Hystra consists of a core team of full-time consultants and of a growing network of partners already present in 12 countries. For more information, visit www.hystra.com