

# GARV TOILETS - SMART, ECO FRIENDLY & SELF SUSTAINABLE PORTABLE TOILETS

## • Background

There is an acute shortage of well-maintained public toilet infrastructure in India. As a norm we should have 1 toilet facility for every 2500 people, and in most cases, we do not have 1 for every 15000 people. For the ones which are there, are filthy and dirty as a result of which, people do not use these facilities.

- More than half of Indian households do not have access to toilets.
- With the number of slum dwellers increasing at an alarming rate every week, the already stressed sanitation infra in cities and semi-urban areas is breaking down to pieces.
- Lack of maintenance and monitoring techniques leaves the sanitation infra in a filthy state. This further leads to people opting for open defecation along the roadsides or in the fields.

To address this acute shortage of well-maintained Public Sanitation Solutions, Smart, Eco Friendly & Self Sustainable Portable Toilets were introduced by GARV Toilets, which are maintained and monitored with the integration of technology to benefit the underserved communities. They make money by charging government or other implementing agencies through the sales of toilets, sales of monitoring software, regular maintenance contracts and selling the advertising rights to generate decent profits which help us in offering sustainable and innovative solutions.

GARV Toilets provides a complete public sanitation solution that can be monitored on a real-time basis through technology and maintained regularly

- These portable toilet units are made up of stainless steel and each & every equipment is welded or fitted with hidden nuts and bolts making it secured against any rugged use/vandalism.
- They are self-sustainable in terms of energy requirement (Solar Panels), waste decomposition (bio-digester) and maintenance (sensor-flushing and RFID tag monitoring).
- They have technology to capture real time data about various monitoring and unit health parameters that helps against any maintenance or malfunction issues.

## • Location, Date

Faridabad, 2015

## • Areas

Urban, Semi-Urban and other Underserved Areas

## • Stage/Scale

India and Bhutan

## • Objective of the assignment

The main aim was to create a public toilet that could maintain itself, was widely available and environmentally friendly.

The objective is to provide well maintained sanitation facilities to 0.5 mn people by 2019 through these toilets.

## • What was done

The research, prototype and design phase of about eight months produced a toilet with a stainless steel superstructure, body and fittings.

## • Impact

A total of 198 toilets are installed spread across Pune, Faridabad, Ujjain and Thimphu (Bhutan) with 20.000 unit uses per day.

User communities acknowledge the fact that well-maintained, attractive toilet facilities promote the regular usage. 94.78% of the tracked users in an industrial area of Faridabad have stopped open defecation since the installation of GARV™ Toilets

## • Challenges and Issues

- Marketing of an innovative sanitation solution which presents itself as an alternative to the conventional brick and mortar structure models.
- Reluctance of the administrators towards accepting the innovation as a scalable alternative despite having multiple point of contacts.
- Culture of empanelment in the system at the municipality levels, which presents itself as a biggest hurdle towards scaling up.

## • Innovation



- GARV Toilets establishes long-term Public Private Partnerships with municipalities, offering full-package solutions with procurement, installation, operation and maintenance. Additional revenue is envisioned through advertising rights and business partnerships.
- These toilets are highly durable – they are created to address the issues of vandalism and maintenance. They are vandal-proof, rust-proof and easy to clean.
- The toilet unit integrates newer technology into its design. Auto-flush sensors are activated before and after each use, and radio frequency and IoT sensors provide real-time updates on usage and any malfunctioning. These updates are sent to a dashboard, which can be constantly monitored from a remote location.
- It has limited water usage, which makes it adaptable to water-scarce areas. By using stainless steel for the structure and fittings, the installations use less water for both flushing and floor cleaning.
- The unit is fitted with solar panels and LED lights.

## • **Lessons learnt**

- Today we live in the age of customisable solutions, every set of customer/user/beneficiary is unique and one product solution is not acceptable to all. GARV Toilets has adapted to these needs, have rolled out customised solutions to its customers by rationalising costs and having multiple optional accessories.
- An innovation which intends to scale up through government channels, has to have multiple pilots.
- Public-Private-Partnerships with innovative revenue models that result in sustainable projects are the way forward to solve the present sanitation crisis.

## • **Financials**

Not Available

## • **Economic sustainability/Revenue Model**

- GARV Toilets business model prefers to set up public-private partnerships with municipal corporations for both installation and operation & maintenance of toilets. Extra revenue can be generated via advertising and business partnerships. This can involve partnering with mobile phone operators, who lease out WiFi hotspots and provide mobile phone recharging services and owners of small kiosks.

## • **Delivery Channels**

- NGOs and CSRs: partnered with NGOs and CSRs for the sanitation projects. GARV™ toilet models are customised as per site/user requirements and the installation, commissioning of toilet blocks is undertaken by our team. Though, we undertake the AMCs for the maintenance and repair of the toilet infrastructure but we ensure that the employees of the partner organisations are also trained about the usage and preventive maintenance aspects. The softer elements of the project which include community mobilisation and behaviour change communication plans are executed by the NGO partners. Our toilet dashboards provide the Health and Hygiene data of the user community to the NGO partners so that the BCC plans and other interventions are designed as per requirements of the community.
- Government Bodies: For the projects with the government, propose long term Public-Private-People Partnership contracts to be executed. Under these contracts, we ensure that the CAPEX (Toilet Installation) and OPEX (Regular Maintenance) for the required Public Toilet blocks are taken care by our company and the government bodies do not have shell out a penny for the whole contract period. We make sure that the sustainable payback for our investments is provided through multiple revenue channels, like, advertising revenues through outer toilet block panels, commissions of community services, partnerships with hygiene product companies, and e-commerce companies. Through these projects, we reach out to a vast number of people who lack the access to basic toilet facilities in cities, urban slums and small towns.
- Private Sales: Also sell the toilet models directly to CSOs and corporates (real estate, Event management or other industries) which like our product. Through these channels our products serve the deprived segments like the daily wage labourers, construction workers, commercial sex workers etc.

- **Implementer Contact Persons**

- **GARV Toilets by SnapEX Overseas**

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- **Sources and References**

- <https://sanitationupdates.wordpress.com/2016/10/10/indestructible-and-smart-public-toilet-innovation-in-india/>
  - <http://www.ennivent.com/GARV-toilets-innovation-meets-sanitation/>
  - <http://bigbetinitiative.com/innovating-indestructible-and-tech-based-toilets/>