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Research on self-sustained eToilet for households/ urban-semi urban public/ community sanitation

Background

- Existing situation in the sanitation front in Indian cities are pathetic
- Despite technological and industrial advancements; no efforts to curb inadequate sanitation amenities and poor hygiene
- Unattractive proposition, social and cultural constraints
- Direct bearing on economic growth especially tourism, public health concerns and hygiene

PHYSICAL TOILETS
common issues

Location and Built up area

Shortage of Manpower

Physical Maintenance Required

Structure has to be Permanent

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- 3 critical issues needs to be addressed:
  - ✓ Cleanliness and hygiene
  - ✓ Conservation of resources
  - ✓ Sustainability of toilets

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Need of the Hour

- A suitable technology intervention in the sanitation sector
- User friendly interface and convergence of technologies was assessed.
- Thus, the need for a cost-effective, sustainable and affordable solution gave rise to the India's first Electronic Public Toilet- ***"eToilet"***


FEMALE
ENTRY
KEEP FRESH!
MALE
ENTRY
മരം ഒരു വരം
Vespalpi


MALE
delight
Electronic Public Toilet
ഇൻഡസ്
INDUS MOTORS
ഇൻഡസ്
INDUS MOTORS
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BASIC
HOUSE
SHOPPEE


ENTRY
ELECTRONIC PUBLIC TOILET
Fashion Street
fresh
spa

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About e-Toilet

- ✓ Compact Design: requires just 45 sq. ft (3.71 sq. m.) of space to set up.
- ✓ Integration with City's power distribution system or works on solar energy.
- ✓ Conservation of valuable resources.

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eToilet Features

Access & Ambience

- Entry automated through Coin Validator or Mobile
- Web access to monitor functional & usage status
- High Tech Advertisement space

Improved Serviceability

- Self checking and GPRS based remote shut down mechanisms
- Facility for user to alert in case of system issues

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How to use e-toilet

Green-Red Indication

Coin Validator

Sliding Door

Main Door

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Entry

Manual Lock

Light, Fan & FM

Pre Flush

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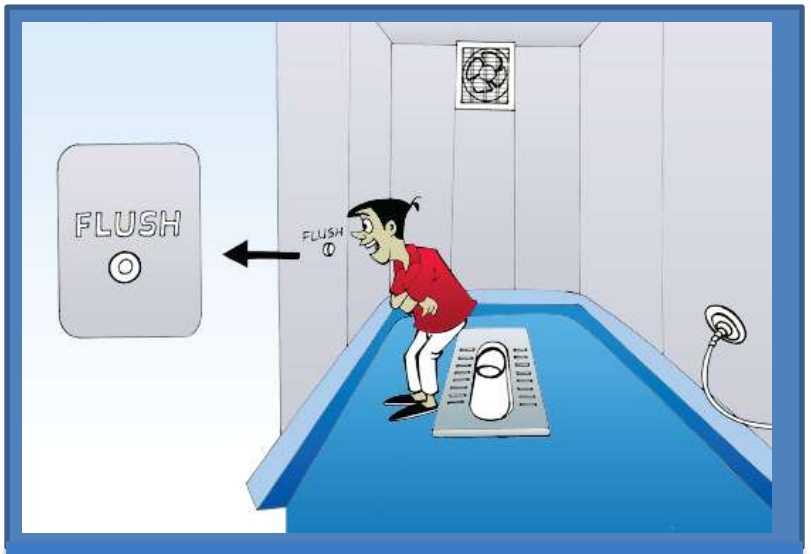
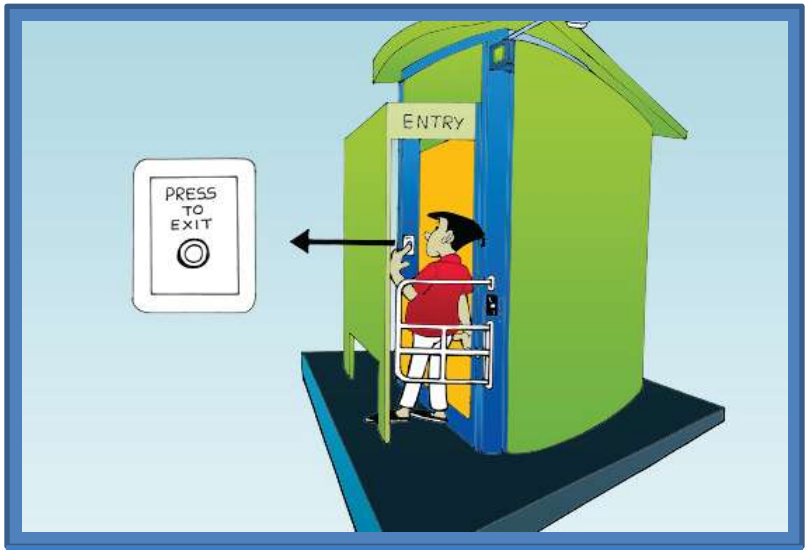
Cloth Hanger & Tap



Manual & Auto Flush

Emergency Floor Wash & Platform Cleaning



Exit Button

Exit & Emergency Door

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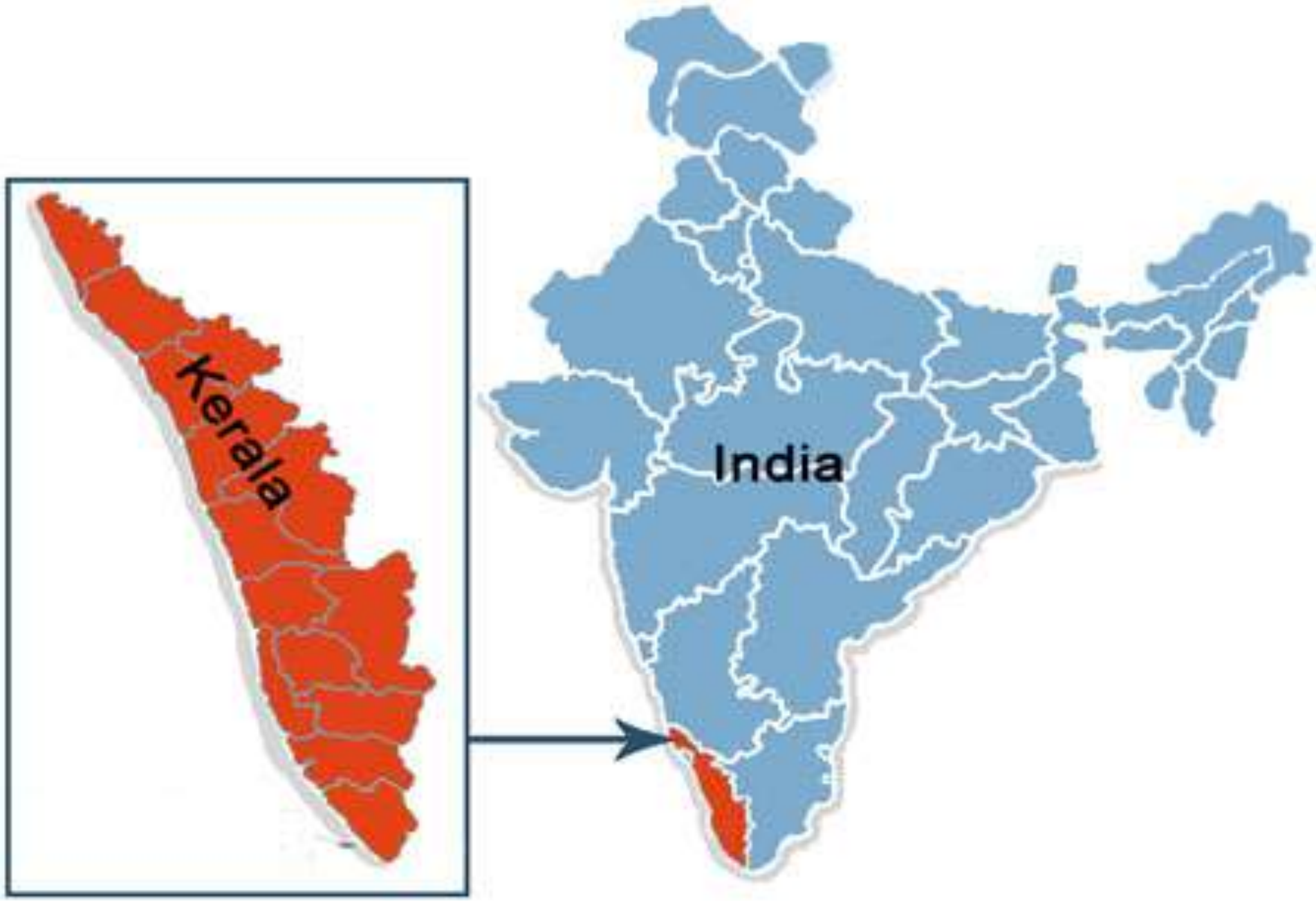
Installation Status

- Installed in various locations in India
- Commercial production started during the first quarter of 2010
- About 400 units have been installed in India, under the aegis of local bodies and Government departments like Tourism, Public Works (Kerala), Women's Development Cooperation
- These eToilets are being installed under the funds available under various MPs, MLAs, and local self Governments


Kerala
India


Kerala
Kasaragod
1 Units
Kannur
3 Units
Wayanad
2 Units
Kozhikode
17 Units
Malapuram
2 Units
Palakkad
7 Unit
Thrissur
Iddukki
4 Units
Ernakulam
109 Units
Kottayam
4 Units
Alappuzha
14 Units
Pathanamthitta
27 Units
Kollam
18 Units
Thiruvananthapuram
46 Units


eToilet


ENTRY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E-toilet School Model

Key Features.....

- SMS Lock
- Pre Flush
- Manual Flush
- Auto Flush
- Platform Cleaning
- 1 year free maintenance
- Rs. 5000 / year AMC
- In built Water Tank
- Replacement Warranty

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Government support

- Extensive support from both the Government and Civil Society.
- 50% subsidy for local Governments
- Reduced taxation by 5%.
- Public Sector Undertakings engaged in marketing and supporting the eToilet project
- She-toilets and Eve’s own e-toilet, school toilets

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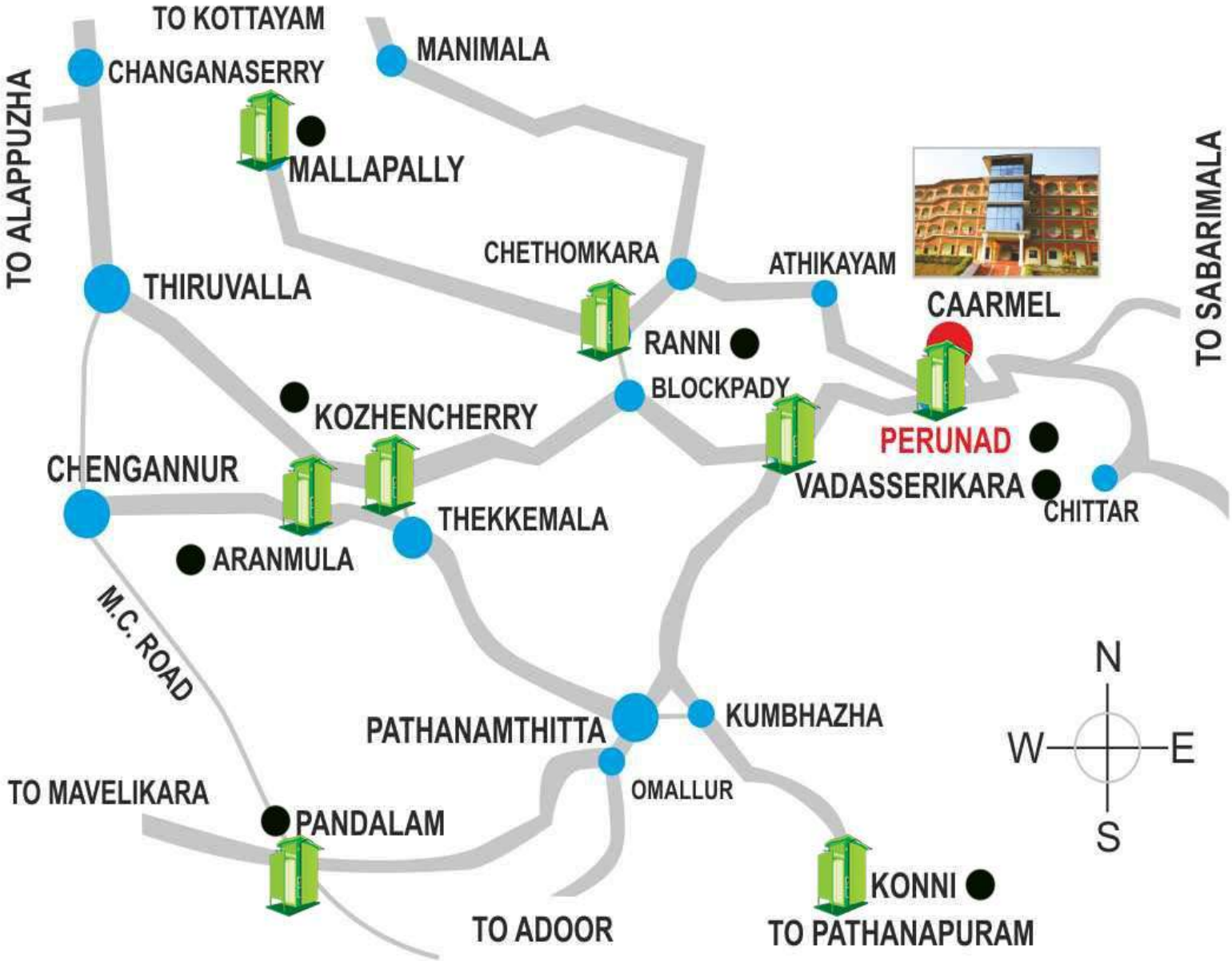
Connected eToilet Infrastructure (CeTI)

- Network of connected eToilets whose locations can be traced with an SMS, remote controlled, remote managed, self operating and sustainable

- Mapping and connecting all the eToilet units via web and mobile, thereby making travel smoother and easier for the Public and tourists alike

- The travelers can identify and select the eToilet units according to their journey route


TO KOTTAYAM
MANIMALA
CHANGANASERRY
TO ALAPPUZHA
MALLAPALLY
TO SABARIMALA
CHETHOMKARA
ATHIKAYAM
THIRUVALLA
CAARMEL
RANNI
BLOCKPADY
KOZHENCHERRY
PERUNAD
CHENGANNUR
VADASSERIKARA
CHITTAR
THEKKEMALA
ARANMULA
M.C. ROAD
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E
S
PATHANAMTHITTA
KUMBHAZHA
TO MAVELIKARA
OMALLUR
PANDALAM
KONNI
TO ADOOR
TO PATHANAPURAM

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Efficient Use of Resources

	Water Efficiency	Electricity Efficiency	Cleaner Sewage Treatment
Conventional Options	15-20 litres for flushing and floor washing per use	Use conventional power sources	Normal concrete pits constantly suffer from waste clogging and overflowing
eToilet & Anapackage Sewage Treatment Plant	CPU controlled valve flushes 2–4 litres depending on usage time 5 litres for floor washing after every 5 uses	Sensor-controlled electric systems like fan, light, audio Mechanism to connect to solar panels	Anapackage utilizes anaerobic bacterial decomposition for sludge treatment in separate Compartments Sewage Treatment Plant does not require electricity

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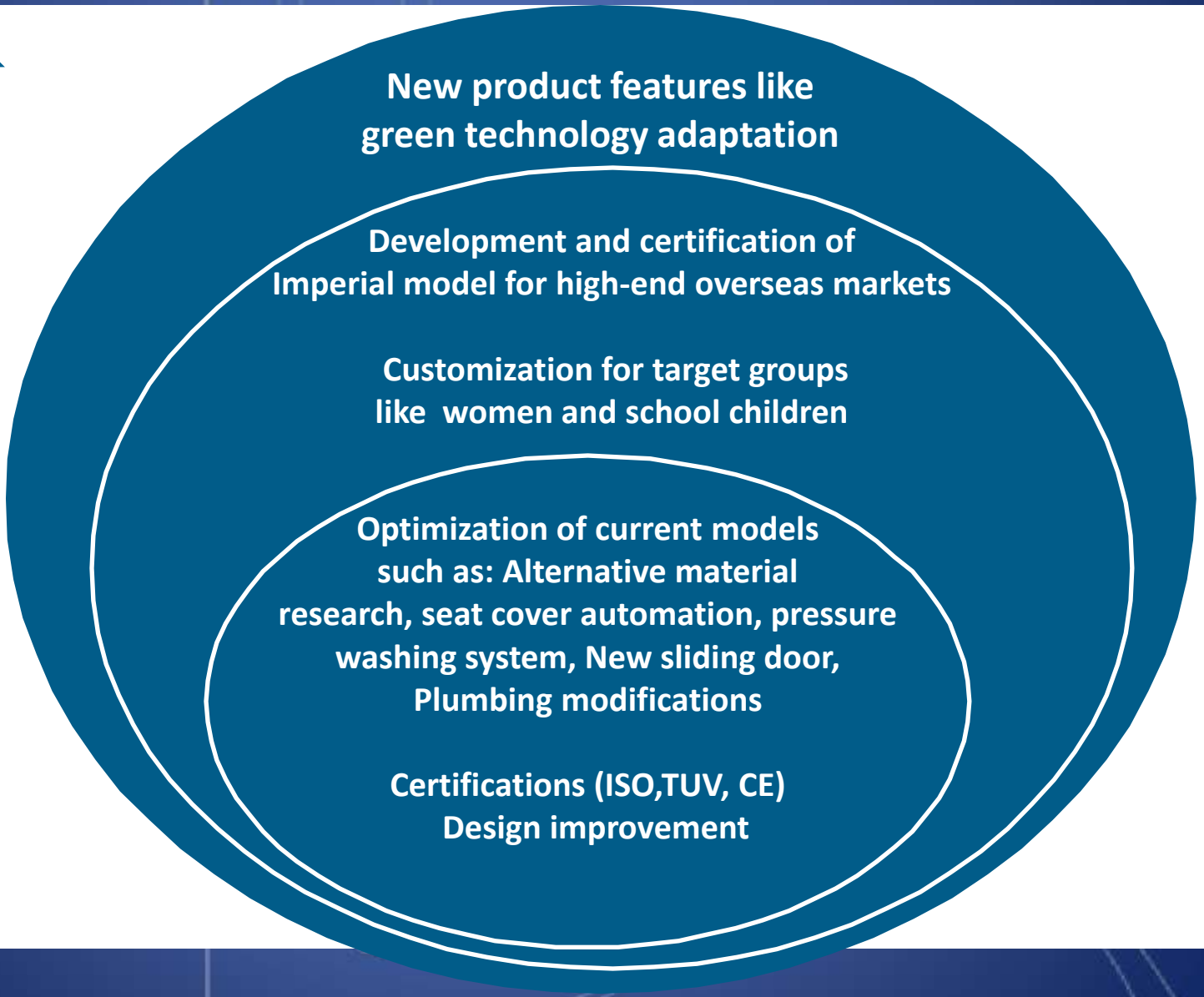
Focusing on Continued Product Development

Building a Strong product Portfolio



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Modular Solutions

Toilet Seat Sterilization

Sterilizing the toilet seat cover to reduce disease causing germs

Power flushing

Reduce water usage for flushing the toilets unlike the existing toilets

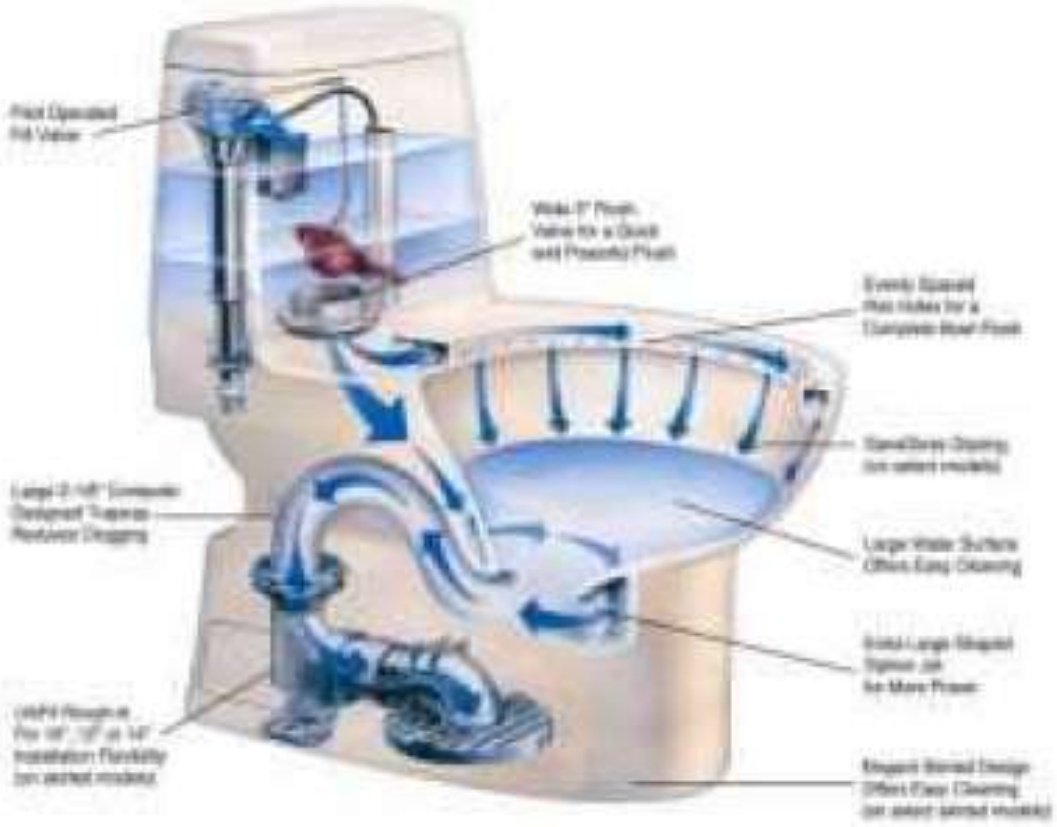
Proposed Solutions

1. Sterilization

- An automated sterilization unit for seat covers
- An automatic seat cover
  - ✓ For house toilets- a switch mechanism for bending out the seat covers and for recombining the seat cover back to sterilization unit
  - ✓ For the public toilet- a pedal which is capable of bending out the seat cover for the usage.

2. Water sucking /Power flushing Mechanism

- It can suck the solid particles with high pressure
- Would help in further reducing water consumption
- The design of flush mechanism in toilets requires less amount of water as compared to normal closet



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Our Vision of the Future

- Universally accessible and affordable public sanitation
- Optimum utilization and conservation of scarce resources like water and electricity
- Self sustainability of technologically advanced sanitation facilities

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Ultimate Vision

1. Public toilets across Geographies

- ✓ Public Sanitation Infrastructure that will be of global standards
- ✓ Connected through various mobile and web based technologies

2. Benefits that will trickle down from the societal level to individuals

- ✓ Possible only through concerted efforts towards developing cost effective and sustainable toilet related technologies
- ✓ Solutions to be implemented at the mass level especially in developing nations, at the household level

About Eram Scientific

- eToilet is developed by Eram Scientific Solutions, a Group Company of Eram & ITL Group Companies
- Eram Group operates in 17 countries, more than 12000 team members in 44 Companies
- Operating in sectors of environment and clean technology, eToilets in urban locations, schools, sewage treatment plants, solid waste treatment systems, rain water harvesting structures, water purification technologies and other technologies

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Company Profile

VISION

"Our vision is to be a pioneer in developing pro-earth solutions in multiple domains and technologies to ensure a better, safer and natural world around us."

MISSION

- Constantly innovating and applying Science and Technology to develop solutions against the pressing needs of the society.
- Applying unconventional methodologies and 'Out of the Box Thinking' and practices
- Focus on developing solutions in alternate energy, clean technologies, and pro nature applications
- Evolve itself as an abode of multi-disciplinary development enthusiasts

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High Visibility of the Product

- Navkriti Award, 2012
- Reinvent the Toilet Challenge Round 2 Grantee, Bill & Melinda Gates Foundation
- TiE50 2012 Top Start Ups, Life Sciences Category

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High Visibility of the Product

- Sankalp-Artha Grand Prize Winner for the most promising enterprise of the Year 2012
- Sankalp Awards 2012, Water and Sanitation Sector
- Finalist, Samsung Innovation Quotient Season 2, 2012
- ET Now's Pick of Sankalp, The Best among 4 enterprises

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- Innovative Enterprise, Manufacturing Leadership 100 Awards
- Winner, Technology Review Grand Challenges 2011 Program
- Product Manufacturing, Computer Society of India (CSI) Excellence in IT Awards 2011

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- Finalist-Special Jury Reference Award, Manthan 2011
- Innovative Technology in Public Convenience, Washroom & Beyond Honors 2011
- Most Innovative Initiative in Public Healthcare - eWorld Public Choice Awards 2011
- Best CSR Project 2011, PMI Award


WHETHER YOU
THINK YOU CAN,
OR THINK YOU CAN'T.
YOU'RE RIGHT.
(HENRY FORD)

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Thank You