

# Automatic Toilet Seat Cleaning



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**DIPP No:** 176159

# Problem

Dirty/Wet toilet seat



Unwanted stuff on seat



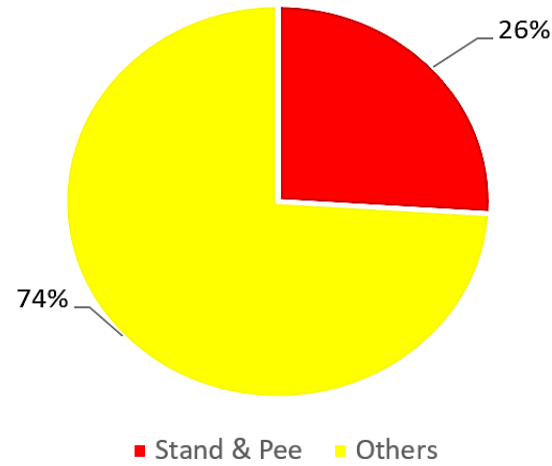
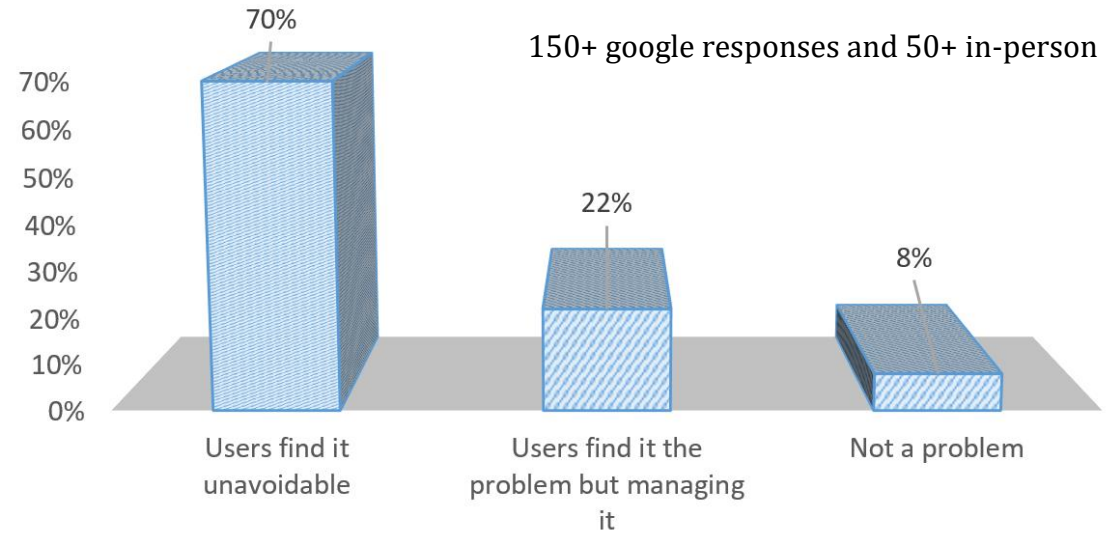
UTI/Skin Infections



Tissue Wiping



# Opportunity



Survey from 20000 Women



67+ in-person customers

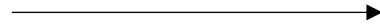
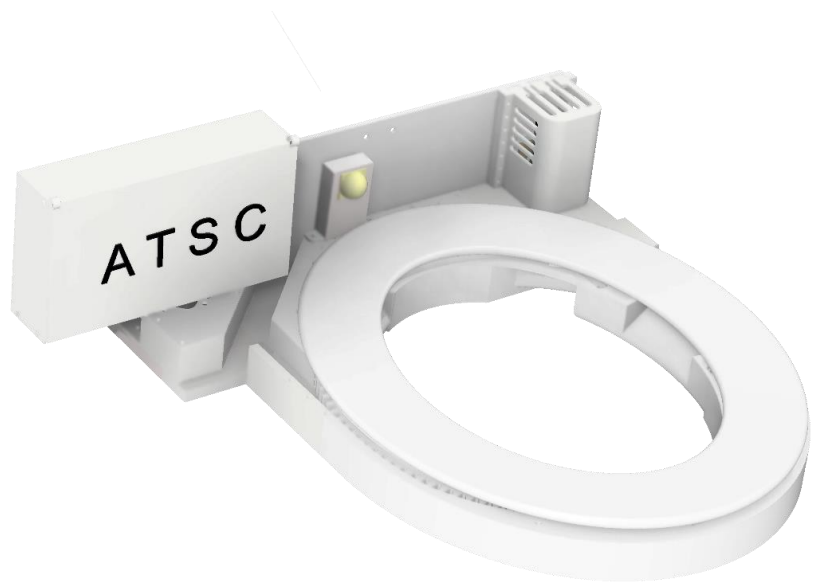
# Elevator Pitch

Reinventing public toilet hygiene with an automated, retrofittable system that delivers a clean, dry, and germ-free toilet seat for every user, anytime.

# Solution



# Fitting



ATSC fitting on a toilet commode

# CAD Video



[CAD Video – Functional working](#)

# Work Done



[Product Working](#)

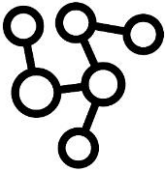


[Super hydrophobic Experiment](#)

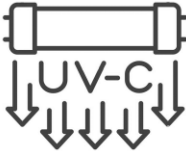
# Technical details



Water Based  
Cleaning



Material  
PLA/PP



UVC Dose  
10-50 mJ/cm<sup>2</sup>



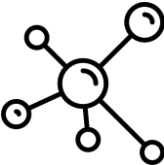
Cleaning cycle  
10-30s



User Interface  
(Manual & Automatic)



Charging  
Direct plug; Removable battery



Advanced Materials  
SH; SLIPS



Certifications  
BIS, ISO, EMR

# Technical details



Product Dimension  
(Commode size & shape compatible)



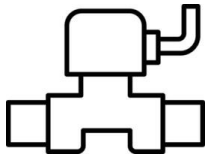
12V Li-ion battery  
5Ah 10-15 Days



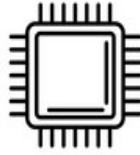
DC Motor  
12V 70 rpm 1 kg cm



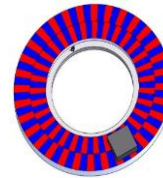
Servo Motor  
5V 180 10 kg cm



Solenoid Valve  
12V 2.5mm orifice



Microcontroller  
ARDUINO/ESP32



Magnetic Encoder  
5V 2 channel 7 CPR



Position sensors  
5V 3mm Accuracy

# Value Proposition



Clean & Safe Environment



Retrofittable



Customizable



No Manual Checks



Client Comfort



Client Retention

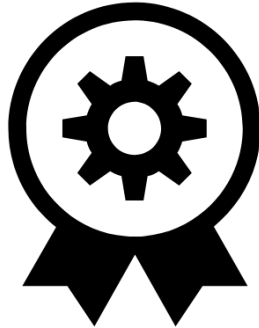


Client Attraction



Positive Branding

# IP Strategy



## **Utility Patent**

Multi-stage cleaning  
process; Disinfection;  
Advanced material seat



## **Design Patent**

System Visual Design



## **Trademark**

Protection for product  
name, brand, logo

# Project Team and Advisors



Anurag Agrawal

Robotics  
Embedded Systems  
Business

Electrical - IIT Bombay  
Scientist – ISRO (3.5 yrs)  
Design Engr. – AMD (2 yrs)

Paper published on ‘Timing synchronization in FPGA for quantum key distribution’

Target Tracking Control System for LOS communication



Renuka

Product Design  
Marketing  
Public Relations

Electrical - IIT Bombay  
Quality Anlst. – Meditab (1 yr)  
Design Engr. – Intel (1 yr)



Chinmay Ghoroi

Mentor

Professor,  
IIT Gandhinagar (17 yrs)

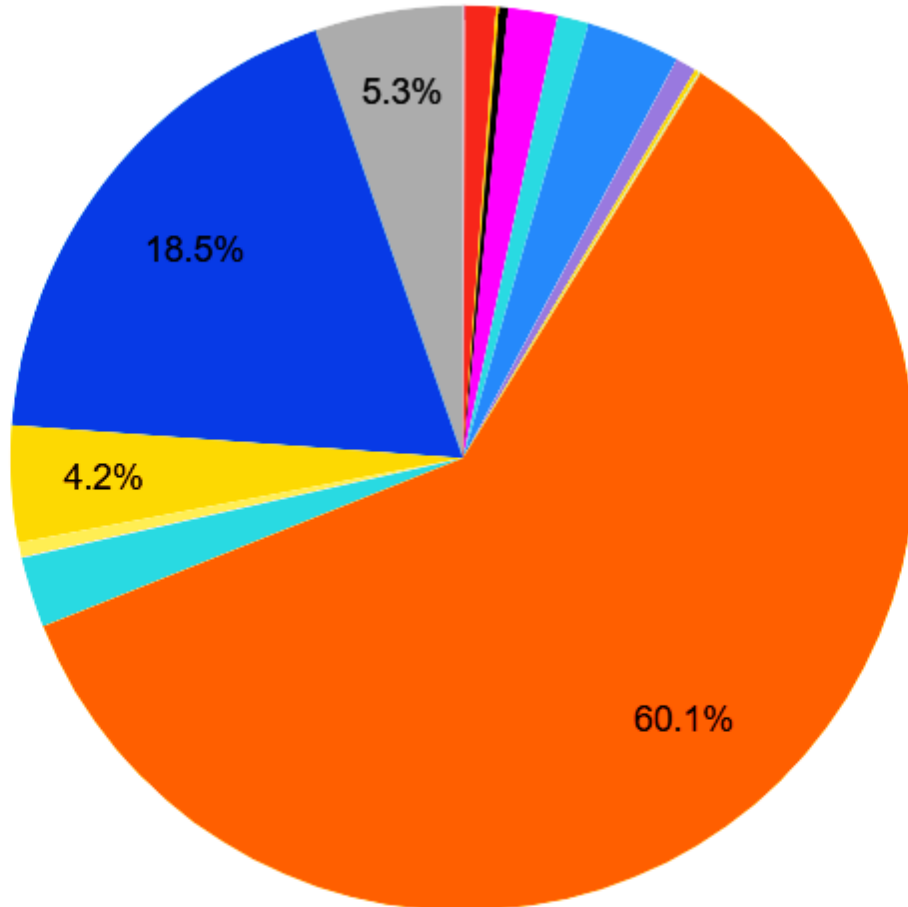


Souymadip Sett

Mentor

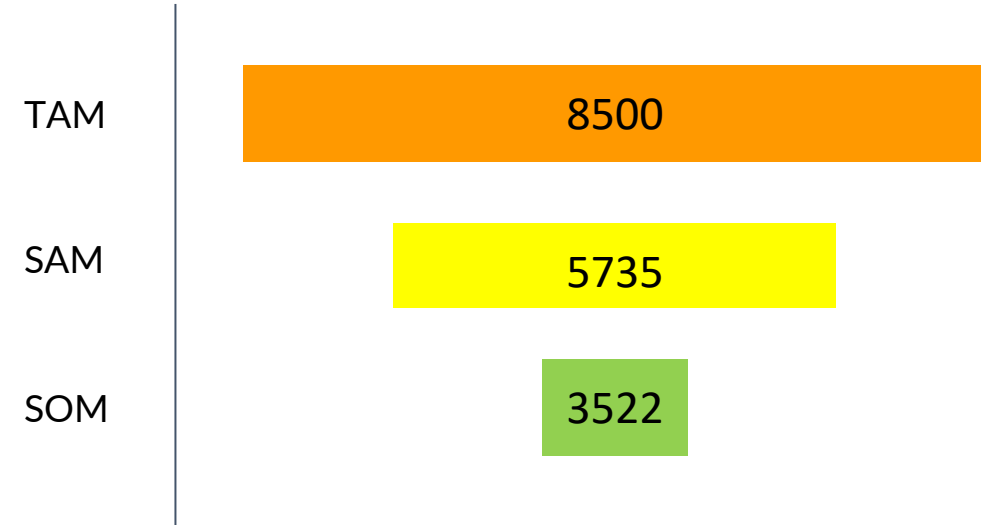
Professor,  
IIT Gandhinagar (5 yrs)

# Market Size



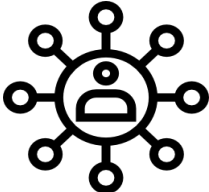
- Airport
- Bars
- Bus Stations
- Clubs
- Gyms
- Hospitals
- Hostels
- Hotels
- Malls
- Metro Stations
- Offices
- Restaurants
- Stadiums
- Stations
- Trains
- Under construction
- Universities

## Commercial Market Size (Crores INR)



[Excel Sheet Link](#)

# Go-to-Market Strategies



Direct Reach



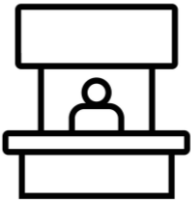
Online Marketplaces



Hospitality Partnerships



OEM Partnerships



Industrial events & shows



Referrals



Distributors

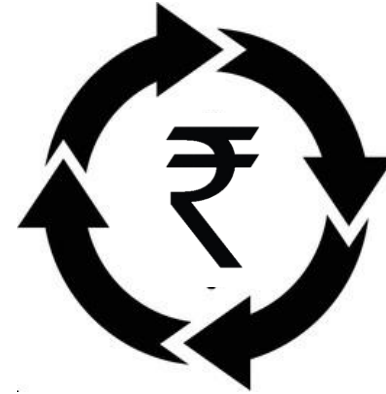


Marketing

# Revenue Model

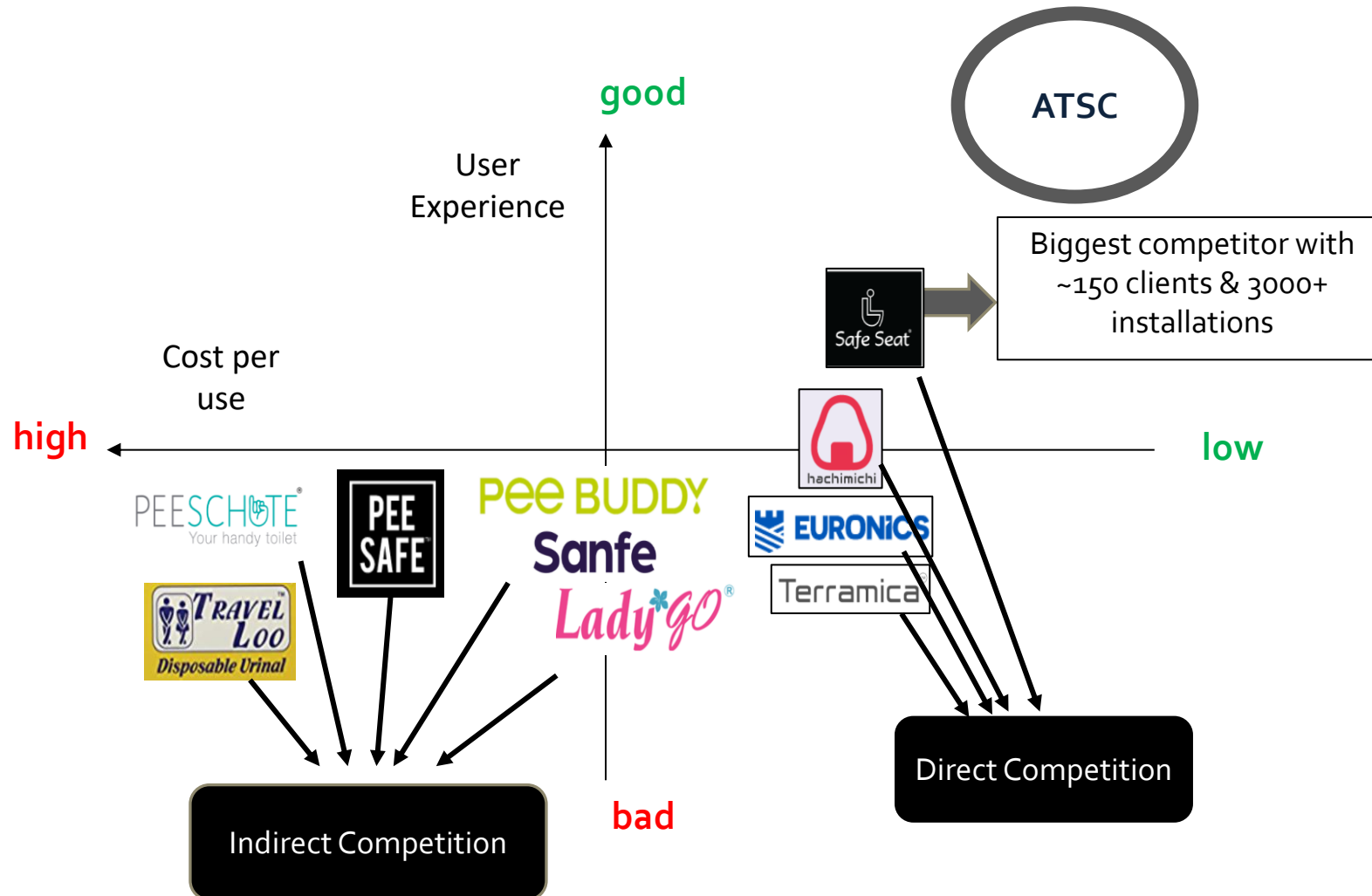


Direct Sales



Recurring revenue  
Accessories; Maintenance

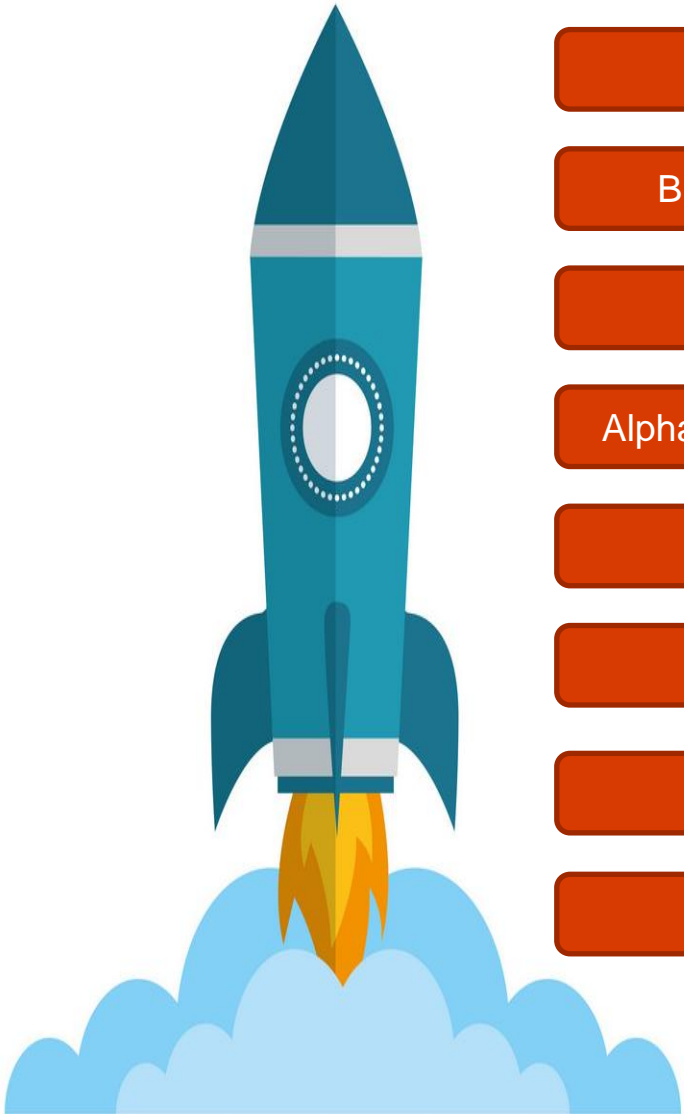
# Competitive Landscape



# Differentiation

	HapiHygi Innovations	Safe Seat, Hachimichi, Euronics	Peebuddy, PeeSafe, Sanfe, Ladygo
Product Offering	Automated Toilet Seat Cleaning	Plastic Sheet Rolling System	Disposable covers, Sanitization sprays
No Human Intervention	<b>Y</b>	<b>N</b>	<b>N</b>
Germ-free	<b>Y</b>	<b>N</b>	-
Retrofittable	<b>Y</b>	<b>Y</b>	<b>N</b>
Customisable	<b>Y</b>	<b>N</b>	<b>N</b>
Garbage Disposal Free	<b>Y</b>	<b>N</b>	<b>N</b>
Nothing to Carry	<b>Y</b>	<b>Y</b>	<b>N</b>
Aesthetics	<b>Y</b>	<b>N</b>	-
B2B	<b>Y</b>	<b>Y</b>	<b>N</b>

# Roadmap



Beta Launch

Business Focused Marketing

Partnership Networks

Alpha Launch (Restaurants, Hotels)

Certifications

Pilot Testing

Patent Filing

MVP Development

## Product Introductions:

- Automatic Toilet Seat Cleaning (Year 1-2)
- Automatic Flush System (Year 2-3)
- Smart Commode Unit (Year 2-3) – A complete smart toilet system with seat cleaning, automatic flush, and bowl cleaning
- Smart Toilet Seat (Year 3-4) – monitoring health parameters
- Smart washbasin (Year 4-5) – a self-cleaning washbasin with drying functionality
- Smart mirror (Year 4-5) – a fog-free, self-cleaning mirror

**Target Key Markets:** Commercial & residential spaces

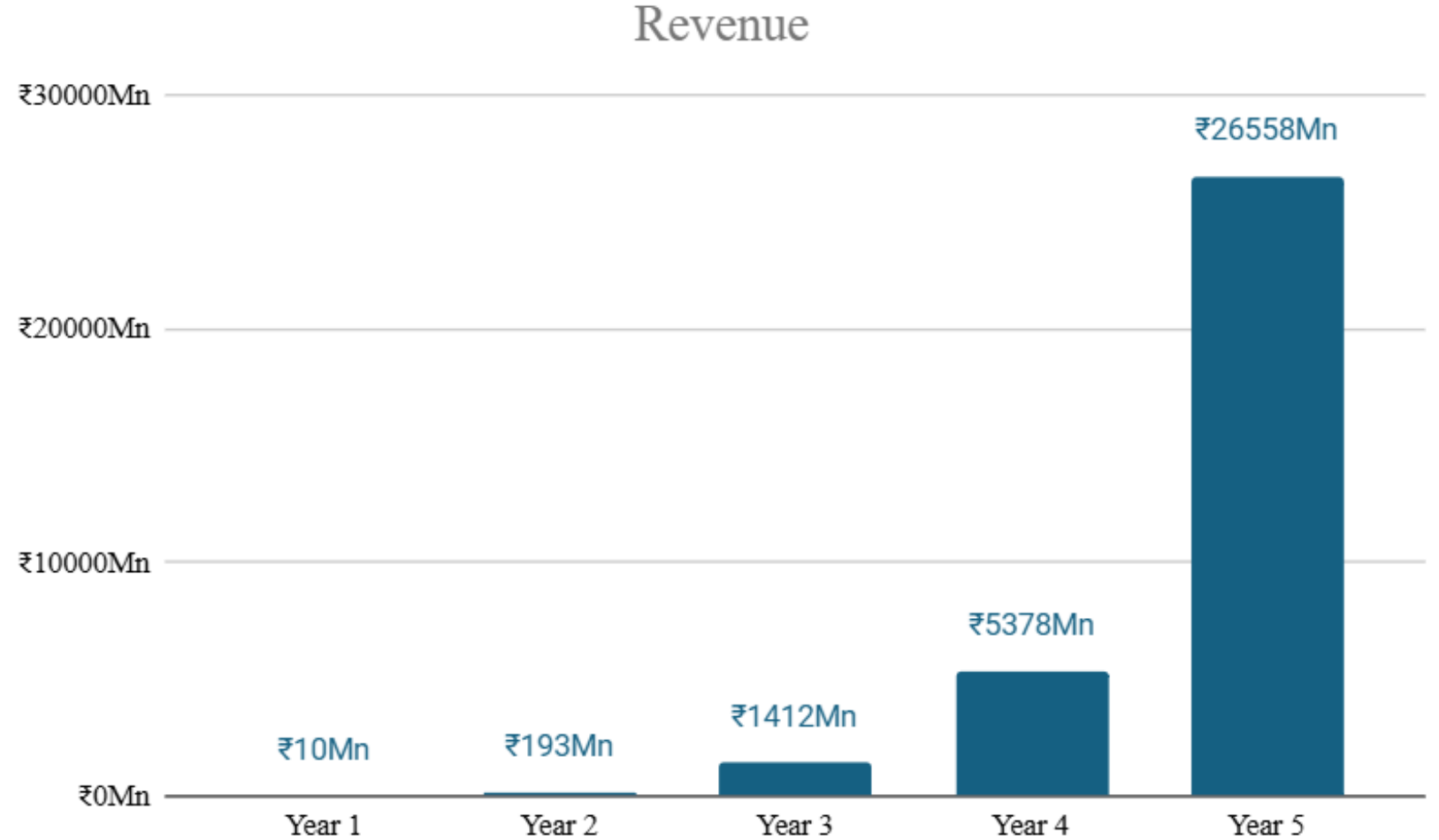
**Strategic Partnerships & Collaborations:** Facility management, real estate developers, and hospitality brands for expansion.

**Global Expansion:** Expand into international markets with high demand for advanced hygiene and IoT solutions.

# Financials

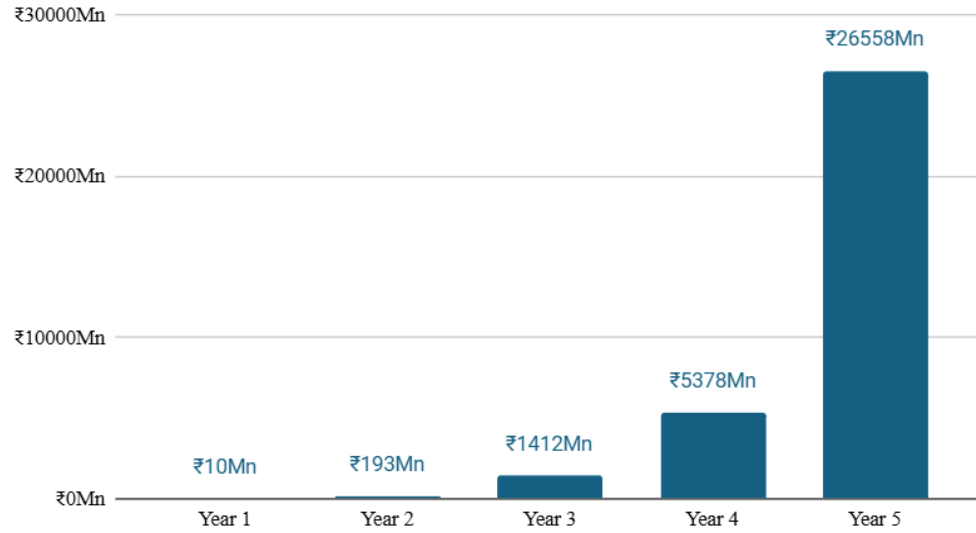
Heads	Amount
COGS	6200
Packaging	300
Installation	500
Transportation	500
Warranty	500
Profit	4000
Selling Price	12000

Costing structure

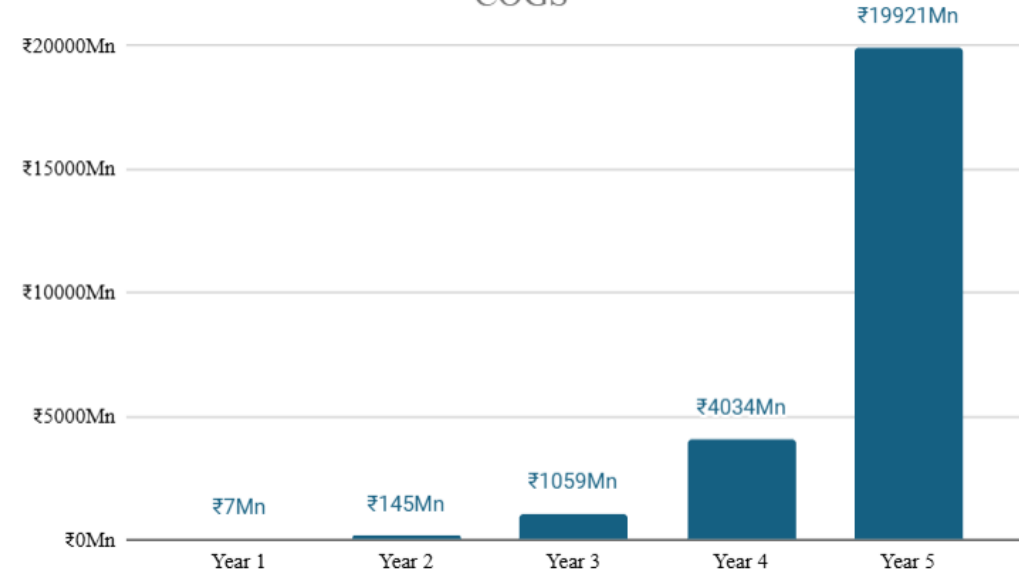


# Financials Projections

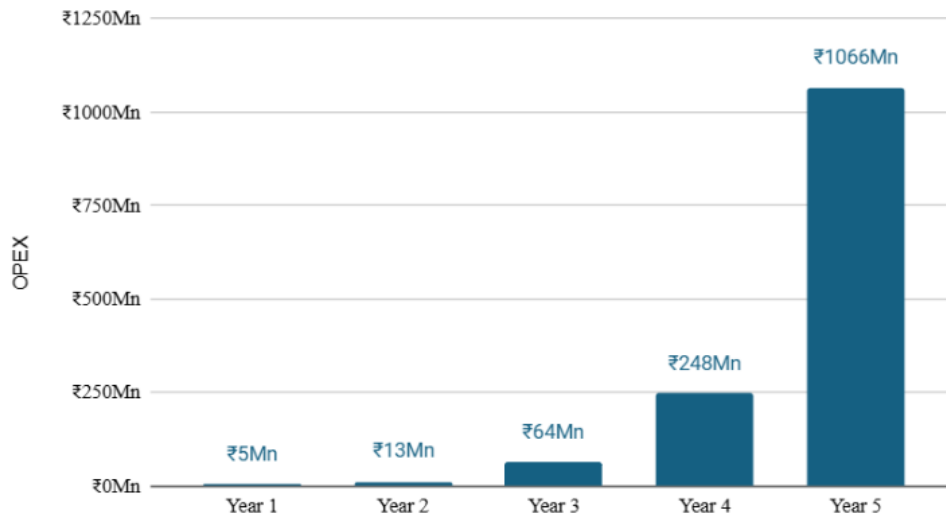
## Revenue



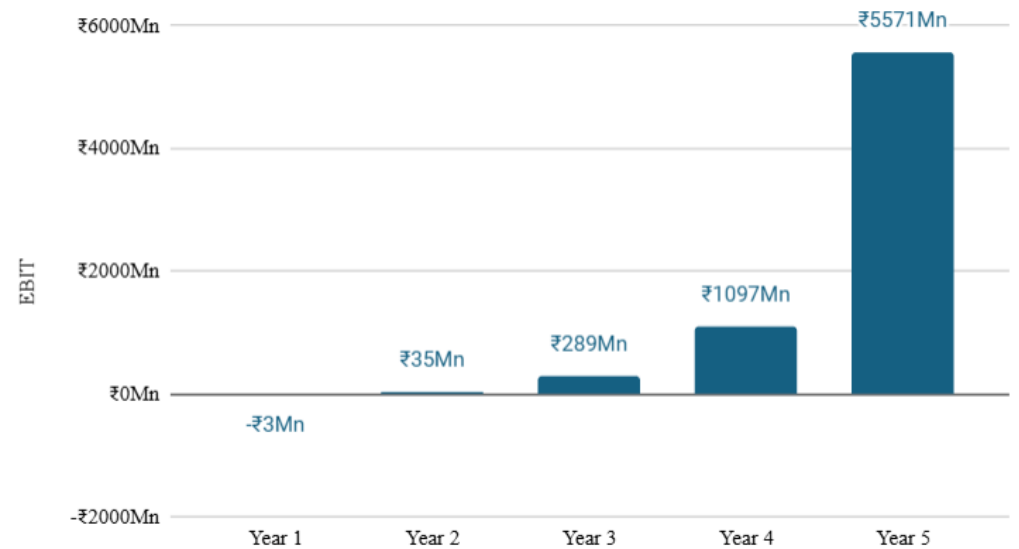
## COGS



## Expenses



## EBIT



# Total Funding Required

Heads	Amount (Rs Lakhs)	Basis
Equipment	3 Lakh	Oscilloscopes, Incubator, Autoclave, Solder Iron, Power supply, Hardware tools, Measurement devices
Consumables	8 Lakh	Chemicals, Mechanical & Electrical components
Manpower	14 Lakh	Design, engineering, development, testing
Travel	5 lakh	Market research, supplier visits, conferences, and meetings
Testing & Manufacturing	17.5 lakh	Certifications; Testing Reports; Manufacturing; Samples Characterization; 3D Printing services
Contingency	1 lakh	Delays in development, additional testing, unforeseen costs in material procurement, and inflation
IP	1.5 Lakh	Patent filings, trademark registration, and legal consultations
Molds	50 Lakhs	Dies – fund required after the product finalization for printing dies

Thank you !!!

# Business Model Canvas

<p><b>Key Partners</b> Hospitality; toilet manufacturing companies; Builders</p> <p><b>Key Suppliers</b> Bathroom Sanitary wares</p> <p><b>What they get:</b> Competitive product offerings</p> <p><b>What we get:</b> Market Presence, Recognition, Scalability</p>	<p><b>Key Activities</b></p> <ul style="list-style-type: none"> <li>- Manufacturing</li> <li>- Connection with businesses</li> <li>- Supply Chain</li> <li>- Marketing</li> </ul> <p><b>Key Resources</b></p> <ul style="list-style-type: none"> <li>- IP</li> <li>- Capital</li> <li>- Service Network</li> <li>- Mechanical &amp; Electrical Inputs</li> </ul>	<p><b>Value Propositions</b></p> <p><b>Value that we brings:</b> Delight to client's customers, WOM publicity, Ratings, Client's customers retention</p> <p><b>Problems that we aim to solve:</b> Manual Checks, Customer complaints</p> <p><b>Needs that we aim to satisfy:</b> Client's Customers Satisfaction, Hygiene standards, Savings on cost of operation</p> <p><b>Features that matches customer needs:</b> Automatic Cleaning</p>	<p><b>Customer Relationship</b></p> <ul style="list-style-type: none"> <li>- Direct Interaction</li> <li>- Partnership Networks</li> <li>- Rewards</li> </ul> <p><b>Channels</b></p> <ul style="list-style-type: none"> <li>- Direct Sales</li> <li>- Online Marketplaces</li> <li>- OEM</li> <li>- Distributors</li> </ul>	<p><b>Customer Segments</b></p> <ul style="list-style-type: none"> <li>- <b>Customers:</b> Restaurants, Hotels, Malls, Offices, Railways, Hospitals</li> <li>- <b>Archetypes:</b> Buyer, Decision Maker, Influencer</li> <li>- <b>Need/Want:</b> Better hygiene and cleanliness</li> </ul>
<p><b>Cost Structure</b></p> <p><b>Fixed:</b></p> <ol style="list-style-type: none"> <li>1) Manufacturing Cost</li> <li>2) Sales &amp; Marketing Overheads</li> </ol> <p><b>Variable</b></p> <ol style="list-style-type: none"> <li>1) Product Warranty</li> </ol>		<p><b>Revenue Streams</b></p> <p>Product Sales Accessories Sales Maintenance contracts Service Fees</p>		

# Annexure

