A toilet is basically all that’s between you and a life full of disease and hardship. It’s certainly the most important appliance in your house. Just ask the millions of people around the world who die from diseases brought on by bad sanitation. One in three people around the world don’t have access to even the most basic of sanitation services, which means they are forced to go outside.

Municipalities and civic bodies were driven by a basic premise that sanitation and more specifically public sanitation is untouched by innovation of any nature in the past century or so, in spite of innovations invading all other spheres of our life.

The problem: Not enough toilets. One of the solutions to this problem is ‘Smart Toilets’, with state-of-the-art technology to address public sanitation challenges. Smart toilets work on a sensor-based technology. The self-cleaning and water conservation mechanism in the toilet makes it unique. In addition, there are features such as coin-operated door, sensor-based light system, auto flush, solar powered, self-clean every 10 uses, bio fuels output, etc.

To monitor these connected Smart Toilets spread across regions and cities, a SAP Connected Goods solution is prototyped here that will control, optimize and automate functions and maximize the true value of our Smart Toilets.
Persona

Mr. Lava Tory

Civic Head

“I would like to improve the sanitation needs of the general public, ensuring a cleaner and healthy environment.”

About

• 42 year old male, married, has 2 kids.
• Former civil engineer and a management graduate by profession.
• Heads the control room for the municipality and well versed with IT technologies and systems.
• Active participant in “Clean and Green” initiatives conducting roadshows and raising awareness of health and sanitation.

Responsibilities

• Co-ordinate with multiple departments such as water, land, health, etc.
• Interact with cleaners, technicians, event organizers.
• Raise awareness of using ‘Smart Toilets’ and the health hazards of open defecation.
• Report statistics and other metrics to the Government Ministry about the success or failure of ‘Smart Toilets’.

Needs

• System to monitor the condition, usage, etc. of the ‘Smart Toilets’
• Alerts and notifications in cases of malfunctioning, vandalism, operating inefficiency, etc.
• Self diagnosis and coordination with other ‘Smart Toilets’, bio plants, sewage treatment plants.

Main Goals

• Public acceptance and usage of ‘Smart Toilets’.
• Provide and/or relocate ‘Smart Toilets’ to locations such as camping sites, parks, concerts, etc. even at short notices.
• Prevent open defecation thus reducing the spread of diseases

Pain Points

• Lack of toilets for public usage
• Immobile permanent toilets that can’t be made available to temporary locations such as concerts, camping sites, etc.
• Untreated human waste.
As a Civic Head
I need a way to connect, monitor, control, optimize and automate ‘Smart Toilets’
So that open defecation is reduced by making Smart Toilets always available for public use, thus preventing the risk of harmful diseases and improving the lives of hundreds of people.

**UX Journey**

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>MINDSET</th>
<th>FEELING</th>
<th>TOUCH POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting in line outside the toilet</td>
<td>“Ohh...I need to poop urgently”</td>
<td>😊</td>
<td>Coin machine</td>
</tr>
<tr>
<td>Enter the toilet</td>
<td>“I am out of coins. No change”</td>
<td></td>
<td>Door</td>
</tr>
<tr>
<td></td>
<td>“I can’t understand the instructions”</td>
<td>😞</td>
<td>Speakers</td>
</tr>
<tr>
<td></td>
<td>“Yuck!!! Someone had a bad stomach”</td>
<td></td>
<td>Video</td>
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<tr>
<td></td>
<td>“What a relief!!”</td>
<td></td>
<td>Switches</td>
</tr>
<tr>
<td></td>
<td>“The air freshener smells great. I think its lavender”</td>
<td></td>
<td>Flush</td>
</tr>
<tr>
<td></td>
<td>Poop</td>
<td></td>
<td>Hand dryer</td>
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<tr>
<td></td>
<td>Wash and sanitize hands</td>
<td></td>
<td>Napkins</td>
</tr>
<tr>
<td></td>
<td>Flush the toilet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Prototype**

Mockup YouTube link: 
https://www.youtube.com/watch?v=_lWVxzfbHkg&feature=youtu.be

SAP Build Study link: 
https://standard.build.me/user-research/bd5fac6378abac980e1d638b/participant/2d4f721539e326910e202f55