Sub-Saharan Africa Stakeholder Perspectives
Developing design & biz model hypotheses

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Sanitation Technology Platform (STeP)
Study focused on hypothesis development
Implications for the BMGF-funded Reinvented Toilet portfolio

Senegal
Nigeria
Kenya
South Africa

Note: Biz model canvas adapted from Osterwalder & Pigneur, Business Model Generation (2010).
Method: Systematic “drinking from the fire hose”

>120 stakeholder interviews in 18 working days

**Who / Where to engage?**
- 8 cities in 4 countries
- >15 interview in each
- 8 stakeholder groups

**How do we engage?**
- Ethnographic
- Dialogue-based

**What to focus on?**
- WHO are the decision makers and influencers?
- WHAT characteristics of the physical context will impact design?
- HOW will end-user perspectives impact adoption and business model?

Note: Icons from flaticon.com
Understand the user in the ecosystem context

Example of a high-level view of Kenya

I am a user who needs...

- Construction of building
  - Paid to construct building
  - Paid to install toilet

- Sanitation product distribution
  - Toilet purchased from private distributor

- Water and sewage piping
  - Provided and maintained by municipality

- Septic emptying
  - Private trucks paid by owner of home
  - Waste dumped informally

- Waste treatment
  - Municipality has trucks for emptying
  - Waste deposited at plant
  - Municipality has treatment plant

- Plumbing services
  - Private plumber hired by owner

- Basic maintenance
  - Cleaning and maintenance handled by tenant or owner

Gov’t supported private entities
Non gov’t supported private entities
Users
Insights organized by potential use cases (I)

Residential: Single family and multi-unit buildings

- Single-unit house
- Multi-unit compound
- Multi-unit apartment
Insights organized by potential use cases (II)

Non-residential: Public toilets and schools

Public toilets

Schools
Behavioral/mental context insights into personas
Understanding the perspective of the end-user

**Home-life**
She sells cooked potatoes at the market. Her husband is a casual day laborer who often cannot find work. She shares her unit with 8 people but has her own toilet which she is proud of.

**Toilet & water usage**
As long as she has a place to relieve herself, she is happy. Knows shared toilets often give children diseases. No access to water but will walk to a market and wait 2 hours to purchase it.

**Sanitation challenges**
The compound smells bad after their latrine is emptied as waste from the latrine is buried within the compound after being emptied with buckets. Drain often clogged with food, trash, and even glass.

**Values**
Worried for her children’s health and believes they may get sick from wastewater contact. Grew up with a pit latrine in the slums and feels that because she did it, her children will be fine.
Insights can be compared across countries

What similarities and differences are notable?

Product design and business model implications
## Hypotheses developed: Biz model implications

<table>
<thead>
<tr>
<th></th>
<th>User openness to new toilet technology</th>
<th>Benefit of new toilet technology for user</th>
<th>User dissatisfaction with current toilet</th>
<th>Example of use case themes to explore</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kenya</strong></td>
<td><img src="https://via.placeholder.com/15" alt="Low" /></td>
<td><img src="https://via.placeholder.com/15" alt="Low" /></td>
<td><img src="https://via.placeholder.com/15" alt="Low" /></td>
<td>Balancing need w/ ability-to-pay</td>
</tr>
<tr>
<td><strong>South Africa</strong></td>
<td><img src="https://via.placeholder.com/15" alt="Medium" /></td>
<td><img src="https://via.placeholder.com/15" alt="Low" /></td>
<td><img src="https://via.placeholder.com/15" alt="Medium" /></td>
<td>Peri-urban vs. urban</td>
</tr>
<tr>
<td><strong>Senegal</strong></td>
<td><img src="https://via.placeholder.com/15" alt="Medium" /></td>
<td><img src="https://via.placeholder.com/15" alt="Medium" /></td>
<td><img src="https://via.placeholder.com/15" alt="Medium" /></td>
<td>New residential</td>
</tr>
<tr>
<td><strong>Nigeria</strong></td>
<td><img src="https://via.placeholder.com/15" alt="High" /></td>
<td><img src="https://via.placeholder.com/15" alt="High" /></td>
<td><img src="https://via.placeholder.com/15" alt="High" /></td>
<td>Balancing need w/ ability-to-pay</td>
</tr>
</tbody>
</table>

**Perceived relative level from interviews**

- ![Low](https://via.placeholder.com/15)
- ![Medium](https://via.placeholder.com/15)
- ![High](https://via.placeholder.com/15)
## Hypotheses developed: Design implications

<table>
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<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water &amp; Electricity</td>
<td>Value of toilet by-products highly dependent on availability and cost of those by-products in the specific local context.</td>
</tr>
<tr>
<td>Toilet Type</td>
<td>Significant variation in whether sit vs. squat toilet types preferred; combination of cultural, age, and income connotation factors.</td>
</tr>
<tr>
<td>Flush Type</td>
<td>Preferred flush mechanism also varied, similar to above.</td>
</tr>
<tr>
<td>Common Issues</td>
<td>Issues with frequent blockage combined with the challenge of finding qualified plumbers common across countries.</td>
</tr>
<tr>
<td>Environmental</td>
<td>Varying soil, water, and space conditions, even within a country, creates unique challenges.</td>
</tr>
</tbody>
</table>
Foundation for hypothesis testing
Disentangling complex design/biz model questions

Customer segment sizing
Partnership models
Market entry plan
Customer willingness-to-pay
Branding and messaging
Pilot testing methodology
Key takeaways: Listen, Process, Adjust

Simple... but can be easy to forget

- Listen to users and stakeholders in the ecosystem with an open mind early and often – don’t wait till “ready”

- Process the information to hypothesize implications to BOTH the product design and business model – a successful concept requires both

- Adjust the product and business model to fit the local context – countries, even cities, within SSA may require different approaches

Note: Icons from flaticon.com