Participant Handout

MODULE FOUR: Product Design

Using Human-Centered Design for Product Design

This module provides an understanding of how to design a sanitation product by following the three phases of human-centered design: HEAR, CREATE, and DELIVER.

Module 4 Objectives

As participants in this module, you will:

- Use human-centered design (HCD) insights to design a product
- Review examples of products designed by other MBS projects
- Consider a gender approach in the HEAR phase
- Test prototypes to achieve the MVP
- Learn how to balance costs with benefits
- Be prepared to let go of good prototypes that are not feasible or viable.

Using HCD for Sanitation Products

In HCD, we hear, create, and deliver. First, we listen to people and HEAR what they need. Then we bring together ideas that will help us CREATE solutions and prototypes, and only then can we DELIVER solutions by carrying out the prototyping and planning.

HEAR – In this phase, we want to gather insights from as many different people as possible. HCD practitioners often start the product or service design process by considering both the current experience and the desired experience to form questions such as "How might we…?" For example, "How might we ensure we all have an enjoyable toilet experience?" In the HEAR phase it is important to include as many perspectives as possible and note if some are absent, such as certain age groups or other diverse members of the community. Consider using a gender approach in the HEAR phase and collect insights from both men and women.

CREATE – To move into the CREATE phase, we can use the concept of a lightning brainstorm. A lightning brainstorm is a creative exercise used by designers to help generate ideas and encourage people to think outside the usual set of solutions. Participants are presented with an idea or scenario and will write down as many ideas as they can in two minutes. Other exercises for the CREATE phase include parallel product design and prototyping. These exercises can be used within a team or with stakeholders. You could invite masons, shopkeepers, or customers to participate in a brainstorming session and guide them through sharing their lists and noting common ideas.

There are three key criteria used in HCD to evaluate prototypes or solutions:

- Desirability: Based on information from the HEAR phase, does this solution respond to users' needs? Does it solve the right problem?
- Feasibility: Is the solution realistic given the communities' and households' circumstances? Will it be possible to deliver?
- Viability: Is the solution profitable and sustainable, can it be delivered in a way that's affordable from a business perspective? Is there a market for this product and can households afford it?

When a solution performs well across all these criteria, it is said to be in the "*innovation sweet spot.*"

DELIVER – This phase is done using the "minimum viable product" or MVP. MVP is a real-life example of how a solution should work but without all the features of the final solution. For example, in the context of a toilet kit, the prototype might include purchasing a container and the products that will be included in the kit, assembling them, then selling them to friends informally in the room. Whereas a prototype may just be a model, the MVP functions in the real world and allows a more sophisticated level of feedback since users will use the product.

In the DELIVER phase, it is important to keep in mind that markets are unpredictable, and products may not be received as expected, even after having spent extensive time trying to understand the market using HCD. By using the approaches "fail fast" and/or "lean start-up" we can shorten the product development cycles and quickly discover whether a proposed business model is viable. Both approaches are grounded in the idea that it is better to quickly get out on the market and test an idea before investing too many resources into it, rather than spending time and money perfecting a product that still may fail given the unpredictability of the market. In order to succeed, we must be open to failure but also use these failures to learn from our mistakes as we quickly modify, reset, and then redo if necessary.

Cost vs. Benefits

As we develop prototypes and finalize different sanitation options, it is important to keep costs in mind and balance what people want with what is available, affordable, and profitable for the business.

Sales conversion rate is the number of interactions that result in a sale. It can also be defined as the cost of advertising per sale. This is an important number because it has a big impact on how much profit the business can make. For example, if you spend a lot of time and money sending sales agents door-to-door to sell toilets but very few consumers end up buying the toilets, your profit margin will be negatively affected.

The cost for a sanitation option includes how much each input will cost: raw materials, labor, sales, and transportation (for example, cement slabs are more expensive to transport than plastic slabs). Different product designs and sales strategies will have implications on both how many products the business will be able to sell, and also how much profit they will be able to make from a sale. In some cases, it will be important to work with the businesses to redesign toilets, which represents additional costs.

Key Product Design Terms

- Prototype: A model or diagram of a product or service used to test or validate ideas.
- Low vs. High Fidelity: Description of how closely a prototype mimics the real product.
- Desirability: A measure of whether a user would want your solution. Desirability is based on insights collected at the HEAR phase and relates to the expected or desired user experience.
- Feasibility: A measure of whether a solution is technically possible.
- Viability: A measure of whether the product or service can be delivered in a way that is affordable and sustainable from a business perspective.
- MVP (Minimum Viable Product): A real-life example of how a solution should work but without all the features of the final solution.
- Sales Conversion Rate: The number of interactions that result in a sale. It can also be defined as the cost of advertising per sale.

For more information and resources on MBS, visit:
https://www.fsnnetwork.org/PRO-WASH/Market-Based-Sanitation.

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