

UNICEF
Sanitation Marketing Learning Series

GUIDANCE NOTE 5

Getting the Product and Service Right

How do we design affordable, desirable latrines that businesses can profitable produce and sell?

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In this Guidance Note, you will learn:

- The definition of design thinking and how to achieve the three objectives of desirability, viability and feasibility for a successful latrine design
- How to plan for and manage the Inspiration-Ideation-Implementation process for designing latrine products
- Who to engage in the design process.
- How to assess available latrine products.
- How to approach reducing product costs

1. Introduction

Sanitation Marketing (SanMark) asks households to invest their own time and money for an improved latrine. As with any purchase, the household consumer will weigh costs and benefits in making their buying decision. The consumer decision is complex and involves functional, social and emotional needs. UNICEF can use design thinking as a tool to better understand all of these consumer needs and develop the 'right' products and services that households will actually want, purchase and use (see GN2: Consumer Behavior). Design thinking also helps build the appropriate business models for the sustainable delivery of those sanitation products and services (see GN3: Sanitation Supply Chains and Business Models).

2. Design Thinking Defined

When we talk about 'design' in SanMark, we are not just talking about technology features. We need to apply a design approach (design thinking) that addresses the user's entire experience with the product or service—including how it is purchased, packaged, transported, installed, used and maintained. In designing the 'right' products, we need to think about people, technologies and businesses. The goal is not to get to the next greatest latrine that will solve the world's sanitation problems, but to get to the best latrine options for a country context.

We need to ask ourselves three key questions (Figure 1):

1) What do people want and need? (Desirability — see GN2)

2) What is technically possible to produce and sell? (Feasibility)

3) What is financially possible for local businesses? (Viability — see GN3)

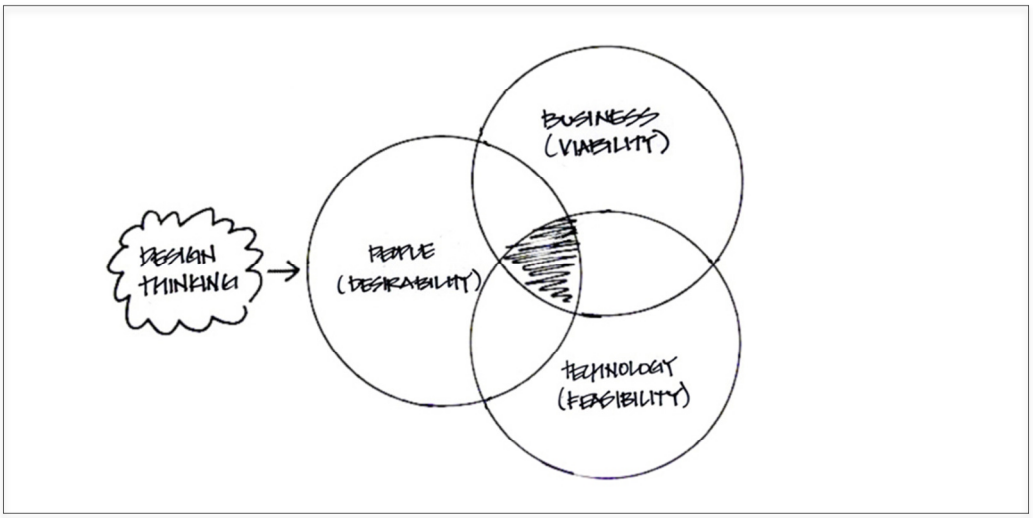

Figure 1. When we apply 'design thinking' we use insights about people's desires, potential technologies and business needs to develop new ideas and create new products and services

3. Design Process

To help us think about these three key questions, we use a simple 3-step design process. The design process moves from Inspiration to Ideation to Implementation (Figure 2). It usually does not happen in a straight line as shown below, but rather goes through repeated cycles and shortcuts to explore and develop ideas. The design process is typically driven by a Design Team (described later) that is assigned to the project.

The Design Team should bring in relevant stakeholders at all stages of the process to inform and complement its own abilities. In design thinking, good ideas can come from and be inspired by anyone, not just 'technical experts'.

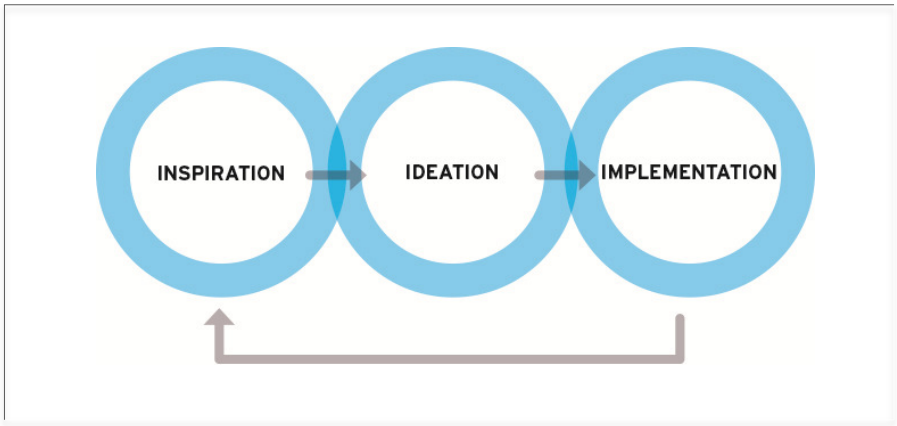

Figure 2. Three-part design process that should act as a guide for repeated design iterations. Designers jump between stages to test ideas and develop concepts.

i) Inspiration

The Inspiration stage usually involves in-depth, qualitative interviews and discussions with relevant stakeholders (typically households, masons, concrete producers, retailers, manufacturers, NGOs, government workers and others relevant to the sanitation market). Extended one-on-one and small group interviews are the best way to gain insights about what people want and need. Quantitative surveys using a pre-determined questionnaire are less productive for this purpose because we want to provoke conversations that lead to new insights. When we meet and talk with stakeholders, it is important to bring a beginner's mindset. We need to ask open rather than leading questions and listen to what people actually say rather than what we are expecting to hear. The Human Centered Design toolkit (see Resources) provides guidance on how to approach such interviews.

All projects should start with an Inspiration phase of roughly 2-3 weeks, so the Design Team can interact with enough stakeholders in a region or country to begin to understand key challenges and opportunities. The goal of the Inspiration stage in a design project is to trigger new ideas, not get statistically significant data—sometimes a single conversation can lead to a great idea. At this stage, it is very useful to talk with people who are doing something exceptional to learn what makes them different to others and to understand how we can apply their thinking and actions to our work. We call these people 'positive deviants.' For example, in Cambodia as part of the WSP and USAID-funded Sanitation Marketing Pilot Project run through iDE, rather than conducting dozens of interviews with 'typical' open defecators, we sought out a villager we had heard of who had made a homemade pour-flush latrine out of a cut and deformed, large diameter PVC pipe. In talking to him, we began to form a key insight about villagers' lack of understanding of latrine plumbing that greatly informed later design approaches. (For more information on positive deviance and how to apply it, see the Positive Deviance Initiative based out of Tufts University in the Resources section).

ii) Ideation

During the Ideation stage, the focus is on generating and developing ideas. In early stages, brainstorms and sketch sessions get many ideas onto paper quickly. Once the Design Team has a lot of ideas, it can start to select which ones might be the best to develop into rough prototypes to share with users. Prototypes should be viewed as tools for prompting conversations and answering questions.

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PROTOTYPING

What is a prototype?

- A prototype can be anything that represents an idea—physical models, a hand drawing, a rendering, a cartoon storyboard, a fake advertisement, even an existing product.

Why prototype?

- People have a much easier time responding to concrete, visual ideas rather than verbal descriptions.
- Through user feedback on prototypes, your ideas will get better, more quickly than they would otherwise.
- Prototypes let your users be part of the creative process.

Rules to follow when prototyping

- Always show at least 3 options so users can compare and contrast.
- Present prototypes of equivalent quality —otherwise people will always pick the better drawn or better constructed one.
- Test out your prototype before showing it to users, you don't want it to break the first time it's being tested.
- Prototypes are built to answer questions—know what you want to learn when you build the prototype.

Prototypes should be shared with stakeholders to get feedback on what they think. What do they like? What needs to change? The learning we get from testing our basic prototypes is used to inform better ideas and more refined prototypes in an iterative process. Ideation sessions are best with a small group of diverse thinkers (3-8 people from a mix of disciplines). They should be kept short (1-2 hours for brainstorming and sketching; 1-4 hours for rough prototyping) and given a concrete goal (e.g. brainstorm 100 ideas or build 5 rough prototypes) focused on a specific topic (such as “how to transport concrete rings safely” or “how to install a plastic slab securely”).

iii) Implementation

During the Implementation stage, we turn ideas into reality. This stage involves working with manufacturers and the supply chain to understand how the products might actually be made and what they might actually cost. We need to include these stakeholders early to ensure that we don’t design something that cannot be made or would be too difficult or expensive to distribute and install (see GN3: Sanitation Supply Chains and Business Models). Implementation should be started during the design phase of the project, but will probably continue for some months as the private sector adopts and adapts the ideas that come out of the work.

For the product design phase of a Sanitation Marketing project, the Design Team should plan to go through the three steps (Inspiration, Ideation, Implementation) about four to eight times before finalizing on a product or service. Each time you go through the design steps, you narrow down further and further until you reach a final set of products or services that you feel sure people want, and that businesses can technically produce and profitably sell.

4. Assessing Available Latrine Products

A good place to start on any SanMark program (sometimes even before engaging a Design Team) is to understand what latrine products (or services) are already available on the market locally or regionally (as part of Step 1 in GN1: Situation Analysis, and further described in GN4: Private Sector Development). Through conversations with NGOs, government and local experts, as well as consumers and supply chain businesses, you can build a database of what is already available, including samples and pictures of components. This key part of sanitation market research should be designed to answer key questions as shown in Figure 3.

Through these and other questions answered in your market research, you will begin to see if any of the available products have potential to be part of your SanMark program. You can assess if existing products can be improved through product design, business modeling (see GN3: Sanitation Supply Chains and Business Models) and/or marketing and promotion (see GN7: Demand Promotion and Marketing), or if you need to develop new products for your market.

Tips

Figure 3: Key questions for initial product surveys

- What products are available? What are their features? How are they relevant for the local context?
- Are rural households aware of these products? Can you find households that have them installed? What are their experiences? Are they happy with them? How have they adapted or altered the products?
- How easy is it for a rural household to purchase the products and have them installed? What and whose expertise is required for installation?
- Are the products available everywhere, or are they hard to find?
- How are the products being marketing? What sales techniques are being employed?
- What are the sales rates?
- What are retail prices? How variable are they? What is the total cost to install (break down by product, transport and installation)? Who is making money in the supply chain and by which margins?

5. Planning, Budgeting and Managing the Design Process

UNICEF will likely need to hire a Design Team, typically a small group of consultants with design skills and experience. The Design Team should propose a detailed project plan and manage the day-to-day activities. Below are five key steps that UNICEF should undertake to manage the design process so that you get the results you want.

Step 1: Creating a Design Brief

A successful design project starts with a good brief that describes the desired results of the project (Figure 4). This will take some time to get right, but is worth it as it will serve as a point of reference throughout the project. It will be up to UNICEF to write the Design Brief and focus the Design Team's efforts. Present the problem, schedule and constraints clearly, and let the designers respond with a proposal describing how they will tackle the project. You will need to be comfortable with some level of ambiguity from the designers, since they will need time to move through the design process and will not know the exact outcomes of the process in advance. Note that the best designers will want to amend and improve the brief with you, and that insights gained from the field may actually lead you (and them) to change the brief even after the project has started.

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Figure 4: What's in a Design Brief?

Background: *What is the history of your organization or the issue you are trying to address? Are there frameworks worth sharing?*

Problem Statement: *What is the problem you want the Design Team to focus on?*

Objectives: *What prices and market segments do you need to reach? What technologies do you need to incorporate?*

Milestones: *What time-based benchmarks does the Design Team need to hit?*

Success Criteria: *What would be a successful project? What deliverables do you expect?*

Step 2: Scoping the Effort

The core design phase of a SanMark program should be about 10-16 weeks long, depending on the complexity of the project and the experience (and size) of the Design Team. It is important to factor in budget for this work, including expenses to support the team's field work and all stages of the process (Inspiration, Ideation, Implementation).

Step 3: Finding Designers

Experienced designers can be hard to find in the development community. Most commonly, you will work with designers recently out of university or graduate school. In any case, be sure to check the portfolios of the designers. Portfolios are far more relevant than resumes. Ask yourself if you like their work and are engaged in reviewing it. Have the designers worked in a developing country context before? Do they have any relevant experience in sanitation? Do they demonstrate a clear design process? How well do they tell the story of their work?

Look to engage a team of 3 to 5 people rather than an individual person—design is a creative process so a team will generate better ideas than an individual. It is okay to have only one experienced designer on the team. The rest of the team can be people with sector-relevant knowledge in the country or region, including local people with existing understanding of local culture and language and who can help facilitate, coordinate and build rapport with key private and public sector stakeholders. Preferably, the team should include people with different skill sets and from different disciplines.

Step 4: Evaluating the Proposal

In addition to evaluating the portfolio of the designers, you will also need to evaluate their proposed approach. Look to see a clear description of their design process. Who do they plan to meet with? What kinds of questions do they want to answer? How will they create and iterate upon ideas? How will they plan to implement those ideas? Did they give themselves enough time to undertake a number of design and prototyping cycles? How well do they respond to the design brief?

Step 5: Providing Support

Although your staff may not be part of the core Design Team, UNICEF should be actively involved in the process. UNICEF can help to pull together a multi-stakeholder advisory group from government, NGOs and other sector experts to regularly meet with the Design Team to share and evaluate feedback from the design process. UNICEF should also actively seek out updates, even if brief, on a weekly basis. Ask for larger milestone meetings every 3-5 weeks. And offer an informed opinion during decision making.

Step 6: Getting the Right Output

Design projects should provide outputs for both consumers and businesses. The products or services designed should meet clearly articulated user needs and desires—functional, emotional and financial. They should facilitate the purchasing and installation process and should leverage and build upon existing strengths of the business sector and provide a profitable income stream that businesses want to pursue over the long term (see GN3: Sanitation Supply Chains and Business Models). UNICEF should hold the Design Team accountable for providing solutions that meet these criteria.

6. How to Lower Latrine Product Costs

As highlighted in GN3 (Sanitation Supply Chains and Business Models), product affordability is one of key barriers for households, so addressing product costs is essential in a SanMark program. When developing new products or evaluating existing products, here are some common design techniques to reduce costs while retaining (or increasing) product desirability:

Re-Engineer it: Most latrine components are severely overbuilt. In Kenya, some masons build 8-inch thick concrete slabs that only span 3 feet and are strong enough to support a truck—this is expensive and unnecessary. Rural masons and manufacturers typically do not apply proper engineering methods and factors of safety to the design of latrine components, increasing up-front material costs, transport difficulty and transport costs. Often this is done out of lack of knowledge or to overcompensate for poor manufacturing quality. By applying engineering principles during the product design process, it is often possible to reduce the amount of material and the weight and size of the product while increasing production rates. In Cambodia, proper engineering of the product design and manufacturing process took 40% out of the cost of latrine components and increased production rates 3-fold. In Kenya, plastic latrine slabs were cut from 7kg to 4kg, which also led to an increase in production rates.

As with local artisans and manufacturers, development engineers are sometimes guilty of over-engineering. Often done with good intentions, such over-engineering can make products unaffordable and stifle markets. Rural latrine products should be 'fit for purpose'—engineering efforts should be focused on reducing material inputs and simplifying designs without compromising safety. If developed-world standards are going to be applied to the products, make sure that they are relevant and necessary—many such standards are often not appropriate for a developing world context.

Go smaller: Most households will probably tell you they want the biggest latrine slab possible, until they see the price tag. Remember that the material usage goes up as the square of the product dimension. A 1m slab is only 25% wider than a 0.8m slab but requires almost 60% more material to construct it. Large slabs, shelters and pit liners are a luxury, not a necessity. As prototypes are developed to test new ideas, make sure households are made aware of the projected retail costs so they can weigh costs versus benefits when providing feedback.

Right-size the pits: In some countries, the bulk of the latrine construction cost is in the pit digging. In Kenya, for example, pit digging rates can be more than 10USD/foot, and households will often want to dig pits of 30 feet or more. Often these pits will collapse long before they fill up. Proposing a more reasonably-sized pit will help reduce installation costs dramatically.

Offer multiple prices: Think of your product portfolio as a 'sanitation ladder', whereby households can invest a little at first, and then make incremental improvements to build on the desirability of what they have. As you develop (or select) products, look to offer a small set of related options at different prices. It is useful if each of these products bears some relation to each other—it makes marketing easier and enables customers to see what they are (or aren't) getting. In Kenya, as part of the joint IFC-WSP-MoPHS Selling Sanitation program, manufacturers will be offering slabs at four different prices that share similar hole shapes, lids, foot rest features and overall geometry (Figure 5). In Cambodia, producers offer an option of adding tiles to concrete slabs which adds $5 to product cost but gives villagers choice (most chose to spend the extra money).

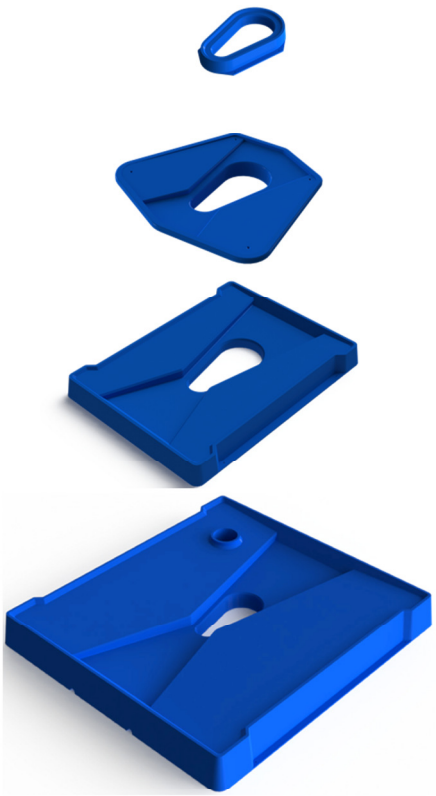

Figure 5. Portfolio of products offered as part of Selling Sanitation program: (from the top) small collar, large collar, small slab and large slab.

Do the hard part: Households will rarely understand how a latrine is supposed to work (especially in pour-flush areas) and what is supposed to happen underground. In many cases, a SanMark project can be successful if it just solves this problem. The latrine core offered through the Cambodian programs provides a single, basic solution to latrine plumbing that people can easily understand, purchase and install.

Choose-your-own shelter: Shelters can cost a lot or a little, but they usually offer the same benefit from a sanitation perspective regardless of cost. Many SanMark programs offer solutions for the slab and the pit, but leave the shelter up to villagers. Typically this will be acceptable because shelters require similar knowledge to home construction and are familiar and comfortable for households to handle on their own. Households without money can be encouraged to start with a simple natural shelter and upgrade over time.

Reduce the labor: In some countries, labor costs can be up to 70% of the cost of installing a latrine. Households must often use masons because they have unique tools or masonry skillsets required to build a latrine. Masons also hold unique knowledge of the underground plumbing of latrine (especially wet latrines) and what components must

be purchased. By simplifying and demystifying the purchasing and construction process, we can increase consumer knowledge and help reduce household dependence on masons.

Consolidate products to reduce retail and transport burden: Product purchasing and transportation can be a logistical and financial burden on households. In most countries, households will typically need to go to two or more different retail stores and arrange product transport to get everything they need for building their latrine. Combined with the multiple trips into the main market town for the planning and purchasing, just buying latrine components and getting them home can become an expensive burden. By packaging latrine components into a single retail purchase, this burden can be greatly reduced. In South Asia, this is often done by precasting and prefabricating concrete components and selling complete latrine kits. Encouraging enterprises to offer home delivery as part of the product package is another way to reduce the burden on households.

Find the right price, not the lowest price: Trying to reach the lowest price possible can sometimes be counterproductive. A latrine is a significant investment for a rural household and makes a statement to neighbors and to other family members. In Kenya, a grandfather explained quite emotionally that a plastic slab prototype he was handling is "just something one must have…. It's something one passes on to your grandchildren and their children… it's something they'll remember you by." If successful, SanMark triggers a purchasing decision that is partially driven by emotion and aspiration. People will want to pay more to get something nicer.

Going Forward

Design thinking ensures that sanitation marketing 1) promotes products and services that people want, can afford and will use and 2) builds the ecosystem (production, marketing, sales and distribution) required to deliver those products and services. It is an iterative process, inspired by repeated conversations with customers and sanitation businesses and informed by multiple rounds of prototyping. Every sanitation marketing project should have a design phase, even if it is just a proper evaluation of what is available on the market to see how it would fit into a sanitation marketing effort.

7. Resources for further reading

Articles

1. Wyatt and Brown (2010) Design Thinking for Social Innovation. Stanford Social Innovation Review, Winter 2010. http://bit.ly/eYsWLR

2. WSP (2012) Sanitation Marketing Lessons from Cambodia: A Market-Based Approach to Delivering Sanitation. Field Note. http://bit.ly/TaT79G

3. Rosenboom et al (2011) Sanitation Marketing in Cambodia, Waterlines, vol 30, No 1, Jan 2011.

Websites

1. HCD Connect: www.hcdconnect.org

2. Positive Deviance Initiative: www.positivedeviance.org

Toolkit

Gates/IDEO Human Centered Design Toolkit: http://bit.ly/TPQvTk

Talks

Jeff Chapin on Design as a Tool for Conversation, http://bit.ly/HYnjQT

About the UNICEF Sanitation Marketing Learning Series

This Guidance Note is part of the UNICEF Sanitation Marketing Learning Series, a learning initiative designed by the University of California Davis (UCD) to improve Sanitation Marketing knowledge and practice within UNICEF. The Learning Series is delivered by Mimi Jenkins (UCD and London School of Hygiene and Tropical Medicine), Danielle Pedi (Consultant, WASH Catalyst), Jeff Chapin (Consultant, IDEO), and Mike Rios (17 Triggers Behavior Change Lab).

The ten Guidance Notes in the Series are available for download here: http://uni.cf/Xo2o2l

1. *Situation Analysis – How do I know if SanMark will work in my country?*
2. *Consumer Behavior – How can we understand sanitation consumers in target markets?*
3. *Sanitation Supply Chains and Business Models – How can we improve market systems?*
4. *Private Sector development - How do we improve capacity of local sanitation businesses?*
5. *Getting the Product 'Right' – How do we design affordable, desirable latrines that businesses can profitably produce and sell?*
6. *Enabling Environment – What roles and functions are needed in the new market?*
7. *Demand Promotion and Marketing – How do we reach rural target markets in san mark?*
8. *Equity in Sanitation Marketing - How can we support the market to reach the poorest?*
9. *Monitoring and Evaluation – How do we measure sanitation marketing progress?*
10. *Sanitation Marketing and CATS – How do we link approaches?*