

DESIGNING VIABLE SANITATION ENTERPRISES

- Recommended duration: 30 – 60 minutes
- Recommended number of participants per group: 3-5

Overview and Facilitation Guide

This section is intended as preparatory reading for facilitators

Outlined below are steps recommended for guiding participants. Please feel free to adapt to the discussion flow.

At this stage, participants would have formed groups, seated at a table with the materials

Step 1: Introduction

- Welcome participants, introduce yourself, and present an overview of the activity.
- Suggested script:
 - Your objective is to design a rural sanitation enterprise such that it is viable
 - Through this exercise, we will understand
 - the importance of looking beyond the metric of toilets sold, which is typically tracked by MBS programs
 - that multiple design options are possible in a given context; and
 - that design choices impact the profit that an enterprise generates

Step 2: Explain the game to participants

- Hand out the game materials and explain how we will play the game
- Suggested script:
 - Let's start by understanding how to play the game (*show the materials*)
 - You have a game board that acts as a placeholder and a set of cards
 - Ask one person to hold the game board and place the stack of cards on the board
 - You should start by reading the **context card** (*show the rectangular card*) – one of you can read aloud to the group when we start
 - **Game board:** The game board shows the key elements of the market and sanitation enterprise. The circles are placeholders for the choices you make on (*point while explaining*):
 - The **Entrepreneur** who will run the sanitation enterprise
 - The **Target Market** represented by the primary customer segment on which the enterprise will focus;
 - The **Product system** that the enterprise markets to its customers;
 - **Sales & Marketing** approach to reach and persuade customers to purchase a toilet; and
 - The **delivery model** that determines what part or parts of the **Product system** and services will or can this enterprise provide to the customer.
 - **Cards:** For each of these elements, we have a set of color-coded cards (*show the circular choice cards*) each color signifying one design element. You have to choose only one for each design element.

- **Results:** When you have discussed and decided from among the options for each element, place the chosen cards on the board. Based on your choices, I have a tool that will generate:
 - the profit loss statement for the enterprise;
 - how much investment is required; and
 - how the profit compares to the Entrepreneur's other, existing business or occupation

Here is an example of the results (*show the exhibit*)

- **Gameplay:** Some of you may have questions on these elements but perhaps start by playing, and I am here to help as we go along. Remember:
 - There is no "right" order for making these choices. That is up to you.
 - You are free to switch choices at any time during the discussion. Just let me know when you have finalized the design, and I'll pop those in the tool.
 - There is no "right" answer. You can come up with any rationale.
 - If time permits, you can change the options to generate alternative results and compare them with your original design.
- Do you have any questions regarding the game? (*address questions*)
- Let's begin!

Step 3: Initiate design activity

- *Allow the group time to review the cards. You can recommend that the group divides the cards instead of each person reviewing all the cards.*
- *If no one takes the lead to start a discussion, you can prompt with questions such as:*
 - *I hope everyone has finished reviewing the cards. Does anyone have doubts?*
 - *Where do you think we should start?*
- *Once the group has started discussing their options, please intervene if the discussion appears stuck, going on a tangent, or if someone requests help. Please share your perspectives or experience or try the angles suggested below:*
 - *Highlight considerations of one or more choices that the group may have missed*
 - *Explain potential trade-offs if they are unable to choose some elements*
 - *FAQs are provided in this document that can help in answering some of the questions, but you are the experts, so please feel free to share your perspectives!*

Step 5: Generate P&L statement and initiate discussion on findings

- *Replicate the group's chosen design in the excel tool to generate the results and show it the group.*
- *Some prompts, if required, are:*
 - *Do you think the Entrepreneur will find this viable or attractive? Why or why not?*
 - *What are the key factors that might explain the profit (or loss) generated?*
 - *What changes, if any, do you think will help improve the results?*
- *If the group request and time permits, run "Round 2" with new options and show them the comparison*

Step 6: Close (last 10 minutes)

- Ask the group to wind-up by sharing their reflections or comments

Background Note: Impact of Strategic Choices on Enterprise Performance

This note is not a part of the activity and is intended as background reading for the facilitator

This note details the key relationships built in the tool and the impact of strategic choices on enterprise profits and capital requirements.

The **five strategic choices**, i.e., the **Entrepreneur**, **Target Market**, **Product system**, **Delivery model**, and the **Sales & Marketing** approach, are **interrelated** and involve **tradeoffs**. Each choice impacts one or more of the variables that determine enterprise profits and/or capital needs of the **enterprise**.

Exhibit I: Structure of Profit and Loss Statement

Line item	Definition
Revenue	Price per unit X Quantity (number of customers)
- Cost of Goods Sold (COGS)	Raw materials, Labor Cost per unit X Quantity (number of customers)
- Other Costs	Cost of Delivery, installation, sales commissions, if offered (per customer) X Quantity (number of customers)
Profit	

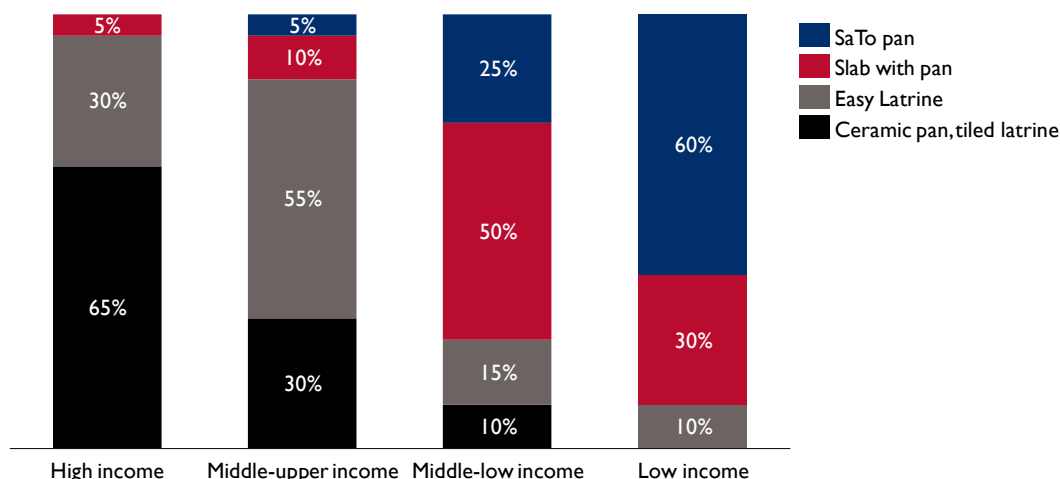
Key relationships:

- $\text{Price} = f(\text{Product system}, \text{Target Market}, \text{Delivery model})$
- $\text{Quantity} = f(\text{Product system}, \text{Target Market}, \text{Sales \& Marketing})$
- $\text{COGS} = f(\text{Product system}, \text{Target Market}, \text{Delivery model})$
- $\text{Other Costs} = f(\text{Price}, \text{Sales \& Marketing}, \text{Entrepreneur})$

Important concepts (built in the model):

- **Price** and **quantity** are negatively correlated – fewer customers across segments can afford products as price increases
- Selecting a **Target Market**, i.e., a specific customer segment does not imply that other customer segments are excluded. The selection implies the “**positioning**” of the enterprise as a **premium** supplier or by contrast, a **mass-market** supplier (Analog: Lexus vs. Toyota). The positioning in this game is realized by **raising or reducing prices** of the chosen **Product system** while product costs remain constant. Demand reduces or increases correspondingly across all customer segments.
- Demand for each **Product system** varies by customer segment and is an assumption of their affordability and preferences. We assumed that higher the income segment, more the share of customers who can afford and/or prefer more expensive **Product systems** (Figure I).

Figure 1: Product preference / affordability within each customer segment




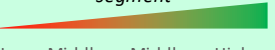
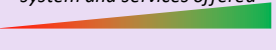












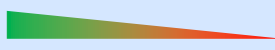
- **Sales & Marketing** choices: Self-marketing does not incur a financial cost, unlike sales agents who must be paid commissions. Nevertheless, self-marketing takes time and effort by the **Entrepreneur**.
- **Delivery model** determines the specific component(s) of a **Product system** and services such as delivery and installation offered by an enterprise; the rest is procured by the customer from other suppliers or not required.
 - The enterprise will earn revenue and incur costs only on those components and services that it sells to the customer.
 - In OSS, the enterprise arranges for most of the components and services, while in the TSP the enterprise provides an end-to-end solution – the customer has only one point of contact to get everything they need
 - The difference manifests most in the network model where **Entrepreneurs** sell only the product/service they typically stock—for instance, a mason may only offer labor, a hardware store owner may only sell pans and PVC pipes, while a concrete block producer may only sell concrete items such as slab, pit rings, and pit covers. Whoever the entrepreneur approaches first will guide the customer to their affiliates or network.
 - As the example illustrates, the specific product components and services offered also depend on the **Entrepreneur**. The model has built-in the price and cost for all combinations of **Entrepreneur** types, **delivery models**, and **Product systems**. Given the number of combinations, facilitators should offer **examples** rather than attempting to offer an **accurate answer** if participants seek this information.

Other metrics:

- **Working capital:** Assumed cost of stocking one month's inventory and, therefore, increases with the **Product system** chosen and quantity sold
- **Capital expenditure:** Cost of molds for the components manufactured by the enterprise = $f(\text{Product system}, \text{Delivery model})$

Important relationships are summarized in the matrix (Figure 2) for quick reference and a detailed narrative included thereafter.

Figure 2: Key relationships and trade-off summary (not exhaustive)

	Product System	Target Market	Delivery Model	Sales & Marketing
Price per unit	<p>More the components, higher the price</p>  <p>Sato pan Slab+ pan Easy latrine Ceramic pan, tiled latrine</p>	<p>Price premium or discount depending on <u>primary</u> customer segment</p>  <p>Low Middle lower Middle upper High income</p>	<p>Price realized to the extent of components sold from a product system and services offered</p>  <p>Network OSS TSP</p>	<p>No impact</p> <p>—</p>
Quantity sold	<p>Fewer customers can afford higher priced products</p>  <p>Sato pan Slab+ pan Easy latrine Ceramic pan, tiled latrine</p>	<p>Fewer customers can afford as premium increases</p>  <p>Low Middle lower Middle upper High income</p>	<p>No impact</p> <p>—</p>	<p>Self-marketing: 2x sales Sales agents: 3x sales</p>  <p>Passive Self-marketing Sales agents</p>
COGS per unit (materials & labor)	<p>More the components, higher the cost</p>  <p>Sato pan Slab+ pan Easy latrine Ceramic pan, tiled latrine</p>	<p>No impact</p> <p>—</p>	<p>Cost incurred to the extent of components sold from a product system and services offered</p>  <p>Network OSS TSP</p>	<p>No impact</p> <p>—</p>
Other Costs - Delivery - Sales commissions - Installation	<p>Delivery costs and sales commissions, if applicable, increase with product price</p>  <p>Sato pan Slab+ pan Easy latrine Ceramic pan, tiled latrine</p>	<p>Sales commissions, if applicable, increase with price premium</p>  <p>Low Middle lower Middle upper High income</p>	<p>Services offered (delivery, installation) and related costs increase</p>  <p>Network OSS TSP</p>	<p>Sales agents paid 5% of price as commissions</p>  <p>Passive / Self-Marketing Sales agents</p>
Profit per unit	 <p>Sato pan Slab+ pan Easy latrine Ceramic pan, tiled latrine</p>	 <p>Low Middle lower Middle upper High income</p>	 <p>Network OSS TSP</p>	 <p>Passive / Self-Marketing Sales agents</p>
Trade off	<p>More expensive the product (profit per customer), Fewer the customers (Quantity)</p>	<p>Higher the income (profit per customer), Fewer the customers (Quantity)</p>	<p>More comprehensive the product and services offered (profit per customer), Higher the associated costs</p>	<p>Higher the number of customers (quantity), Higher the cost</p>

- **Price = f (Product system, Target Market, Delivery model)**
 - **Product system:** Each product carries a price tag that increases with number and type of components; “ceramic pan with tiled slab,” is the highest, while “Sato® pan” is the lowest
 - **Target Market:** Selecting a **primary** customer segment introduces a premium or a discount—targeting “high income” customers sets the highest price while targeting “low income” customers sets the lowest price for **all** customers.
 - **Delivery model** decides the **share of the Product system** sold by the enterprise. “Network” model sells only some components from the **Product system**, while “turnkey solution provider (TSP)” sells all components with installation. Therefore, price realized by the enterprise is limited to only the items and services it sells; increases from the “network” model to the “TSP” model
- **Quantity = f (Product system, Target Market, Sales & Marketing)**
 - **Product system: Demand** for each product varies by customer segment; “Ceramic pan with tiled slab” has highest demand among high income customers and least among low income customers; Sato® pan has the opposite.
 - **Target Market:** Demand across customer segments reduces with higher prices, which are set in part by the **Target Market** chosen (see above)
 - **Sales & Marketing:** “Self-marketing” doubles while “Sales agents” triple the quantity sold by an enterprise compared to a “Passive marketing” approach, i.e., **Entrepreneur** relies on walk-in customers
- **Cost = Cost of Goods Sold (COGS) + Other costs**
 - **COGS = f (Product system, Delivery model)**
 - The enterprise has to spend on **raw material and labor** to manufacture and/or procure toilet components and installation services (under the TSP model)
 - These costs are the highest for “Ceramic pan with tiled slab” and lowest for “Sato® pan”
 - The **delivery model determines package components and services** offered by the enterprise, thus impacting costs. **Costs are the lowest under the “network” model** and the highest under the “TSP” model.
 - **Other costs = f (Product system, Entrepreneur, Sales & Marketing)**
 - Include the **cost of delivery** and the **commissions paid to sales agents**
 - **Cost of delivering larger packages is higher** compared to packages with fewer components
 - **Delivery cost is higher for mason** as he does not own a vehicle
 - **Sales & Marketing** impacts costs as the enterprise needs to pay commissions if it uses sales agents

Invalid combination(s): A “concrete block producer (CBP)” selling a Sato® pan under the **network model** is **not a valid option** and 12 such instances out of 432 possible combinations exist. The P&L sheet will **display an error message** if this combination is selected. Participants should be explained that a CBP is unlikely to stock and sell only a Sato® pan (an assumption).

Frequently Asked Questions

- **Why is the enterprise making low profit or losses?**
 - Is the **Product system** selected not appropriate for the **Target Market**? E.g., selling ceramic pan, tiled latrine while targeting low income customers?
 - Is the “network” **delivery model** chosen, which can limit both revenue and profit
 - Prices might be very low, i.e., **low profit per unit** (due to **product system** and **target market** choices), and **other costs** might be pushing the enterprise into losses.
- **How do we know if the enterprise is viable?**
 - Is the enterprise making a loss or too low a profit?
 - Compare the sanitation enterprise profit with the entrepreneur’s income from other business. Is it adequate to motivate the entrepreneur?
 - How does the investment required by your design compare with the entrepreneur’s **available capital**?
- **Why should we hire sales agents if they increase costs?**
Think of it as an investment – you pay commissions only when agents bring you orders. Even if the profit per customer reduces, the increase in total customers can increase your total profit. Also, entrepreneurs often are not interested in self-marketing or want to devote time to their other business. Sales agents bring business without the entrepreneur leaving the shop.
- **Why should we bother with delivery and installation when it costs money?**
These value added services can be a game changer – customers need these services and by offering them the enterprise can get more orders, charge a fee, and more importantly provide convenience and ensure the product is delivered and installed properly.
- **Why should we target only one customer segment? Why not all?**
In practice you are selling to all who can afford and want your product. Since preferences and budgets are heterogeneous, it becomes difficult to meet everyone’s requirements. Selecting a segment helps an enterprise have a clear strategy and value proposition. Pick any business – cars, phones, soaps.. products, services, marketing, prices are designed with particular types of customers in mind. Sanitation enterprises are no different.
- **Which combination is the best?**
Depends on the context and the entrepreneur’s capabilities, assets, and motivation. Enterprises who have partnered with us are different – even in the same market.
- **Why are the results so similar/ different between Round 1 and Round 2?**
To identify the factor(s) causing similar/ significantly different results between the two rounds, compare the output by altering choices one by one to check the major sources of change (or lack of change):
 - Has the **price realized per toilet [P]** changed substantially? Is it because you selected a different **Product system**, a different **Target Market**, or a different **delivery model**?
 - Are the **number of toilets sold [Q]** significantly different? What choices could have led to this situation?
 - What about costs? What could have caused the change (or lack of it)?
 - How has the capital requirement changed?
- **I don’t understand the delivery models?**



Offer explanation provided earlier and encourage them to view USAID WASHPaLS MBS desk review or webinar recordings at globalwaters.org/WASHPaLS

- **What are the underlying assumptions and calculations? I want to see the details in the model**

This game is a simulation and while figures are imaginary, the concepts are based on findings from a study on sanitation enterprises across three geographies conducted by the USAID/WASHPaLS project. We are delighted with your interest in the model! This game and the excel model will be in the public domain so you can examine the inner workings, modify it, and play the game by yourself or with your colleagues. However, we can't go into the details of the model at this time since we have limited time.