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Enterprise Viability & Sustainability Diagnostic Toolkit

Understand Current Performance | Profit & Loss Statement Analysis

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Enterprise Viability & Sustainability Diagnostic Toolkit Modules

1. **Preliminary research**
2. **Understand current performance**
3. **Identify factors to improve viability**
4. **Assess sustainability**

Analytical activities

Enterprise Mapping

Select diverse enterprises based on their market context and sales performance for in-depth research

Exploratory Research

Understand enterprises' contexts and operations to customize tools and research questionnaires

Profit & Loss Statement Preparation

Prepare profit & loss (P&L) statements with revenues, costs, and resulting profits to support analyses

Profit & Loss Statement Analysis

Analyze P&L statements using financial ratios to enable inter-enterprise comparisons

Enterprise Classification

Categorize enterprise based on revenue and profit

Gross Margin Variance analysis

Identify the profit drivers that differentiate performance among enterprise categories

Strategy Identification

Identify the strategies that improve profit of enterprises in different contexts

Financial Independence Assessment

Assess enterprises' ability to meet recurring future financial investments independently

Operational Independence Assessment

Assess enterprises' ability to operate independently in future market conditions

Return on Capital Employed Analysis

Compute returns from sanitation relative to other opportunities available to the entrepreneur

Focus of this document

Table of Contents

- Introduction
- Financial ratios

Objective of this document

Intended outcomes

This document is intended to help MBS programs:

- Understand the concept and calculation of basic financial ratios in a profit & loss (P&L) statement
- Understand the value of using financial ratios to analyze sanitation enterprises

Value for MBS programs

- Reveals **nuances of profitability / loss** of an enterprise by breaking down profitability into multiple levels
- Enables an **understanding of financial implications** of strategic choices made by enterprises

Additional reference material

This document is meant to be used along side two other documents that are part of this module:

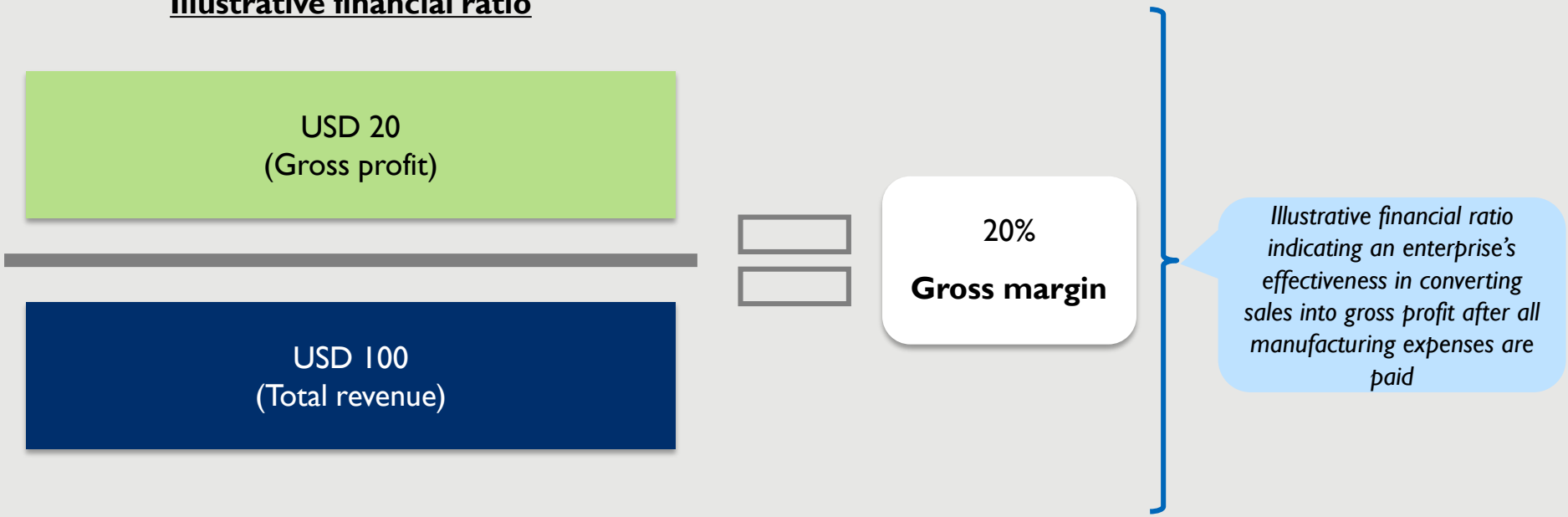
- **Profit & Loss Statement Template:** A Microsoft Excel template that allows MBS programs to enter financial data of sanitation enterprises to generate a P&L statement; this document refers to the template at several instances to explain the analysis of the P&L statement
- **Profit & Loss Statement Preparation:** A PDF guide which helps MBS programs understand and prepare P&L statements

Note:The methods in this document are intended to offer practitioners with guidance rather than a strict model to follow. Practitioners are encouraged to adapt the methods or consider other approaches for their contexts.

Financial ratios – Basics

A financial ratio, like any numerical ratio, is the relative magnitude of two line items derived from the P&L statement that helps analyze enterprise profits and allows for cross-comparison of enterprise performance.

Illustrative financial ratio



Tip Financial ratios ignore the quantum or amount of the constituent line items. While valuable in evaluating the same enterprise over time or comparing multiple enterprises, financial ratios should form just one part of an analyses.

Financial ratios – Basics

This document studies four ratios in the P&L statement for the purposes of analyzing sanitation enterprises and tracking enterprise performance over time.

Screenshot of P&L statement summary from P&L statement template

P&L statement summary	
Revenue	
Revenue from toilet sales	4,400.0
Revenue from related services	0.0
Cost of goods sold	
Raw materials	2,181.7
Direct labor	650.0
Transport of raw materials	90.0
Damaged components	102.3
Gross profit	1,478.3
Gross margin	*34%*
Operating expenses	
Transport for delivery	310.0
Land rent	192.0
Utilities	40.0
Marketing (commissions)	45.0
Marketing (non-commission)	0.0
Repairs	36.0
Bad debts	16.0
Depreciation	12.8
Operating profit	826.5
Operating margin	*19%*
Other expenses	
Interest	85.4
Net profit	741.1
Net margin	*17%*
Cash net profit	753.9
Cash net margin	*17%*

1 *Gross margin*

2 *Operating margin*

3 *Net margin*

4 *Cash net margin*

Focus of this document

P&L statement ratios – Summary

All four ratios reveal different efficiency parameters and should be studied together to form a detailed understanding of the business

	Ratio	Purpose
1	Gross margin	*Measures the efficiency of an enterprise to manufacture toilets by minimizing costs and/or sell toilets by maximizing prices*
2	Operating margin	*Measures the efficiency of an enterprise to generate a profit after managing both manufacturing and indirect costs*
3	Net margin	*Measures an enterprise's ability to generate a profit after accounting for all expenses, including financing (i.e., interest on loans) and extraneous (i.e., taxes) factors*
4	Cash net margin	*Measures the actual cash income an enterprise makes for every unit of revenue earned*

Table of Contents

- Introduction
- Financial ratios
  - Gross margin
  - Operating margin
  - Net margin
  - Cash net margin

Gross margin

<u>Gross margin measures an enterprise's ability to manufacture toilets by minimizing costs and/or sell toilets by maximizing prices.</u> Gross margin is gross profit expressed as a percentage of revenue. Gross profit is the amount of money a sanitation enterprise makes after deducting the costs directly incurred to manufacture its products.

<u>Illustrative gross margin calculation</u>

$$\text{Gross margin (\%)} = \frac{\text{Gross profit}}{\text{Total revenue}} = \frac{B}{A} = \frac{1{,}478}{4{,}400} = 34\%$$

P&L statement summary		
Revenue		
Revenue from toilet sales	A	4,400.0
Revenue from related services		0.0
Cost of goods sold		
Raw materials		2,181.7
Direct labor		650.0
Transport of raw materials		90.0
Damaged components		102.3
Gross profit	B	1,478.3
Gross margin		*34%*

Tip

Simply comparing gross profits from year-to-year or quarter-to-quarter can be misleading. For instance, gross profits can rise with increasing sales but gross margins may fall due to higher unit costs incurred. Hence, for purposes of analysis and comparison, users should consider both gross profit (absolute) and gross margin (ratio).

Gross margin – Example

Illustrative gross margin calculation – Selling toilets by maximizing prices

Illustrative P&L statements	***Enterprise 1***	***Enterprise 2***
Revenue	USD 36 (3 Toilet packages @ USD 12 each)	USD 30 (3 Toilet packages @ USD 10 each)
Cost of goods sold (COGS)		
(Raw materials)	USD 20	USD 20
(Direct labor)	USD 4	USD 4
(Transport of raw materials)	USD 1	USD 1
Gross profit	**USD 11**	**USD 5**
Gross margin	***31%***	***17%***

Enterprise 1 generates a higher revenue than Enterprise 2 as it is able to charge higher prices while selling the same volume of toilets as Enterprise 2

Enterprise 2 generates a lower revenue than Enterprise 1 as it is not able to price the same as Enterprise 1 while selling the same volume of toilets as Enterprise 1

Both enterprises have the same costs of production of toilets

Calculation
Revenue - COGS

Enterprise 1 earns a higher gross margin due to its ability to ***sell toilets at higher prices***

Gross margin – Example

Illustrative gross margin calculation – Manufacturing toilets by minimizing costs

Illustrative P&L statements

	Enterprise 1	***Enterprise 2***
Revenue	USD 45 (3 Toilet packages @ USD 15 each)	USD 36 (3 Toilet packages @ USD 12 each)
Cost of goods sold (COGS)		
(Raw materials)	USD 20	USD 14
(Direct labor)	USD 6	USD 2
(Transport of raw materials)	USD 1	USD 1
Gross profit	**USD 18**	**USD 17**
Gross margin	***40%***	***47%***

Enterprise 1 generates a higher revenue than Enterprise 2 as it able to fetch higher prices while selling the same volumes of toilets as Enterprise 2

Enterprise 2 is able to purchase raw materials and hire labor at a lower cost than Enterprise 1

Calculation
Revenue - COGS

*Enterprise 2 has a higher gross margin as its **lower costs offset Enterprise 1's price advantage***

Operating margin

Operating margin measures an enterprise's efficiency of operations after accounting for all costs directly related to manufacturing as well as overheads or indirect costs incurred in the day-to-day operation of the business. Operating margin excludes interest and taxes. Operating margin is operating profit expressed as a percentage of revenue.

Illustrative operating margin calculation

P&L statement summary	
Revenue	
Revenue from toilet sales (A)	4,400.0
Revenue from related services	0.0
Cost of goods sold	
Raw materials	2,181.7
Direct labor	650.0
Transport of raw materials	90.0
Damaged components	102.3
Gross profit	1,478.3
Gross margin	*34%*
Operating expenses	
Transport for delivery	310.0
Land rent	192.0
Utilities	40.0
Marketing (commissions)	45.0
Marketing (non-commission)	0.0
Repairs	36.0
Bad debts	16.0
Depreciation	12.8
Operating profit (B)	826.5
Operating margin	*19%*

$$\text{Operating margin (\%)} = \frac{\text{Operating profit}}{\text{Total revenue}} = \frac{B}{A} = \frac{827}{4{,}400} = 19\%$$

Operating profit = *Revenue – COGS – Operating expenses*

Operating margin – Example

Illustrative operating margin calculation

Illustrative P&L statements	***Enterprise 1***	***Enterprise 2***
Revenue	USD 36 (3 Toilet packages @ 12 USD each)	USD 36 (3 Toilet packages @ 12 USD each)
[Cost of goods sold (COGS)]	USD 23	USD 23
Gross Profit	USD 13	USD 13
Gross Margin	*36%*	*36%*
Operating expenses		
(Transport for delivery)	-	-
(Land rent)	USD 2	USD 3
(Utilities)	-	-
[Marketing (commissions)]	USD 1	USD 2
[Marketing (non-commission)]	-	-
(Repairs)	-	-
(Bad debts)	USD 1	USD 3
(Depreciation)	-	-
Operating profit	**USD 9**	**USD 5**
Operating margin	***25%***	***14%***

Both enterprises have the same gross margins, i.e., they generate the same revenue and have the same cost of goods sold

Enterprise 1 has lower land rent, marketing (commissions) and bad debts

Calculation
Revenue – COGS – Operating expenses

Enterprise 1 earns a higher operating margin due to its ability to ***better manage its various operating expenses***

Net margin

<u>Net margin measures an enterprise's ability to make profit after accounting for all expenses.</u> Net margin is net profit expressed as percentage of revenue. Net profit is the profit made after accounting for all expenses related to the sanitation enterprise.

<u>Illustrative net margin calculation</u>

P&L statement summary	
Revenue	
Revenue from toilet sales (A)	4,400.0
Revenue from related services (A)	0.0
Cost of goods sold	
Raw materials	2,181.7
Direct labor	650.0
Transport of raw materials	90.0
Damaged components	102.3
Gross profit	1,478.3
Gross margin	*34%*
Operating expenses	
Transport for delivery	310.0
Land rent	192.0
Utilities	40.0
Marketing (commissions)	45.0
Marketing (non-commission)	0.0
Repairs	36.0
Bad debts	16.0
Depreciation	12.8
Operating profit	826.5
Operating margin	*19%*
Other expenses	
Interest	85.4
Net profit (B)	741.1
Net margin	*17%*

$$\text{Net margin (\%)} = \frac{\text{Net profit}}{\text{Total revenue}} = \frac{B}{A} = \frac{741}{4{,}400} = 17\%$$

Net profit = *Revenue – COGS – Operating expenses – Interest*

Net margin – Example

Illustrative net margin calculation

Illustrative P&L statements	***Enterprise 1***	***Enterprise 2***
Revenue	USD 36 (3 Toilet packages @ 12 USD each)	USD 36 (3 Toilet packages @ 12 USD each)
Cost of goods sold (COGS)		
[All costs of goods sold (COGS)]	USD 23	USD 23
Operating expenses		
(All operating expenses)	USD 4	USD 4
Other expenses		
(Interest)	USD 2	USD 3
Net profit	**USD 7**	**USD 6**
Net margin	***19%***	***17%***

*Both enterprises have the **same operating profit** i.e. they generate the same revenue and have the same cost of goods sold and operating expenses*

Enterprise 1 has a lower interest expense compared to Enterprise 2

Calculation
Revenue – COGS – Operating expenses – Interest

*Enterprise 1 earns a higher net profit margin due to its ability to **make a higher profit after accounting for all expenses (including interest)***

Cash net margin

<u>Cash net margin is a proxy for the actual cash income[1] an entrepreneur takes home for every unit of revenue earned</u>. Cash net margin is cash net profit expressed as a percentage of revenue. Cash net profit is calculated by adding depreciation to net profit as depreciation is a non-cash expense, i.e., it is recorded as an expense despite not resulting in a cash outflow

Illustrative cash net margin calculation

P&L statement summary	
Revenue	
Revenue from toilet sales (A)	4,400.0
Revenue from related services (A)	0.0
Cost of goods sold	
Raw materials	2,181.7
Direct labor	650.0
Transport of raw materials	90.0
Damaged components	102.3
Gross profit	1,478.3
Gross margin	*34%*
Operating expenses	
Transport for delivery	310.0
Land rent	192.0
Utilities	40.0
Marketing (commissions)	45.0
Marketing (non-commission)	0.0
Repairs	36.0
Bad debts	16.0
Depreciation	12.8
Operating profit	826.5
Operating margin	*19%*
Other expenses	
Interest	85.4
Net profit	741.1
Net margin	*17%*
Cash net profit (B)	753.9
Cash net margin	*17%*

$$\text{Cash net margin (\%)} = \frac{\text{Cash net profit}}{\text{Total revenue}} = \frac{B}{A} = \frac{754}{4{,}400} = 17\%$$

Cash net profit = *Net profit + Depreciation*

1. *Cash net profit is a good measure of actual cash income as the revenue and expenses on the P&L statement for which cash has not been exchanged (such as credit sales and supplier credit) are typically negligible for sanitation enterprises.*

Cash net margin – Example

Illustrative cash net margin calculation

Illustrative P&L statements	***Enterprise 1***	***Enterprise 2***
Revenue	USD 36 (3 Toilet packages @ 12 USD each)	USD 36 (3 Toilet packages @ 12 USD each)
Cost of goods sold (COGS)		
(Raw materials)	USD 18	USD 18
(Direct labor)	USD 4	USD 4
(Transport of raw materials)	USD 1	USD 1
Operating expenses		
(Transport for delivery)	-	-
(Land rent)	USD 2	USD 2
(Utilities)	-	-
[Marketing (commissions)]	USD 1	USD 1
[Marketing (non-commission)]	-	-
(Repairs)	-	-
(Bad debts)	USD 1	USD 1
(Depreciation)	USD 2	USD 6
Other expenses		
(Interest)	USD 2	USD 2
Net profit	USD 5	USD 1
Net margin	*14%*	*3%*
Cash net profit	**USD 7**	**USD 7**
Cash net margin	***19%***	***19%***

Both enterprises have same revenue, COGS and operating expenses ***except for depreciation***

Calculation
Net profit + Depreciation (being a non-cash expense)

Despite making different net profits, both enterprises have the ***same take-home income i.e. same cash net profit***