



# **Assessment of BI Maturity & Dashboard Development**

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# Introduction

This project integrates classroom learning with real-world application by assessing Baraka Hygienics' BI maturity and creating practical solutions.

## Importance of BI for SMEs:

Enhances decision-making with **data-driven insights**.

**Streamlines** operations and **reduces** costs.

Provides a **competitive edge** and supports **strategic planning**.

**Simplifies** compliance and reporting.

Promotes **sustainable growth**

## Project Objectives:

Establish **contact**, collect **data**, and conduct interviews with Baraka Hygienics.

Assess BI maturity through surveys and develop a detailed report.

Perform **data analysis**, including building a predictive model for sales.

Develop and share a **comprehensive** BI dashboard and report.

Write **BI documentation** and present findings to the class.

# SME Selection and Business Understanding

Baraka Hygienics is a **female-owned manufacturing business** established in June 2023 in Kizingo, Mombasa, Kenya.

They produce a **variety of personal hygiene products**, including shower gels, soaps, detergents, and shea butter.



Products are sold locally through their website, social media (Instagram, WhatsApp, Facebook), and word of mouth

The company differentiates itself with lower prices, **high-quality**, eco-friendly, and **hypoallergenic** products.

The owner **manages** manufacturing at **her residence** and distributes products via a salesperson and boda-boda riders.

As a young company, many **business processes**, such as inventory tracking and sales recording, are informal and handled manually.



# BI MATURITY ASSESSMENT

We used the **Capability Maturity Model Integration(CMMI)** to assess the BI maturity levels at Baraka Hygeinics

The model focuses on **appraising individual business processes** and **assigning them a maturity level**, then **aggregating these results** to give an **overall maturity score** for the business.

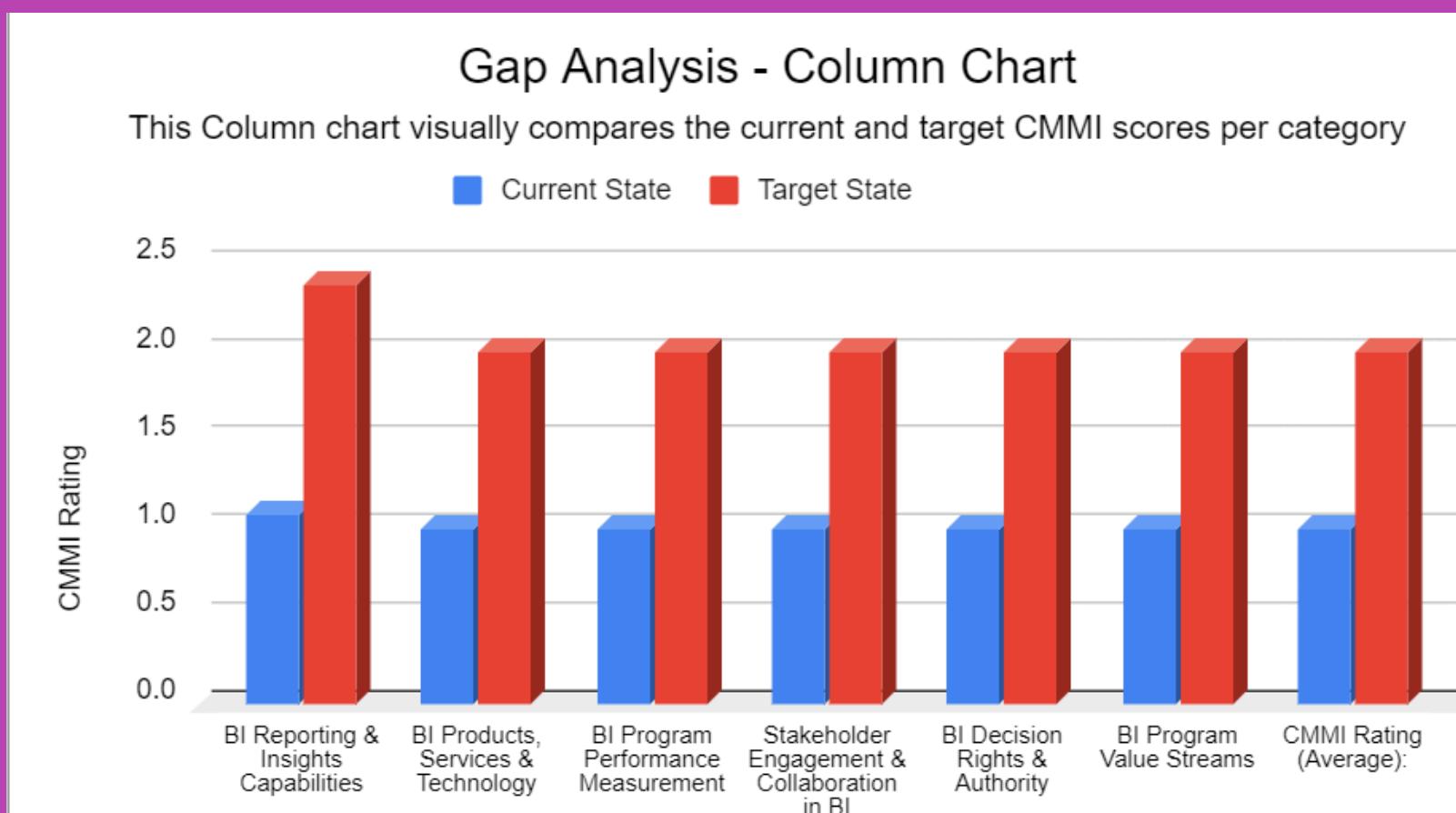
The model assesses the BI capabilities of a business at **five levels of maturation**, which in ascending order of sophistication are Initial/Ad-hoc, Developing, Defined, Managed and Measurable, and Optimised.

The business was assessed across **six key categories of BI processes**, namely BI Reporting and Insights; BI Products, Services and Technologies; BI Practice Performance Measurement; Stakeholder Engagement and Collaboration in BI; BI Decision Rights and Authority; and lastly BI Program Value Streams.

We created a **simplified BI Maturity Assessment Questionnaire** for Baraka Hygienics to evaluate their current BI practices and assigned ratings based on their responses in the workbook

# BI MATURITY ASSESSMENT

BI Practice Dimension	Current State	Target State (Jan. 2025)	GAP - Current State vs. Target State 1	CMMI Rating Scale	Level Description
BI Reporting & Insights Capabilities	1.08	2.38	1.3	1	Initial/Adhoc
BI Products, Services & Technology	1	2	1	2	Developing
BI Program Performance Measurement	1	2	1	3	Defined
Stakeholder Engagement & Collaboration in BI	1	2	1	4	Managed and Measurable
BI Decision Rights & Authority	1	2	1	5	Optimised
BI Program Value Streams	1	2	1		
<b>CMMI Rating (Average):</b>	<b>1</b>	<b>2</b>			
CMMI Level	Initial/Adhoc	Developing			



Activity	Label	#	Count
Define and document sales and revenue targets.	Activity 1	1	
Define and implement documentation standards.	Activity 2	1	
Determine the best tools for defining business targets for the business.	Activity 3	1	
Develop set standards for data, in terms of documentation, presentation, quality and pipelines.	Activity 4	4	
Develop a basic understanding and usage of dashboards, namely GoogleSheets	Activity 5	3	
Develop the use of basic analytical models, namely predictive sales models	Activity 6	2	
Maintain the current Security Standards	Activity 7	1	

# Data Identification and Analysis

*Upon exploring the data, several key observations emerged:*

**Rent expenditure** : Rent is identified as the highest expenditure, significantly impacting the overall cost structure. An interesting finding was the absence of rent payment in December due to an impending relocation, affecting the expense trends for that month.

**Raw materials** : Raw material costs are substantial, particularly in months with higher sales volumes like October and December. This surge is linked to the need to replenish inventory to meet the demand generated by a significant tender from Wapek Supply.

**Packaging and Transport** : Packaging and transport expenses are also high, correlating with increased production and sales volumes. The necessity to transport large quantities of products further escalates transport costs, especially noticeable in October and April.

**Internet and other costs** : Although internet costs are significant, a combined category labelled 'others' (including labour and KRA penalties) appears misleadingly higher in the pie chart due to its composite nature.

**Additional Expenditures** : Chicken feed expenses are added as a result of informal business ongoing that is selling chicken .

# Data Identification and Analysis

*Several key trends and patterns were identified in the data:*

**Monthly expense patterns** : They show notable fluctuations, with rent being a major contributor except in December. A spike in raw material costs in October aligns with increased inventory replenishment activities.

**Revenue and profit trends**: They reveal that high-revenue months like October are linked to significant tenders and bulk sales of products like detergents and shea butter. The decline in profits post-October is attributed to the end of these tenders and the corresponding high sales generated by these tenders compared to other customers.

**Product sales trends** : Highlight that shower gels, shea butter, and detergents are consistent high-revenue generators. Implementing mixed product sales strategies, such as selling shower gels alongside 5L Takasa, is recommended to boost profits.

**Cost management** : It is suggested to review the 'others' expense category for better clarity, optimise transport costs through efficient logistics planning, and explore cost-saving measures in packaging.

**Informal activities** : Activities like selling Ankara and chicken also contribute to high revenue , especially in months of June 2023 and August respectively.

**Product Placement** : Products under the category of " others" should be replaced with more profitable items or sold in smaller quantities as they don't generate much revenue. For products that sell higher when together rather than individually it is advisable to place them next to those that generate high profits when bought together

# BI Report and Dashboard Design

We created two dashboards in our analysis:

This Dashboard gives a visual representation of the *BI Maturity assessment score*, *Gap analysis charts*, as well as visualisations of most important activities for growth of the organisation's BI Maturity.

Created using *google sheets*

This Dashboard comprises three main sections: *Profit-Cost Analysis*, *Product Analysis*, and *Predictive Analysis*. Each section offers specific functionalities tailored to the needs of Baraka Hygienics, providing insights into various aspects of the business.

Created using *streamlit*

# Implementation Strategies

## ***Steps for implementing the BI dashboard in the SME***

**Define the Objectives and Scope :** Set up a team

**Asses Current Data Infrastructure:** Data Inventory and Quality

**Select Appropriate BI tools :** Tool selection and customization

**Develop the BI dashboard :** Design, Integration and Testing

**Deploy the BI dashboard**

## ***Training and Support for SME Staff:***

**Training Programs:** Initial and Role based training

**Documentation:** User manuals and online resources

**Continuous Support:** Help desk and regular updates

## ***Recommendations for Ongoing Use and Maintenance:***

**Regular Data Updates :** Data refresh and Automated processes

**Performance Monitoring:** KPIs and Feedback Mechanism

**Continuous Improvement :** Review and Revise, Training Updates

# User Documentation and Manual

We created a user manual for both the BI Maturity and BI dashboards. Our user manual is designed to aid Baraka Hygienics to understand how to effectively use both the BI Maturity Assessment Tool and the BI Dashboard to improve their business processes and decision-making capabilities.

The user manuals contain sections on:

*System requirements*

*Access and Download*

*User Interface Overview*

*Functionalities Overview*

*Troubleshooting*

# Feedback and Future Recommendations

## Feedback

Clear and Comprehensible BI reports

Recognition of BI Scores and Business future recommendations

Projected positive impact on business growth

Overall, our project was seen as beneficial to the business due to its ease of understanding and positive impact on business knowledge.

## Future Recommendations

Use BI tools for real-time inventory management : Economic Order Quantity (EOQ) and Just-in-Time (JIT)

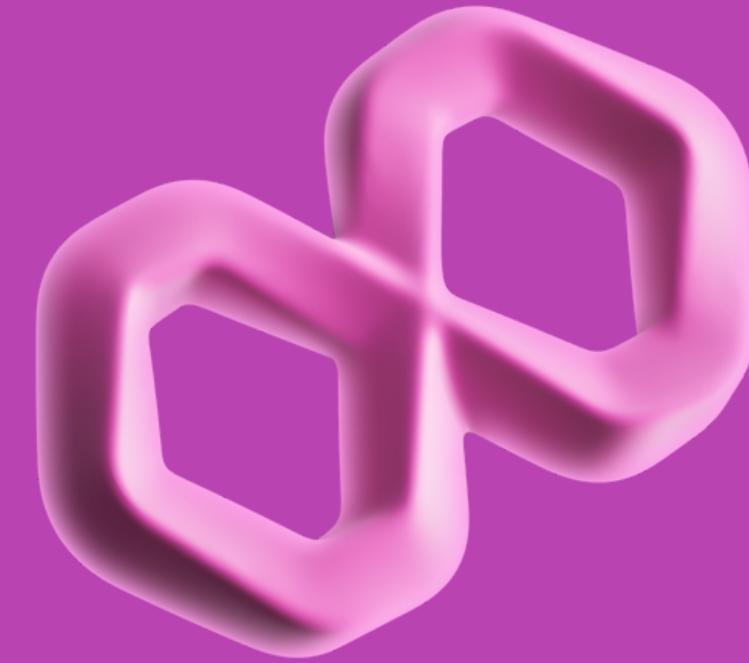
Set up a customer feedback system and platform

Establish and leverage social media analytics to refine their target market

Implement an e-commerce platform on their website to automate the sales tracking

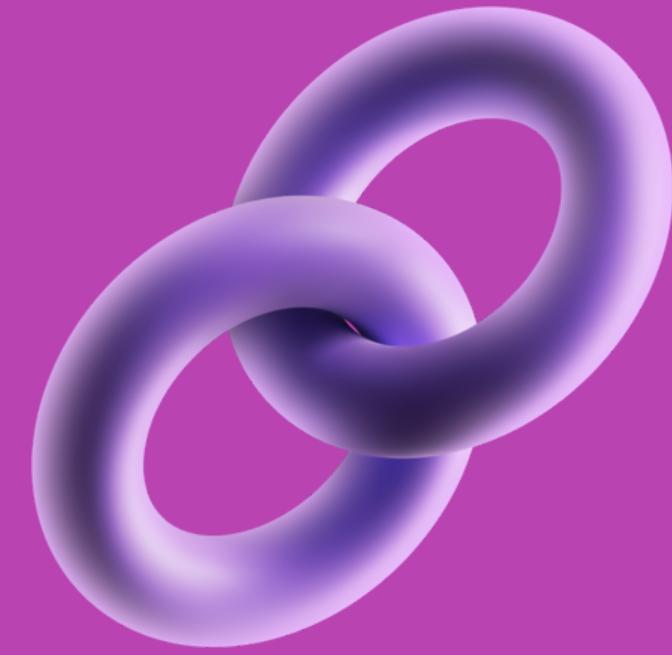
# BI Report and Dashboard Design

## Live Demonstration



BI Maturity Dashboard

[Google Sheets link](#)



BI Dashboard

[Github Link](#)