



IIT Madras

Operational Excellence and Profit Optimization Strategy: Dayash Life Sciences

A proposal report for the BDM capstone Project

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DECLARATION STATEMENT:

I am working on a project title "Operational Excellence and Profit Optimization Strategy: Dayash Life Sciences. I extend my appreciation to Dayash Life Sciences Private Limited, for providing the necessary resources that enabled me to conduct my project.

I hereby assert that the data presented and assessed in the project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered through primary sources and carefully analyzed to assure its reliability.

Additionally, I affirm that all procedure employed for the purpose of data collection and analysis have been duly explained in this report. The outcome and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the information of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for the individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I agree that all the recommendations are business specific and limited to this project exclusively , and cannot be utilized for any other purpose with an IIT Madras tag. I understand that IIT Madras does not endorse this.

A handwritten signature in blue ink that reads "Khushi". The signature is written in a cursive, flowing style with a large initial 'K'.

Signature of candidate

Name:- Khushi

Date:- 09 May 2025

2 EXECUTIVE SUMMARY

Dayash Life Sciences Private Limited, a pharmaceutical distribution company based in Kolkata, faces challenges including stagnant profit margins, inefficient inventory management, and rising operational costs. This report proposes a data-driven approach to optimize operations and enhance profitability. Time-series sales and inventory data will be cleaned and analyzed using LibreOffice Calc and Google Sheets to compute metrics such as revenue, profit margins, inventory turnover, and operating expense ratios. Pivot tables, statistical functions (e.g., SUM, AVERAGE), and forecasting techniques will identify trends and inefficiencies. Geographic Information System (GIS) tools like QGIS will map distribution costs to optimize logistics. The expected outcomes include actionable recommendations to reduce product expiration, streamline inventory, and lower operational costs, with a project timeline spanning data collection (May 10-15, 2025), analysis (May 16-25, 2025), and report preparation (May 26-30, 2025).

3 ORGANIZATION BACKGROUND

Dayash Life Science Private Limited is the business selected for this project. It was incorporated on December 4, 2018, with its registered office in Kolkata, West Bengal. The company operates under the Corporate Identification Number (CIN) U51397WB2018PTC229099 and is registered with the Registrar of Companies (RoC) in Kolkata.

The company is classified under the "Wholesale of pharmaceutical and medical goods" industry according to the National Industrial Classification (NIC). The authorized share capital of the company is Rs. 1,00,000, and the paid-up capital is also Rs. 1,00,000. The company is currently active and operates primarily in West Bengal and neighbouring states.

They have a team of 15 expert personnel (8 permanent and 7 contract-based) who form the backbone of the business. These include pharmaceutical experts, logistics specialists, and sales professionals. They have established themselves as a prominent player in the pharmaceutical distribution sector with a strong customer base comprising hospitals, clinics, and retail pharmacies.

4 PROBLEM STATEMENT

Dayash Life Sciences faces three primary challenges:

- 1. Low profit margins:** Stagnant profits due to seasonal sales fluctuations and narrow margins require analysis of sales patterns to enhance profitability.
- 2. Inefficient inventory management:** Excess stock and expired products lead to capital tie-up and wastage, necessitating optimized inventory practices.
- 3. Rising operational costs:** Increased expenses from regulatory compliance, logistics, and labor impact profitability, requiring cost analysis and reduction strategies.

5 Background of the problem

Despite having a strong base of loyal customers in the form of hospitals, clinics, and pharmaceutical retailers, Dayash Life Science is experiencing difficulties in expanding its operations and maintaining financial stability.

5.1 Low Profit Margins

Seasonal demand for pharmaceutical products causes unpredictable revenue, forcing discounts to maintain market presence. This reduces profit margins, while fixed expenses like employee wages and loan EMIs persist, hindering financial growth.

5.2 Inefficient Inventory Management

Bulk purchasing to anticipate orders results in overstocked warehouses, tying up capital and increasing the risk of product expiration due to the limited shelf life of pharmaceuticals. This inefficiency occupies valuable storage space and reduces operational agility.

5.3 Rising Operational Costs

Regulatory compliance, logistics, and labor costs have risen, straining profitability. Additionally, delayed payments from institutional customers (90-120 days) create cash flow challenges, limiting the company's ability to invest in growth.

6 PROBLEM SOLVING APPROACH

The collected time-series data will first be cleaned and then subjected to primary analysis to identify trends along with various key measures such as monthly revenues, expenses, profits, losses, and other similar indicators. Along with these basic metrics, important ratios like OER (Operating Expense Ratio), Inventory turnover ratio, Product expiration rate, and Distribution efficiency ratio will be calculated. Forecasting methods will be employed to project how trends will evolve in subsequent cycles, and sales data will be mapped against various expenses such as logistics costs, regulatory compliance costs, and storage costs.

6.1 Data Collection

- **Low Profit Margins:** Collect 12 months of sales data (January-December 2024) from company records, including product-wise sales, pricing, and discounts.
- **Inefficient Inventory Management:** Gather inventory data for the same period, detailing stock levels, procurement dates, and expiration incidents.
- **Rising Operational Costs:** Compile expense data, including regulatory compliance costs, logistics (fuel, transport), and labor costs, for 2024.

6.2 Methods

- **Low Profit Margins:** Use time-series analysis to identify seasonal trends and calculate profit margins per product. Apply forecasting to predict future sales.
- **Inefficient Inventory Management:** Compute inventory turnover and product expiration rates to assess stock efficiency. Recommend just-in-time inventory practices.
- **Rising Operational Costs:** Calculate Operating Expense Ratio (OER) and distribution efficiency ratios to pinpoint high-cost areas. Suggest cost-saving measures.

6.3 Analysis Tools

- **Spreadsheets:** LibreOffice Calc and Google Sheets for data cleaning, pivot tables, and statistical functions (SUM, AVERAGE, STDEV) to compute metrics.
- **Visualization:** Charts (bar, line) to visualize sales trends, inventory levels, and cost breakdowns.
- **GIS Tools:** QGIS to map distribution routes and analyse logistics costs by region.

7 EXPECTED TIMELINES:

The project follows a structured Work Breakdown Structure (WBS):

- **Data Collection (May 10-15, 2025):** Gather and verify sales, inventory, and expense data.
- **Data Cleaning (May 16-18, 2025):** Remove inconsistencies and format data for analysis.
- **Data Analysis Phase 1 (May 19-21, 2025):** Compute basic metrics (revenue, expenses, profit margins).
- **Data Analysis Phase 2 (May 22-24, 2025):** Calculate ratios (OER, inventory turnover) and perform forecasting.
- **Final Analysis (May 25, 2025):** Integrate GIS mapping and finalize recommendations.



Gantt Chart:

Task	10/5	12/5	14/5	16/5	18/5	20/5	22/5	24/5	26/5	28/5
Data Collection										
Data Cleaning										
Analysis Phase 1										
Analysis Phase 2										
Final Analysis										
Meeting 1 (Progress Review)										
Meeting 2 (Analysis Review)										
Report Preparation										
Viva Preparation										

8 Expected Outcomes

The project aims to deliver the following outcomes:

- **Reduced Losses from Low Profit Margins:** Identify high-margin products and optimal pricing strategies through time-series analysis, increasing overall profitability by at least 10% within six months.
- **Improved Inventory Management:** Implement just-in-time inventory practices to reduce excess stock by 20% and product expiration incidents by 15%, freeing up warehouse space and capital.
- **Lowered Operational Costs:** Optimize logistics routes using GIS analysis to reduce distribution costs by 10% and streamline regulatory compliance processes to cut related expenses by 5%.
- **Cash Flow:** Propose payment term negotiations with institutional clients to reduce payment delays from 90120 days to 6090 days, improving liquidity for operational investments