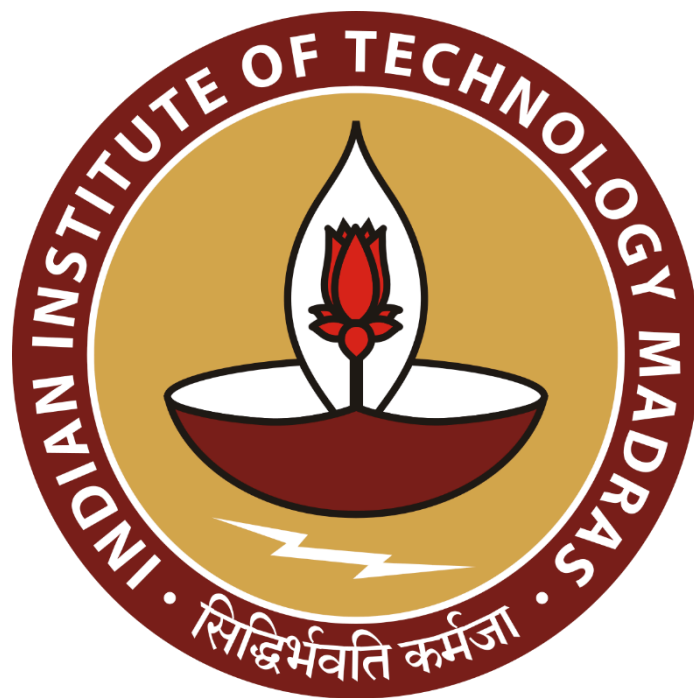# Optimized Business Data Management for Strategic Growth at Arihant Enterprises

A Proposal report for the BDM capstone Project

Submitted by

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Declaration Statement

I am working on a Project titled **"Business Data Management for Arihant Enterprises"**. I extend my appreciation to **Arihant Enterprises**, for providing the necessary resources that enabled me to conduct my project.

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

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes 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 principles 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 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 understand that all recommendations made in this project report are within the context of the academic project taken up towards course fulfillment in the BS Degree Program offered by IIT Madras. The institution does not endorse any of the claims or comments.

Signature of Candidate:

Name: Deepesh Kumar Dawar

Date: 01/03/2025

1 Executive Summary

Arihant Enterprises faces critical challenges in inventory inefficiencies, pricing misalignment, supplier dependency, and cash flow disruptions. High-demand products contribute minimally to revenue due to improper pricing strategies, while slow-moving, high-cost items strain financial resources. An over-reliance on a limited number of suppliers reduces negotiation power and increases procurement costs. Additionally, delayed payments from institutional clients create liquidity constraints, affecting day-to-day operations and financial planning.

To address these issues, a structured and data-driven methodology will be adopted. Forecasting models like **ARIMA** will be used for sales trend prediction and inventory optimization, while **K-Means clustering** will assist in product and customer segmentation for more effective pricing strategies. **Microsoft Excel** will support initial data cleaning and tabular analysis, **Python** (with libraries like pandas, matplotlib, and scikit-learn) will be used for advanced analytics and model building, and **Power BI** will provide real-time, interactive dashboards for business insights. These tools and methods collectively aim to improve inventory control, optimize pricing, diversify suppliers, and enhance cash flow stability—ultimately driving efficiency and sustainable growth.

Supplier diversification and cost benchmarking will be key strategies to improve procurement efficiency. A multi-supplier strategy will mitigate risks associated with over-reliance on specific vendors, while bulk purchase negotiations will reduce procurement costs. AI-driven dashboards and predictive analytics will provide real-time insights, allowing for proactive decision-making and financial planning.

By implementing these solutions, Arihant Enterprises will streamline operations, optimize pricing models, strengthen financial management, and achieve long-term profitability and business growth.

2 Organization Background

Arihant Enterprises, founded in 2020 by Atul Jain, is located at 22, Above Bata, Kashi Bagh Colony, Happy Villa Colony, Dhar, Madhya Pradesh - 454001. It operates in the B2B, B2C, and B2G sectors, providing goods and services to government institutions, hospitals, hotels, schools, and NGOs. The company generates 60% of its revenue from government contracts and 40% from direct retail sales.The estimated yearly turnover is approximately INR 1 crore.

Arihant Enterprises specializes in housekeeping chemicals, cleaning tools, mops, safety equipment, and various consumables. The mission of Arihant Enterprises is to provide quality products at competitive prices while ensuring efficiency in supply chain and inventory management. The vision is to expand its reach into larger corporate and government contracts while improving operational transparency.

The company manages its operations using Binary Solution PS Software for stock and billing. It employs five staff members, including two for logistics, one for inventory management, and two for retail operations.

3   Problem Statement

3.1   **<u>Inefficient Inventory & Pricing Strategy</u>:** Some high-selling products generate low revenue, while low-quantity items contribute significantly due to high pricing. The lack of a structured pricing strategy affects profitability and inventory allocation.

3.2   **<u>Supplier Dependence</u>:** Certain suppliers account for a large percentage of expenditure, and costly products strain cash flow. Over-reliance on a few vendors increases business risks.

3.3   **<u>Cash Flow Challenges</u>:** Key customers, especially institutions, have significant unpaid dues, affecting cash flow and operational stability. A lack of strict credit policies and delayed payments contribute to financial strain.

4   Background of the Problem

4.1. Inefficient Inventory & Pricing Strategy

Arihant Enterprises struggles with unstructured pricing and ineffective inventory allocation. **Internally**, inaccurate demand forecasting and imbalanced stockholding. Products with high sales volume are often priced too low, resulting in poor profit margins, while expensive, slow-moving items remain overstocked, tying up working capital. This issue is further compounded by the absence of category-wise sales analysis and a reliance on outdated inventory practices. **Externally**, the retail environment is highly competitive, with rival firms leveraging dynamic pricing algorithms, e-commerce channels, and real-time demand analytics to capture market share. Without a comparable digital or analytical pricing framework, Arihant is unable to respond swiftly to market trends or optimize margins.

4.2. Supplier Dependence & Costly Procurement

The company faces procurement challenges due to its over-reliance on a handful of suppliers. **Internally**, there is no formal vendor evaluation or cost benchmarking process, resulting in unchecked increases in procurement prices and limited opportunities to negotiate better deals. The absence of strategic sourcing protocols or alternative supplier scouting further aggravates the issue. **Externally**, supply chain disruptions, inflationary trends in raw material prices, and fluctuating market conditions elevate the risk of cost instability. Arihant's inability to diversify or negotiate with multiple vendors leaves it vulnerable to vendor-driven terms and reduced flexibility during shortages or price hikes, hampering operational efficiency.

4.3. Cash Flow Challenges & Credit Policy Gaps

The organization's cash flow is severely affected by delayed payments from key institutional customers. **Internally**, the firm lacks robust credit policies, customer risk profiling, and a structured receivables follow-up mechanism. There is no automation in invoicing or payment reminders, leading to irregular collection practices and poor accountability. The finance team

also lacks analytical tools to assess customer payment behavior or predict cash flow gaps. **Externally**, institutional clients operate on extended credit cycles and bureaucratic payment systems, often stretching beyond 60 to 90 days. Additionally, in the absence of legal enforcement or formal contracts for payment terms, Arihant has limited recourse in recovering dues promptly. These external constraints, coupled with internal inefficiencies, result in chronic liquidity issues that impair operational planning and growth investment.

5 Problem Solving Approach

To address **Arihant Enterprises' challenges**, a structured data-driven business management approach will be used to improve financial tracking, inventory management, and digital expansion. The following structured steps will be implemented:

5.1 Inventory & Pricing Optimization

Data Collection

- **Types of Data:** Historical sales data, product pricing data, inventory levels, stock turnover rates.
- **Data Sources:** Business's sales records, inventory management system, purchase bills, and point-of-sale (POS) reports.

Methods

- **Category-Based Sales Analysis:** Identify performance of each product based on sales volume and revenue contribution.
- **ABC Analysis:** Classify inventory into A, B, and C categories based on sales frequency and profitability.
- **Just-in-Time (JIT) Inventory:** Align purchasing with real-time demand to reduce overstocking.
- **Pricing Adjustment Strategy:** Re-price high-selling low-revenue products and reduce focus on low-selling high-cost items.

Analysis Tools Used

- **Excel / Power BI / Tableau:** Visualize sales patterns and stock trends.
- **Python (Pandas/NumPy):** Perform ABC classification and data transformation.
- **ARIMA Model:** Forecast future demand trends based on historical sales.
- **K-Means Clustering:** Segment inventory into logical clusters (high vs. low turnover) for better stock management.

5.2 Supplier Cost Management & Diversification

Data Collection

- **Types of Data:** Vendor names, supply frequency, product cost history, delivery timelines, credit terms.
- **Data Sources:** Supplier invoices, procurement logs, and purchase orders maintained in ERP or spreadsheet systems.

Methods

- **Supplier Performance Tracking:** Monitor delivery consistency and pricing trends.
- **Cost Benchmarking:** Use regression analysis to assess supplier pricing changes over time.
- **Negotiation Strategy:** Use historical data to negotiate better credit periods and volume discounts.
- **Supplier Diversification:** Onboard alternate suppliers to reduce dependency and procurement risk.

Analysis Tools Used

- **SQL:** Query vendor delivery records and procurement data.
- **Excel / Python:** Run cost comparisons and performance reports.
- **Regression Analysis:** Evaluate cost trends over time.
- **AI Dashboards (Power BI/Tableau):** Track real-time supplier metrics and visualize procurement cost breakdowns.

5.3 Cash Flow Management & Credit Control

Data Collection

- **Types of Data:** Customer payment records, credit terms, overdue invoices, and mode of payments.
- **Data Sources:** Accounts receivable ledger, client credit agreements, digital transaction logs.

Methods

- **Customer Risk Categorization:** Classify clients based on payment behavior (low, medium, high risk).
  Early Payment Incentives: Offer 2–5% discounts for prompt payments.
- **Credit Policy Implementation:** Enforce stricter terms for high-risk customers and reward regular payers.
- **Digital Payment Enablement:** Promote UPI, bank transfers, and online platforms to accelerate transactions.

Analysis Tools Used

- **Excel / Power BI:** Track outstanding dues and payment timelines.
- **Automated Invoicing Tools (Tally/Zoho):** Send timely payment reminders.
- **Python Automation Scripts:** Trigger SMS/email reminders based on due dates.
- **Financial Dashboards:** Visualize overdue amounts and aging schedules.

5.4 Strategic Monitoring & Performance Improvement

Data Collection

- **Types of Data:** Key business metrics (sales, margins, dues, inventory levels).
- **Data Sources:** Business intelligence dashboards, ERP reports, and manual logbooks.

Methods

- **KPI Monitoring:** Track improvements in profit margins, debt collection rates, and supplier reliability.
- **Continuous Improvement Cycle:** Monthly review of strategy effectiveness and adjustments where necessary.
- **Alert System Implementation:** Real-time alerts for overdue invoices and low stock levels.

Analysis Tools Used

- **Power BI/Tableau Dashboards:** Monitor KPIs and performance trends.
- **AI-Based Alert Systems:** Set triggers for restocking and overdue payments.
- **Python with Scheduled Scripts:** Automate periodic performance checks and send insights to decision-makers.

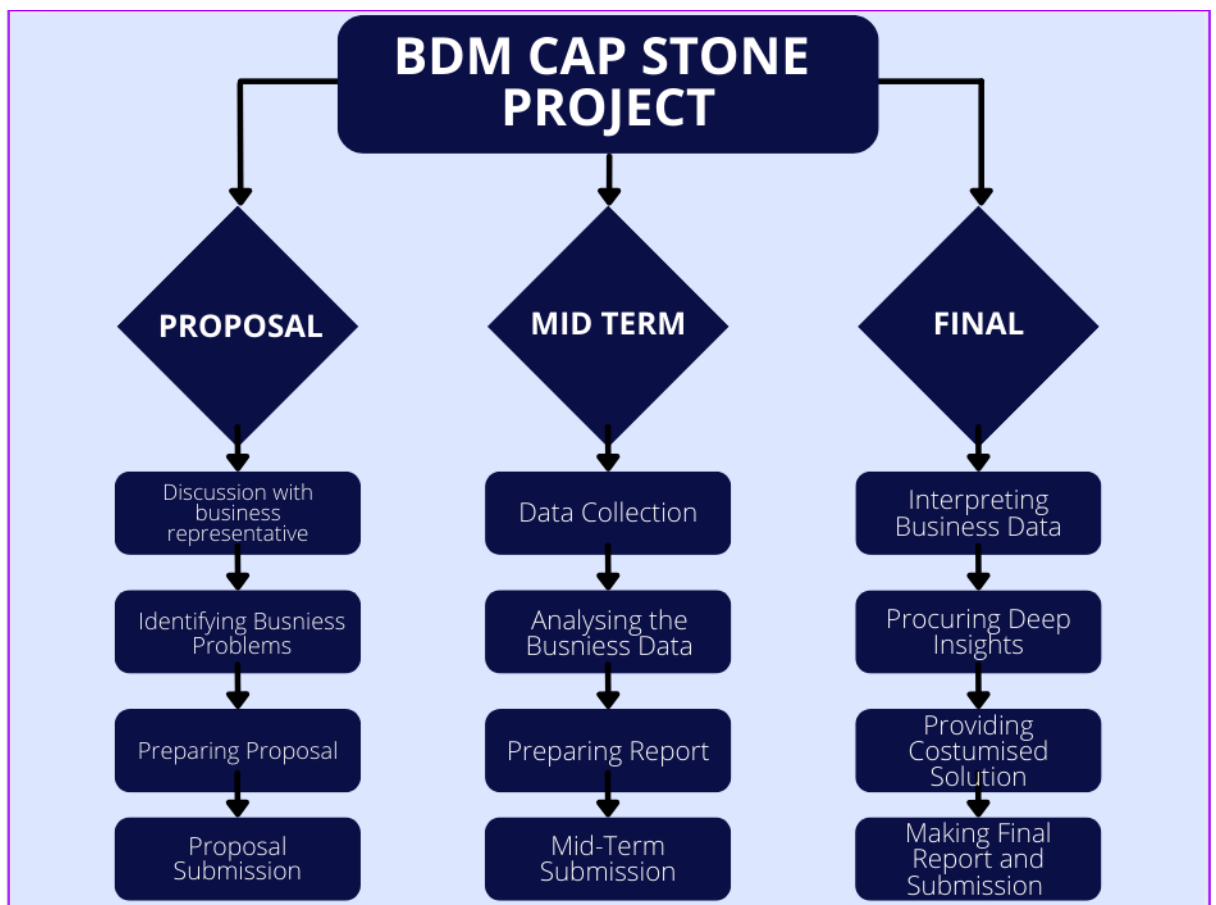# 6 Expected Timeline

6.1 Work Breakdown Structure:

Figure 1 Work breakdown structure of project

6.2   Gantt chart

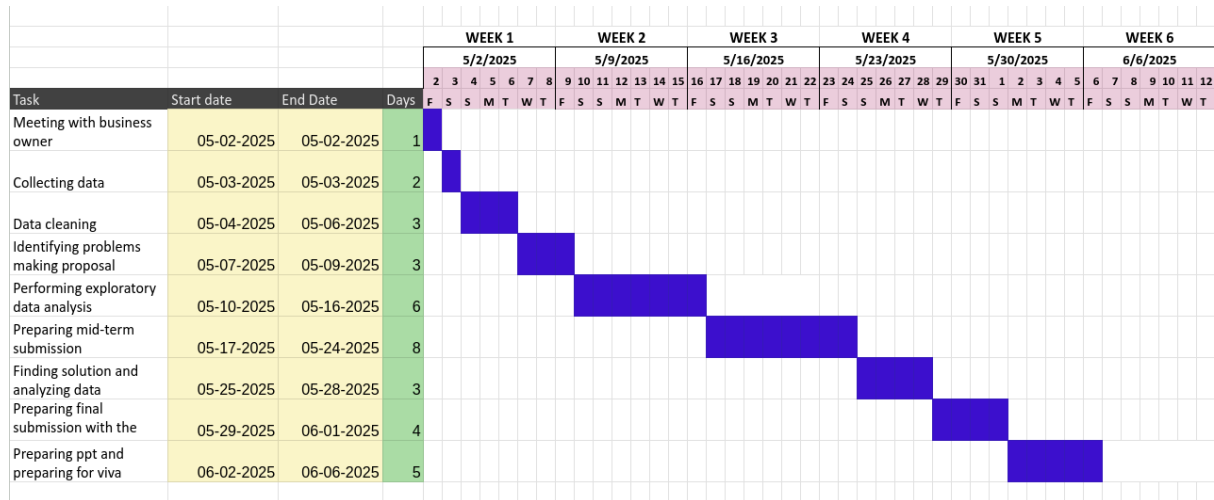| Task | Start date | End Date | Days | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-----------|----------|------|
| | | | | | | WEEK 1 5/2/2025 | | | | | | WEEK 2 5/9/2025 | | | | | | WEEK 3 5/16/2025 | | | | | | WEEK 4 5/23/2025 | | | | | | WEEK 5 5/30/2025 | | | | | | WEEK 6 6/6/2025 | | | | | |
| Meeting with business owner | 05-02-2025 | 05-02-2025 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Collecting data | 05-03-2025 | 05-03-2025 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Data cleaning | 05-04-2025 | 05-06-2025 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Identifying problems making proposal | 05-07-2025 | 05-09-2025 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Performing exploratory data analysis | 05-10-2025 | 05-16-2025 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preparing mid-term submission | 05-17-2025 | 05-24-2025 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finding solution and analyzing data | 05-25-2025 | 05-28-2025 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preparing final submission with the | 05-29-2025 | 06-01-2025 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preparing ppt and preparing for viva | 06-02-2025 | 06-06-2025 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Figure 2   Gantt Chart.

7   Expected Outcome

Improved transparency in expense tracking, including hidden transportation costs, leading to more accurate pricing and profitability analysis.

Enhanced supplier performance monitoring will reduce restocking delays and improve inventory availability. A structured approach will help identify fast-moving and slow-moving products, ensuring better stock planning.

Tracking supplier overcommitments will provide a clear understanding of which vendors frequently delay deliveries, helping the business make informed supplier decisions.

The implementation of listing products on Amazon's e-commerce platform will allow better customer reach, resulting in increased revenue and market share

By integrating data analytics and digital solutions, Arihant Enterprises can achieve operational excellence, better market reach, and sustainable growth.