

# **Harnessing Data for Pharma Excellence**

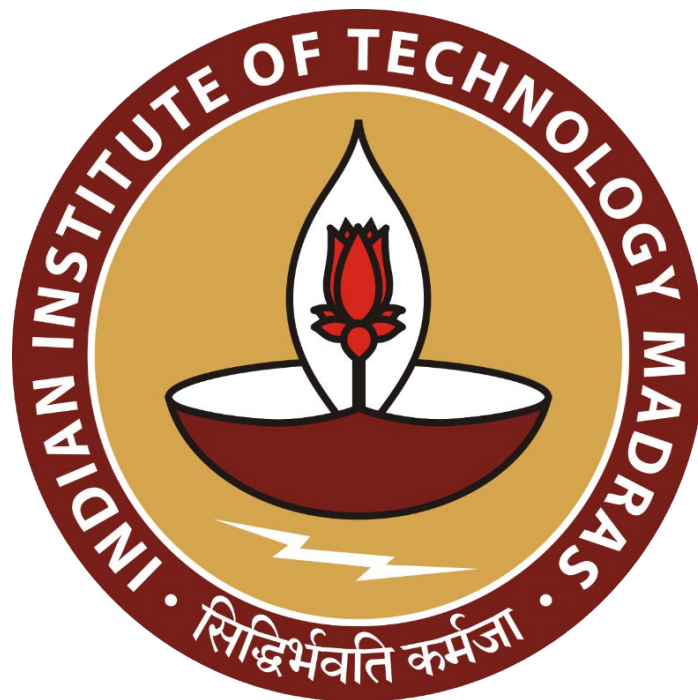
**A Proposal report for the BDM capstone Project**

Submitted by

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## **Declaration Statement**

I am working on a Project titled “**Harnessing Data for Pharma Excellence: Transforming Operations, Talent Strategies, and Market Leadership**”. I extend my appreciation to **MEDICURE LIFE SCIENCES, INDIA PRIVATE LIMITED**, 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: Sibani Tiwari

Date:

1-11-2024

## **1 Executive Summary and Title**

MEDICURE LIFE SCIENCES (INDIA PRIVATE LIMITED) is a marketing & sales company of pharmaceutical finished product. They are subdivided into two companies i.e. Medisure and Remedy, but both are considered one. They were supposed to be merged together but the imbalance that COVID-19 caused delayed it. Collaborating with manufacturers, to get high-quality medications into the hands of healthcare providers and patients faster. Their services are designed to cater the on-demand needs and evolving market conditions with stringent adherence to regulatory norms, so that pharmaceutical brands can leverage our capabilities for their success in challenging marketplace. Their network is built on strong relationships in the healthcare bound by commitment to compliance, customer satisfaction and industry leading technology.

The company has operation issues that hurt overall business efficiency and profitability, such as high employee churns (almost 50%), pricing which they have hard time doing in the competitive market. Furthermore, the quick introduction of new drug molecules and unoptimized supply chain management together with lackluster top talent complement the complexity within which companies operate. And at the same time, it is important to improve and scale the existing healthcare marketing strategy.

A data-driven solution to these problems is what they are hoping for. I aim to create predictive models for decision making by analyzing critical business data w.r.t employee performance, market trends, sales patterns and recruitment. The goal is to improve talent retention, develop competitive pricing strategies, optimize supply chain management, and fine-tune marketing efforts to drive overall business growth and performance.

## **2 Organization Background**

Medisure Lifesciences India Pvt Ltd was founded in 2009 and is based out of Hyderabad headed by its MD Mr K Srinivas Rao. The company has a focus on providing high-quality, affordable drugs primarily in chronic therapy areas such as cardiology and neurology or diabetes. Positioned strongly in Telangana, Andhra Pradesh and Maharashtra as well as Goa; Medisure is now venturing into newer territories to provide its high-quality product offerings.

By having an annual turnover that is more than 30 crores, the company manages to hold over 120 brands in holding which provides all essential needs on healthcare by supplying them dependable and affordable main medicines. Medisure is well recognised within the healthcare industry and has over 45 employees. The company continues to focus on delivering outstanding healthcare solutions and bringing the very best in patient care through a commitment to access, quality, working with service providers/providers-of-service across-nations (in local markets) ~ better outcomes physically and emotionally.

## **3 Problem Statement**

- 3.1 Problem statement 1: **High Employee Attrition (Loosing Good Talent out to the competitors)** Employee retention, especially among more skilled workers is an issue as others are getting to pay them much better benefits than the company. This reduces operational efficiency and increases hiring costs.

Understand employee exit surveys, performance data and average salaries. Construct models that predict which employees are likely to withdraw, then develop personalised retention initiatives like better remuneration schemes

- 3.2 Problem statement 2: **Difficulty in Pricing Medicines Competitively**  
The company's pricing strategies are suboptimal, leading to either low demand or lost market share as competitors offer better pricing.

Use historical sales data, information on current demand trends in the market and competitor pricing to develop a dynamic pricing model. Tune real-time price adjustments to ensure profit maximization maintaining competitive market position.

- 3.3 Problem statement 2: **Rapid Release of New Drug Molecules**  
Given that the competition continues to release new drug molecules with great frequency, R&D and market adaptation efforts are under much pressure since they were not fast enough in response.

Track competitor pipelines, patent filings and clinical trial data to project new drug launches. Predictive models help predict the market impact and better-informed decisions for R&D investments, as well as marketing strategies.

## **4 Background of the Problem**

### **4.1 High Employee Attrition**

#### **Internal Problems:**

- Limited career development opportunities and promotion pathways.
- Insufficient alignment of compensation packages with industry benchmarks.

#### **External Problems:**

- Competitors offering higher salaries, better benefits, and more attractive career growth opportunities.
- Industry-wide shortages of specialized talent, amplifying competition for top performers.

#### **4.2 Difficulty in Pricing Medicines Competitively**

##### **Internal Problems:**

- Lack of a sophisticated, dynamic pricing model to adjust prices in real-time.
- The company lacks a proper pricing strategy, leading to inconsistent pricing that fails to adapt to competitor changes or accurately reflect market demand.

##### **External Problems:**

- Competitors are aggressively cutting prices to gain market share, putting pressure on the company to remain competitive.
- Additionally, regulatory pricing constraints and shifting market demands, coupled with increasing customer price sensitivity, limit the company's flexibility in adjusting drug prices.

#### **4.3 Rapid Release of New Drug**

##### **Molecules Internal Problems:**

- R&D agility is limited which makes it unable to respond quickly for the new competitor drug releases.
- Product innovation and delay in reaching the market leads to a competitive disadvantage

##### **External Problems:**

- The market competition is intensified by the rapid release of competing drugs and R&D advancements which negatively influences upon company's sales volume.
- This puts additional pressure on the company to tone down its pricing & brand positioning strategies due to increased competition.

## **5 Problem Solving Approach**

### **Steps Involved:**

#### **1 Data Collection and Cleaning:**

I would start by gathering all available data relevant to the problem statements mentioned above such as:

For the Employee attrition problem, I would use the below data:

- Exit surveys
- Employee demographics (e.g., age (D.O.B), company)
- CTC

For the other two problems i.e (Difficulty in pricing medicines competitively and Rapid release of new drug molecules) I would use the following data:

- Product name
- MRP (of these products)
- Tax

- PTR, PTS

- Company name

For the comparison of prices of the medicines in the data, I will use the data of other companies like that of Primus remedies, arkas etc.

Once collected, I will clean the data, addressing any missing values, duplicates, or inconsistencies to ensure accurate analysis.

## **2 Data Exploration and Initial Analysis:**

The next step is to conduct exploratory data analysis (EDA) to understand the patterns in the data. For the first problem:

- Analyze attrition rates by age factor, salary, company and Date of Join.
- Visualize correlations between key variables, such as age and attrition, salary and attrition, salary growth and attrition, date of join and attrition etc.
- Identify any outliers that could skew results.

For the second problem:

- Ensure data completeness by checking for missing values in **PTR**, **PTS**, and **MRP**.
- **Average PTR, PTS, and MRP**: Calculate the mean and median values for each pricing metric to understand the overall price range.
- **Price Ratios**: Compute ratios, such as **MRP-to-PTR** and **PTS-to-PTR**, to understand markups at each distribution level. This can reveal if certain drugs have higher-than-average markups, possibly affecting competitiveness.
- Pricing Trends by Drug Composition
- Competitive Benchmarking
- Correlation Analysis between PTR vs MRP
- Identify outliers

For the third problem:

- Calculate the number of new drugs introduced by composition or therapeutic area to understand where new releases are concentrated.
- Assess the average PTR, PTS, and MRP for new drugs by composition to see if new launches are priced competitively relative to existing options.
- Composition Popularity Trends
- Correlation Analysis between New Drug Composition vs. Price Levels
- Identify outliers

This EDA phase helps form initial hypotheses on what might be driving these problems.

## **3 Feature Engineering:**

- **Salary Buckets:** Group employees by salary/ctc to see if certain groups are more likely to leave.
- **Relative Pay:** Compare each employee's salary to the average salary for everyone within the company to identify pay gaps that might influence attrition.
- Compare PTR and MRP for each drug with similar compositions to see if they're competitively priced.
- Look if pricing adjustments are needed.
- Track the frequency of new drug launches by composition to identify active areas of interest common among customers.
- Compare new drugs prices by classifying it into low, medium and high and check if it aligns with the pricing strategy.

#### **4 Dashboard Creation for Insights:**

This can be done using excel

- Use a **bar chart** to show attrition rates across different salary and age groups.
- Add a **heat map** or **bar chart** comparing average salaries by age to highlight potential pay gaps that may influence attrition.
- Use a **line chart** to show trends in **MRP-to-PTR** and **PTS-to-PTR** ratios, helping to spot drugs with high markups.
- Add a **scatter plot** comparing PTR and MRP against competitor averages for similar compositions to assess competitiveness.
- Use a **stacked bar chart** to display the number of new launches by composition over time, indicating high-growth interest areas.
- Add a **box plot** or **column chart** to show the distribution of new medicine prices within each composition category for pricing strategy insights.

#### **5 Present Data Driven Recommendations:**

- Adjust the salary if that's the major cause of attrition among young ones.
- Focus on Retention for Newer Employees by providing additional support or better onboarding programs.
- Better pricing strategies like lowering the cost if the mrp/ptr ratios are above average.
- For drugs with similar compositions that are priced higher than competitors, reducing the price could improve market positioning.
- if certain compositions of drugs are seeing a lot of new releases, consider investing more in these areas to keep up with market demand.
- If selling the new released drugs, make sure the pricing aligns with the market demand.



A glimpse at the data I have been given by the organisation  
There are 13 sheets available and a sheet describes a month's data:

S.NO	PRODUCT	COMPOSITION	COMPANY	MRP	PTR	PTS
1	ACECURE PLUS tab	Aceclofenac 100mg + paracetamol 325mg	MEDICURE	50	35.71	32.14%
2	ACESERAPLUS Tab	ACECLOFENAC 100MG+ PARACETAMOL 325MG +SERRATIOPEPTIDASE 15MG	MEDICURE	80	57.14	51.43%

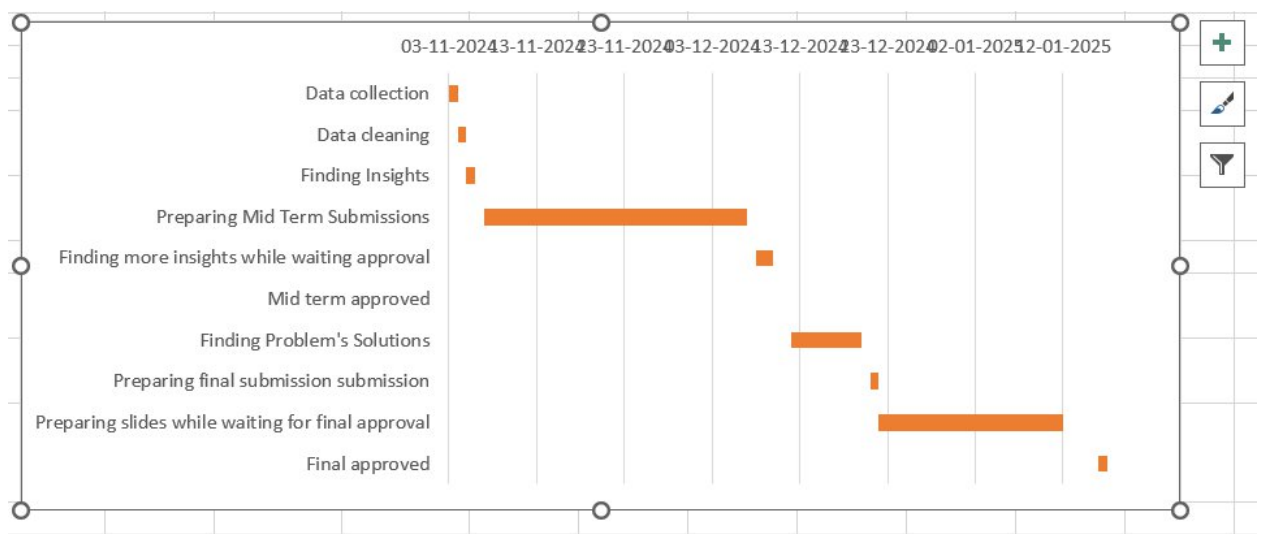
NAME	HQ	DOJ	DOB	DESIG	COMPANY	CTC	GROSS SAL CT	EFNOV21	E CONT	NS	TDS	SES	E	Bank details	PAN	Ca	UK
ANUP DHANASHRI	HYDERABAD	01.11.2020	17.06.1974	GM	MEDICURE	2121600	186800	1800	1800	200	20000	0	163000	05211050074180 HDFC	AFTPD291D	100	
HARI BABU K	HYDERABAD	01.01.2021	04.01.1990	PRM	MEDICURE	751200	80000	1800	1800	200	5000	0	73000	914010037778126 AXISBANK	CZBPK3720M	100	
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## 6 Expected Timeline

### 6.1 Work Breakdown Structure:

- 1) Once the proposal gets accepted. (Proposal document preparation the first month (entire October).
- 2) Mid term preparation, making the document and providing the data (The second entire month of November)
- 3) If the Mid term is approved as well
- 4) Final document preparation another month (of December)
- 5) Final approved

### 6.2 Gantt chart



## **7 Expected Outcome**

### **7.1 Reduced Employee Turnover and Increased Delay for New Employees:**

By looking into employee level tenure, relative pay, and the other factors where the employee leaves, it is anticipated that some drivers of employee turnover will be understood. This will allow the company to come up with selective retention policies such as giving some bonuses to people that are already working with the company, as well as other onboarding strategies. This in the end should lead to a cut down in attrition numbers, increase employee satisfaction, and enable a desirable level of employee stability in the organization.

### **7.2 Improved Pricing Tactics to Gain a Competitive Advantage:**

Since our competitors, and especially those that supply drugs with similar compositions, will have a clear view of our pricing, it is anticipated that we will put competitive pricing on our products. Understanding of the relations between the **MRP-PTR** and **PTS-PTR** will help the company to manage its profit margins and market requirements thus creating opportunities for the loyalty of customers and an increase in sales due to competitive market prices.

### **7.3 Improved Competitive Position by Timing New Drug Launches in the Market:**

We will be able to monitor new drug releases through their composition to predict the possible new areas of therapy and their appropriate prices. This will help in ensuring that new enterprises entered the market at the time when their products were most needed.

