**Product Sales Analysis with Cognos**

# TEAM MEMBERS

# Regno & Name:812621243052 – Srinivasan R

# Regno & Name:812621243019 – Jagatheeswar A

# Regno & Name:812621243030 – Mohan Raj R

# Phase 1: Problem Definition and Design Thinking

# Project Definition

The project involves leveraging IBM Cognos to analyze sales data and extract valuable insights to assist businesses in enhancing inventory management and marketing strategies. By understanding sales trends, customer preferences, and identifying top-selling products, we aim to provide actionable recommendations for our clients.

**Design Thinking Approach**

# Analysis Objectives

Identify Top-Selling Products: Determine the products with the highest sales volume and revenue.

Analyze Sales Trends: Explore historical sales data to identify seasonal patterns, growth trends, and sales fluctuations.

Understand Customer Preferences: Discover customer preferences based on product categories, customer demographics, and purchasing behavior.

Visualize Insights: Create intuitive and informative visualizations to effectively communicate the analysis findings.

Actionable Insights: Translate the insights into actionable recommendations for inventory management and marketing strategies.

# Data Collection

To achieve our analysis objectives, we will collect and integrate data from multiple sources, including:

1. **Sales Transaction Records**: We will use the provided dataset from Kaggle (Dataset Link: [Sales Dataset](https://www.kaggle.com/dfsets/anuvagoyal/sales-store-product-details)) which contains information about sales transactions, such as product IDs, purchase dates, quantities, and prices.
2. **Product Information**: Additional product details like product categories, descriptions, and manufacturer information will be collected. This data will help us categorize and analyze products effectively.
3. **Customer Demographics**: Customer-related data, including demographic information (age, gender, location), customer IDs, and loyalty status, will be acquired to gain insights into customer preferences.

# Visualization Strategy

Our visualization strategy in IBM Cognos will include the following steps:

1. **Data Preparation**: Clean and preprocess the collected data, ensuring consistency and data quality.
2. **Data Modeling**: Design a data model that integrates the various datasets, enabling comprehensive analysis.
3. **Dashboard Creation**: Utilize IBM Cognos to create interactive dashboards and reports that visually represent the insights. These may include:
4. **Top Products Dashboard**: A visualization showing the top-selling products.
5. **Sales Trend Analysis**: Visual representations of sales trends over time.
6. **Customer Preference Dashboard**: Insights into customer preferences, potentially segmented by demographics.
7. **Interactivity**: Ensure that the dashboards are interactive, allowing users to filter and drill down into the data for a deeper understanding.

# Actionable Insights

The ultimate goal is to provide actionable insights that can guide inventory management and marketing strategies:

**Inventory Management**:

1. Identify underperforming products and consider reducing their inventory.
2. Stock up on top-selling products, especially during peak sales periods.
3. Optimize inventory levels based on historical sales trends.

**Marketing Strategies**:

1. Tailor marketing campaigns to match customer preferences and purchasing behavior.
2. Plan promotions and discounts strategically during peak sales periods.
3. Identify potential cross-selling or upselling opportunities based on product associations.

# Conclusion

In this phase, we have defined the project objectives, outlined the design thinking approach, and identified the steps for data collection, visualization, and deriving actionable insights. By following this structured approach, we aim to provide our clients with valuable insights to optimize their sales strategies and improve business outcomes. In the subsequent phases, we will execute these steps and present the results through IBM Cognos visualizations.