



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCST1043
Sem: 2 Session: 2024/25

SECTION A: Project Information.

Program Name: **Masters of Science (Data Science)**

Subject Name: **Project 1 (MCST1043)**

Student Name: Sivarajan A/L S.Esvaran

Metric Number: MCS241051

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Project Title: Discovering Potential Sales Opportunities in Direct Selling Business through Data Analysis and Data Visualization Strategy

Supervisor 1: _____

Supervisor 2 / Industry Advisor(if any): _____

SECTION B: Project Proposal

Introduction:

Direct selling and also known as person to person sales is a business model allowing individuals to sell products directly to customers in the absence of a physical store. Amway is among many companies that empower millions of direct distributors worldwide through this model. However, the majority of these sellers operate in absence of business intelligence system and relying instead on manual monitoring, their own intuition or previous experiences and knowledge in making their sales decisions. In light of the growing availability of data as well as user friendly data analytic tool and data visualisation tool to assist distributors in identifying patterns in customers' behaviour, sales trends and the product refund or return issues. The purpose of this project to examine how these tools can enhance this direct selling business performance as well as data-driven decision making.

Problem Background:

The direct sellers themselves usually lack of training, time or tools required to utilise data effectively in their business. They generally do not have deeper access to advanced data analytics tool but they accomplished complex task such as inventory management, customer targeting and timing for promotion. Mismatches in demand and supply, poorly timed promotion as well as unclear on customers' preferences are some of common problems. By modeling or projecting online retail transaction data, which is similar to Amway sales trends, the project will be able to deliver useful insights through data visualisation and segmentation of customers, giving distributors a better grasp of their businesses.

Problem Statement:

Data analysis and visualisation can uncover trends, customer behaviour patterns as well as return or refund challenges in direct selling companies such as Amway in several ways.

Aim of the Project:

The aim of the project is to study and display retail transaction data concerning direct selling companies such as Amway

In order to :

1. Recognise trends in sales within different time of periods.
2. Identify the customers segments which return highest profits.
3. Highlight patterns in returns and refund of sold products.
4. Provide recommendation based on the analysed data to increase monthly and annual sales.

Objectives of the Project:

To examine and present sales data across intervals of time for instance, monthly or seasonaly.

To identify the top performing and lowest performing products' categories.

To recognise trends in returns and refunds across the products' categories and demographics of customers.

To provide suggestions for increasing sales from the insights gathered thorough data analysis and visualisation tools.

Scopes of the Project:

Data of one year time period from a distributor's Amway online retail system will be utilised for this project.

The data will be aquired from order history of an Amway distributor from 1st April 2024 to 1st April 2025. The research will focus on explolatory data analysis, visualisation of trends and customers' segmentations.

Expected Contribution of the Project:

The visual report will allow direct sellers to track their performance and make informed decisions.

A structure for leveraging low cost, user friendly tools such as Pyhton, Power BI and Excel to analyze sales data.

Strategic insights customised for Amway distributors, comprising the best time to promote certain products, identify the most valuable customers, most frequent causes of product returns and ways to reduce the product returns. This data analysis and visualisation tool will equip independent distributors who might not possess technical skills with use of data driven decisions.

Project Requirements:Software: Phyton, Power BI and Excel

Hardware: _____

Technology/Technique/
Methodology/Algorithm: Exploratory Data Analysis, Visualisation**Type of Project (Focusing on Data Science):**☐ Data Preparation and Modeling☒ Data Analysis and Visualization☒ Business Intelligence and Analytics☐ Machine Learning and Prediction☐ Data Science Application in Business Domain**Status of Project:**☒ New☐ ContinuedIf continued, what is
the previous title? _____**SECTION C: Declaration****I declare that this project is proposed by:**☒ Myself☐ Supervisor/Industry Advisor ()

Student Name: _____

Signature_____
Date**SECTION D: Supervisor Acknowledgement**

The Supervisor(s) shall complete this section.

I/We agree to become the supervisor(s) for this student under aforesaid proposed title.

Name of Supervisor 1: _____

Signature_____
Date

Name of Supervisor 2 (if any): _____

Signature_____
Date**SECTION E: Evaluation Panel Approval**

The Evaluator(s) shall complete this section.

Result:☐ FULL APPROVAL☐ CONDITIONAL APPROVAL (Major)*☐ CONDITIONAL APPROVAL (Minor)☐ FAIL*

* Student has to submit new proposal form considering the evaluators' comments.

