# **Section 1: Business Understanding & Problem Formulation**

## **Business Problem Definition**

Understanding and maximizing the Customer Lifetime Value ( CLV), the total revenue a customer is expected to generate from the platform is essential for maintaining profitability and guiding strategic business decisions in a competitive and low-margin e-commerce environment. Predicting CLV helps the business by enhancing client acquisition and retention strategies for Olist, a market that connects customers to a different network of third-party sellers. Personalized marketing and advertising efforts. Prioritize high-value users in order to receive better customer service or expedited shipping. Better financial planning and overall revenue forecasting.

Olist is a leading Brazilian e-commerce platform. It connects small and medium-sized businesses to major online marketplaces. Olist enables sellers to reach a broader customer base by centralizing product listings, logistics, payments, and customer service through a unified system. Sellers benefit from simplified operations, while customers enjoy a wide selection of products and streamlined shopping experiences. By aggregating thousands of merchants under one platform, Olist has become a key player in Brazil’s digital retail ecosystem.

We define the central business problem as:

1. How can we accurately calculate the Customer Lifetime Value (CLV) for each customer using Olist’s e-commerce data?  
2. What proper benefits may Olist derive from CLV insights?

## **Understanding CLV in E-commerce**

Customer Lifetime Value ( CLV ) is a financial metric representing the total expected revenue from a customer throughout their relationship with the business. It is crucial for e-commerce because it teaches businesses how much money to put into customer acquisition and retention.

## **CLV Calculation Methodology (Based on Alibaba's Approach)**

According to Alibaba’s business practices (Alibaba Seller Central, 2024), CLV can be estimated with the following formula:

***CLV = Average Order Value × Purchase Frequency × Customer Lifespan***

Where:  
- Average Order Value (AOV): Total revenue divided by the number of orders.  
- Purchase Frequency: The number of purchases a customer makes in a given period.  
- Customer Lifespan: The average duration a customer continues to interact with the platform.  
  
This behavioral-based model is widely adopted by leading platforms like Alibaba and is highly effective in marketplaces with diverse customer bases.

## **Adapting CLV Calculation to Olist's Dataset**

For Olist’s dataset, we propose the following concrete computation:

| Step | Olist Dataset Mapping |
| --- | --- |
| AOV | Calculate as the total payment\_value divided by the total order\_id count per customer\_unique\_id. |
| Purchase Frequency | Count the number of unique orders per customer over their active time window. |
| Customer Lifespan | Estimate based on the time difference between the first and last purchase by each customer\_unique\_id. |

Thus, the adapted formula for Olist becomes:

***CLV\_Olist = AOV × Purchase Frequency × Customer Lifespan***

This approach allows the business to predict a customer's future contribution based on observable transactional behaviors.

## **Business Value of CLV Prediction**

E-commerce companies like Olist benefit significantly from knowing and applying CLV insight. As highlighted by Datrics ( Datrics, 2023 ), CLV prediction supports: High-CLV customers can be targeted with superior offers and devotion incentives, improving ROI, thanks to successful marketing spending. - Customer Retention Strategy: Companies you concentrate on work where the potential loss of benefit is greatest by actively engaging customers at risk of attrition. Resource Allocation Optimization: Customers whose engagement results in the best long-term revenge receive operational efforts ( such as faster delivery and advanced help ). - Financial Planning and Revenue Forecasting: Trusted CLV models enable more accurate revenue forecasting, improving corporate choice-making across advertising, operations, and finance departments.  
In other words, calculating CLV is a key pillar of achieving data-driven, sustainable growth in the e-commerce market.

## **References**

- Alibaba Seller Central. (2024). What is Customer Lifetime Value (CLV)? The Key to Success in E-commerce. Retrieved from https://seller.alibaba.com/businessblogs/what-is-customer-lifetime-value-clv-the-key-to-success-in-ecommerce-px002c29x

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