Business Intelligence Plan Oriented Towards User Loyalty on an E-commerce Platform

1. Introduction

The company selected to develop this business plan, and whose strategic purpose gives meaning to this project, is an e-commerce platform whose main business model revolves around connecting sellers and buyers. This platform has around 133 million users in 185 countries globally.

Aligned with the above, the e-commerce platform was founded in 1995. Since then, over the years and with technological advancements, the platform has evolved through changes in user interfaces and the provision of technological tools for sellers. Under this model, it has connected a diverse and passionate community of buyers and sellers, including individuals and small businesses. As a result, the e-commerce platform has positioned itself as one of the leading platforms in developed countries, primarily in the U.S., the U.K., and Germany (Cuofano 2023).

However, this platform has not yet been adopted with the expected success in developing countries with a middle to low Gross Domestic Product (GDP). Evidence of this is that the total earnings obtained in the U.S., the U.K., and Germany (developed countries) quadruple the total earnings obtained in the rest of the world (Cuofano 2023).

Currently, this platform has a very low market impact, trailing behind platforms like Mercado Libre, Amazon, Aliexpress, or Linio.

In this context, the design of a business intelligence system focused on customer retention and loyalty is proposed, followed by the development of a strategic optimization plan for the e-commerce platform. This plan will help improve integration by allowing anyone to trade almost any product, thus creating economic opportunities in that nation.

Aligned with the above, improving customer loyalty on the e-commerce platform in the market will offer several benefits, including reaching new customers worldwide, competing on a level playing field with larger international companies, and improving logistical efficiency through online inventory management and home delivery. From the perspective of local consumers, the digital commerce platform would allow economic savings by increasing the available supply, financial integration, and reducing the digital divide.

In this context, the development of the present strategic optimization plan, through the analysis of current traffic and sales audit, will allow for expanding the number of users on the platform,

understanding the affinity among community members, and building loyalty within the e-commerce platform's customer base. This aligns with the company's mission and vision.

2. Strategic Vision of the Business Intelligence Plan

General Objective

The general objective of this document is to present a business intelligence plan for the e-commerce platform, focused on customer retention and loyalty.

Specific Objectives

The specific objectives that will support the general objective are:

- To identify and describe both the business process and the key indicators for customer loyalty on the e-commerce platform.
- To develop the conceptual, logical, and physical model of the datamart.
- To design the implementation plan for strategies oriented towards customer loyalty on the e-commerce platform.

3. Conceptual Model of the Datamart

In order to clearly and comprehensively reflect the structure of the relevant business data, a star schema was developed, representing the fact and dimension tables, whose conceptual model of the datamart is presented below in Figure 1:

Figura 1. Conceptual Model of the Datamart.

Source: Own elaboration.

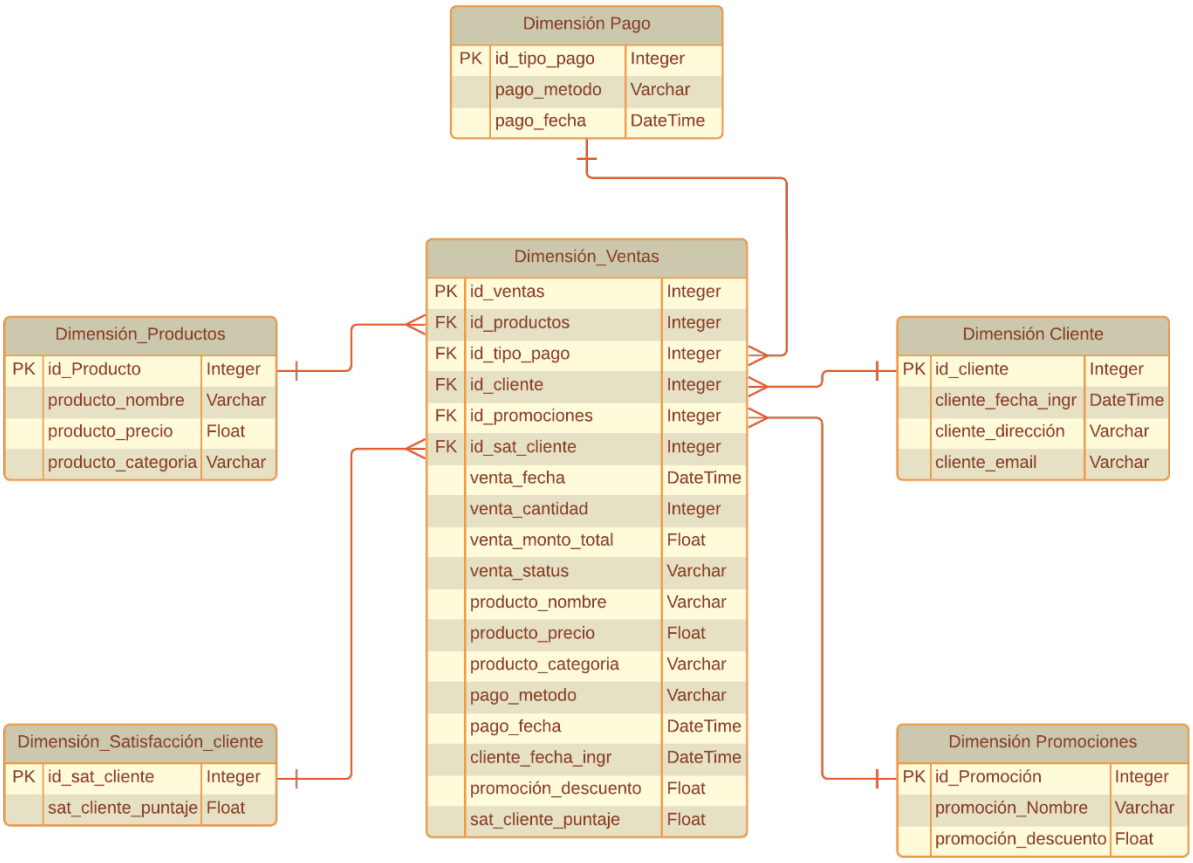
From this conceptual model, the logical and physical model of the datamart will be developed in the following sections, defining the necessary queries, reports, tools for data analysis, and decision-making.

4. Physical Model of the Datamart

The physical model of the datamart is a continuation of the logical model, where the abstract representation of the database is brought to a technical operationalization, defining and pairing the attributes with their respective data types.

In this sense, the physical model of the datamart is presented below in Figure 2:

Figure 2. Physical Model of the Datamart.



Source: Own elaboration.

5. Definition and Description of Key Performance Indicators (KPIs)

Customer loyalty KPIs are those that help us reflect the impact of loyalty programs and provide information for future optimization efforts (Gómez Zorrilla & Sánchez Piña 2022). Therefore, the selected KPIs for this project are detailed in Table 2:

Table 1. KPIs selected to measure customer loyalty on the e-commerce platform.

Indicator Name	Calculation Mechanism	Escale	Measurement Units	Interpretation

Customer Retention Rate	[(Number of customers at the end of the period minus the number of new customers acquired during the period) divided by the number of customers at the beginning of the period] multiplied by 100.	The results fluctuate between 0 and 100%.	%	Measure the loyalty of customers towards a business over a specific period of time.
Customer Lifetime Value (CLV)	[Average Order Value] x [Average Annual Purchase Frequency] x [Retention Time]	The result will be greater than zero, and the higher the value, the more it signifies bringing greater benefit to the company.	$	Indicates the average value (money) that a customer has contributed to the company throughout their entire relationship with it.
Ratio Upsell	[Different Products Customers] / [Single Product Customers] x 100	The result will be greater than zero. Customers who repeatedly purchase the same product should not be taken into account.	%	Indicates the ability to persuade our current customers to choose us for purchasing other types of products.
Client Retention Rate	[Number of Returns / Total Number of Purchases] * 100	Results range from 0-100%.	%	This measures how many products are returned by customers after purchase.
Re buying Rate	[Repeat Customers] / [Total Purchasing Customers]*100	Results are greater than 0%. A higher value indicates higher customer loyalty	%	This index allows to know the percentage of buyers who repeat among your customer base
Cart Abandonment Rate	[Number of Cart Abandonments] / [Total Number of Started Carts] * 100	Results are greater than 0%. A higher value indicates lower retention and loyalty.	%	This index measures the proportion of customers who add products to the online shopping cart but do not complete the purchase.
Churn rate	[Number of Lost Customers] / [Number of Customers at the Beginning of the Period] * 100	Results are greater than 0%. A higher value indicates lower retention and loyalty	%	This index measures the proportion of customers lost within a certain period.

Source: Own elaboration.

6. Conclusions

Through the previous sections, a Business Intelligence plan for the digital e-commerce platform has been developed, focusing on customer retention and loyalty. Based on the identification of the business process, the development of the conceptual, logical, and physical models, the

conceptualization of the application and technological axes, and the design of the implementation plan, the following conclusions have been reached:

- **Customer Retention Rate:** The monthly values are well below 50%, with the peak being reached in October. Given that optimal values for an e-commerce company are around 80%, there is a significant shortfall.
- **Customer Lifetime Value (CLV):** The Customer Lifetime Value is approximately $1756 annually, which is considerably high. This may be explained by the high percentage of repeat buyers purchasing only a single product.
- **Upsell Ratio:** The KPI for Upsell Ratio shows its peak in November 2016 y agust 2017 (45% & 22.4%), presumably due to "Black Friday" offers. However, the monthly values are still considered average.
- **Devolution rate:** The devolution rate is very high y June and December, overpassing 50%, which is considered critical.
- **Cart Abandonment:** the tendency is very similar to devolution rate.
- **Re-buying Rate:** The re-purchase rate is 18.1%, which can be considered optimal. Therefore, it is recommended to continue with customer loyalty programs, special offers for repeat customers, and personalized email marketing.

Based on these results, it can be observed that users of the e-commerce platform are not fully satisfied with the quality of products and services provided by the platform. However, the high re-purchase rate indicates that this dissatisfaction is either mitigated or overshadowed by the promotions and offers made to the most loyal customers.

Similarly, the high loyalty of customers who purchase only one type or category of product is evident. Therefore, it is recommended to conduct a targeted marketing campaign for this segment with the aim of offering a broader range of products.

This plan is based on data collected over a specific period, but this analysis should be conducted periodically. Routine monitoring of loyalty KPIs allows for maximizing profits and reducing costs by rewarding loyalty and focusing on increasing customer satisfaction.

7. References

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