

TIMELESS TRANSPORT MODELS

Regional Demand Intelligence Framework

STRATEGIC BUSINESS OBJECTIVE

PURPOSE: Defining the core problem and the proposed high-level solution to support sales and supply chain decision-making.

Timeless Transport Models, a premier online wholesale supplier since 2003, faces a critical decision-making gap where the Sales department lacks visibility into how regional demand fluctuates across product lines like classic cars and vintage trains. By transitioning from retrospective 'total sales' reporting to targeted regional insights, this project analyzes historical data across 19 countries to identify specific regional preferences. This dashboard will empower the sales team to better support retail partners with data-backed strategies, optimize inventory allocation before regional demand peaks, and utilize 12-month forecasts to ensure high-demand collectibles remain in stock.

OPERATIONAL IMPACT & EXPECTED USE

PURPOSE: Outlining how the sales team will utilize insights for weekly check-ins, monthly reviews, and performance evaluations.

Our dashboard will provide insights on regional product trends via sales forecasting and be a great source for revenue check ins. The sales team should be able to make better supply chain decisions with the insights and visualizations presented in the dashboard.

CORE ANALYTICAL REQUIREMENTS

PURPOSE: Key business questions and metrics that drive dashboard design and data modeling.

Which months were the most and least profitable?

To answer this, the dashboard should include month and sales as metrics. Alternatively we could also examine Quantity ordered by month to identify trends in volume versus revenue performance across time.

Were our frequent customers also the most profitable?

We would analyze metrics such as Deal Size, Customer Name, Quantity Ordered, and Sales. This allows us to gain insight into individual vendor spending habits and determine if large deal sizes drive the most sales, or if high-frequency small orders are more profitable over time.

Regional Order Distribution

Understanding the relationship between quantity ordered and geographic location helps distinguish which specific global regions contain our top-performing vendors to manage inventory accordingly.

Order Success Rate & Seasonality

Tracking order status (Completed vs. Cancelled) relative to the time of year helps determine if specific seasons are prone to higher cancellation rates.

Product Line Volume & Deal Sizing

Analyzing the relationship between product lines and deal size to understand volume-to-value performance across the inventory catalog.

Sales Optimization through MSRP Analysis

During low-profitability months, the strategy involves analyzing the relationship between sales trends and MSRP pricing to potentially increase demand through strategic price positioning.

Product Line Seasonality

Identifying product-specific seasonal spikes to guide inventory replenishment and targeted marketing efforts.

DATA PIPELINE & CLEANING PROTOCOLS

PURPOSE: Summary of data transformation and cleaning logic applied to the raw dataset.

The following processing steps were executed to refine the data for analysis:

- Dimensional Pruning: Removed columns with >30% null values (ADDRESSLINE2, STATE).
- Scope Refinement: Removed irrelevant PII and administrative data (FirstName, LastName, PostalCode).
- Normalization: Cleaned and standardized phone number formatting by country and removed whitespace/delimiters.

PROJECT SCOPE & CONSTRAINTS

PURPOSE: Defines the boundaries of the analysis to manage stakeholder expectations.

The current scope excludes profitability calculations based on purchase cost (COGS), as initial data lacks item-level procurement costs. Forecasts are strictly limited to a 12-month window. Geographical analysis is restricted to regional/country trends rather than municipal/city-level detail.

DATA DICTIONARY & METADATA SPECIFICATIONS

PURPOSE: Field-level documentation for technical implementation and data governance.

Field Name	Data Type	Description	Usage Notes	Allowed Values
ORDERNUMBER	Number (Integer)	Unique identifier assigned to each sales order.	Used to group orders into a single identifier.	Positive integers.
QUANTITY	Number (Integer)	Number of units ordered for a product line item.	Used to calculate total sales volume.	Values ≥ 1 .
PRICEEACH	Decimal	Price per unit per product.	Multiplied by quantity to calculate sales.	Value ≥ 0 .
ORDERLINENUMBER	Number (Integer)	Line-item number within an order.		Positive integers.
SALES	Decimal	Total \$ value of the order line.	Primary metric used to analyze revenue.	Values ≥ 0 .
ORDERDATE	Date	Date when order was placed.		Valid calendar dates.
STATUS	String	Status of an order placed.	Used to filter completed, in-progress, and canceled orders.	Shipped, Cancelled, On Hold, In Process, Disputed.
QTR_ID	Integer	At the quarter of the year when order was placed.	Used for quarterly trend analysis.	1, 2, 3, 4.
MONTH_ID	Integer	Month when order was placed.	Used for monthly trend analysis.	1 – 12.
YEAR_ID	Integer	Year in which the order was placed.	Used for yearly comparisons.	Valid years (2003 – 2005).
PRODUCTLINE	String	Category of products sold.	Used to group and compare product sale performance.	Classic Cars, Motorcycles, Planes, Ships, Trains, Trucks and Buses, Vintage Cars
MSRP	Decimal		Used for reference.	Values ≥ 0 .

Field Name	Data Type	Description	Usage Notes	Allowed Values
		Manufacturer's suggested retail price of the product.		
PRODUCTCODE	String	Internal code used to identify each/any product.	Used as a reference identifier.	Codes.
CUSTOMERNAME	String	Name of the customer who placed an order.	Used to identify top/repeating customers.	Text.
PHONE	String	Customer's contact phone number.		Valid phone numbers or "Unknown" (Null).
ADDRESSLINE1	String	Customer's street address information.	Used for location context.	Text.
ADDRESSLINE2	String	Customer's street address information.	Used for location context.	Text.
CITY	String	Geographic information for the customer.	Used for geographic analysis and mapping.	Valid city.
STATE	String	Geographic information for the customer.	Used for geographic analysis and mapping.	Valid State.
POSTALCODE	String	Geographic information for the customer.	Used for geographic analysis and mapping.	Valid postal code.
COUNTRY	String	Geographic information for the customer.	Used for geographic analysis and mapping.	Valid country name.
CONTACTLASTNAME	String	Last name of the customer.	Used for reference only.	Text.
CONTACTFIRSTNAME	String	First name of the customer.	Used for reference only.	Text.
DEALSIZE	String	Size of the sales deal.	Used to track sales performance.	Small, Medium, Large.