TIMELESS TRANSPORT MODELS

Regional Demand Intelligence Framework

STRATEGIC BUSINESS OBJECTIVE

> **GUIDELINE:** Describe the real-world problem your dashboard addresses. Identify what decision-making gap exists in the Sales department and how this dashboard will help fill it.

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

> **GUIDELINE:** Explain how the Sales team should use this dashboard. Examples include weekly revenue check-ins, monthly forecasting reviews, customer performance evaluations, etc.

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

> **GUIDELINE:** List the core questions and metrics that your dashboard must answer or display. These should map directly to the dashboard requirements listed later in this assignment.

Which months were the most and least profitable?

The dashboard tracks monthly sales performance and provides a 12-month forecast, utilizing a product line filter to facilitate detailed analysis of both historical revenue trends and projected growth across product line categories.

How does order size differ by country?

The metrics we would track would include the quantity ordered, the number of sales, and country. We would then use this data to identify our highest volume customers by country and plan inventory accordingly by highlighting which regions require greater stock in products to meet our demands.

How does the quantity of sales change with the price of each item?

The metrics we would track would include sales, the price of each item, and product line. We would evaluate whether individual products are performing above or below the expected sales trend by additionally creating a trend line, which would lead to insights about which products are doing well vs which products are underperforming and help us determine how to address pricing in the future.

Were our frequent customers also the most profitable?

We would analyze metrics such as Deal Size, Customer Name, Quantity Ordered, and Sales. We could then be able to identify which vendors purchase large orders vs small orders, the total sum of sales per vendor, and quantity ordered per vendor. This would allow us to gain the insight of the spending habits of individual vendors and determine whether customers that place orders with large deal sizes are also driving the most sales, or if customers that frequently purchase small deal sizes lead to higher profitability over time.

How does the quantity of items ordered differ between different regions?

Understanding the relationship between quantity of items ordered and countries can help us better distinguish which specific parts of the world our top vendors are located in and manage inventory accordingly.

What percentage of orders are successfully completed? Does this vary by time of year?

Tracking the metrics of month, status, and quantity ordered, would help us determine if orders that are cancelled specifically happen within specific parts of the year or whether they're spread out equally throughout the year.

Which product lines were the most popular globally?

We would track the metrics of product line, country, and sales. This would allow us to derive insights into the demand of each product line by revenue, and determine which product lines perform better in certain regions than others.

Are specific product lines more profitable than others during certain times of the year?

To address this, we should review the Product Line, Month, Quarter, and Total Sales. Identifying seasonal spikes for certain products would help guide decision making on when to increase inventory for that item or marketing efforts to promote sales.

DATA PIPELINE & CLEANING PROTOCOLS

> **GUIDELINE:** Provide an outline of which columns/data points are needed to answer the questions above. Identify any transformations required. It is here you will discuss the cleaning done to the data.

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

- Removed Columns with total null values taking up over 30% of the data: ADDRESSLINE2, STATE
- Removed Data that is irrelevant to analysis and Business Objective: ContactFirstName, ContactLastName, PostalCode, and Phone Number.

PROJECT SCOPE & CONSTRAINTS

> **GUIDELINE:** Clearly state what your project will not attempt to address.

Profitability won't be addressed since we don't have the purchase cost of each item. Our dashboard will not attempt to forecast sales beyond 12 months as these predictions would be out of scope. Additionally, our project will not attempt to address specific cities or towns and instead focus on broader regional sales trends.

DATA DICTIONARY & METADATA SPECIFICATIONS

GUIDELINE: List each field used in your dashboard with an explanation of what it represents.

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	Manufacturer's suggested retail price of the product.	Used for reference.	Values >= 0.

Field Name	Data Type	Description	Usage Notes	Allowed Values
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.