**TradeVerse**

TradeVerse is a cutting-edge e-commerce platform that seamlessly integrates a robust logistics network to serve its growing customer base of over 190,000 users worldwide. Built on advanced analytics and supply chain optimization, TradeVerse ensures swift deliveries, efficient inventory management, and seamless order processing. The platform leverages real-time data insights to enhance operational efficiency, reduce costs, and provide customers with a superior shopping experience. Whether it's sourcing products from various vendors or ensuring last-mile delivery, TradeVerse’s logistics ecosystem functions like a well-oiled machine, adapting to market demands and optimizing routes for faster fulfillment.

With its global reach, TradeVerse thrives on innovation, using AI-driven demand forecasting and warehouse automation to streamline its supply chain processes. Customers benefit from a hassle-free shopping experience, backed by personalized recommendations and predictive logistics that enhance delivery speed. The platform’s expansive network connects suppliers, distributors, and end consumers, ensuring transparency and reliability across the supply chain. By continually investing in logistics enhancements and customer-focused solutions, TradeVerse stands as a powerhouse in the e-commerce industry, revolutionizing global commerce with efficiency and convenience.

**Findings and Objectives:**

**1. Analyze Product Category Performance, based on the updated view.**

**2. Monitor Supply Chain Efficiency and Delivery Performance**

**3. Evaluate Customer Satisfaction and Return Behavior**

**Dashboard 1: Insights**

**1. Profit Distribution Across Categories**

* All major categories (Automotive, Clothing, Electronics, etc.) are closely matched, contributing around ₹2M+ each.
* Top 3 by profit:
  + Home & Kitchen: ₹2.37M
  + Furniture: ₹2.33M
  + Health & Beauty: ₹2.23M

**Insight:** Business has a diversified profit structure — no single category dominates excessively, reducing business risk.

**2. Subcategory Contribution**

* Within each category, subcategories like Furniture, Cookware, Appliances, and Hair Care show strong profit.
* Suggests focus on:
  + Marketing high-performing subcategories.
  + Optimizing inventory for top profit drivers.

**3. Sales vs Profit Trend Over Time**

* Highest Sales and Profit occur around Month 4–6 (April–June) every year.
* Sales spike consistently in Q2 across 2023–2025, indicating:

Strong seasonal demand — likely due to sales campaigns or product launches.

**Insight:** Prepare stock and marketing budget ahead of Q2 to leverage peak season.

**4. Regional Analysis (Map View)**

* **India:**
  + Historical Sales Trend: ₹3.23M
  + Profit: ₹47.5K

High sales but low profit margin — potential over-discounting or high costs.

* Global reach is strong, though a few “unknown” entries in the dataset suggest:
  + Some data might have missing or inconsistent location info.

**KPI Highlights**

| **KPI** | **Value** |
| --- | --- |
| Avg. Discount | 15% |
| Gross Margin | ₹7.57M |
| Total Profit | ₹43M |
| Total Sales | ₹482.5M |

**The avg. discount of 15% is quite high. Margin control is important to ensure profits stay aligned with sales.**

**Recommendations**

1. **Drill Down into Subcategories during Q2 to improve ROI.**
2. **Review pricing/discount strategy in countries like India.**
3. **Add filters for:**
   * **Customer Segment**
   * **Shipping Mode**
   * **Return Rate**
4. **Enhance with New Metrics:**
   * **Profit Margin % = Profit / Total Sales**
   * **Discount Efficiency = (Profit / Discount)**

**Objective 2 Dashboard Analysis with Recommendations**

**Key Visuals & Insights:**

1. **Carrier Distribution (Pie Chart):**
   * **UPS**: 2,516,857
   * **DHL**: 2,467,874
   * **Local Courier**: 2,563,463
   * **FedEx**: 2,471,397

***Insight*:** Shipment load is fairly evenly distributed across all four carriers.

**Recommendation**:

* + Monitor performance KPIs (delivery time, damage rate, cost) for each carrier and **reallocate shipments** to top-performing ones.
  + Consider negotiating **volume-based contracts** with best carriers to reduce logistics cost.

1. **Order Date vs Stockout Events (Line Chart):**
   * **Highest Stockouts**: May (86,990 events)
   * **Lowest Stockouts**: February (70,149 events)

***Insight*:** Fluctuations suggest **demand surges or poor forecasting** during certain months.

**Recommendation**:

* + Implement **seasonal demand forecasting** models and maintain **safety stock** during high-risk months.
  + Review **supplier lead times** to avoid disruptions in peak periods.

1. **Logistics Delay vs Sales (Pie Chart):**
   * **Yes (Delay)**: ₹236 million
   * **No Delay**: ₹246 million

***Insight*:** Logistics delays occur in nearly half of the transactions, which could be **impacting customer satisfaction and revenue**.

**Recommendation**:

* + Conduct **root-cause analysis** on delayed shipments: route issues, warehouse handling time, or carrier inefficiency.
  + Set up a **real-time alert system** for logistics delays and establish **SLA-based penalties** with delivery partners.

1. **Warehouse Location vs Stock Availability (Bar Chart):**
   * Wide variation in stock levels, with some warehouses holding excess and others likely understocked.

***Insight*:** **Inefficient stock allocation** may lead to stockouts and overstocking.

**Recommendation**:

* + Use **centralized inventory management software** to automate stock replenishment based on historical sales.
  + Apply **ABC classification** to prioritize restocking of high-demand items.

**Key Visuals & Insights:**

1. **Global Warehouse View with Logistic Delay Indicator:**
   * **Orange Dots**: Logistics Delay = Yes
   * **Blue Dots**: No Delay
   * Example (India - Brownland):
     + **Utilization Rate**: 1.434 (low)
     + **Delay**: Yes

*Insight*: Even low-utilized warehouses are facing delays, implying **issues unrelated to stock capacity** (e.g., poor last-mile delivery or location inefficiency).

**Recommendation**:

* + Audit underperforming warehouses (like Brownland) for **operational inefficiencies** — poor staffing, outdated systems, or geographical challenges.
  + Relocate or **strategically scale back** warehouses with persistent delays and low utilization.

1. **Regional Cluster Trends**:
   * High density of warehouses in **Europe, Africa, and Asia** with mixed performance.

***Insight*:** Some regions show **systemic logistic delays**, possibly due to infrastructure or policy constraints.

**Recommendation**:

* + Partner with **local logistics consultants** in high-delay regions to optimize supply chain flow.
  + Invest in **infrastructure improvements or digital route planning tools** in areas with frequent logistics issues.

**Dashboard3: Insights**

**1. Monthly Customer Complaints (Line Graph)**

* Complaints are consistently high throughout the year, ranging mostly between 6,000 to 9,700 per month.
* **March** and **November** show slightly lower complaint volumes for specific categories (e.g., "Home & Kitchen" had only 6,672 complaints in March).
* Categories like **Electronics and Fashion** appear to experience the most fluctuation in complaints.

**2. Customer Return Status (Stacked Bar Chart)**

* Top 3 return reasons:
  + **Damaged Products**
  + **Late Delivery**
  + **No Return**
* “Damaged Products” and “Late Delivery” account for a large volume of returns, especially in **Review Rating Groups 3 and 4**.
* Even **high review ratings (Group 4 & 5)** have substantial return counts, suggesting issues persist despite customer satisfaction.

**3. Customer Rating in Different Segments (Heat Map Table)**

* **Retail** and **Wholesale** segments consistently receive higher review ratings (especially group 5).
* **Enterprise segment** has more customer complaints even in high review ratings.
  + e.g., Enterprise has **31,895 complaints** in rating group 5.
* This indicates that **Enterprise clients may be more vocal or have more complex service expectations**.

**Recommendations:**

**1. Targeted Improvement for Enterprise Clients**

* Since Enterprise clients have **high complaints even with high ratings**, consider assigning **dedicated account managers** and improving post-sale support.

**2. Improve Logistics for Damaged/Late Deliveries**

* Damaged products and late delivery are the leading causes of returns. Focus on:
  + Better packaging standards.
  + Partnering with more reliable logistics providers.
  + Offering real-time delivery tracking and proactive delay notifications.

**3. Conduct Root Cause Analysis for High Rating Returns**

* Returns from customers in rating groups 4 and 5 should not be ignored.
  + Investigate product-level issues where customers may still rate well but return due to mismatch, wrong item, or post-purchase realization.

**4. Segment-Specific Follow-ups**

* **Retail and Wholesale segments** are doing well in terms of satisfaction; however, regular feedback loops can help sustain this.
* For **low-rating groups**, consider running **loyalty or improvement campaigns** (e.g., satisfaction surveys, discounts, support calls).

**5. Optimize Monthly Service Patterns**

* Based on the line chart, certain months show drops or spikes. Identify internal or external causes (e.g., sales events, stockouts, seasonal issues) and **prepare ahead for high-volume complaint periods.**