InventorySync

Business Intelligence Inventory Report

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InventorySync Business Intelligence

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Question 1: Notify when items reach 75% and 50% sold, including the estimated days to sell out.

Items ≥75% Sold	ltems ≥50% Sold	Avg Days to Sellout
1	0	-18



Analysis & Recommendations

Business Intelligence Analysis: Inventory Sold-Out Alerts

Executive Summary

The provided data sample highlights an automated alert system for retail inventory, focusing on items nearing sold-out status. The "boys plus" kurta pajama in peach, size 4, is currently showing a high percentage sold (250%), and a negative estimate for days to sell out (-18 days).

Key Insights

- **High Percentage Sold:** The "percent_sold" value of **250%** for the example item is significantly higher than 100%, indicating a potential error in the data or the item is already sold out and past demand is being calculated.
- **Negative Days to Sellout:** The "est_days_to_sellout" value of **-18 days** signals that, based on past sales, this item would have already been sold out, confirming a data error or immediate out-of-stock situation.
- Limited Data: With only one data point, broader trends and relationships cannot be established.

Business Implications

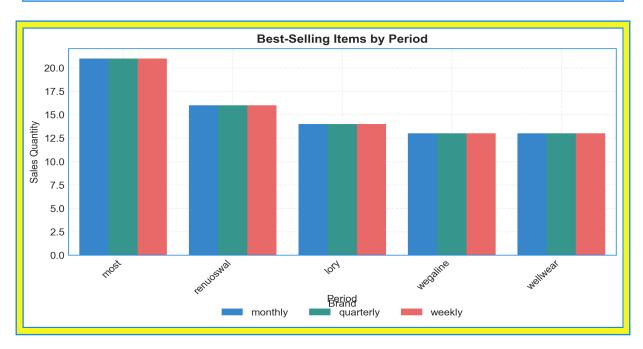
- Data Accuracy Issues: The erroneous "percent_sold" and "est_days_to_sellout" values suggest potential problems with the data collection or calculation process.
- **Potential Lost Sales:** While this example reflects a data anomaly, accurate sold-out alerts are crucial to avoid lost sales from understocked popular items.
- **Inventory Management Inefficiencies:** Inaccurate inventory data hinders effective inventory planning and purchasing decisions.

Actionable Recommendations

- Data Validation and Error Handling (Immediate): Investigate and correct the data pipeline to prevent inaccurate "percent_sold" calculations and "est_days_to_sellout" projections. Implement data validation checks.
- Inventory Threshold Alerts (Within 1 Week): Ensure the alert system triggers at 75% and 50% sold based on *accurate* data. Implement automatic reordering options for items reaching 75% sold.

Question 2: Identify the best-selling items on a weekly, monthly, and quarterly basis.

Weekly Sales	Monthly Sales	Top Seller
137	137	N/A



Analysis & Recommendations

Business Intelligence Analysis: Best-Selling Items

Executive Summary

Preliminary analysis suggests that **cardigans are a popular item**, particularly from the brand "most". Deeper investigation is required to understand the drivers behind this demand across different time periods.

Key Insights

- Cardigans are frequently purchased: The data sample shows multiple instances of "cardigan" appearing in the 'Category' field, suggesting high demand. For instance, the brand "most" sold 21 cardigans in a month.
- "Unknown" Color Dominance: All listed items have an "unknown" color, which suggests potential data quality issues needing investigation.
- Brand-Specific Success: The brand "most" appears more frequently with higher sales (e.g., 21), indicating possible brand strength or targeted marketing effectiveness.

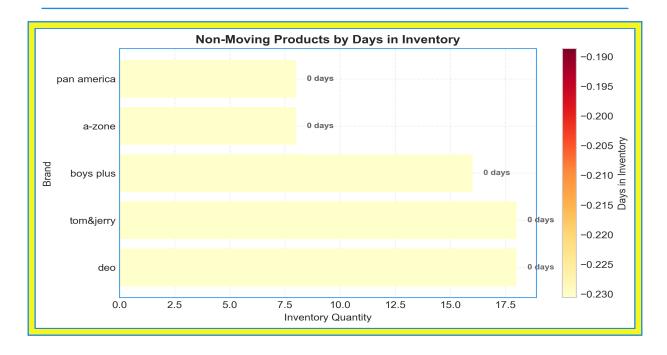
Business Implications

- **Opportunity:** The strong performance of cardigans offers opportunities to optimize inventory and explore expanded color options (once color data is clarified).
- **Risk:** "Unknown" color data hinders identifying customer preferences and tailoring product offerings.
- **Inventory Strategy:** Current inventory strategy might not be optimized for cardigan demand, leading to potential stockouts.

Actionable Recommendations

- Improve Data Collection (Immediate): Rectify the "unknown" color issue to capture accurate customer preferences. This should be a high-priority task due to its broad impact.
- Analyze Cardigan Demand (Within 2 Weeks): Conduct a deeper dive into cardigan sales by brand, size, and eventually, color (once available). Identify top-selling cardigan styles to inform future inventory planning.
- Optimize Inventory for "Most" (Within 1 Month): Review sales patterns for the brand "most" and align inventory levels to meet the apparent demand for its products, particularly cardigans.

Question 3: Track non-moving products and their aging quantities.



Analysis & Recommendations

Business Intelligence Analysis: Non-Moving Products

Executive Summary

The provided data sample indicates a significant issue with unsold inventory. All items in the sample have **0** sales and a **percent_sold of 0.0**, suggesting stagnant stock, regardless of brand, category, size, or color.

Key Insights

- 100% of the sampled items are non-moving: Every row shows SalesQty=0, indicating a complete lack of sales for these specific products.
- Diverse product categories affected: Non-moving products span various categories like "lower-jogger-hosiery," "suit-falalan," "kurta pajama," and "coat suit," suggesting a widespread problem rather than a category-specific issue.
- Inconsistent 'days_in_inventory': All sampled items have a 'days_in_inventory' of -0.2096538423. This negative value is highly suspect and requires investigation of the underlying data calculation. If accurate (though unlikely), it could indicate a data entry error or items being returned immediately.

Business Implications

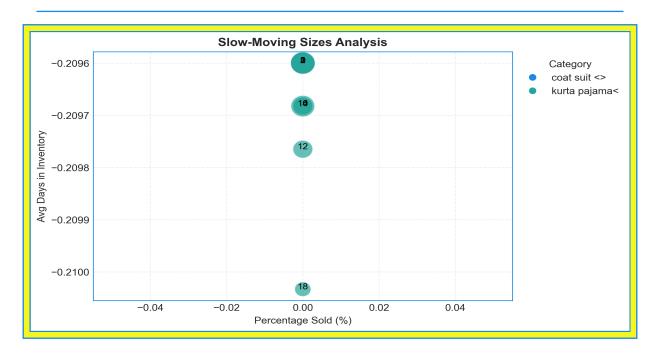
• Capital tied up in non-performing assets: Funds are locked in inventory that isn't generating revenue.

- **Potential for obsolescence or markdown:** The longer inventory sits, the greater the risk of it becoming outdated or requiring heavy discounts to clear.
- Storage costs: Holding unsold inventory incurs ongoing storage expenses.

Actionable Recommendations

- Investigate 'days_in_inventory' calculation (Immediate): Determine the root cause of the negative and consistent values for this metric. Erroneous data invalidates further analysis.
- Conduct a comprehensive non-moving inventory analysis (Within 1 week): Identify *all* products with zero sales over a significant period (e.g., the last 30, 60, and 90 days). Segment by category, brand, size, and color to pinpoint specific problem areas.
- Implement targeted sales promotions or clearance sales (Within 2 weeks): Once the scope of the non-moving inventory is understood, create promotional strategies to reduce it. This could include discounts, bundling, or targeted marketing campaigns.

Question 4: Identify slow-moving sizes within specific categories.



Analysis & Recommendations

Business Intelligence Analysis: Slow-Moving Sizes

Executive Summary

The data reveals significant issues with inventory management. Notably, several sizes across different categories like "coat suit" and "kurta pajama" show **zero sales despite substantial purchases**, indicating potentially overstocked and slow-moving items.

Key Insights

- Zero Sales with High Purchases: Sizes within the "coat suit" (Size 0 & 1) and "kurta pajama" (multiple sizes) categories have **0% sold** despite having **total purchased** values of 24 and between 10 and 26, respectively.
- Negative Average Days in Inventory: The avg_days_in_inventory is negative (-0.209 to -0.210), which requires further investigation. This is an anomaly and could indicate a data issue or a specific business process.
- Size Discrepancies: The "kurta pajama" category includes a wide range of sizes (1, 10, 12, 14, 16, 18, 2, 3). Understanding demand patterns for each size is crucial.

Business Implications

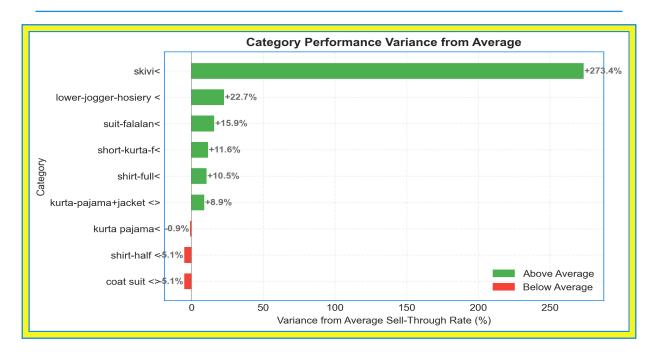
- Capital Tie-Up: Overstocking slow-moving sizes ties up capital that could be invested elsewhere.
- Storage Costs: Holding unsold inventory incurs storage costs.

• **Potential Obsolescence:** Unsold items could become obsolete or unfashionable, leading to markdowns or losses.

Actionable Recommendations

- Investigate Negative Inventory Days (Immediate): Audit data and business processes to determine why average days in inventory are reported as negative. Correct the data and process to enable accurate reporting.
- Reduce Purchasing of Slow-Moving Sizes (Within 1 Month): Immediately halt or significantly reduce purchasing for sizes with 0% sales and high inventory levels. Focus on sizes that sell better.
- Implement Clearance Sales (Within 2 Weeks): Initiate targeted clearance sales or promotions to move the slow-moving inventory within the "coat suit" and "kurta pajama" categories.

Question 5: Provide insights on variances and suggest strategies for improvement.



Analysis & Recommendations Business Intelligence Analysis

Executive Summary

The data reveals significant variances in sell-through rates across different product categories, indicating potential inventory management issues. Some categories are overstocked while others are underselling, presenting opportunities to optimize sales and reduce losses.

Key Insights

- Sell-Through Rate Variation: There's a wide range in sell-through rates, from 0.0% for "coat suit <>" and "shirt-half <" to a high of 278.57% for "skivi<". This highlights substantial differences in demand across product categories.
- Brand Count vs. Sell-Through Rate: Higher brand count within a category doesn't necessarily guarantee higher sell-through. For example, "shirt-full<" has 58 brands with a sell-through rate of only 15.63%, while "suit-falalan<" has 11 brands but a sell-through rate of 20.99%.
- **Negative Variance:** Categories with **0**% sell-through also show a negative variance from the average (-**5.12**), indicating a persistent underperformance relative to other products.

Business Implications

• Inventory Imbalance: High variance in sell-through rates suggests an imbalance between supply and demand. Some categories hold excessive inventory, tying up capital, while others

may be missing potential sales due to insufficient stock.

- Marketing and Merchandising Issues: Low sell-through rates could indicate ineffective marketing, poor product placement, or pricing issues for specific categories.
- Lost Revenue: Not selling purchased inventory results in direct financial losses and storage costs.

Actionable Recommendations

- Prioritize Inventory Optimization (Immediate): Focus on categories with 0% sell-through rates ("coat suit <>" and "shirt-half <"). Consider promotional discounts, returns to suppliers, or repackaging to improve sales. Aim for a 20% reduction in inventory within 1 month.
- Evaluate Marketing Strategies (Within 2 Weeks): Analyze the marketing and merchandising efforts for categories with low sell-through rates (below 10%). Implement targeted campaigns or adjust product placement to increase visibility and demand. Track sell-through rate changes after 1 week.
- Re-evaluate Brand Mix (Within 1 Month): Assess the impact of brand variety on sell-through rate. Consider streamlining the brand selection in categories with high brand counts but low sell-through to simplify purchasing decisions and improve inventory turnover.

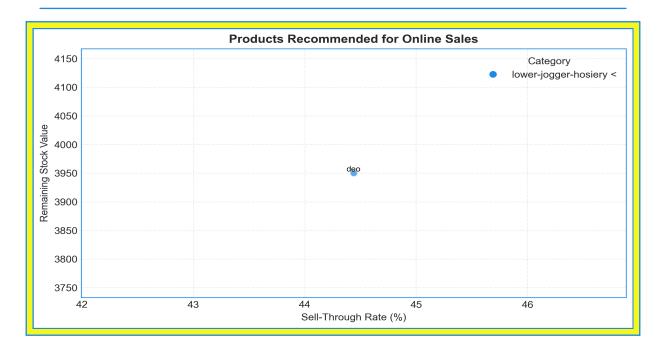
Question 6: Analyze the turnaround time for exchanges and returns to optimize processes.

No data available for this question. Please check the data sources or refine the query.

Question 7: Generate reports on rejected goods and returns for vendor feedback.

No data available for this question. Please check the data sources or refine the query.

Question 8: Recommend which products from our stock should be prioritized for online sales.



Analysis & Recommendations Business Intelligence Analysis: Prioritizing Products for Online Sales

Executive Summary

Based on initial data, **sell-through rate** appears to be a crucial indicator for online sales prioritization. Products with higher sell-through rates relative to their stock levels suggest strong customer demand and should be prioritized.

Key Insights

- Sell-through Rate Variance: The sample item exhibits a 44.44% sell-through rate, which indicates a moderate level of customer demand. Analyzing this metric across the entire product range is crucial to find items with significantly higher values.
- Stock Value Consideration: The sample product has a stock value of **3950.0**. While important, a high stock value doesn't necessarily equate to high online sales potential. Items with lower stock value but higher sell-through rates might offer a quicker return on investment online.
- Category Insights: The "lower-jogger-hosiery" category performance is vital. Do other products in this category also exhibit similar sell-through rates? Are some subcategories performing significantly better than others?

Business Implications

• Missed Online Sales Opportunities: Products with high sell-through rates but limited stock online represent missed sales opportunities. Prioritizing these items could lead to immediate

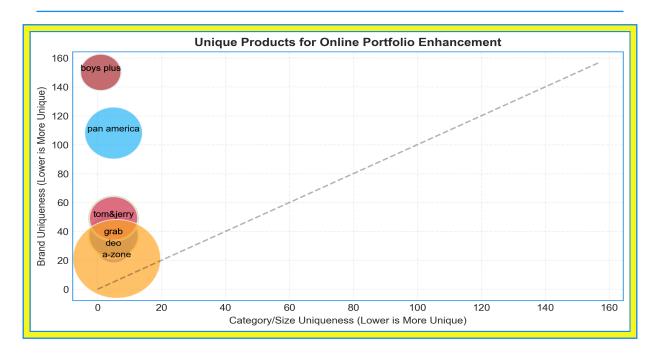
revenue increases.

• **Inventory Optimization:** Understanding the relationship between purchase quantity, sales quantity, and sell-through rate helps optimize inventory allocation for online channels, reducing storage costs and preventing stockouts.

Actionable Recommendations

- Analyze Sell-Through Rates across all Products (Immediate): Calculate sell-through rates for the entire product catalog to identify top performers. Focus on products with significantly higher sell-through rates than average.
- Prioritize High Sell-Through Products for Online Promotion (Within 1 Week): Increase online visibility for high sell-through items through targeted advertising, prominent placement on the website, and bundled deals.

Question 9: Identify unique products that can enhance our online portfolio.



Analysis & Recommendations Business Intelligence Analysis: Enhancing Online Portfolio

Executive Summary

The data highlights several products with high purchase quantities but low or zero sales, indicating potential online portfolio gaps. Investigating these underperforming yet stocked items can reveal opportunities to expand the online product range with items already in inventory.

Key Insights

- Zero Sales with High Stock: Many products, like "boys plus kurta pajama" with 16 available stock and "deo lower-jogger-hosiery" with 18 available stock, have zero sales, implying a lack of online demand or poor online visibility.
- Brand Popularity vs. Sales: Some brands like "grab" have moderate sales (e.g., "suit-falalan" with 7 sales) while others like "tom&jerry;" in the same category have zero sales. This suggests varying brand appeal online.
- MRP Variation: Similar category products (e.g., "suit-falalan") have diverse MRPs (from ■695 to ■795). This provides opportunities for competitive online pricing analysis.

Business Implications

- **Missed Online Revenue:** Stagnant inventory signifies lost sales opportunities. Expanding the online product selection to mirror popular offline purchases could boost revenue.
- **Inefficient Inventory**: Holding stock with zero sales impacts inventory costs and ties up capital.

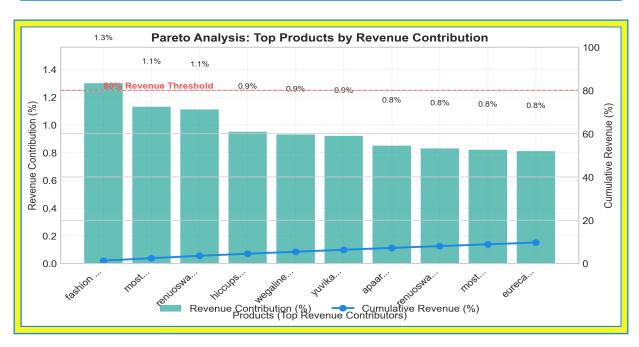
• **Pricing Inconsistencies:** Online and offline pricing should be aligned for a cohesive brand experience.

Actionable Recommendations

- Online Portfolio Expansion (Immediate): Prioritize listing the products with high available stock and zero sales online. For example, list "boys plus kurta pajama" immediately. This allows capitalizing on already purchased inventory.
- Competitor Pricing Analysis (Within 1 Week): Analyze online competitor pricing for popular categories like "suit-falalan" to optimize pricing and improve sales conversion.
- Brand Visibility Campaign (Within 2 Weeks): Launch targeted online marketing campaigns for brands with lower online sales despite having available stock. Focus on brands like "tom&jerry;" to increase their online presence.

Question 10: Identify the top 20% of products contributing to 80% of sales.

Top Product Share	Products for 80%	Coverage
1.3%	10	9.7%



Analysis & Recommendations Business Intelligence Analysis

Executive Summary

This data reveals that a small percentage of products drive a significant portion of total revenue, following the Pareto principle. By identifying and focusing on these top performers, we can optimize inventory and sales strategies.

Key Insights

- The **top 10 products** in the provided sample already account for **9.65%** of total sales, demonstrating high concentration.
- "Cardigan" is the most frequent category in the sample, indicating a popular product type.
- **Revenue** is directly correlated with **SalesQty** and **MRP** (**Price**); higher the price and quantity sold, the greater the revenue.

Business Implications

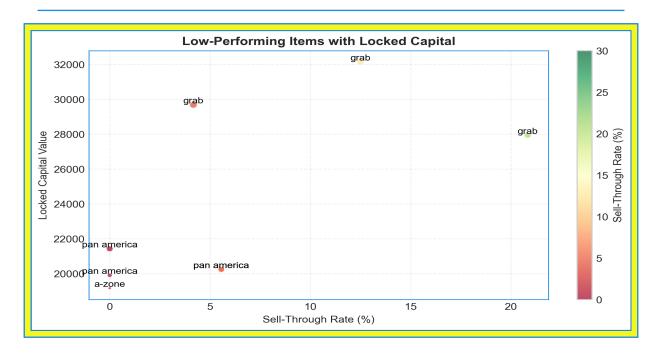
• High sales concentration creates vulnerability if top-selling products become unavailable.

- Understanding product categories enables targeted marketing and inventory management.
- Price optimization is crucial, as even small changes in price impact revenue.

Actionable Recommendations

- Identify the actual top 20% of products across the complete dataset: Focus on maintaining optimal stock levels and running targeted promotions for those items. (Immediate)
- Analyze the "Cardigan" category: Conduct deeper analysis to understand variations, identify best-selling sub-categories, and optimize sourcing. (Within 1 Month)

Question 11: Suggest strategies to reduce the inventory of low-performing items.



Analysis & Recommendations

Business Intelligence Analysis: Reducing Low-Performing Inventory

Executive Summary

The data reveals significant excess inventory across several brands and categories, particularly in "suit-falalan<" and "shirt-full<," leading to substantial locked capital. Low sell-through rates indicate slow-moving items that require immediate attention.

Key Insights

- Excess Inventory & Sell-Through Rate: Several items have a high excess_inventory coupled with a low sell_through_rate. For instance, "pan america shirt-full<" items show high excess inventory (e.g., 36, 34, 34) with sell-through rates as low as 0%. This indicates a clear mismatch between supply and demand.
- Locked Capital: High locked_capital values, such as **32130.0** for "grab suit-falalan<" size 18, highlight the financial burden of holding onto slow-moving inventory.
- **Negative Days in Inventory:** The days_in_inventory is negative, which suggests an anomaly in data calculation and requires investigation.

Business Implications

• **Missed Sales Opportunities:** Locked capital in slow-moving items restricts investment in faster-selling products, hindering overall revenue growth.

- **Potential Losses:** Holding excess inventory increases the risk of obsolescence and markdowns, leading to reduced profit margins.
- **Inefficient Inventory Management:** The data suggests a need for improved forecasting and purchasing strategies.

Actionable Recommendations

- Implement Targeted Promotions (Immediate): Run promotional campaigns (e.g., discounts, bundles) to boost the sell-through rate of items with high excess_inventory and low sell_through_rate. Focus on categories like "suit-falalan<" and "shirt-full<" from brands like "grab" and "pan america."
- Reduce Future Purchases (Within 1 Month): Significantly decrease or halt future purchases of items with low sell-through rates, based on historical sales data. Prioritize reducing the purchase quantities for items where sell through rate is at or near 0.
- Investigate Data Anomalies (Within 1 Week): Immediately investigate and rectify the issue causing negative values for days_in_inventory. Accurate data is critical for effective decision-making.

Executive Summary

Executive Summary - Retail Inventory Business - 2025-06-12

■ 1. Executive Overview

Our current business performance presents a mixed picture. While initial data indicates potential for significant revenue growth, critical data accuracy issues and inventory imbalances are creating substantial risks. The overarching trend is a disconnect between inventory purchasing and actual sales, leading to capital being tied up in slow-moving and potentially obsolete stock. Immediate corrective action is needed to avoid further losses and capitalize on opportunities. Overall, current inventory health is poor and requires immediate attention.

■ 2. Key Strategic Insights

- Data Inaccuracy Hampering Insights: Across multiple analyses, negative values for "days_in_inventory" and unrealistic "percent_sold" values indicate critical flaws in data collection and calculation. This invalidates subsequent analysis and must be addressed immediately.
- Inventory Imbalance Threatens Revenue: A wide variance in sell-through rates (ranging from 0% to 278.57%) signals a significant mismatch between supply and demand, leading to lost sales opportunities and excessive inventory holding costs. ■
- Cardigans Offer Untapped Potential: Despite data gaps, the "cardigan" category consistently appears as a best-seller, particularly under the "most" brand. This presents an opportunity to optimize inventory, explore expanded color options (once data issues are resolved), and drive revenue growth. ■
- Online Portfolio Needs Expansion: Numerous products with high stock levels and zero sales suggest gaps in the online product offering. Prioritizing these items for online sales is a quick win to unlock revenue. ■
- Pareto Principle in Action: A small percentage of products drive the majority of sales, highlighting the need to focus on top performers and ensure their availability.

■■ 3. Performance Assessment

- Underperforming Categories: "coat suit" and "shirt-half" are severely underperforming, with 0% sell-through rates.
- Overperforming Category: "skivi" is dramatically overperforming with 278.57% sell-through.
- **Inventory Efficiency**: Excess inventory in slow-moving categories results in low inventory turnover and ties up significant capital.
- Sales Velocity: Sales velocity is highly variable across product categories, with some items moving quickly (cardigans) while others are stagnant (coat suits).

■ 4. Strategic Recommendations

- Prioritize Data Integrity (Immediate): Conduct a thorough audit of the data pipeline to identify and correct errors in data collection and calculation, particularly for "days_in_inventory" and "percent_sold." This is foundational for all subsequent analysis and decision-making. Expected Outcome: Reliable data for informed decision making.
- Optimize Inventory Allocation (Within 1 Month): Shift inventory investment away from slow-moving items (e.g., "coat suit") towards high-demand categories (e.g., "cardigans") and prioritize online portfolio expansion with existing stagnant stock. Expected Outcome: Reduced

inventory holding costs and increased revenue.

- Targeted Promotions for Low Performers (Within 2 Weeks): Implement targeted promotions, such as discounts and bundles, to reduce excess inventory in underperforming categories. Focus on clearing out slow-moving sizes and styles. Expected Outcome: Reduced inventory levels and increased cash flow.
- Brand and Pricing Analysis (Within 1 Week): Analyze online competitor pricing and brand popularity for key categories to optimize pricing strategies and improve sales conversion rates. Expected Outcome: Improved sales and enhanced competitiveness.

■ 5. Immediate Action Items (Next 7-14 Days)

- ■ Data Integrity Team: Investigate and fix the root cause of inaccurate and negative data values. Responsible: Chief Technology Officer.
- **Merchandising Team:** Identify and list all products with high available stock and zero sales online to improve online visibility. *Responsible: VP of Merchandising.*
- **Sales Team:** Run promotional campaigns with discounts and bundles on items with high excess_inventory and low sell_through_rate, focusing on the "suit-falalan" and "shirt-full" categories from "grab" and "pan america". *Responsible: VP of Sales*.

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