Bike Sales and Customer Insights

Executive Summary

- The dataset covers **36 months** of trading from **Dec 29, 2010 to Jan 28, 2014**, giving a full multi-year view of sales and seasonality.

- Business performance totals **≈$29.36M revenue** on **60,423 items** with an **avg selling price ≈$486** and **27,659 distinct orders**—healthy scale and repeat purchasing.

- Customer and catalog depth: **18,484 customers** bought from a **295-SKU** product range.

- **Bikes** drive the business, contributing **~$28.32M**; **Accessories** and **Clothing** play supporting roles.

- Demand is geographically broad with the **United States** leading in units sold, followed by **Australia** and **Canada**.

Dataset Summary

- **Tables:**

    - **customers** — 18,484 records with near-even gender split (**9,341 male; 9,128 female; 15 unspecified**).

    - **products** — 295 products across **Components (127)**, **Bikes (97)**, **Clothing (35)**, **Accessories (29)**; cost tiers: **Low <100 (110)**, **Medium 100–500 (101)**, **High 501–1000 (45)**, **Premium >1000 (39)**.

    - **sales** — 60,398 processed orders (27,659 distinct), **60,423 line items**; order window **2010-12-29 → 2014-01-28**.

- **Geography:** Customers and sales across US, Australia, UK, Germany, France, Canada; some country values missing (**337 customers "n/a"**).

- **Pricing mix:** Average product cost by category—**Bikes ≈$949.44**, **Components ≈$264.72**, **Clothing ≈$24.80**, **Accessories ≈$13.17**.

Key Statistics

- **Business totals:** Revenue **≈$29.36M**; **60,423 items**; ASP **≈$486**; **27,659 distinct orders**; **18,484 customers**; **295 products**.

- **By category (revenue): Bikes ~$28.32M**, Accessories **~$0.70M**, Clothing **~$0.34M**.

- **Top markets (units sold): US 20,481**, **Australia 13,346**, **Canada 7,630**, **UK 6,910**, **Germany 5,626**, **France 5,559**.

- **Top products: Mountain-200** variants are the top 5 by revenue (**~$1.29M–$1.37M** each).

- **Seasonality & trend:** Sales rise steadily through 2013; **Dec-2013 peaks at ~$1.874M and ~5,520 items**; early-2014 dips (data window ends).

- **Customer depth:** Even gender distribution; **all customers placed at least one order**; a long tail of **single-order customers** exists.

Dimensions Exploration

Overview of Customer Geography and Product Offerings

This analysis provides a comprehensive view of our business reach by listing all countries where our customers are located, alongside a detailed breakdown of product categories, subcategories, and individual products. It helps identify market diversity and the range of products offered.

Country	Category	Sub-category (10)	Products-name (10)
Australia	Components	Road Frames	HL Road Frame - Black- 58
Canada	Bikes	Mountain Bikes	HL Road Frame - Red- 58
France	Clothing	Road Bikes	Mountain-100 Black- 38
Germany	Accessories	Mountain Frames	Mountain-100 Black- 42
n/a		Socks	Mountain-100 Black- 44
United Kingdom		Forks	Mountain-100 Black- 48
United States		Wheels	Mountain-100 Silver- 38
		Gloves	Mountain-100 Silver- 42
		Headsets	Mountain-100 Silver- 44
		Locks	Mountain-100 Silver- 48

Date Range Exploration

Order and Customer Timeline Analysis

- The first order was placed on **December 29, 2010**, and the most recent order on **January 28, 2014**, covering a total duration of **36 months**. This provides insight into the active sales period for the dataset.

- Customer age analysis shows the youngest customer was born on **June 25, 1986**, while the oldest was born on **February 10, 1916**, highlighting the broad age range of our customer base.

Measures Exploration (Key Metrics)

- **Total Sales:** The business generated **$29,355,710** in sales, reflecting overall revenue performance.

- **Total Items Sold:** A total of **60,423 items** were sold, indicating product demand and volume.

- **Average Selling Price:** The **average price per item was $486.04**, highlighting the typical transaction value.

- **Total Number of Orders: 60,398 orders** were processed, showing the scale of customer transactions.

- **Distinct Number of Orders:** There were **27,659 unique orders**, reflecting repeat purchases and order patterns.

- **Total Number of Products: 295 products** were available in the catalog, demonstrating product variety.

- **Total Number of Customers:** The database included **18,484 customers**, indicating the breadth of the customer base.

- **Customers Who Placed Orders:** All **18,484 customers** placed at least one order, showing full customer engagement.

Business Key Metrics Overview

The table below summarizes the critical metrics of the business, providing a snapshot of sales performance, customer engagement, and product portfolio:

Measure Name	Measure Value
Total Sales	29356250
Total Quantity	60423
Average Price	486
Total Orders	27659
Total Products	295
Total Customers	18484

Magnitude Analysis: Customer Distribution by Country

The table below shows the total number of customers from each country, providing insights into geographic concentration and market reach:

Country	Total_Customers
Australia	3591
United Kingdom	1913
France	1810
Germany	1780
Canada	1571
n/a	337

The majority of customers are from the **United States**, followed by **Australia** and the **United Kingdom**, indicating key markets for targeted marketing and sales strategies. The presence of unspecified countries (337 customers) suggests the need to improve data completeness for better geographic analysis.

Customer Distribution by Gender:

The customer base is almost evenly split between genders, with **9,341 male** and **9,128 female** customers. A very small portion (**15 customers**) have unspecified gender. This balance suggests opportunities for marketing and product strategies that equally target both male and female customers.

Product Distribution by Category:

The product catalog is dominated by Components (127 items), followed by Bikes (97 items). Clothing (35 items) and Accessories (29 items) make up a smaller portion of the portfolio. This distribution highlights a strong focus on bike parts and complete bikes, with comparatively fewer lifestyle and accessory products.

Average Product Cost by Category:

The average product cost varies significantly across categories. **Bikes** are the most expensive, averaging **$949.44**, followed by **Components** at **$264.72**. **Clothing ($24.80)** and **Accessories ($13.17)** are considerably lower in cost, reflecting their smaller individual price points and positioning in the product portfolio.

Total Revenue by Product Category:

Revenue is heavily concentrated in **Bikes**, which generated **$28,316,272**, highlighting their dominant contribution to overall sales. **Accessories ($700,262)** and **Clothing ($339,716)** contribute relatively smaller portions, indicating that the business's primary revenue driver is high-value bike sales, while apparel and accessory sales play a supporting role.

Revenue Contribution by Top Customers:

The table highlights the top customers by total revenue generated. Individual customers contribute significantly to overall sales, with the highest-spending customers generating over **$13,000** each. This insight helps identify key accounts for targeted marketing, loyalty programs, and personalized engagement strategies to maximize retention and repeat business.

Customer_key	First_name	Last_name	Total_revenue
1133	Kaitlyn	Henderson	13294
1302	Nichole	Nara	13294
1309	Margaret	He	13268
1132	Randall	Dominguez	13265
1301	Adriana	Gonzalez	13242
1322	Rosa	Hu	13215
1125	Brandi	Gill	13195
1308	Brad	She	13172
1297	Francisco	Sara	13164
434	Maurice	Shan	12914

Distribution of Sold Items Across Countries:

The table shows the number of items sold in each country, highlighting market activity. The **United States leads with 20,481 items sold**, followed by **Australia (13,346)** and **Canada (7,630)**. The **United Kingdom, Germany, and France** show moderate sales volumes. These insights help identify key markets for sales growth and inform regional marketing strategies.

Country	Distribution
United States	20481
Australia	13346
Canada	7630
United Kingdom	6910
Germany	5626
France	5559

Ranking Analysis: Top 5 Revenue-Generating Products

The table highlights the top five products driving the highest revenue. The Mountain-200 series dominates, with individual variants generating between $1,294,854 and $1,373,454 each. This insight identifies the most valuable products in the portfolio and supports strategic decisions for inventory management, promotions, and focus on high-performing SKUs.

Product_name	Product_revenue	Product_rank
Mountain-200 Black- 46	1373454	1
Mountain-200 Black- 42	1363128	2
Mountain-200 Silver- 38	1339394	3
Mountain-200 Silver- 46	1301029	4
Mountain-200 Black- 38	1294854	5

Top 5 Lowest Performing Products

The table shows the five products with the lowest sales volumes. Items such as Racing Socks (L & M), Patch Kit, Bike Wash, and Touring Tire Tube have the lowest demand, ranging from 2,430 to 7,440 units sold. This insight highlights underperforming products, helping the business consider inventory adjustments, promotions, or discontinuation strategies to optimize the product portfolio.

Product_name	Revenue
Racing Socks- L	2430
Racing Socks- M	2682
Patch Kit/8 Patches	6382
Bike Wash - Dissolver	7272
Touring Tire Tube	7440

Top 10 Customers by Revenue

The table highlights the **top ten customers contributing the highest revenue**, with each generating over **$12,900** in total purchases. Key customers like **Kaitlyn Henderson** and **Nichole Nara** are among the top contributors, indicating a small segment of highly valuable clients driving significant revenue. This insight can guide **personalized engagement, loyalty programs, and targeted marketing** to maintain and grow these high-value relationships.

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Customers with the Fewest Orders:

The analysis identifies customers with the lowest engagement, each having placed only one order. Customers such as Marc Navarro, Chloe Young, and Wyatt Hill fall into this category. This insight highlights opportunities for targeted promotions or personalized campaigns to encourage repeat purchases and increase customer lifetime value.

Sales Performance Over Time

The table presents monthly sales performance across multiple years, highlighting trends in revenue and order volume. Key observations include:

- **Steady Growth:** Sales show a consistent upward trend from 2010 through 2013, with both revenue and the number of orders increasing significantly over time.

- **Peak Performance:** 2013 records the highest monthly sales, with December reaching over **$1.87 million** in revenue and more than **5,500 orders**, reflecting strong market demand.

- **Seasonal Patterns:** Some months show fluctuations, suggesting seasonality in customer purchasing behavior.

- **Recent Decline:** Early 2014 shows lower sales compared to prior months, indicating either market slowdown or incomplete data.

Analyzing sales over time helps identify growth trends, peak periods, and potential seasonal effects, which can inform inventory planning, marketing campaigns, and sales strategies.

Order_year	Order_month	Total_sales	Total_customers	Total_quantity
2010	12	43419	14	14
2011	12	669395	222	222
2011	11	660507	208	208
2011	10	708164	221	221
2011	9	603047	185	185
2011	8	614516	193	193
2011	7	596710	188	188
2011	6	737793	230	230
2011	5	561647	174	174
2011	4	502042	157	157
2011	3	485165	150	150
2011	2	466307	144	144
2011	1	469795	144	144
2012	12	624454	354	483
2012	11	537918	324	324
2012	10	535125	313	313
2012	9	486149	269	269
2012	8	523887	294	294
2012	7	444533	246	246
2012	6	555142	318	318
2012	5	358866	207	207
2012	4	400324	219	219
2012	3	373478	212	212
2012	2	506992	260	260
2012	1	495363	252	252
2013	12	1874128	2133	5520
2013	11	1780688	2036	5224
2013	10	1673261	2073	5304
2013	9	1447324	1832	4616
2013	8	1545910	1898	4848
2013	7	1371595	1796	4673
2013	6	1642948	1948	5025
2013	5	1284456	1719	4400
2013	4	1045860	1564	3979
2013	3	1049732	1631	4087
2013	2	771218	1373	3454
2013	1	857758	627	1677
2014	1	45642	834	1970

Products are segmented by cost to understand pricing distribution. The majority fall into the **Low Cost (<$100, 110 products)** and **Medium Cost ($100–$500, 101 products)** ranges. **High Cost ($501–$1,000, 45 products)** and **Premium (> $1,000, 39 products)** products are fewer, highlighting a focus on affordable and mid-range offerings, with a smaller share of premium items.

Cost_range	Product_count
Low Cost (<100)	110
Medium Cost (100-500)	101
High Cost (501-1000)	45
Premium Cost (>1000)	39

Strategic Conclusion

- **Double-down on Bikes:** Maintain inventory and marketing focus on bike SKUs—especially **Mountain-200**—to maximize proven high-value demand.

- **Market prioritization:** Allocate budget and stock for **US, Australia, and Canada**, where unit volumes are highest; use localized promos to deepen penetration.

- **Attach-rate play:** Bundle **Accessories/Clothing** with bike purchases (e.g., kits at checkout) to lift AOV in lower-revenue categories.

- **Lifecycle programs:**

    - **Retain top customers** (high-revenue cohort) with loyalty benefits and early access.

    - **Re-activate single-order customers** via win-back offers and service reminders.

- **Seasonal readiness:** Plan inventory and campaigns to **front-load Q4**, given December spikes; smooth operations in lower months with targeted discounts.