

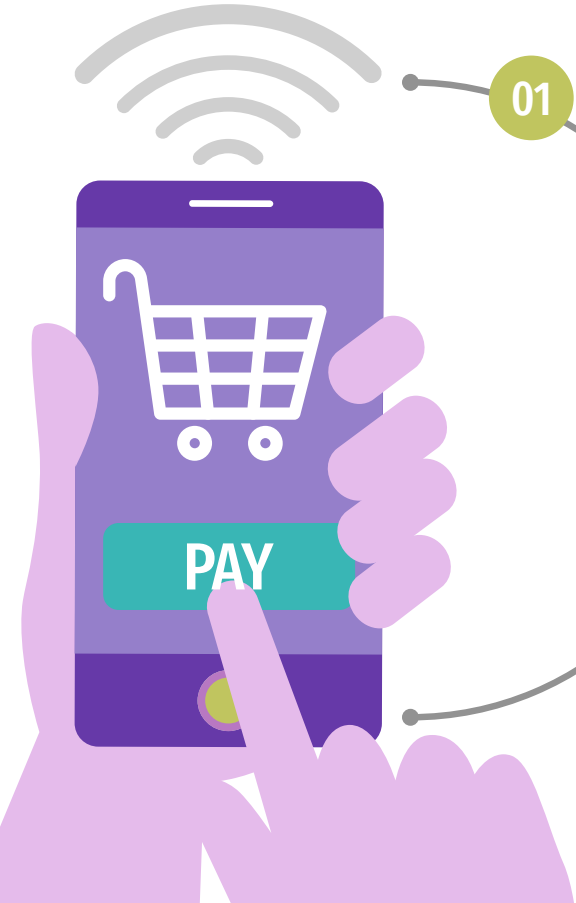
# BigQuery E-Commerce Data Analysis



## **BA775-Team-B06:**

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# Business Definition and Problem



01

## Objective: Historic Performance Analyze

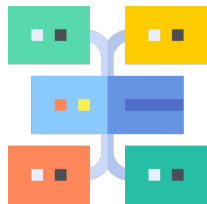
1. Customer Behavior & Market Trends Analysis
2. Product Sales Performance Analysis
3. Order Processing & Supply Chain Management

02

## Motivation: Future Guidance

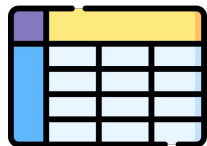
1. Marketing Strategy Design
2. Popular Products Selection
3. Supply Chain Optimization

# Data Description



**Source:** Google Looker (BigQuery)

- ID: bigquery-public-data.thelook\_ecommerce.distribution\_centers



**Tables:** seven tables within the dataset

- Customers, Products, Orders, Operations, etc
- Global: Europe, North and South America, Asia, Australia.



**Time Range:**

- August 2019 to November 2023



# Data Processing

1. Checked for NULL values & duplicates in unique values
2. Remapping country names
  - Country - *'España'* and *'Deutschland'* mapped back to *'Spain'* and *'Germany'*
1. Selected and created three tables from the original seven

# Project Departments

## Marketing



Table used:

users | orders | events | order\_items

## Product



Table used:

users | orders | products | order\_items

## Operation



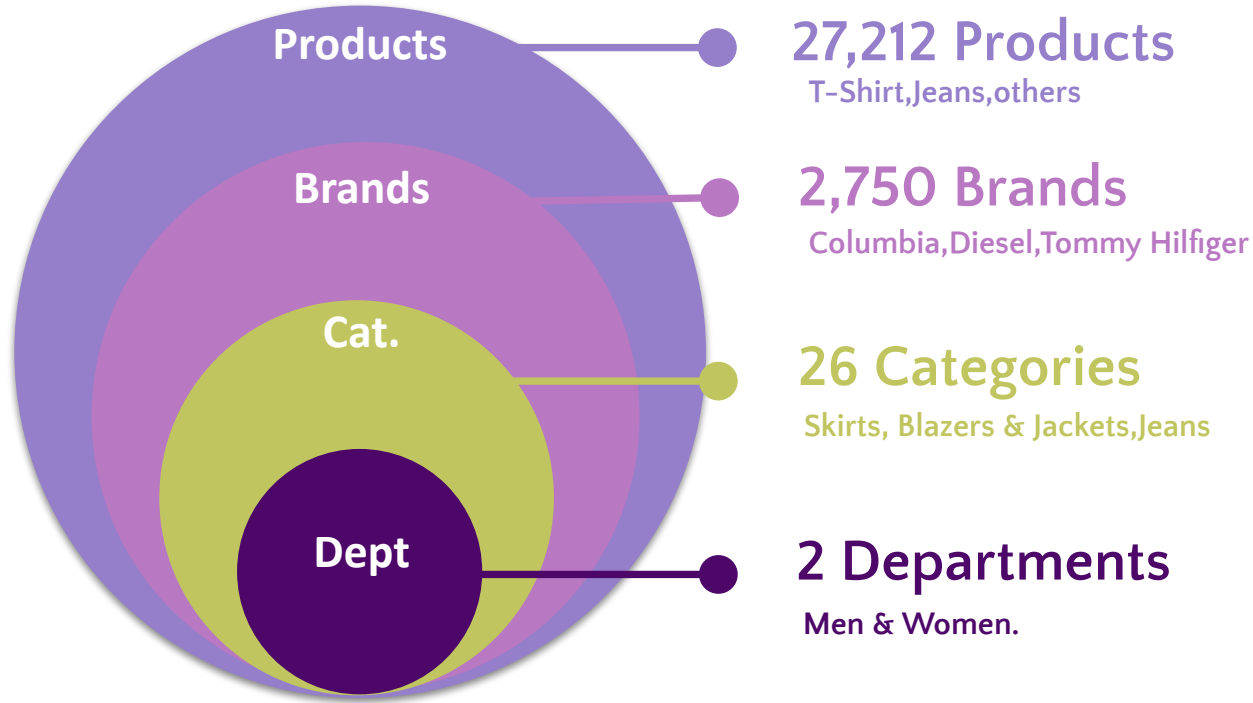
Table used:

users | distribution\_center | events |  
order\_items | inventory\_items



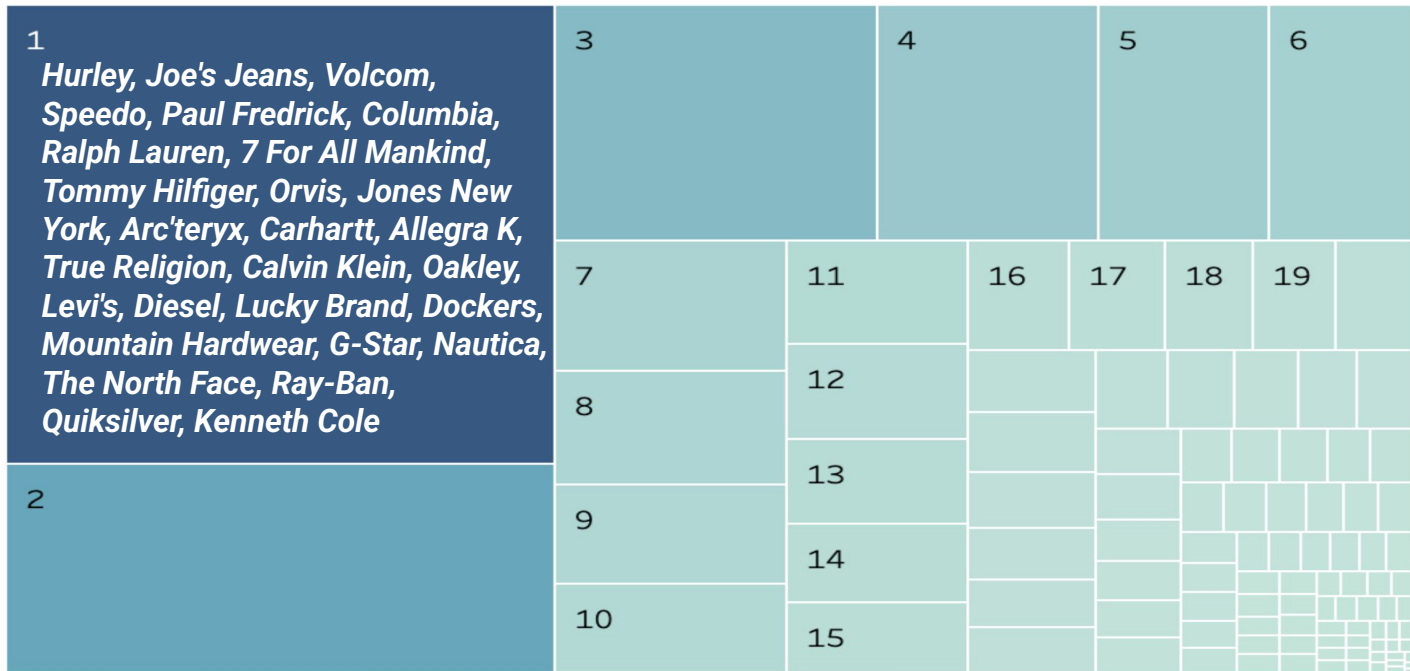
Project Main Sections

# Question 1: What are the most money-making brands?



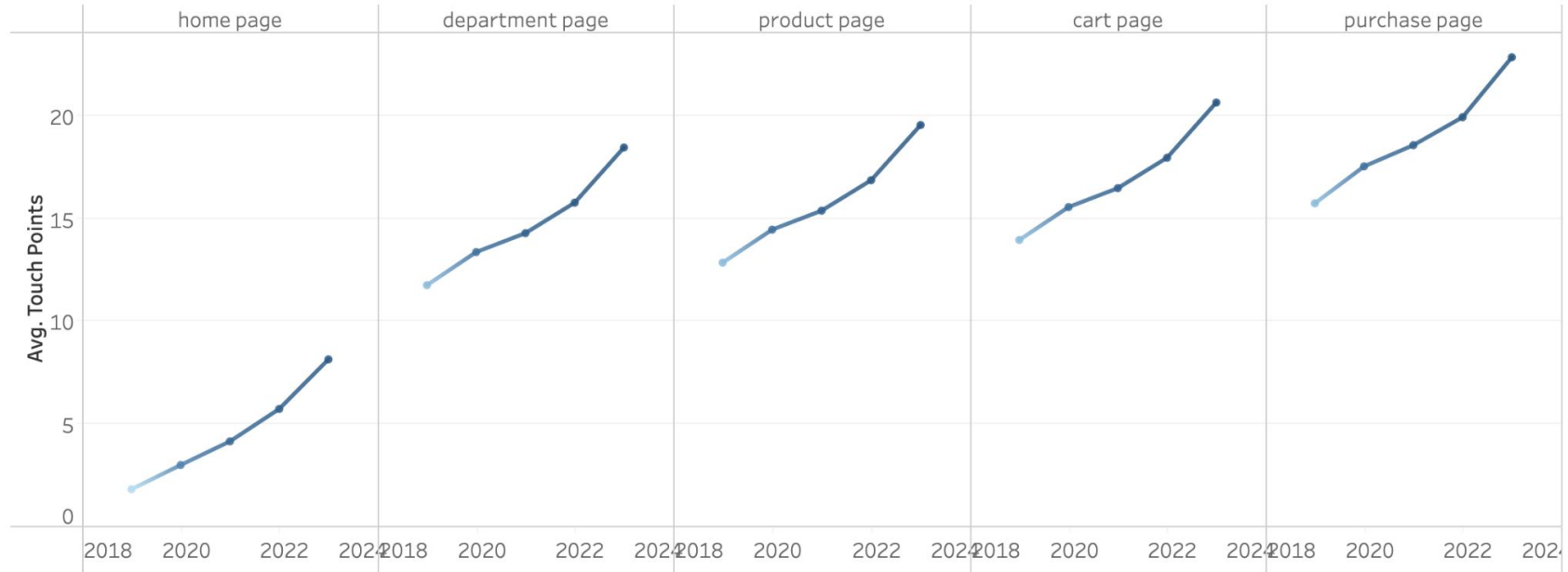
# Question 1: What are the most money-making brands?

100 Brand Bins by Revenue



Through the 100 bins of brands, we see that the top 1 bin of 27 brands accounts for about 27% of the total revenue. In future marketing tactics, it'd be a great idea to capitalize on brands inside bin#1.

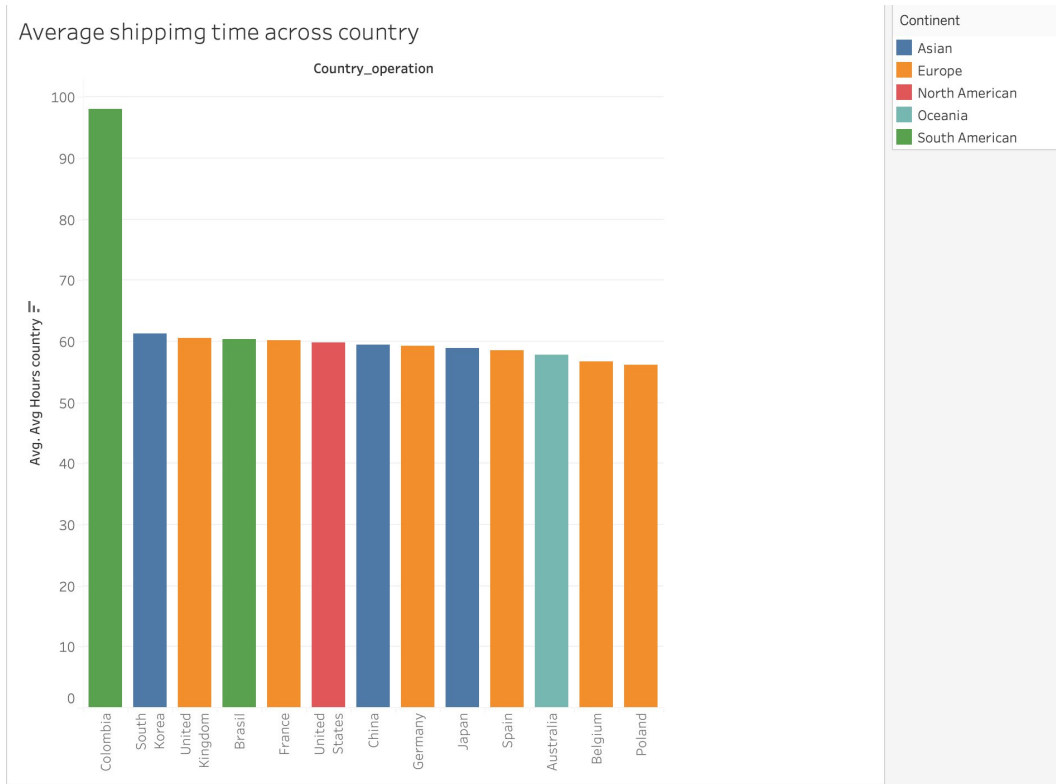
## Question 2: The typical marketing funnel



- Clear marketing funnel:
  - *Home page* → *Department page* → *Product page* → *Add to Cart* → *Purchase page*
- YoY increase in clicks for department, product and cart pages



# Question 3: Is there a difference in average shipping time between different country and continent?

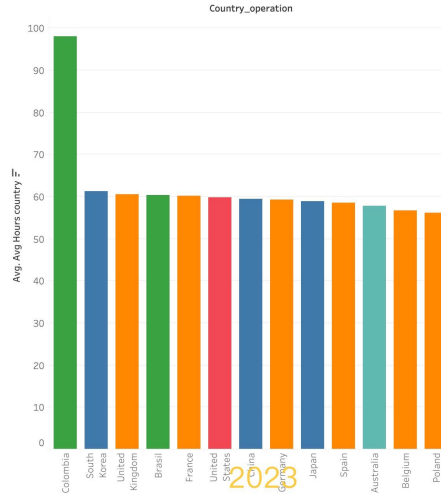
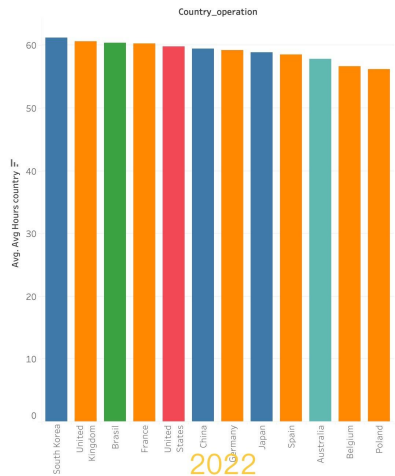
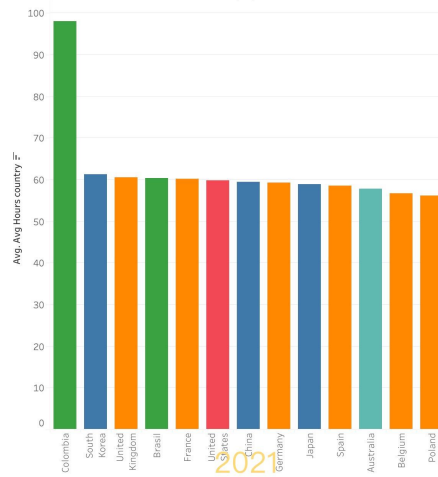
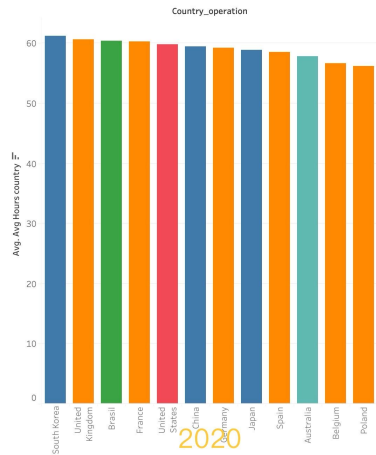


## Definition:

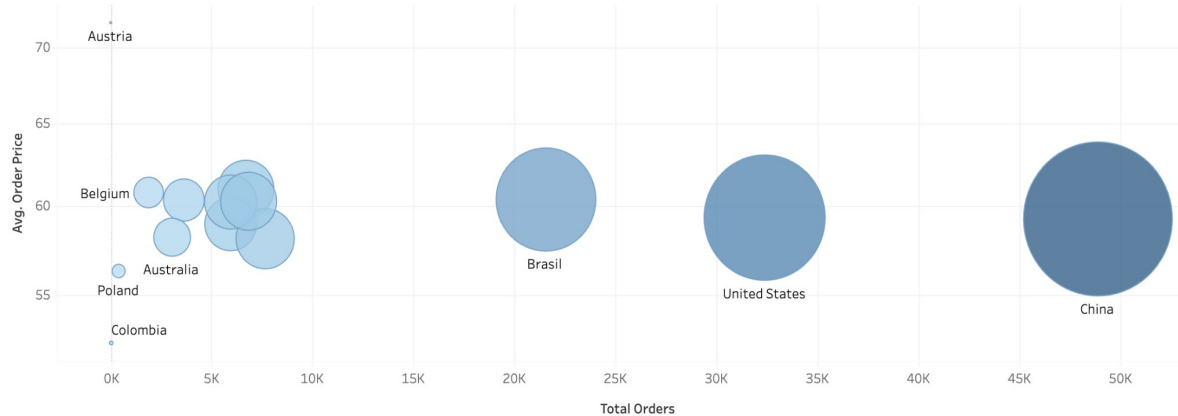
- Shipping Time:
- $\text{Delivered\_at} - \text{Shipped\_at}$

## Findings:

- Colombia has the highest average shipping time of approximately 98 hours (about 4 days).
- Other countries have quicker shipping time of about 2-3 days.



- The extended shipping time may result from a low order volume, leading to a lack of convenient transportation infrastructure and services in the local area.



## Suggestions:

- Enhance domestic shipping system.
- Establish new distribution center in China, as China has the highest customer purchase volume and maximized total orders.
- Establish new distribution center in Brazil.

# Tableau Display

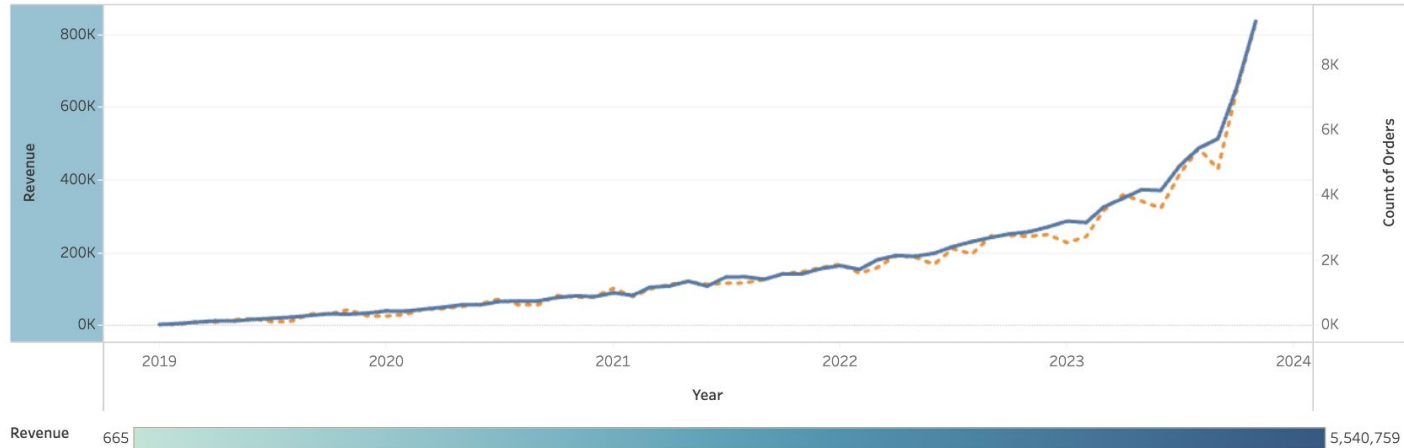
## BA775-B06 E-Commerce

Country: (All) Traffic Source: (All) Year: (All) Quarter: (All) Month: (All)

TOTAL REVENUE  
23,663,632

TOTAL ORDERS  
145,163

REACH  
64,139



# Challenges & Conclusion



- Each department - BigQuery table formats - view vs table (aligning the format)
- Identifying scope for each department
  - required constant communication



- Tremendous growth - past 4 years — **2023 is its best performing year yet**
- In total **\$24M** revenue
- **80k+** orders
- Largest revenue - Q3 - 190% YoY growth
- 2750 brands - 27 Top Brands - **27%** of Revenue
- Fall sees highest revenue and profit
- Allows marketing department - capitalize on seasonal spending pattern
- Shipping efficiency needs to be balanced more across continents - Differences of **20 hrs** - Certain South American countries - long shipping time



**Thank you!**