

Data Management Project REPORT
(Project Semester August-December 2022)

Adidas US Interactive Sales Dashboard

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Programme and Section : B-Tech(CSE), KM110
Course Code : INT217

Under the Guidance of
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Lovely School of Computer Science and Engineering
Lovely Professional University, Phagwara



CERTIFICATE

This is to certify that **Dharmireddi Anand** bearing Registration no. **12016445** has completed **INT217** project titled, “**Adidas US Interactive Sales Dashboard**” under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her original development, effort and study.

Signature and Name of the Supervisor

Designation of the Supervisor

School of Computer Science and Engineering

Lovely Professional University

Phagwara, Punjab.

Date: 10-11-2022

DECLARATION

I, Dharmireddi Anand, student of B-Tech CSE under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 10-11-2022

Signature

Registration No. 12016445

Dharmireddi Anand

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my Teacher Ms. Tanima Thakur for providing her invaluable guidance, comments and suggestions throughout the course of the project. Also, I would like to thank my friend Somya and Kamal for assisting me in the areas.

I was facing difficulties in finding a way out and guiding me to the correct path forward. They always gave me support and guided on how to do my assignment in purpose to produce a good outcome.

TABLE OF CONTENTS

S. NO.	TITAL	PAGES
1)	COVER PAGE	1
2)	CERTIFICATE	2
3)	DECELARATION	3
4)	ACKNOWLEDGEMANT	4
5)	TABLE OF CONTENT	5
6)	INTRODUCTION	6
7)	OBJECTIVES	7
8)	SOURCE OF DATASET	8
9)	ETL PROCESSES	9 - 11
10)	Analysis On Data	12-21
11)	Visualization	22-23
12)	My Dashboard	23
13)	List of Analysis	24-27
14)	References	28
15)	Bibliography	29

1. Introduction

What is sales data?

Sales data is any information that is machine-readable and of benefit to sales teams. It helps with decision making, understanding your customers better and improving future performance within your organization. It is imperative that sales leaders know how to interpret the data they collect and use its insights to improve their strategy.

Why is sales data important?

1. Identifying ideal customers.
2. Enabling effective prospecting.
3. Optimising the sales process

What is a Sales Dashboard?

A sales dashboard is a single screen displaying all the essential information about a salesperson's success. In one glance, it offers a complete picture of all the data involved in the sales process. The report includes metrics like opportunities, conversion rates, revenue, pipeline forecasts, etc.

A sales dashboard is a Business Intelligence (BI) tool that allows data-driven sales teams to track and analyse Key Performance Indicators (KPI) and share this information across an organization. Modern sales dashboards go beyond simple visualization.

They integrate with your Customer relationship management (CRM), marketing, and finance systems, allowing you to easily drill into the data and get real insights – insights that help you forecast more accurately, close more deals, and crush your revenue goals.

2. Objectives/Scope of the Analysis

By reviewing sales by both dollar amount and order amount, leaders can ensure that teams are achieving their big-picture sales goals. They can also make sure their inventory matches customers' needs. Further, monitoring sales by country, State and City can help marketing and sales teams decide where to focus their outreach efforts.

It is also worth noting that the dashboard's two bar charts use the multi-level drill down feature. By clicking on a bar, users can view a more detailed breakdown of its data. For instance, by clicking the *tarte au sucre* bar on the sales bar chart, I can see all of the companies that purchased the item and the amount of their orders.

Similarly, by clicking the same bar on the order quantity bar chart, I can see how many units each company purchased.

One key feature of this dashboard is its versatility. With the "Select Year" drop-down list box filter, viewers can display data for any combination of the two years for which we have data. Users can reset the filter by clicking the funnel-shaped icon in the upper right corner of the list box. This feature is invaluable for users who need to focus their analysis on specific sets of data.

3. Source of dataset

I have downloaded the dataset from flowdesk.com.

The link of the dataset is <https://view.flodesk.com/pages/62e6c1afc4d48aec3664b8e4>

What is Flowdesk?

The one-stop-shop to the digital asset markets. Interacting with the cryptocurrency market has never been this complex with venues and products scattered across the globe. Flowdesk makes it painless and cost efficient. Improving the liquidity to support innovative assets.

Founded in 2020, flowdesk combines significant experience from traditional markets with acute knowledge of algorithmic trading and crypto. We have developed a trading infrastructure which integrates more than 70 centralized and decentralized exchanges. We've combined this technology to our expertise to bring the best of crypto finance to our clients, always putting their interest firsts.

Flowdesk provides a wide range of digital assets services such as market-making, custody, brokerage and treasury management. Flowdesk is made by unique individuals who are technologist, innovation driven and convinced by the positive impacts crypto will have on the world. We are putting impact at the heart of everything we do, with the highest level of compliance and ethics.

4. ETL process

ETL, which stands for extract, transform and load, is a data integration process that combines data from multiple data sources into a single, consistent data store that is loaded into a **data warehouse** or other target system.

As the databases grew in popularity in the 1970s, ETL was introduced as a process for integrating and loading data for computation and analysis, eventually becoming the primary method to process data for data warehousing projects.

ETL provides the foundation for data analytics and machine learning workstreams. Through a series of business rules, ETL cleanses and organizes data in a way which addresses specific business intelligence needs, like monthly reporting, but it can also tackle more advanced analytics, which can improve back-end processes or end user experiences. ETL is often used by an organization to:

- Extract data from legacy systems
- Cleanse the data to improve data quality and establish consistency
- Load data into a target database

ETL vs ELT

The most obvious difference between ETL and ELT is the difference in order of operations. ELT copies or exports the data from the source locations, but instead of loading it to a staging area for transformation, it loads the raw data directly to the target data store to be transformed as needed.

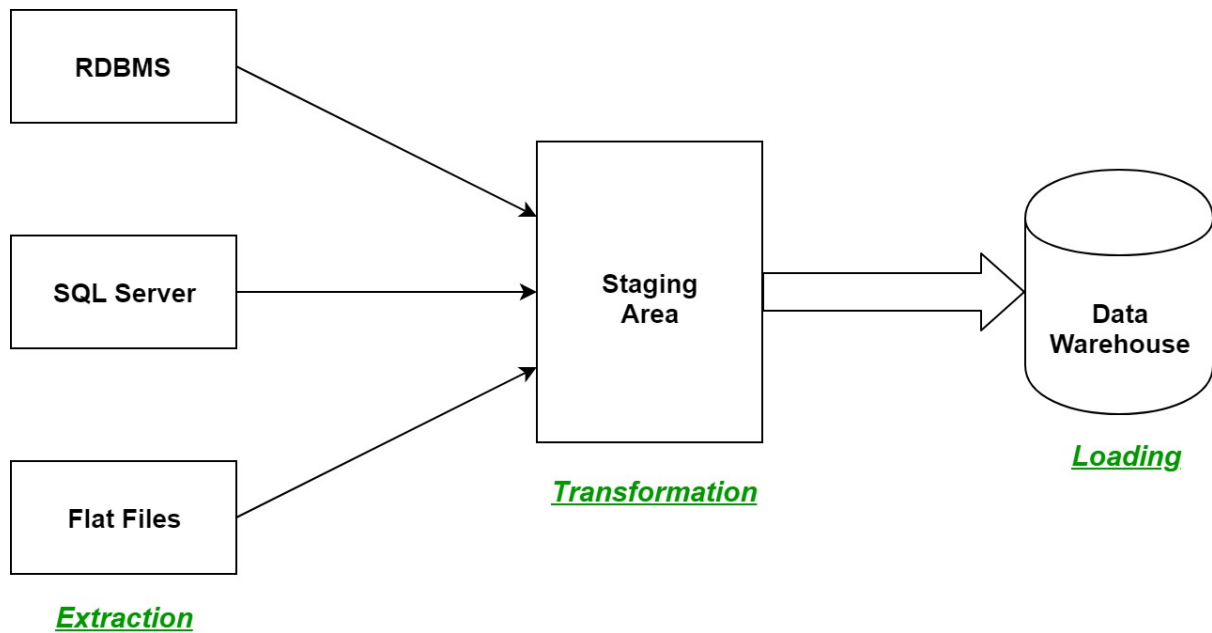
How ETL works

The easiest way to understand how ETL works is to understand what happens in each step of the process.

Extract

During data extraction, raw data is copied or exported from source locations to a staging area. Data management teams can extract data from a variety of data sources, which can be structured or unstructured. Those sources include but are not limited to:

- SQL or NoSQL servers
- CRM and ERP systems
- Flat files
- Email
- Web pages



Transform

In the staging area, the raw data undergoes data processing. Here, the data is transformed and consolidated for its intended analytical use case. This phase can involve the following tasks:

- Filtering, cleansing, de-duplicating, validating, and authenticating the data.
- Performing calculations, translations, or summarizations based on the raw data. This can include changing row and column headers for consistency, converting currencies or other units of measurement, editing text strings, and more.
- Conducting audits to ensure data quality and compliance
- Removing, encrypting, or protecting data governed by industry or governmental regulators
- Formatting the data into tables or joined tables to match the schema of the target data warehouse.

Load

In this last step, the transformed data is moved from the staging area into a target data warehouse. Typically, this involves an initial loading of all data, followed by periodic loading of incremental data changes and, less often, full refreshes to erase and replace data in the warehouse.

For most organizations that use ETL, the process is automated, well-defined, continuous and batch-driven. Typically, ETL takes place during off-hours when traffic on the source systems and the data warehouse is at its lowest.

Retailer	Max Total Sales	Min of Total Sales	Average Total Sales
Amazon	618750	416	81874.51212
Foot Locker	765000	0	83464.05764
Kohl's Sports Direct	520000	520	99140.53689
Walmart	698750	528	89798.719
West Gear	825000	880	119102.8914
		203	102343.8639

Sales example of ETL

5. Analysis on dataset

1. Introduction

In sales, many tasks are now managed through centralized cloud software, including CRMs, email marketing platforms and integration tools, making sales data readily available. Many global, industry-leading brands are now using their sales data in ingenious ways to make better business decisions, but any company can take advantage of insights and reporting tools to achieve data-driven sales success.

However, the prospect of sifting through the many sales metrics available to make sense of the data can be overwhelming, while knowing what to do with that information once you've got it is another challenge.

2. General Description

General Description of Company:

Adidas Inc. is a German manufacturer, a marketer of athletic shoes and sports apparel. Adidas was founded in 1948 and was named after its founder, Adolf (Adi) Dassler. His aim was to provide athletes with the best possible sports gear and equipment. For over eight decades the Adidas Group has been part of sports on every level, providing state of the art sports: – apparel, footwear and accessories. Today, the Adidas Group is an international leader in the sporting goods business and offers an outspread portfolio of sporting goods.

About Dataset

Context

The growth of footwear markets in most populated cities are increasing and market competitions are also high. This dataset is one of the footwear sales of Adidas company which has recorded in 4 different quarters for 2 years data. Predictive data analytics methods are easy to apply with this dataset.

Attribute information

Retailer	- Retailers are experts in marketing, sales, merchandise inventory, and knowing their customers. They purchase the goods from the manufacturers at cost and market them to consumers at retail prices.
Retailer ID	- Computer generated unique identification number for every retailer
Invoice Date	- The invoice date is the date of products were provided
Region	- It is a geographical area including the customer group or groups that is assigned to a particular salesperson or the sales team.
State	- U.S States
City	- Location of Footwear Centres
Product	- Casual and Sports footwear
Price per Unit	- Original price of a single item
Units Sold	- Total Sales of a products
Total Sales	- The revenue produced as a result of normal business operations
Operating Profit	- It referred to as earnings before interest and tax (EBIT), as interest and taxes are non-operating expenses.
Operating Margin	- Operating margin is a profitability ratio that shows how much profit a company makes from its core operations in relation to the total revenues it brings in.
Sales Method	- In-Store/Outlet

Purpose

This dataset can be used for predictive data analytics purpose.

Like that provides information about a specific product or product line.

And the information that is machine-readable and of benefit to sales teams. It helps with decision making, understanding your customers better and improving future performance within your organization. It is imperative that sales leaders know how to interpret the data they collect and use its insights to improve their strategy

3. Specific Requirements, functions and formulas

- i. $\text{Sales} = (\text{Number of Units Sold}) \times (\text{Selling Price per each Unit})$
- ii. $\text{Operating profit} = (\text{Revenue}) - (\text{Direct costs} - \text{Operating expense})$
- iii. $\text{Operating Margine} = (\text{Operating Profit}) / \text{Revenue}$
- iv. Sum
- v. Average
- vi. Maximum
- vii. Minimum
- viii. Count

4. Analysis results

A sales analysis report is a document that includes all of the most important data of your business's sales process and provides you with a complete overview of your sales trends, volume, and overall sales activities.

Some of the metrics included in sales analysis reports are:

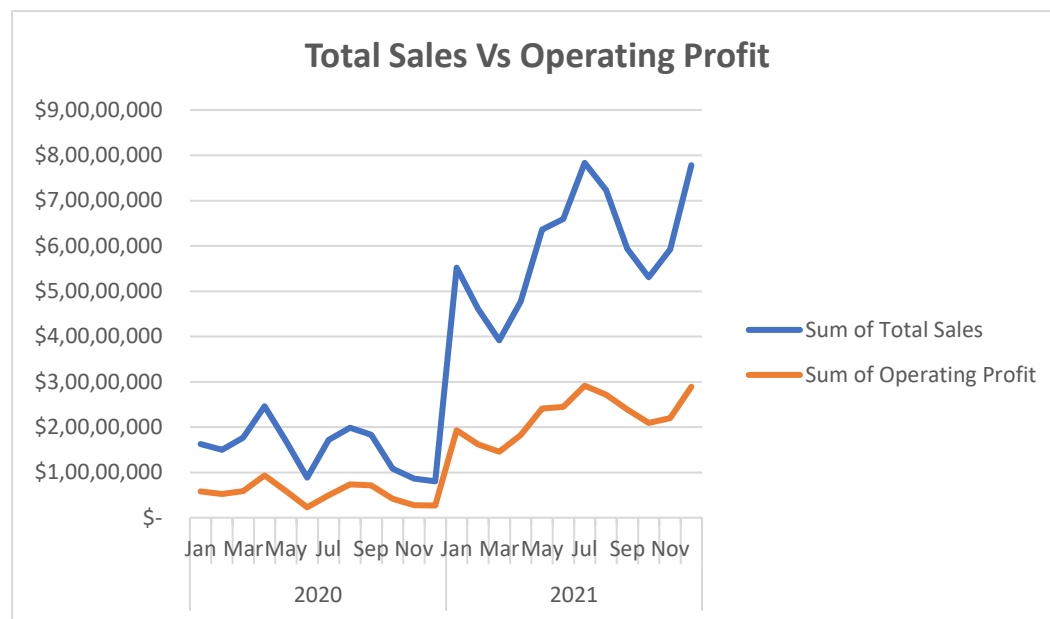
- Sales trends
- Lead conversion rate
- Number of leads in the sales pipeline
- Historic sales data
- Sales team performance
- Product assessment

The main goal of this report is to inform you whether there is an increase or reduction in sales. Once you finish analyzing the data in a sales analysis report, you will be able to create better strategies, avoid unnecessary costs, and identify which areas in the sales process need to be optimized. Based on your sales goals, you can also refer to different kinds of sales analysis reports for getting insights.

i. Sales Trend Analysis

This type of sales analysis is about finding patterns in sales data (whether they are going up or down) over a specific timeframe. A micro trend might last for a week for a specific product, while a macro trend might last for a quarter over a range of products.

For instance, the graph below shows that a company has seen an increase in 'sum of total sales' and 'Operating Profit.'



Why sales teams should measure this?

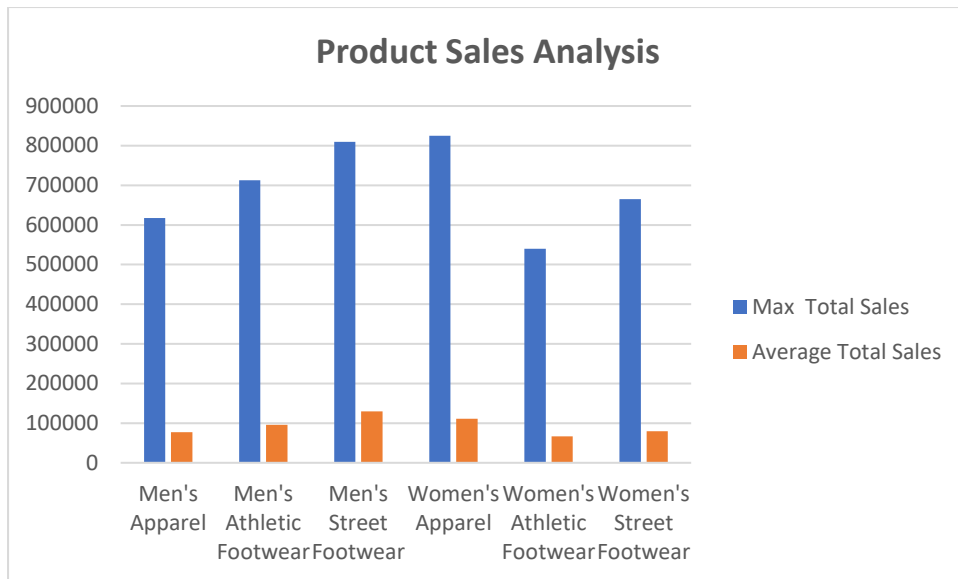
Sales pattern analysis is an easy way to track progress towards your sales goals while simultaneously understanding the sales patterns in specific products, customers, or geographies.

ii. Product Sales Analysis

If your company offers many products, then you need to conduct regular product sales analysis to find out the items that are overcrowding your product lining. You can use KPIs and revenue bar charts to look at the product sales overall or in a specific time frame.

Why sales teams should measure this?

It lets you approach product sales data from various angles like demographics, product popularity, and the like. Multi-product firms can use the results from this analysis to take constructive actions, like discontinuing unprofitable products.



iii. Sales Performance Analysis

If you want to gauge the effectiveness of your sales strategy and how your sales team is performing, a sales performance analysis can come in handy. It can involve conducting a strictly financial analysis based on the sales revenue generated and how it's meeting your sales targets.

Based on what you intend to achieve, you can also seek to evaluate parameters like:

- An improvement in your win rates
- Faster closing rate
- Quicker revenue growth
- Better price margins

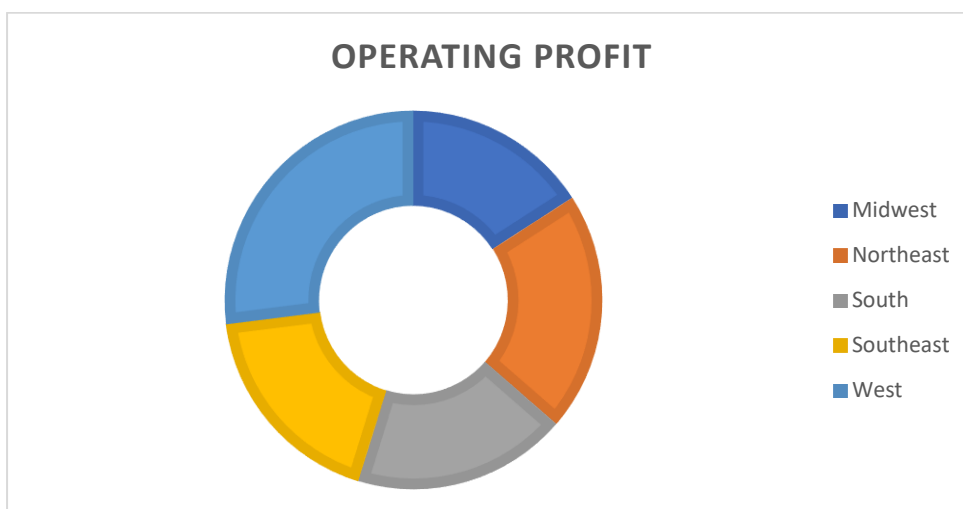
You can work on the gaps found in a sales performance analysis to put your business back on track to “where you need to be.”



iv. Diagnostic Analysis

This sales analysis involves justifying the trends and observations in sales-related data with reasonings. For example, the increased competition in the industry might lead to a decrease in your product sales. Sales leaders conduct internal diagnostics to identify the roadblocks for their teams, list their observations, and brainstorm ways to improve.

The Center for Sales Strategy has prepared a [diagnostic list](#) that you can refer to as a starting point for auditing your performance.





THE NUMBERS

- ▶ Revenue Goals by area
- ▶ Best categories or industries
- ▶ Average order size
- ▶ Key Account Level



THE BUSINESS

- ▶ Problems We Solve
- ▶ Common Objections
- ▶ Reason for Being
- ▶ Elevator Speech
- ▶ Top competitors and how you compare



YOUR PROCESS

- ▶ Performance review process
- ▶ Sales Structure
- ▶ Job Roles
- ▶ Ideal Prospect Profile
- ▶ Decision-Making Process
- ▶ Valid Business Reasons
- ▶ Sales Process
- ▶ Key Sales Collateral



YOUR PRICING

- ▶ Standard pricing
- ▶ Negotiating points
- ▶ When do you discount



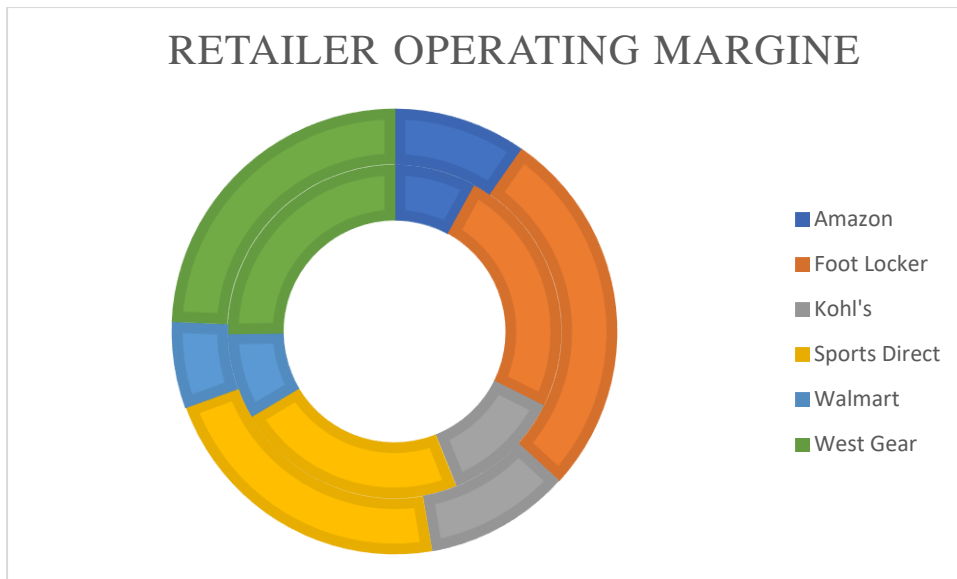
YOUR METRICS

- ▶ Performance Measures
- ▶ Leading Indicators
- ▶ Compensation Plans



YOUR SERVICE

- ▶ Service team
- ▶ Onboarding a new client



Why sales teams should measure this?

It lets you review the health of your sales organization by giving detailed insights into different aspects of your sales operations.

v. Market Research

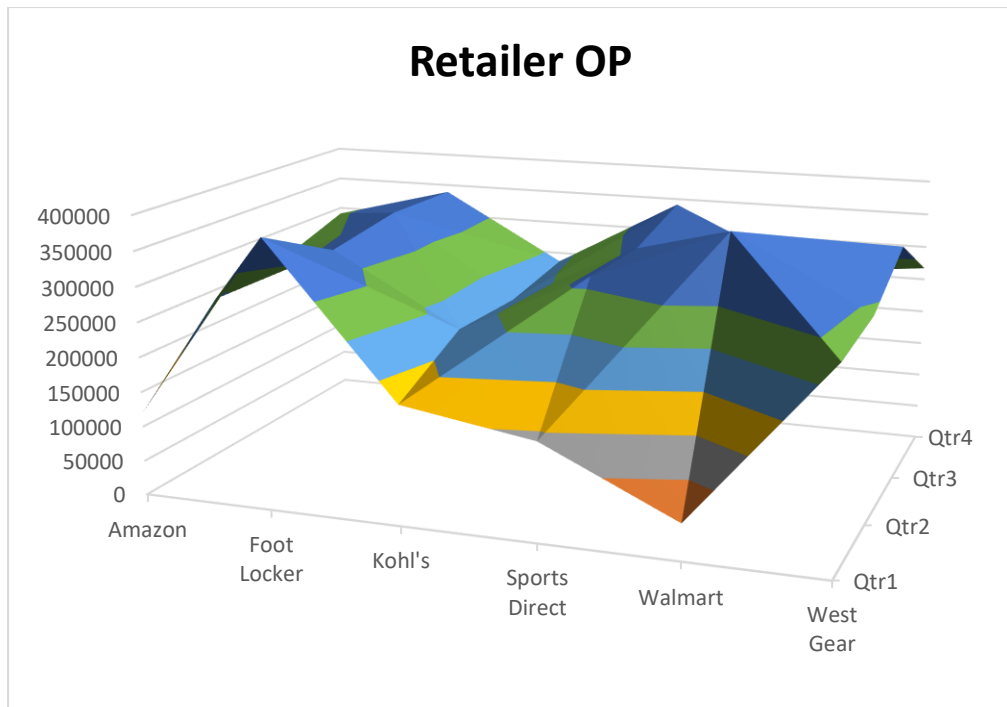
Occasionally the good old market research helps make informed business decisions.

The technique could involve surveying your customers over the phone, by email, or in person. You can also study your competitors and general sales statistics.

Once you get a good handle on the market conditions, you can evaluate your company's performance and identify the weaknesses of your sales team. It also identifies potential business opportunities and gives a better understanding of your customers' needs, thereby improving your sales effectiveness.

Why sales teams should measure this?

Sales data analysis and interpretation are based on your past sales data, but market research can fill in the gaps of such analyses. For sales directors, it serves as a gateway into the future.



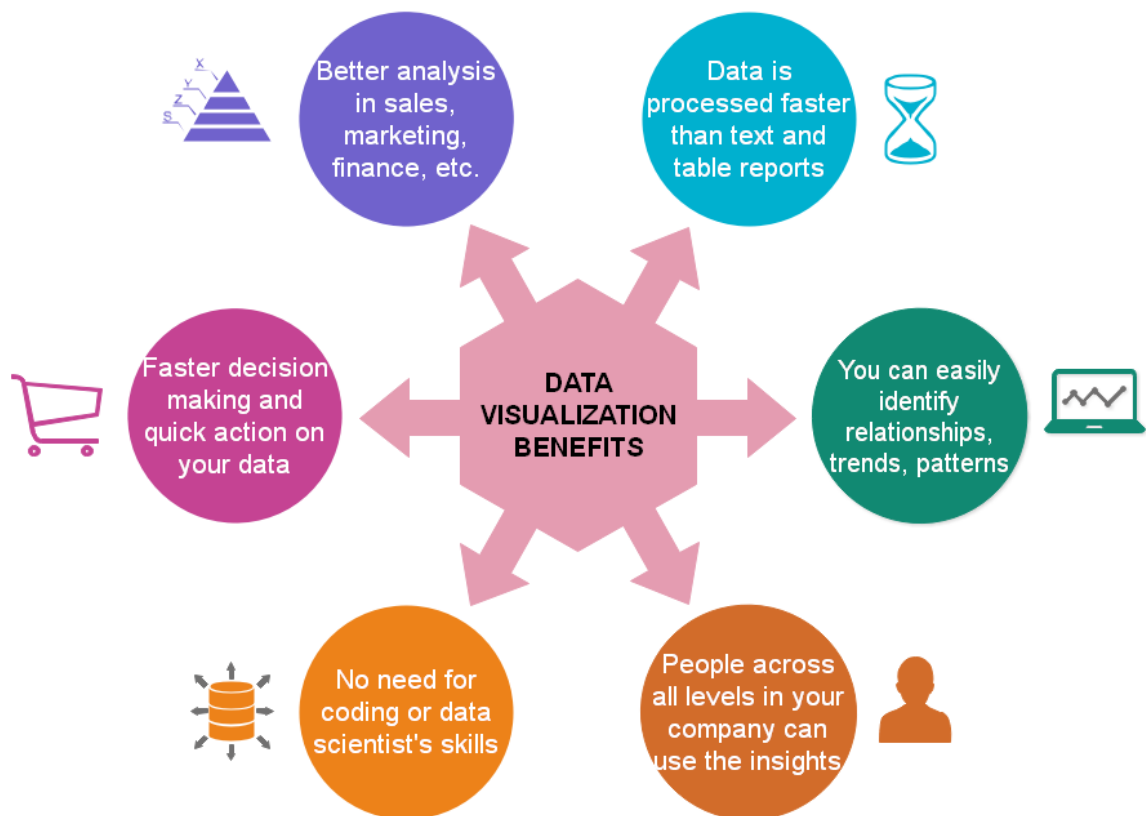
Improve Sales Strategies

Once we combine all of these previous benefits, we realize that sales analysis reports ultimately help you improve and optimize your future sales strategies.

If you properly analyse your product's performance, customers, and the overall market, creating the perfect sales strategy will be a piece of cake.

5. Visualization

Data visualization techniques are visual elements (like a line graph, bar chart, pie chart, etc.) that are used to represent information and data.



Data visualization techniques convert tons of data into meaningful visuals using software tools.

The tools can operate various types of data and present them in visual elements like charts, diagrams, and maps.

They allow you to easily analyse massive amounts of information, discover trends and patterns in data and then make data-driven decisions.

How To Create Effective Graphs And Charts?



First:
define the information
you need to present.
What is the goal of your
graph or diagram?



Find the most suitable
visual to show that
information.
Know your basic charts
and what they are best
at.



Don't start with "I need a
bar chart/pie chart. Let's
make one that looks cool".
This is how you can end
up with misleading
visuals.



Focus the graph on the
most important points that
reinforce its goal. Use
color, size, or weight to
draw attention to some
graph elements and
suppress others.



Don't make complex
descriptions such as:
"A's sales were more
than B by 5.8% in 2018,
and despite a sales
growth of 30% in 2019,
A's sales became less
than B by 6.2% in 2019."



Keep your chart simple
and easy to understand.
Avoid too many
symbols, line types, bar
fills in a single graph.

intellspot.com

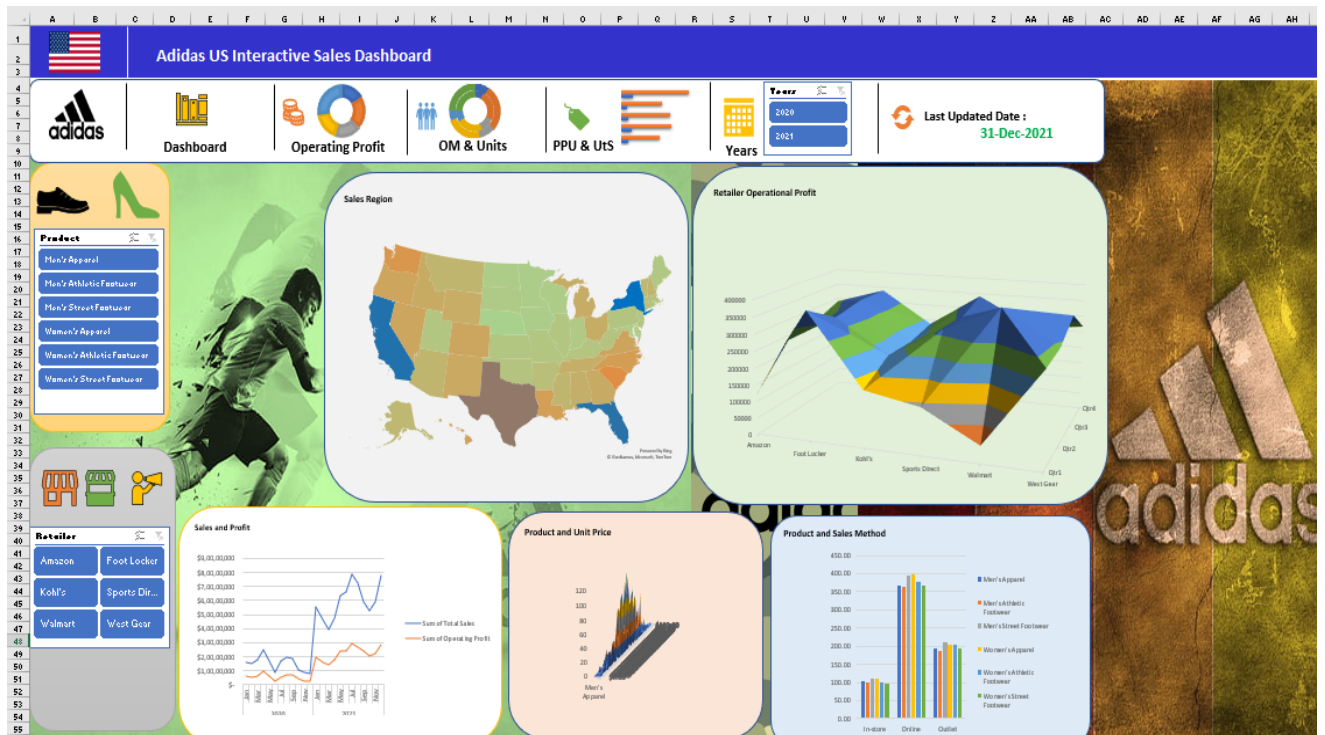
Dashboard:

A data visualization dashboard tracks key performance indicators (KPIs) across multiple marketing channels and transforms them into a visually beautiful report.

It's like an infographic that helps you make sense of your complex data.

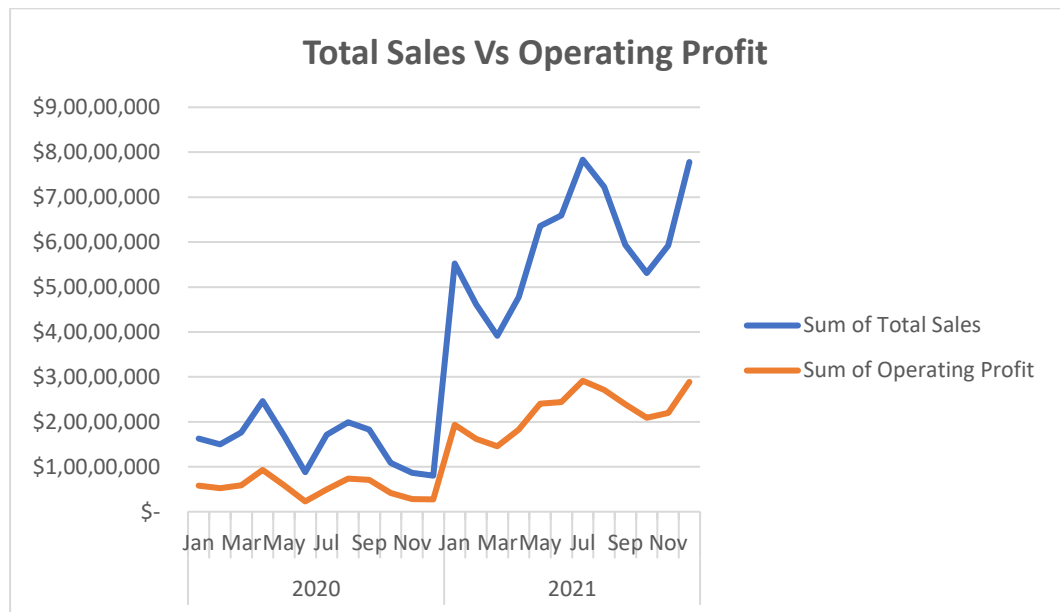
My Dashboard:

“Adidas US Interactive Sales Dashboard”

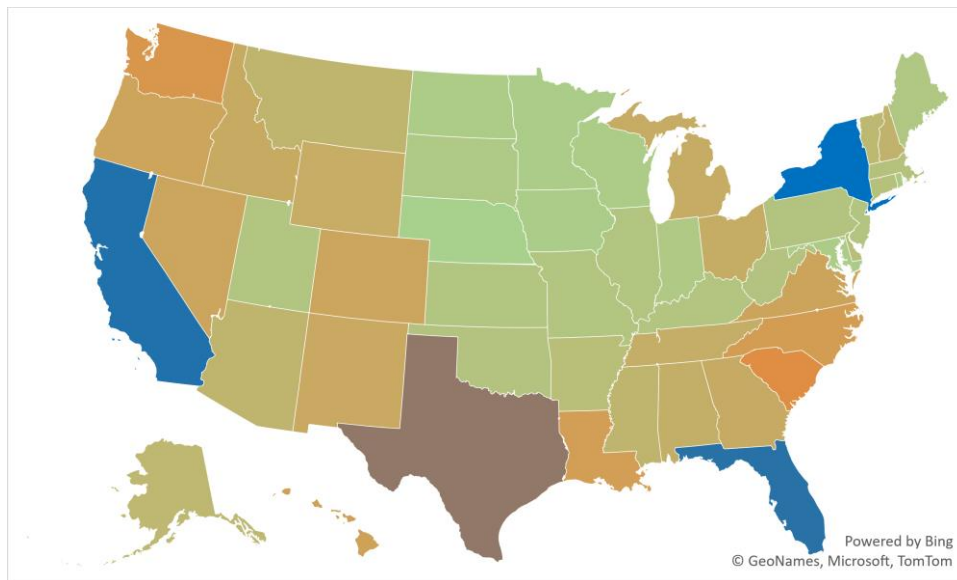


6. List of Analysis

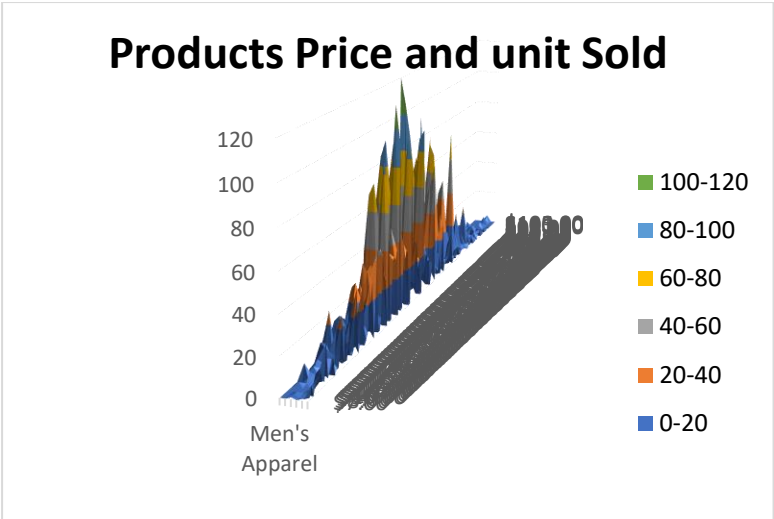
i. Sales and Operating Profit



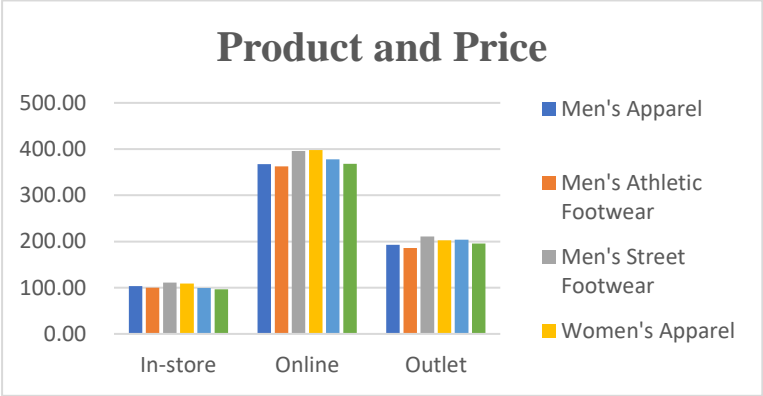
ii. State wise Sales



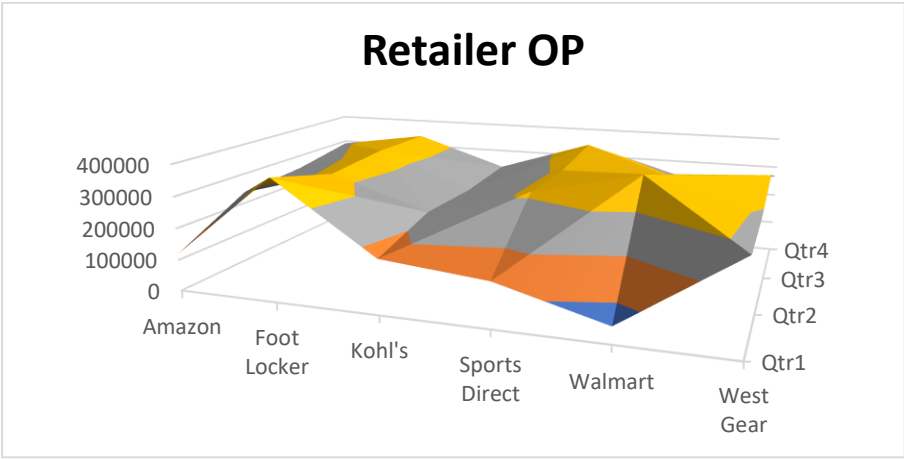
iii. Products Price and unit Sold



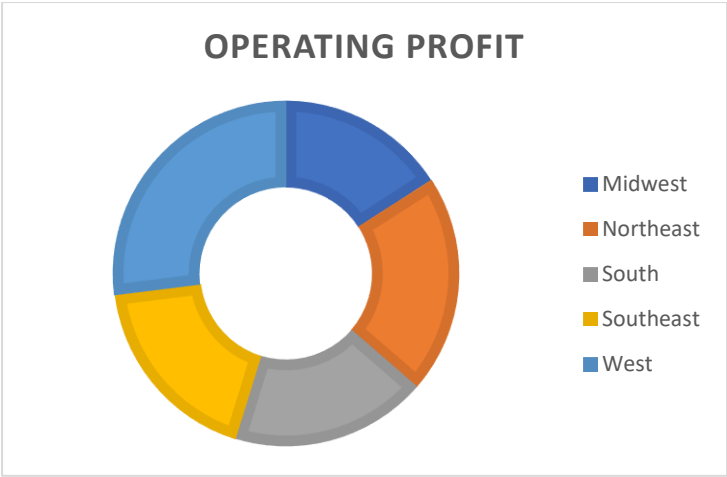
iv. Products Operating Method and Sales Margine



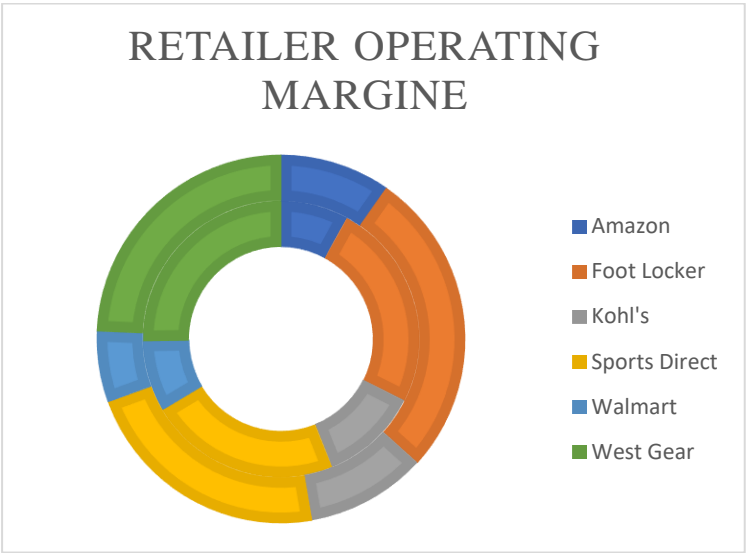
v. Retail Operating Profit



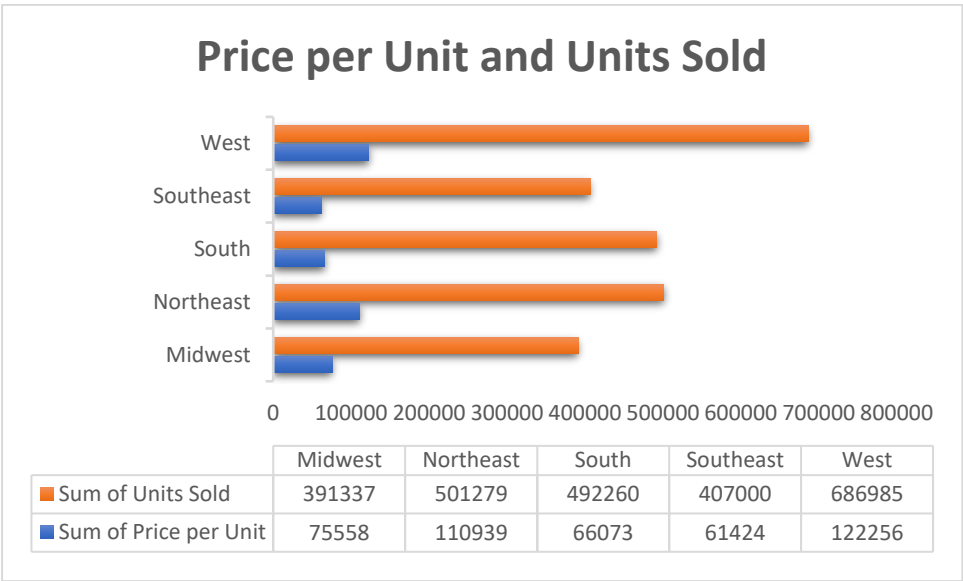
vi. Region Operating Profit



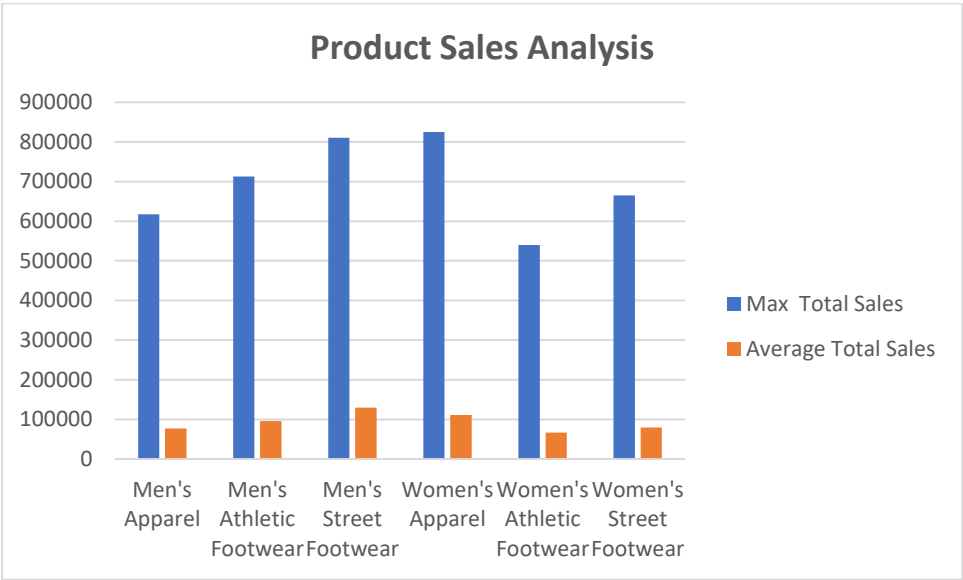
vii. Retail Operating Margine and Units Sold



viii. Price per Unit and Units Sold



ix. Products Total and Average Sales



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