

# Data Analysis of Amazon's Sales

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## Abstract -

*This paper discusses the sales made by the company Amazon all over the world and provides useful insights and potential decisions the company should make in order to maximise its profit. This paper also analyses the spending habits of customers and thereby providing the company with some useful information.*

## Keywords -

Data Analysis, Sales Analysis, Sales Report, Sales Review, Customer Analytics, Data Analysis of Amazon's Sales

## I. INTRODUCTION

Amazon is a multibillion-dollar technology company based in Seattle, Washington, that specialises in e-commerce, cloud computing, digital streaming, and artificial intelligence. It is one of the Big Five corporations in the United States' information technology business, including Google, Apple, Meta (Facebook), and Microsoft.

It started out as a book-selling website but has now expanded to include electronics, software, video games, fashion, furniture, food, toys, and jewellery. In 2015, Amazon surpassed Walmart as the most valuable retailer in the United States based on market capitalization.

Amazon paid \$13.4 billion purchase Whole Foods Market in August 2017, significantly

expanding its physical retail reach. In 2018, Amazon Prime, the company's two-day delivery service, surpassed 100 million global users.

It is the world's largest online marketplace, AI assistant provider, live-streaming platform, and cloud computing platform in terms of sales and market capitalization. Amazon is the world's most profitable Internet corporation. It is the country's second-largest private employer and one of the world's most valuable corporations.

Amazon's subsidiaries, including Amazon Prime Video, Amazon Music, Twitch, and Audible, offer a wide range of downloading and streaming content. Amazon has three divisions: Amazon Publishing, Amazon Studios, and Amazon Web Services, which is a cloud computing subsidiary.

Among other things, it produces Kindle e-readers, Fire tablets, Fire TV, and Echo devices. Among the firms it has bought over the years are Zoox, Ring, Twitch, Whole Foods Market, and IMDb. Amazon is currently purchasing Metro-Goldwyn-Mayer, a film and television company.

## II. LITERATURE REVIEW

The Amazon success story started in July 1994 by Jeff Bezos a Computer Science and Electrical Engineering graduate from Princeton University.

Amazon's Business Model includes six main

pillars - Product Quality, Marketing Strategy, Customer Satisfaction, Employee Satisfaction, Business Analytics and Corporate Relationships.

#### ***A. Product Quality***

Amazon buys products from reputed companies only. If the product is defective Amazon has a policy to return the product within 30 days of procurement. After Amazon buys the products a Quality Assurance Team checks all the products and then it is out for sale for the customers.

While delivering the product to the customer, it ensures that the product is packaged properly so that it isn't damaged while transportation. After doing this step even if the product is damaged, then Amazon has a 7 Day return policy with a full refund or a replacement of the same product.

#### ***B. Marketing Strategy***

Amazon advertises its products on YouTube, television, newspapers and through big banners on the streets. Sometimes it hires actors to promote its business. It provides discounts before festivals in the form of conducting a mega sale, for eg. Big Billion Days or Great Indian Festival Sale. It also ensures that the cultural sentiments are not hurt within a country.

Sometimes it provides a certain amount of discount if customers buy through a specific credit card. It also partners with some top companies and tells them to advertise their

product and urges customers to buy them from Amazon. For eg. Samsung had partnered with Amazon for the promotion of Samsung Galaxy S10 5G Mobile.

#### ***C. Customer Satisfaction***

Amazon generates high customer satisfaction by providing a constantly developing and vast product range as well as a personalised experience. They are said to cater to middle- and upper-class customers who are familiar with basic technology and want to save time by shopping online.

Customers can also make recommendations, downsides, and basic critiques of the product using a feedback / product review system. Customers can also rate products on a five-point scale, which the company has incorporated.

It also achieves consumer happiness with quick services such as Prime Delivery and low costs. Amazon also educates its personnel on how to understand customers and their needs.

#### ***D. Employee Satisfaction***

Rather than waiting for the results of an annual employee survey, Amazon managers have access to daily input from their teams, which they can utilise to continuously enhance the employee experience. This method enables managers to move fast and handle issues as they arise.

#### ***E. Business Analytics***

Amazon has a department known as Amazon Web Services (AWS), it hires Business Analysts to predict the demand of products in the near future. These engineers use Amazon Forecast, a fully managed service that uses statistical and machine learning algorithms to predict product demand and market trends.

#### ***F. Corporate Relationships.***

Amazon has good relations with its partners. Most of Amazon's business works on trust. Amazon has partnered with few of the top companies in the world which has enabled Amazon to provide attractive discounts to its customers.

### **III. OBJECTIVE**

The objective of this paper is to analyze the sales made by Amazon and present that analysis in the form of various Data Visualization techniques ie. Bar/ Line/ Pie/ Spider Chart, Histogram, Heat Maps and many more.

In this case, Amazon's Data can be analyzed and some insights can be acquired. The insights are - which item is sold the most, which country is the highest buyer of Amazon's goods, when do people generally buy i.e. before a festival or a national holiday, which category of items are sold the most i.e. furniture, electronics etc. It would help to analyze the spending habits of customers all over the world and would help the company to make the right decision in order to maximize the profit.

### **IV. METHODOLOGY**

#### ***A. Sample Dataset***

Search for a sample supermarket's dataset on the internet and save it in your project folder.

#### ***B. Observe the Data Items***

Observe all the data items and understand the data thoroughly. It is an important step in analyzing the data.

#### ***C. Filter and Transform Data***

Filter the data and remove any unnecessary data items or the data items which have null values. Also add any extra columns which you might think may be necessary for data analysis.

#### ***D. Data Visualization***

The most important step ie. Data Visualization. Visualize the given data in the form of Pie Chart, Donut Chart, TreeMap, Bar Chart, Column Chart, Line Graph, Area Chart and Heat Map.

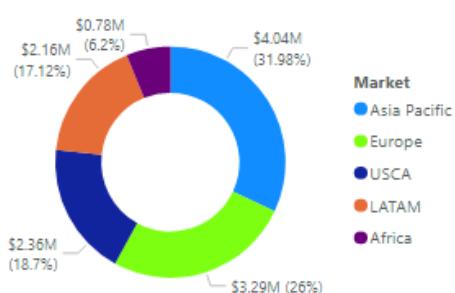
## V. BUSINESS INSIGHTS

### A. Sales by Region, Market and Country

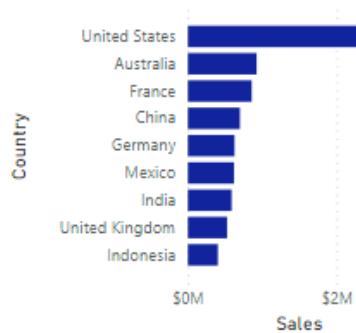


The insights acquired are: Asia-Pacific Region has the highest amount of sales (31.98%), followed by Europe (26%), North America (18.7%), LATAM (17.12%) and the least sales is in Africa (6.2%).

Sales by Market



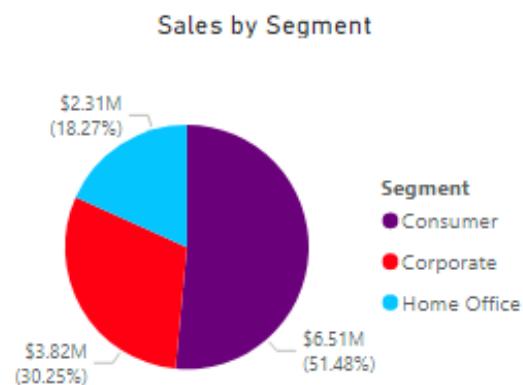
Sales by Country



The country leading in sales is the United States with over \$2 Million followed by Australia, France, China, Germany, Mexico, India with

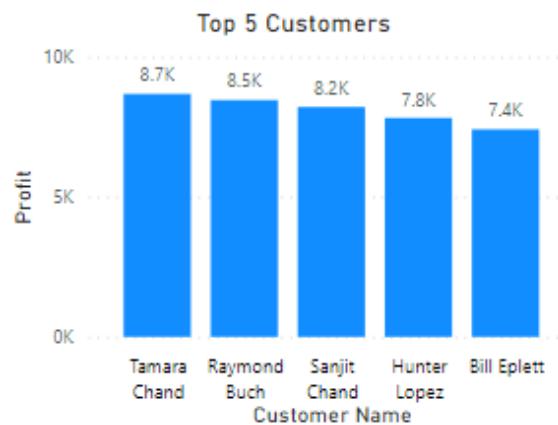
each country having around \$1 Million of sales.

### B. Sales by Segment



There are three categories in segment - Consumer, Corporate and Home Office. The Consumer segment has the most amount of sales around 51.48% followed by Corporate (30.25%) and Home Office (18.27%).

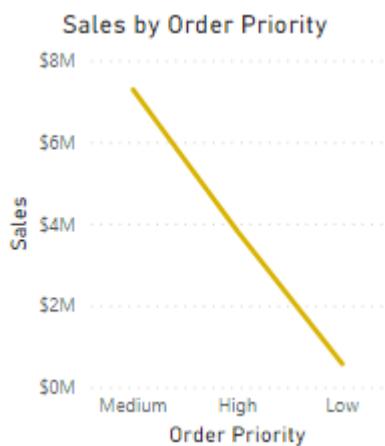
### C. Top 5 Customers



These are the top 5 profitable customers for the organization. The organization has gained around \$8700 by selling items to Tamara Chand, followed by Raymond Buch (\$8500), Sanjit Chand (\$8200),

Hunter Lopez (\$7800), and Bill Eplett (\$7400).

#### D. Sales by Order Priority / Ship Mode



After analyzing this graph following conclusion can be made. Most of the customers buy items of medium priority, some customers buy items of high priority and very less customers buy items of low priority.



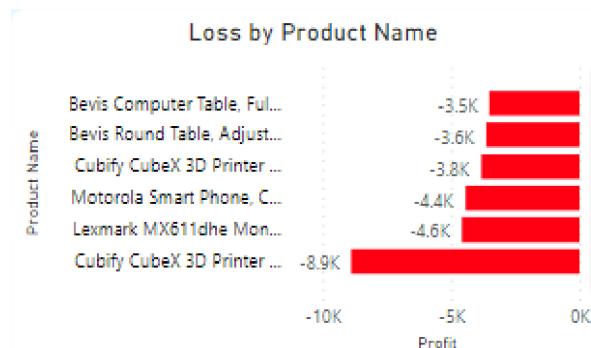
On analyzing this TreeMap following points can be noted down -

- 60% of customers choice Standard Delivery option while checkout.
- 25 % of customers chose Second

Class Delivery.

- 12% of customers chose First Class or Prime Delivery for High Priority items
- 3% of the items were delivered on the same day irrespective of the shipping mode.

#### E. Loss Incurred by Product Name



The following items were the most undesirable for the company - Cubify Printer with a loss incurred of -\$8900, followed by Lexmark Monitor (-\$4600), Motorola C Phone (-\$4400) and Bevis Computer Table (-\$3500).

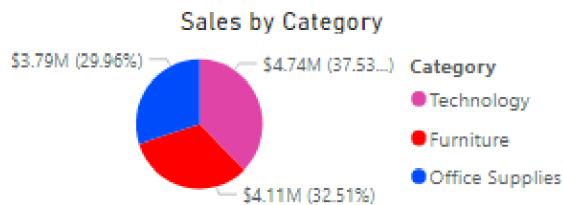
#### F. Profit Gained by Product Name



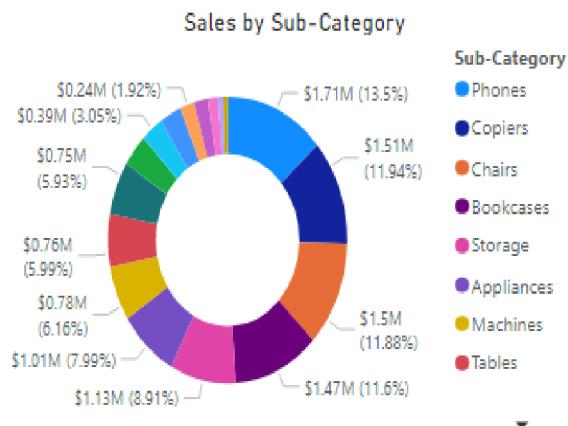
The following items were the most profitable for the organization - Canon ImageClass DSLR (+\$25000), followed by Cisco

Smartphone (+\$17000), Motorola F Smartphone (+\$17000), Hoover Stove (+\$12000) and Sauder Classic Bookcase (+\$11000).

#### G. Sales by Category & Sub - Category



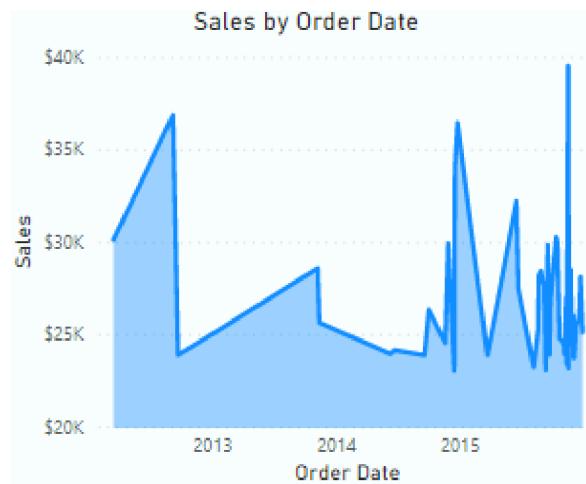
On analyzing this pie chart following conclusion can be made - Items from Technology category were sold the most. They have made a revenue of about \$4.74 Million, followed by Furniture category with a revenue of \$4.11 Million and the least is Office Supplies category with a revenue of about \$3.79 Million.



Mobile phones were the most profitable items for the company. They made a revenue of about \$1.71 Million which comprises of about 13.5% of all sales. Copiers were the second leading item in the list with a revenue of \$1.51 Million. Chairs, Bookcases, Storage items made a revenue of about \$1.5, \$1.47, \$1.13 Million each. The rest of the items

were below the \$1 Million mark.

#### H. Sales by Order Date



On 7<sup>th</sup> September 2012, the sales skyrocketed as India had Ganesh Festival and USA had Labor Day Sale. On 8<sup>th</sup> November 2013, sales were high because India had Diwali Festival and USA had Veterans Day Sale. On 26 December 2014 the sales were more as it was Christmas. On 25<sup>th</sup> November 2015 there was a boost in Sales due to Diwali.

## VI. CONCLUSION

This project will help companies analyse their organization's data and gain some valuable insights and thus take appropriate decisions from time to time. It would also help them organize their data in an efficient way.

## **VII. ACKNOWLEDGEMENT**

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