Analytics Tool For Ecommerce Businesses

INTRODUCTION:

1.1 Overview:

Our project is mainly on the analysis of E-Commerce Businesses. We have collected a dataset of E-Commerce products details and made a dashboard to show the various variations in the type of products sold most and least.

1.2 PURPOSE:

The main purpose of the dashboard created in our project is to show the clients the visual representations of products that have been ordered frequently, ordered least, the profit gained through those, the regions that account for most of the online orders from the shop. It will help to find a solution to increase the profit of favorable products and reduce the loss in the regions that buy fewer items, by marketing there.

LITERATURE SURVEY:

2.1 Existing Problems:

Attracting the perfect customers has always been a major focus for the E-Commerce business. The customer has many websites to choose for themselves to buy a product for themselves. Knowing the competition and analyzing their ways will help in being better than them. Price and shipping are important factors, as the huge cost of products and shipping charges can make the customer choose some other company or shopping website.

2.2 Proposed Solution:

High marketing strategies should be applied at regions and places that account for less profit or loss to the company. This can be done by advertising in the newspapers, billboards, and social media.

Knowing the strategies which the competitors have used, and how it has affected the sales will be useful, so that the same strategy should be executed or not.

Customers mostly purchase products that have very few shipping charges or no shipping cost at all. This can be done when the company makes deals with the shipments and pay them based on a weekly or monthly basis instead of signing deals instead of paying for each product.

3. THEORETICAL ANALYSIS:

HARDWARE SOFTWARE DESIGNING:

The software which we have used to create the dashboard is IBM Cognos Analytics. With e-commerce analytics, businesses can better manage all phases of inventory, from vendor management and manufacturing to pricing and delivery. It also makes it possible to detect fraud, enhance marketing, and deeply understand customer expectations. IBM Cognos Analytics is a set of business intelligence tools available on cloud or on premise. The primary focus is in the area of Descriptive Analytics, to help users see the information in your data through dashboards, professional reporting and self-service data exploration.

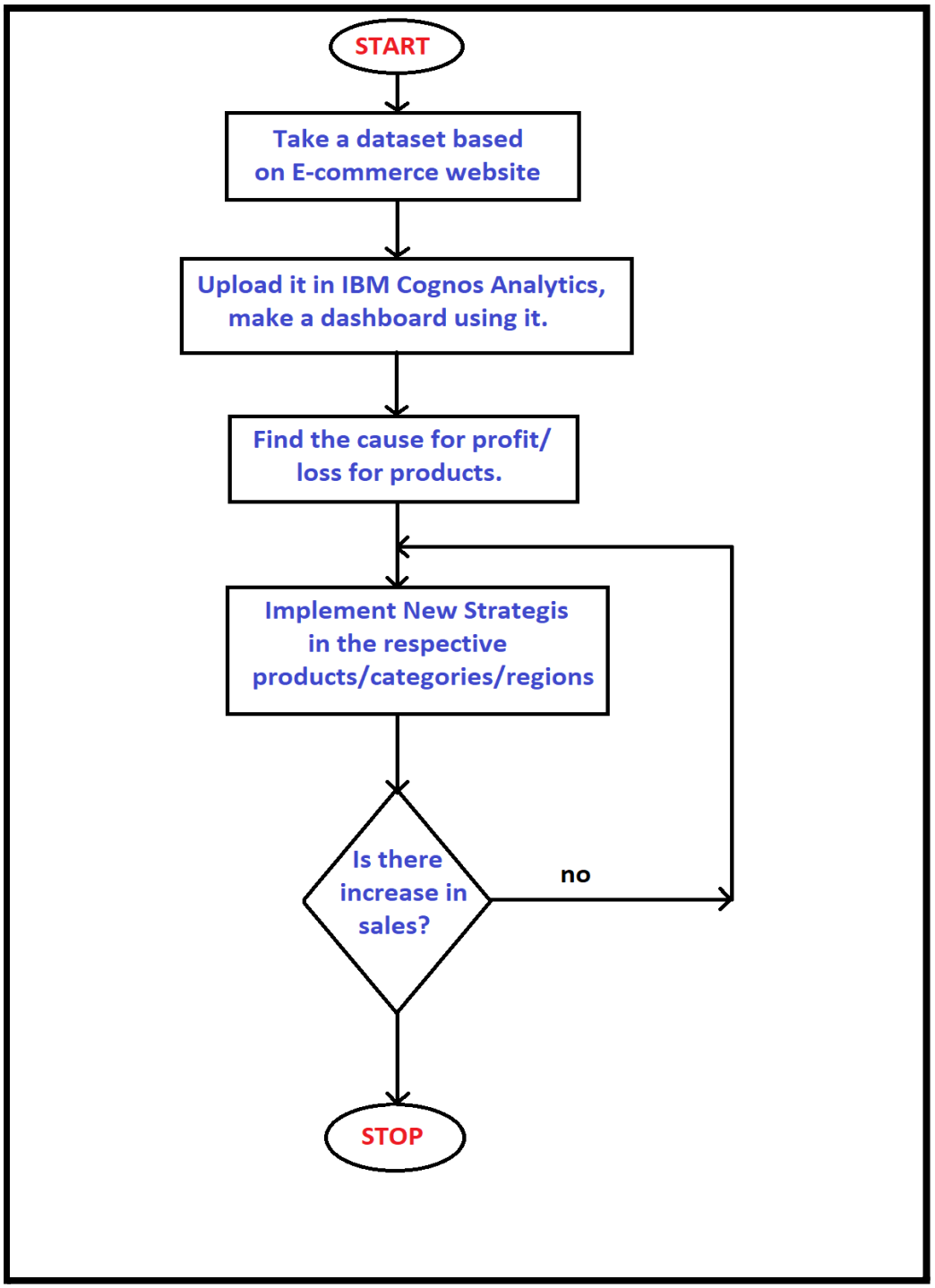
4. Experimental Investigations:

The dataset used in our project is about the customer, their details and their respective product details. "US Superstore data.xls" is the name our table data set. The various fields in our tables are : Row ID, OrderID, OrderDate, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country, City, State, Postal Code, Region, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount, Profit. After making the dashboard of various queries, the following are the conclusions that we have come up with:

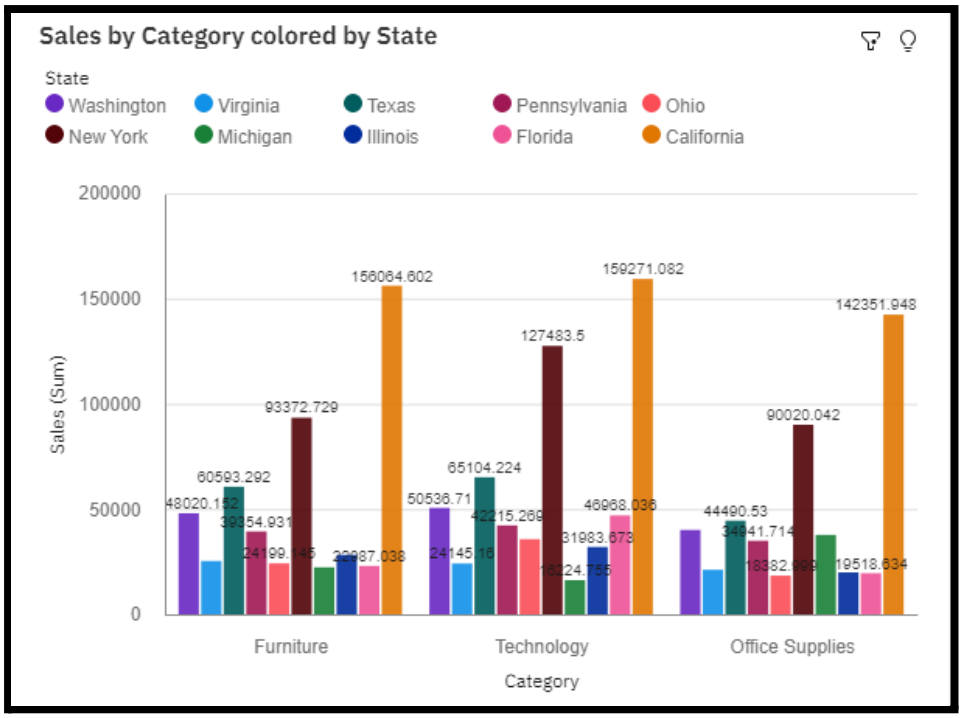
Profit by Category: The sum of Profit for all values of Category is 286,397. For Profit, Technology and Office Supplies are the most important categories of Category with a total value of 267,946 (93.6 % of the total). The summed values of Profit range from a minimum of 18,451 (when Category is Furniture) to a maximum of 145,455 (when Category is Technology). The value of Profit is unusually low when Category is Furniture.

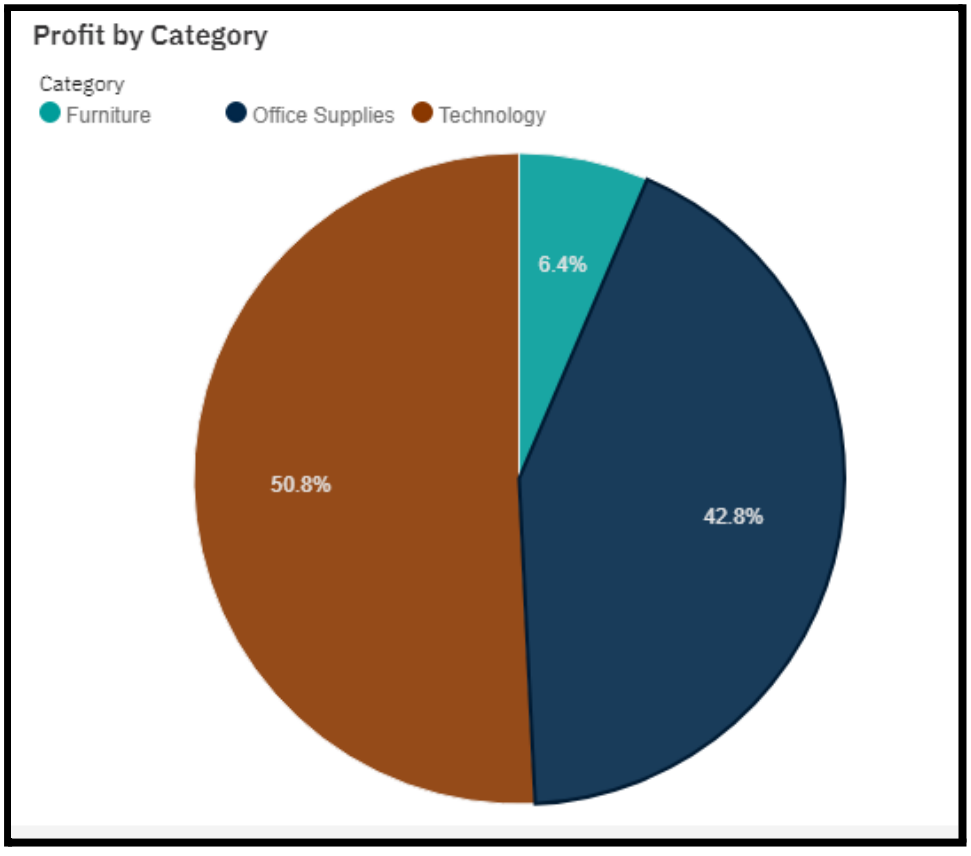
For Sales, California is the most important category of State with a total value of 457,688 (28.8 % of the total). The value of Sales is unusually high when State is California. For Sales, Technology is the most important category of Category with a total value of 599,608 (37.7 % of the total). The sum of Sales for all values of Category and State is 1,588,709. The summed values of Sales over all combinations of the inputs range from a minimum of 16,225 to a maximum of 159,271. The value of Sales is unusually high when the combinations of Category and State are Technology + California, Furniture + California, Office Supplies + California and Technology + New York

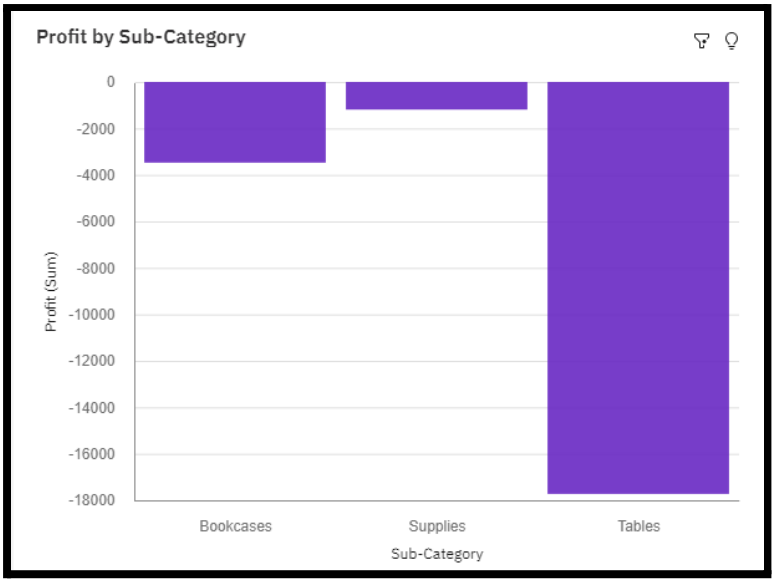
5. Flow Chart:

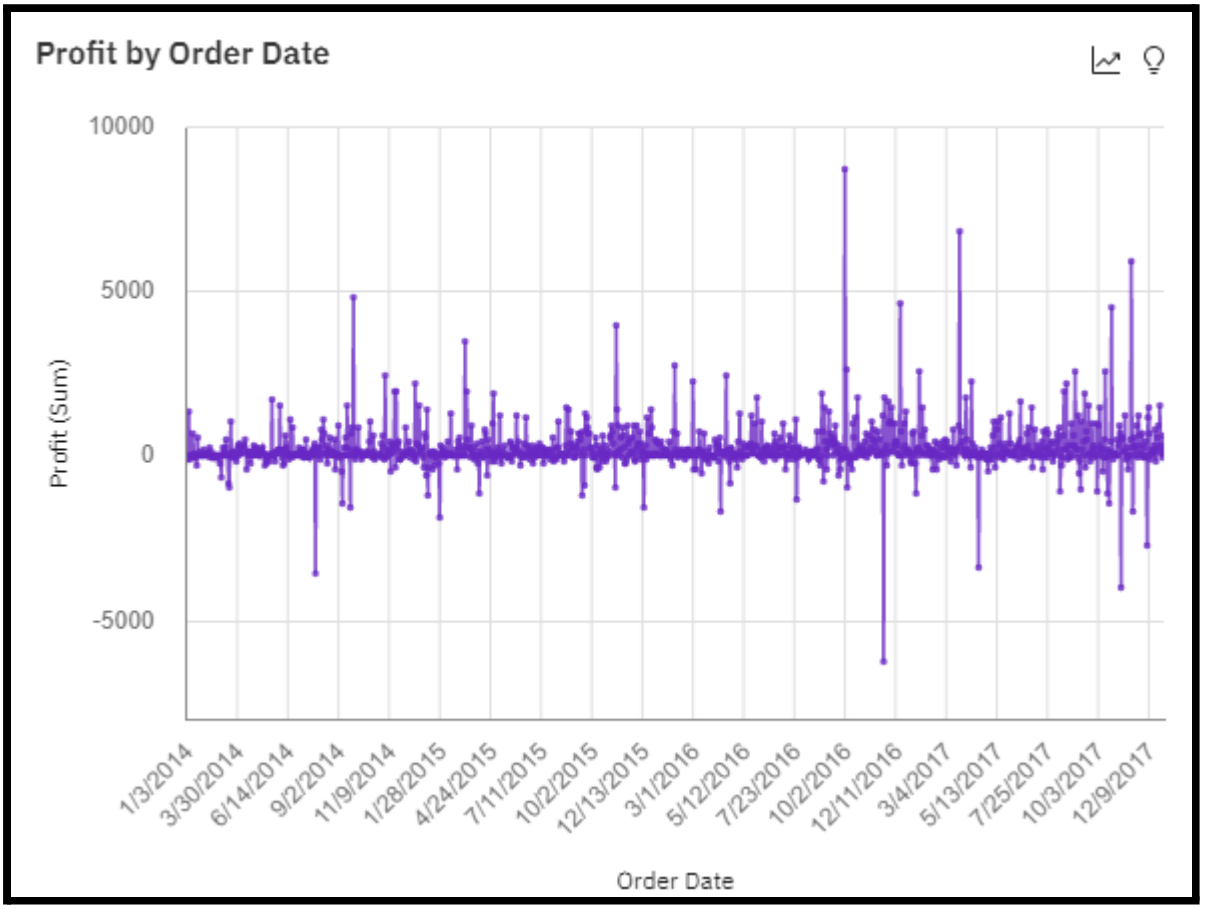

START
Take a dataset based on E-commerce website
Upload it in IBM Cognos Analytics, make a dashboard using it.
Find the cause for profit/ loss for products.
Implement New Strategis in the respective products/categories/regions
Is there increase in sales?
no
STOP

6. Result


Sales by Category colored by State
State
Washington
Virginia
Texas
Pennsylvania
Ohio
New York
Michigan
Illinois
Florida
California
200000
150000
100000
50000
0
Sales (Sum)
156064.602
159271.082
142351.948
127483.5
93372.729
90020.042
60593.292
65104.224
50536.71
48020.152
46968.036
44490.53
Furniture
Technology
Office Supplies
Category


Profit by Category
Category
Furniture
Office Supplies
Technology
6.4%
42.8%
50.8%


Profit by Sub-Category
0
-2000
-4000
-6000
-8000
-10000
-12000
-14000
-16000
-18000
Profit (Sum)
Bookcases
Supplies
Tables
Sub-Category


Profit by Order Date
10000
5000
0
-5000
Profit (Sum)
1/3/2014
3/30/2014
6/14/2014
9/2/2014
11/9/2014
1/28/2015
4/24/2015
7/11/2015
10/2/2015
12/13/2015
3/1/2016
5/12/2016
7/23/2016
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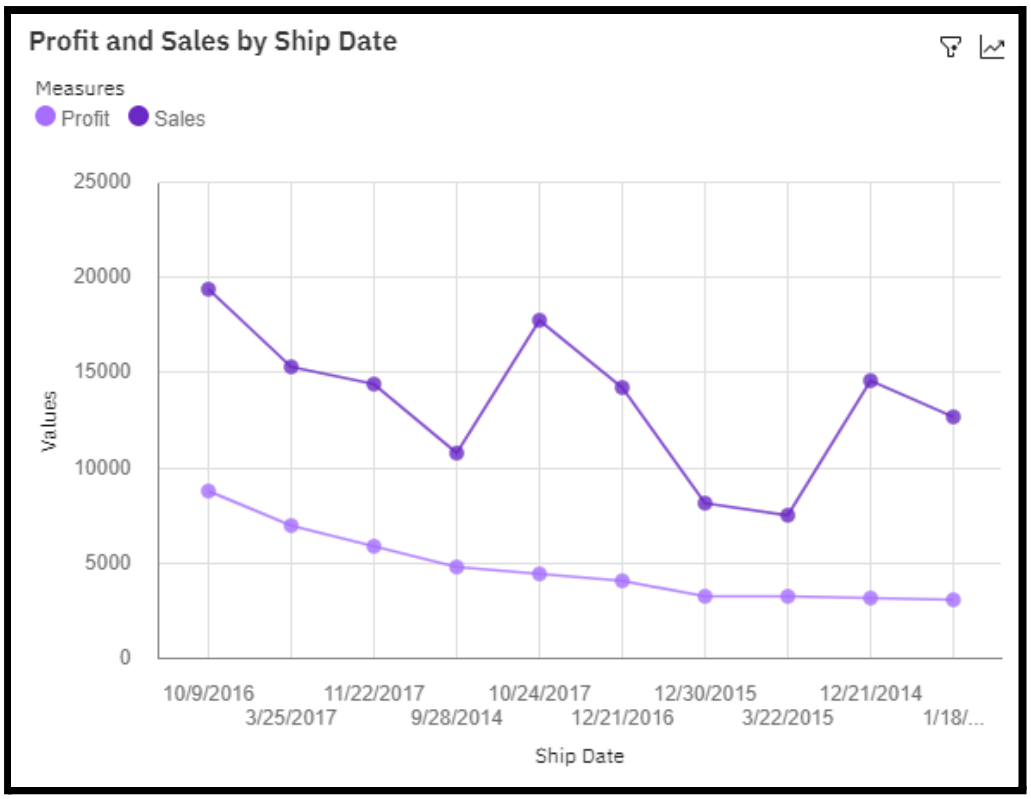
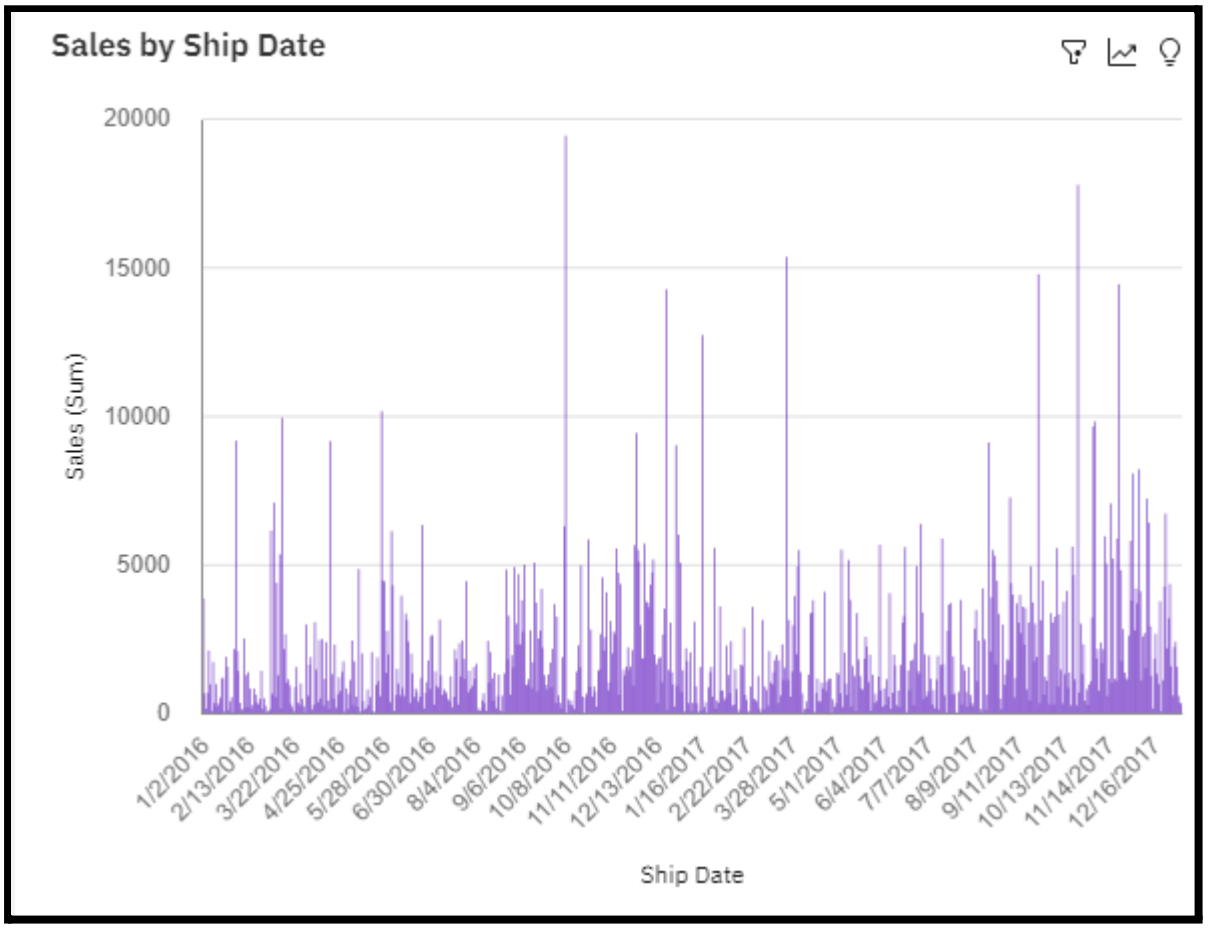
12/11/2016
3/4/2017
5/13/2017
7/25/2017
10/3/2017
12/9/2017
Order Date


Profit and Sales by Ship Date
Measures
Profit
Sales
25000
20000
15000
10000
5000
0
Values
10/9/2016
11/22/2017
10/24/2017
12/30/2015
12/21/2014
3/25/2017
9/28/2014
12/21/2016
3/22/2015
1/18/...
Ship Date


Sales by Ship Date
20000
15000
10000
5000
0
Sales (Sum)
1/2/2016
2/13/2016
3/22/2016
4/25/2016
5/28/2016
6/30/2016
8/4/2016
9/6/2016
10/8/2016
11/11/2016
12/13/2016
1/16/2017
2/22/2017
3/28/2017
5/1/2017
6/4/2017
7/7/2017
8/9/2017
9/11/2017
10/13/2017
11/14/2017
12/16/2017
Ship Date

The sum of Profit for all values of the Sub-Category is -22,387. The summed values of Profit range from a minimum of -17,725 (when Sub-Category is Tables) to a maximum of -1189 (when Sub-Category is Supplies). The value of Profit is unusually low when the Sub-Category is Tables.

Advantages:

Lower costs—reduces maintenance due to complete report coverage and a zero-footprint environment.
Faster results—shortens reporting time due to seamless integration and adaptive authoring.
Improved decision-making—reports and dashboards present data in easily understood formats.
The tool is very helpful in creating interactive dashboards and helps monitor data.

7. Disadvantages:

The users may take time to come up with a new solution to increase sales.
Total Cost of Ownership (TCO) is more significant than other tools.
Minimal forecast capabilities.
Investment in Cognos R&D by IBM is declining.
Won't work smoothly with large data sets having many parameters.
Cross-browser compatibility is often problematic.

8. Applications:

IBM Cognos Analytics is a set of business intelligence tools available on the cloud or on-premise.

The primary focus is in the area of Descriptive Analytics, to help users see the information in your data through dashboards, professional reporting, and self-service data exploration.

Other places where this can be used is:

- Banking & financial markets.
- Energy & utilities.
- Healthcare.
- Insurance.
- Manufacturing.
- Retail & consumer products.
- Telco, media & entertainment.
- Travel & transportation.

9. Conclusions:

The analysis will provide a multitude level of benefits to organizations categorically better strategic management. Regions that account for a greater number of orders, profit by category, years sales of different products, products lead to profit this kind of analysis will provide better visibility for decision making. The tool is very helpful in creating interactive dashboards and helps monitor data.

10. Bibliography:

- www.kaggle.com
- www.wikipedia.org