

ANALYTICS TOOL FOR ECOMMERCE BUSINESS

DONE BY,

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PROBLEM STATEMENT

With the increase in consumer demand , the E-commerce space has boomed.

This also lead to an increase in fierce competition in today's online marketplace.

The ecommerce industry sells a diverse product line of grocery items and merchandise products, such as food, pharmaceuticals, apparel, games and toys, hobby items, furniture and appliances.

The analysis of such industry is of great importance as it gives insights for the sales and profits of various products.

GENERAL DESCRIPTION/ PROPOSED SOLUTION

With the basic understanding of the problem statement, we propose the following solution:

A simple IBM Cognos analytics dashboard is built covering

- 1) Order level analysis,
- 2) Product level analysis
- 3) Sales level analysis &
- 4) Shopping patterns with suitable graphs & explanation.

GENERAL DESCRIPTION/ PROPOSED SOLUTION

I) Order level analysis includes analysis of

- i) Regions having more number of orders
- ii) Frequency distribution of quantity ordered.

II) Product level analysis includes analysis of

- iii) % sales by different product categories
- iv) Max profitable products
- v) Product incurring losses
- vi) Frequently brought products

GENERAL DESCRIPTION/ PROPOSED SOLUTION

III) Sales level analysis includes analysis of

- vii) Yearly sales over different states
- viii) Forecasting future sales based on shipping date
- ix) Profit/sales trend over time [Y, M, Q]

IV) Shopping pattern includes finding patterns such as

- x) Items that are bought together using algorithms such as Association Rule mining.

NOVELY/ UNIQUENESS

- I) As a novelty to the problem statement, we are also adding **customer level analysis** to it, since, analysis & segmentation of customers also found to be very valuable. It also will be helpful in the growth of ecommerce business.
 - Some of the customer segmentation strategies we have in mind are i) RFM analysis ii) Loyalty analysis
- II) We also planned to include analytics graphs alongside its **uses/ brief explanation** , rather than plain graphs. It will be very helpful for the business people to take decisions.
 - To make business managers more interactive , we thought of adding **IBM ASSISSTANTS** to help them in using our tool.
- III) We also planned to build a simple **front end e-commerce Website** linked to our main analytics dashboard page to show real value of how it works.

BUSINESS IMPACT

- With the help of our analytics dashboard (tool) , the business people can quickly take decisions based on data to improve the standard of business.
- Using the order level analysis , the company can what regions to concentrate and what is the peak time such that they hire more delivery persons to improve customer experience.
- Using the product level analysis, the company can find what are the top selling & profitable products and targeting mainly on them to increase profit as well as increasing number of customers.
- Using sales level analysis help the accounting/investing people to make better business strategies.
- With knowledge on shopping patterns, help in many aspects such as personalized recommendation to the individual customers.

BUSINESS IMPACT

- Using Customer level analysis, we can segment the customers into various groups such that it will be very useful to target each group differently & personally , which will increase the reputation of the company among customers.
- Apart from that our dashboard (tool) is simple to use, even person with basic qualification can use . Hence it reduce the dependency of manager on sales experts, so sometimes managers/owners can make their own decisions.

TECHNOLOGY STACK

Data-Visualization dashboard :

Charts & Cards : IBM Cognos analytics

Models building : IBM Watson studio platform

Chatbot : IBM Assisstant

Hosting : IBM Cloud / Heroku

Front end : HTML, CSS, javascript or(React)

Demo-E-Commerce Website (connected to dashboard):

Front-end used : HTML, CSS, javascript / React.

Backend used : Nodejs, Expressjs

DataBase : Firebase

SCOPE OF WORK

- Any data analytics/ data science application scope depends on the quality of data, here we planned to utilize the opensource datasets provided by Kaggle. So , the models or predictions made here are somewhat restricted with the trained data scope.
- Other than the tool built by us will be very helpful for business people in making their decisions.
- Especially our tool will be more suitable for **startup e-commerce companies** in making business decisions.
- As a future scope we planned moving to real time data , either by scrapping or with the help of any companies concern.
- Also in future we need to concentrate somewhat on data pipeline to make our system more robust.

REFERENCES

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