

Sales Prediction on Retail and Online Market

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1 Abstract

In 21st century, it is very conventional that data scientist have been called for the prediction of company sales expansion and it works with their expected plan. Data scientists use various machine learning algorithms for planning and the companies follow the strategic plan made by planners for the company growth and success. In this report, we will discuss on the different parameters(algorithms) used by data scientist for the prediction of sales on Retail and Online Markets. Moreover, to balance the risk on prediction, complying ethical and privacy aspects, summary and conclusion are presented in this report. We will also see some example of companies dealt with different algorithms for the prediction on Sales growth.

2 Introduction

Online Market has become most convenient and fast growing market in the present scenario, similarly Data scientist has become one of the favorable investment choices that has significantly contributed to the growth and success of the digital industries. Traditional methodology was totally different than the ongoing approach in business development . Data scientists are playing the key role in expanding the ventures and success stories for company. They do data analysis of company dataset, current market growth trend and implement different techniques (machine learning algorithm) for increasing the sales and revenue of the company. The study includes various algorithm

strategies to understand buyers attraction and analysis of surveys, promotions, customer analytic and predictive analytic and impact due to various factors which creates instability on market growth.

3 Related Work

There are several studies done for profit maximization, one of the most common and popular algorithm in the e-commerce marketplace is **Recommendation system** . It is the system which provides similar content based on Users choices and likings. The system collect the information from users, could be experiences of previous usage of the product or the ratings provided to the product as inputs and then use this information for prediction like how much percentage of Users are liked and rated as good product and search the similar products which are rated as good by users. Then recommend the similar matched products to other users. It also understands the users equality and their similar choices and based of that recommend. However, this is not the only thing which takes place in recommendation system, the quality of product, its prices and product feedback from the existing users also factors. After checking all these and ensuring the users trust about the product quality that they are not compromising with it and then suggest other users as recommendation along with users ratings and reviews. If they do not follow the checklist, then users trust could be dropped and they might stop doing shopping from them. Hence, there are many factors has to be focused in the recommendation system.

Smoke Stack tool : This technique was introduced to one of the retail companies for increasing the revenue of it, In this technique, tool checks the day to day data from different systems of that company dataset such as Inventory records, user feedback, promotion, survey results and provides real time day to day advice to the company to check the worst part of it and apply the corrective measurement for optimization of the processes and sales improvement. This technique helped a lot in strengthening the company growth and reputation in the market.

4 Methods

There are several methods which used to follow while making the predictions, some are listed below :

Customer Analytic: The goal of customer analytic is to efficiently understand company's customer information and customer behavior to identify, attract and hold customers and proactively interact with them, the better understanding of customer behavior and their preferences resulting accurate prediction value.

Predictive analytic: It is a collection of statistical techniques that deal with extracting information from dataset to examine current and historical behavior patterns to make forecast of future events.

Sales Records : The past records are crucial dataset for the prediction of sales and decision making. These records tell in which period the sales were high and low, based on that it get easier to narrow down the further analysis for taking decision on business growth.

Data Mining : It is the process to extract the patterns and knowledge from the large dataset, basically it is two types 1.**Predictive Models** which use past customer connections to predict future actions and 2.**Segmentation Techniques** used to place customer having similar behavior and characteristics into distinct groups. This group selection helps decision makers to optimize their objective and campaign management.

Rating and Review : Product rating and reviews are key information for predicting about the product sales. This information also encourages other users to buy the product and create demand in the sales market, hence it is crucial information for prediction.

Product Enquiry : It helps to understand the user needs and their choices which used to identify which products have high demand based on that planner predict for future orders and fulfill the users demands.

5 Risk Assessment:

Data scientist makes predictions with considering of various impact analyses while making predictions:

Market Stability: The current market trend and future possibilities are important factors while making predictions for the company. The study pre-

vent from enormous investment and save from huge losses.

Political Crises : If there are political crises between the two parties or nations, then planners avoids investing such areas because the growth rate will be low for that place, there will be less demand in the market.

Environmental Disturbance : The places where temporary disturbance such as flood, landslide, earthquake, etc happens frequently then the investor avoids to invest such places.

Competitors in the Market:Its good to check the competitors against you while making prediction and investment in the market, this helps prevent from high losses.

6 Ethics and Privacy Aspects :

Its very important to use of others personal and sensitive information with their knowledge and permission. It is vital to comply the GDPR law and defined regulation if the data is being used of European countries. Data should not be shared with other third party and deleted once it is used. Datasets are used which might have other personal information so its mandatory for the company to grant permission from users and after acceptance of concern, then only used while making predictions for company's profit maximization.

7 Summary and Conclusion:

In this report, we have studied about how the data science plays a key role in the prediction of sales margin for any company and with the help of various algorithms, data scientists make the decision for company growth, have also seen the various factors to be considered and follow the ethics and privacy regulations while making predictions. After all we can conclude that data science has lots of potential and various explored and unexplored algorithm which helps in making decisions in favor of growth and progress, and its become one of the critical investment for most growing companies for taking the company growth at the peak level along with customer's trust and fulfill their demands.

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