

# A SURVEY ON PROMOTING AND MARKETING BASED ON SALES DATA

A.Praveen Kumar , S.Saran Kumar , S.Snehal , G.S.Nandhakumar

**Abstract**—Online retailers like Amazon and Snap deal collect information from user history and manage them effectively. They know what products the customers browse and research, how much time they spend on a product webpage, etc. By that way of analysis they predict products that are always bought, seasonal products, products that would always yield them profit, products that should be held on stock etc., But in case of retailers everything are manual and complex. They have to store data in docs and no prediction is possible without analysis. So to provide analysis we go in for digital approach. In this way a mobile application can be created and installed in the retailer's mobile phone. Using that mobile application the owners can store the buying information like stock availability and invoice details, mobile phone models bought frequently, and frequent accessories that are bought together. Using Associative rule mining the owners may get insight on what are all the most needed products that are to be stocked in the inventory, what a privileged and a frequent buyer could buy next, what are the accessories to be stocked in order to satisfy a customer's need. Seasonal time are the most crucial time in the financial period. So the products in the stock must be more appropriate to notify the users to buy accessories for their products and this project uses the concept of data mining where we use the information obtained to arrive at the required conclusion

**Keywords** — Sales Analytics, Item Analytics, Stock list, Data mining.

## I. INTRODUCTION

Data mining is an upcoming domain where many research projects are going on. Trend analysis is gaining popularity by providing suggestions to the users based on certain rules. Association rule mining focuses on uncovering the relations between the unrelated data in a relation database. It is the process of finding frequent patterns, associations, correlations

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among different sets of items in transactional databases, relational databases, and other information repositories Retail industry provides a rich source for data mining. Retail data mining can help identify customer behavior, discover customer shopping patterns and trends, improve the quality of customer service, achieve better customer retention and satisfaction, enhance goods consumption ratios design more effective goods transportation and distribution policies and reduce the cost of business.

## II. RESEARCH BACKGROUND

Previous Literatures and research work done by accredited scholars in this domain are being reviewed. Challenges proposed in specific to context aware location based service are presented here.

Woan-Rou Tseng and Kuo-Wei Hsu[1] proposes that an immense amount of data is generated in daily transactions at retail stores.The system uses these large datasets for analysing and providing useful information that would benefit businesses and individuals by supporting decision making .The system does the market basket analysis that involves analysing the transactional data of a supermarket or retail store in order to determine which products are purchased together and also examine customer purchase preferences and apriori algorithm to determine the frequent items.

Mr. R. Agrawal, T. Imielinski and A. Swami [2] states that The system typically aims at discovering associations between attributes in the large databases and in order to decrease the multiple scanning of database, a new method of association rule mining using pattern generation is used.The data set for the application is taken from the transactional database that stores the day to day transaction details

Mr. Ana Azevedo and Manuel Filipe Santos[3] demonstrated the reduction in the number of times the transactional database is scanned, which leads to reduce the number of times the conditional pattern bases are generated and remove the generation of the conditional FP-trees. Using the D-tree and the support count as an input a new improved FP-tree and a node table is generated with which the frequency of each item is found

and this will help the retailers to increase the profit based on customer's frequent needs.

The listed literatures gives us the basic understanding of the concepts related to our system designing and enable us to develop the new idea of fetching the user's location to provide accurate nus location to other users.

### III. SYSTEM ANALYSIS

#### A. Existing System

The existing system has some of the proposed features. The existing system has the following drawbacks like

- i. The existing algorithm generates a large number of conditional FP-trees which needs a large amount of memory.
- ii. It takes a lot of time to generate the frequent item sets due to the generation of the complex computations
- iii. It sometimes leads to incorrect results due to the flaws in the algorithm.

#### B. Proposed System

The proposed system has the following benefits

- i. In large database Application of association rule mining in market basket analysis area.
- ii. To analyze the point of sales transaction
- iii. From users information on what customers buy to provide insights into who they are and why they make certain purchases
- iv. From which products are purchased together and which are most willing to support.

### IV. SYSTEM DESCRIPTION

The description of the proposed system is explained with architecture diagram and module explanation.

#### 1) Overview of the Project

In this paper, " Promoting and Marketing based on sales data" we are going to provide analysis on the recent trends in the purchase history of a particular user and providing offers for the product that the user may buy. Here we are doing it in the android platform for android mobiles because android mobiles are widely reached for all sorts of users. In the user interface when the user selects his particular brand of mobile.

The proposed system will also prompt for the feedback of what will be the user's next mobile opinion, which will be taken into account for further intimation.

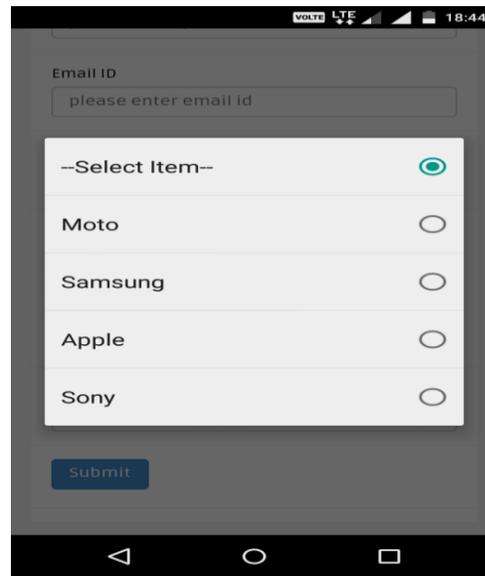


Fig. 1. Prompt for the item bought by the user.

#### 2) System architecture

The architecture diagram provides the clear view of the modules in the project. The user must sign up to use the android application and login module prevents the misuse of application. The modules in the project are

- Login
- Signup
- Updation
- Preprocessing and
- Graph generation

The way in the data collected is being analyzed is explained stepwise in the architecture diagram.

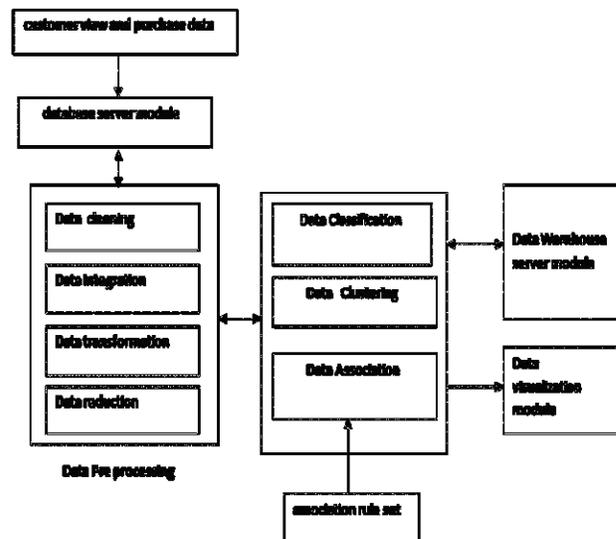


Fig 2. Architecture Diagram

## V. MODULE DESCRIPTION

### 1) Login Module

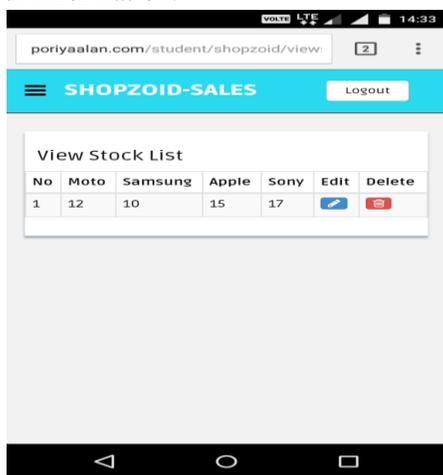
The users of the proposed application has to login with their username and password to get into the system to use the features of the app.

### 2) Signup Module

First every user has to register themselves with the application by registering their email id and other contact details, so that they can have a valid account with the app

### 3) Updation Module

The details of the customers are collected and stored in the database which is used for analyzing and obtaining useful information.

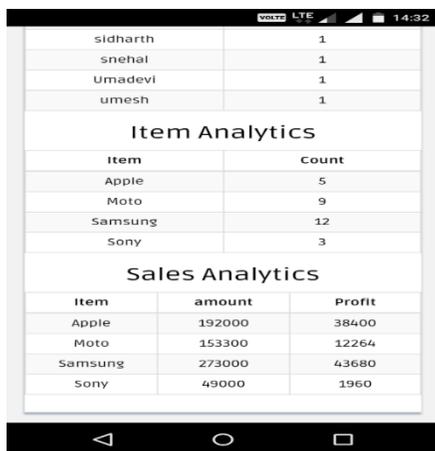


No	Moto	Samsung	Apple	Sony	Edit	Delete
1	12	10	15	17		

Fig 3.Screenshot showing the stock list

### 4) Preprocessing Module

The data set from the database is pre-processed with the help of the data mining tools and the result is given to the retail owner.



sidharth	1
snehal	1
umadevi	1
umesh	1

Item Analytics	
Item	Count
Apple	5
Moto	9
Samsung	12
Sony	3

Sales Analytics		
Item	amount	Profit
Apple	192000	38400
Moto	153300	12264
Samsung	273000	43680
Sony	49000	1960

Fig 4.Screenshot showing the data set for preprocessing.

### 5) Graph Generation Module

The output from the preprocessing step is given to the graph generating tool and the output is displayed in the form of graph.

## VI. CONCLUSION

Thus by using this system, it helps the customers to find their needs easily and also helps to decide whether to buy the product or not based on the customers financial situation. This system is not only helpful for the customers but also for the manufacturers to produce goods that seeks a high demand for the product. It also helps the retailers to gain a huge profit out of it and it is also very effective and improves productivity.

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## REFERENCES

- [1] Woan-Rou Tseng and Kuo-Wei Hsu, Smartphone App Usage Log Mining "International Journal of Computer and Electrical Engineering, Vol. 6, No. 2, April 2014.
- [2] R. Agrawal, T. Imielinski and A. Swami, "Mining Association Rules between Sets of Items in Large Databases", Proceedings of ACM SIGMOD Conference, Washington DC, USA, May 1993.
- [3] Ana Azevedo and Manuel Filipe Santos, "A Perspective on Data Mining Integration with Business Intelligence", Information Science Reference, IGI, 2011.
- [4] S.Moens, E.Akshirli, and B.Goethals, "Frequent itemset mining for big data" in SML: BigData 2013 Workshop on Scalable Machine Learning. IEEE, 2013.
- [5] Perreau, F. 2014. The Consumer Factor. The Consumer Buying Decision Process. <http://theconsumerfactor.com/en/5-stages-consumer-buying-decision-process/> Accessed on 29 December 2014.
- [6] Riley, J. 2012. Buyer behavior-The decision-making process. [http://tutor2u.net/business/marketing/buying\\_decision\\_process.asp](http://tutor2u.net/business/marketing/buying_decision_process.asp) Accessed on 7 January 2015.
- [7] Khairiowala Ziauddin & Siddiqui Saif (2001). Buying behaviour of rural consumer in haat markets – A case study of some selected villages of western Uttar Pradesh, Indian Journal of Marketing, 31(11-12), 14-24
- [8] "Extraction Of Interesting Association Rules Using Genetic Algorithms" Peter P. Wakabi-Waiswa\* Venansius Baryamureeba, International Journal of Computing and ICT Research, Vol. 2 No. 1, June 2008