

# Sales Trend Analysis of Products Using Customer Relationship Management Tool

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## ABSTRACT

CRM is a new technique in market where the dealer tries to develop long connection with their clients. CRM attempts to make their client climb up the stepladder of reliability. CRM purposes to make customer for life time. Company first tries to begin set-up with the publics who have a tough attention in the merchandise and ready to pay for it. Company try to change lookout of customer so that they can repeat their customers for life time.

**Keywords :** CRM, Data Mining, Risk Management, Quality Analysis, Salesperson Service

## I. INTRODUCTION

CRM is the board task for a corporate field that is to help and keep a good with their customer. It is the method of the exchanging commercial atmosphere. CRM changes have made today's creator move from outdate environment to new marketing. In New market trend we can improve goods for payment and the value of goods, support the product and make it easy for customer. The procedure of the developing a supportive and combined bond among the consumer and vendor is called customer relationship management shortly called CRM.

CRM goals to keep customer for life time. The corporation field tries to bind up people who show their strong importance in the product and always ready to pay for any product. The company continuously tries to change a lookout of their customer so that they adapt their first time customers into repeat customers. Then the company tries to adapt these customers into daily users. And then these customers buy only from the company in the appropriate product groups.

## II. METHODS AND MATERIAL

### Why CRM Required

We produce a universal state of affairs that communicates with their client in many ways. competitors are continually within the setting.

CRM is additionally a future read of recent developments in markets and events that may be leading indicators of your business. ceo of any company may forever explore for new changes to steer generation, chance creation, or pipeline worth to mark early indicators of future issues to the top-line. This may allow a positive approach to organization the business. everywhere market entry is low, growing viable power. Corporations and careers rise and fail twitter, yelp, and LinkedIn. (CRM) is that the technique of trailing and analysing all of the connections you have got together with your customers and forecast? CRM code could be a tool that centralizes, simplifies, secures, and scales our client meeting.

## Why your business needs a CRM

We need CRM as a result of it makes our business well-organized and develop our company profit. We want CRM to make eminent processes. We want a CRM as a result of we tend to square measure trying to find active advantage in an exceedingly multi-channel atmosphere. We want to understand the interest of consumers that square measure increasingly harder and square measure ignoring the previous ways we tend to accustomed market and sell to them. We want a CRM to appear into our close to future and be prognosticative of our profit. We want CRM to understand the danger and prices of turnover rate. We want CRM to attach in an exceedingly cycle of continuous development. We want CRM for your business to remain alive.

## Advantage and Disadvantage of CRM

There are several advantages of CRM and even disadvantages also.

1. It collects all data of client information in one place.
2. It permits being additional inventive and in a position by trailing customer's history, and adding reminders for the sales calls and conferences.
3. It helps to manage our increasing information and quickens the expansion method.
4. It helps concentrate information.
5. 5. It builds long relationships with customers, through little however necessary functions, like causing them birthday needs. Confirm however and wherever to form enhancements in your business.

## Disadvantage

1. The transition from manual to automatic processes is usually one in every of the most

important issues that you may face whereas implementing CRM.

2. The mind of being tracked; with the execution of CRM software system even the team can have issues regarding the likelihood of being hacked. However, with the correct coaching and steering, it will be corrected.

## Data Mining

Data mining is that the approach of sorting massive knowledge sets to determine patterns and solve issues through knowledge analysis. Data processing tools permit enterprises to estimate future trends.

## Data Mining Applications:-

Data mining is extraordinarily helpful within the following domains

1. Market research and Management:-
  - 1.1 client identification – data processing helps to ascertain what quite folks obtain what quite merchandise.
  - 1.2 distinctive client necessities – data processing helps in distinctive the simplest merchandise for various customers. It uses prediction to search out the factors which will attract new customers.
  - 1.3 Cross market research – data processing performs connection/correlations between product sales.
  - 1.4 Target selling – data processing helps to search out clusters of model customers World Health Organization share a similar individuality like interests, outlay habits, income, etc.
  - 1.5 determinant client getting pattern- data processing helps in determinant client getting example.
  - 1.6 Providing outline info – data processing provides America varied third-dimensional outline reports.
2. Company Analysis & Risk Management: - data processing is employed within the following fields of the business.

2.1 Finance coming up with and quality analysis – It involves money stream analysis and guess, dependent claim analysis to assess assets.

2.2 Resource coming up with – It involves summarizing and comparison the resources and prices.

2.3 Competition – It involves watching competitors and market directions.

3. Fraud Detection: - Data mining is also used in the fields of credit card services and telecommunication to detect frauds. In fraud telephone calls. It helps to find the target of the call, duration of the call, time of the day or week. It also analyses the patterns that deviate from expected norms.

#### Benefits of data mining

Data mining techniques that are used in many research areas, including mathematics, cybercrime, inheritance and marketing. While data mining techniques are a means to make efficiencies and predict customer behaviour, if used properly, a business can set itself apart from its opposition through the use of predictive analysis.

## 2. Review of Literature on CRM

Customer Relationship Management (CRM) has become one of the most dynamic technology topics of the millennium. according to Raj Agnihotria at all [2017] proposed “Despite the growing recognition of the critical role of post-sale service on the salesperson-customer relationship, few studies have explored how salesperson service behaviours (SSB) are enhanced through tools such as sales based customer relationship management (CRM) technology and social media. According to Aditya Vaish at all [2016] proposed “Customer relationship management (CRM) is significant for hospital services as it has been for any other businesses Bose (2002) noted that CRM was invented because the

customers differ in their preferences and purchasing habits. As a result, understanding customer drivers and customer profitability, firms can better tailor their offerings to maximize the overall value of their customer portfolio. Alok Mishra and Deepti Mishra [2009] proposed “Customer relationship management (CRM) can help organizations manage customer interactions more effectively Ruey-Sheng Horng, at all [2014] proposed the enterprise customer’s demands for telecom applications often vary from case to case and contain many customization needs.

## 3 Proposed Work

In this section we are going to create sales generation for some product, sales analysis for product, year performance for any product , product analysis for product and create excel sheet for sales generation, sales analysis, year performance, product analysis. Create graph for sales for products and also create some flow charts of Sales generation, sales analysis, product analysis, year performance according to work of CRM. After flow charts we create some data in tabular form and create some equation which is required for product and financial services.

### 3.1 Technique used

#### 3.1.1calculus based machine learning over dynamic data base:-

We need to understand some basic calculus so as to know however functions amendment over time derivatives), and to calculate the entire quantity of an amount that accumulates over a fundamental quantity (integrals). The language of calculus can permit you to talk exactly concerning the properties of functions and higher perceive their behaviour. Usually taking a calculus course involves doing countless tedious calculations by hand, however having the ability of computers on your aspect will create the method rather more fun. This section

describes the key ideas of calculus that you'll get to apprehend to know machine learning ideas. Understanding calculus is central to understanding machine learning we are able to consider calculus as merely a group of tools for analysing the link between functions and their inputs. Typically, in machine learning, we have a tendency to are attempting to seek out the inputs that modify a perform to best match the info.

Machine learning model management process:-

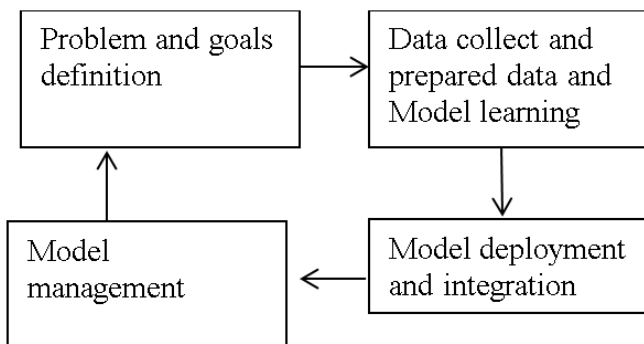


Figure 1. Machine Learning Model

**Methodology**

1. **Sales generation:** - create excel sheet for product and their categories.
2. **Sales analysis:** - analysis all sales of all product according to sales of month.
3. **Product analysis:** - In product analysis, analysis product sales and create a graph according to product sales.
4. **Year performance:** - In year performance we analysis in which year sales goes up and down.

**Block Diagram**

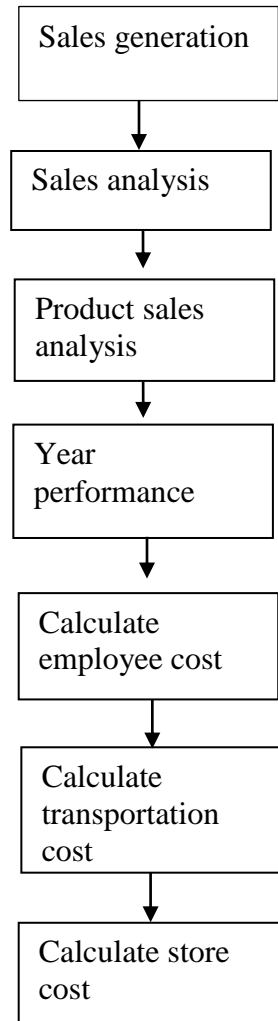


Figure 2. proposed work flow chart

Employee cost and transportation cost for product:-

Employee Cost:-

Input variable

- Daily paid(DP) = x
- Number of employee(NOE) = y
- Stock unit price(SUP) = z

Output variable = Q

- Total employee cost = NOE \* DP \* 365
  - (y\*x\*365)
- INCSP = SUP + total employee cost
  - (z+(y\*x\*365))
- INCRATIO = INCSU
- P/SUP

- $(z+(y*x*365))/z$
- INCPER = INCRATIO \* 100
- $(z+(y*x*365/z))*100$

Transportation Cost:-

Input variable

- Product price = x
- Fuel price = y
- Distance = z
- Average = a
- NOT = b
- Lab cost = c

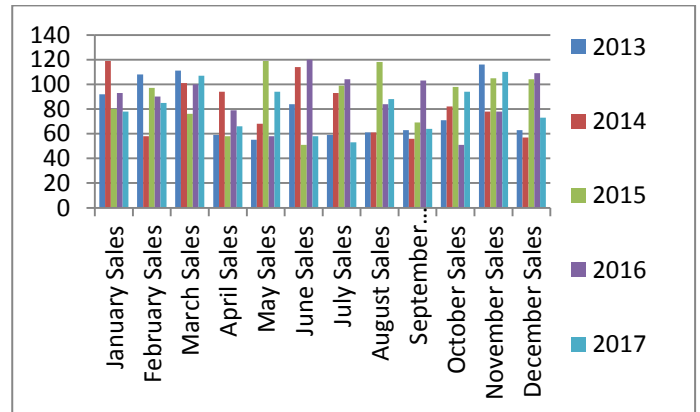
Output variable

- DR = distance/average
  - $z/a$
- cost of fuel = DR \* fuel price \* 2
  - $DR * y * 2$
- Total cost = lab cost + cost of fuel
  - $C + COF$
- Total fuel cost = total cost \*NOT
  - $TC * NOT$
- $Q = (TFC/PP) * 100$
- $Q = (TFC/x)*100$
- $Q = (TC*b/x) * 100$
- $Q = ((C+COF)*b/x)*100$
- $Q = (C+(DR*y+2)*b/x)*100$
- $Q = ((C + z/a*y+2)*b/x)*100$

#### 4. Result and experimental analysis

The graphical illustration of the sales of various product in every month for individual year ranging from 2013 to 2017. It shows comparison of sales of product in every month for 5 years which can facilitate to analyse the most sale and minimum sale to require more action. Here x axis represents every month and y axis represents the sales in individual year comparable to every month. of these graphs show however a product's sale increase and reduce within the respect of month's sale of product.

year\month	January Sales	march Sales	May Sales
2013	60	108	60
2014	65	115	84
2015	99	63	84
2016	56	64	97
2017	98	91	106



### III. CONCLUSIONS

CRM is tested to be of nice use if used properly and with precise previous information, tho' if the previous information isn't offered a brand new one is created and may use for future coming up with. CRM is terribly helpful for coming up with sale and stock keeping as per the market trends and analysis.

### IV. FUTURES SCOPE

CRM is as used as a close monetary coming up with code, will| which may| which might} facilitate business teams minimizing the loss risk and for the little enterprises it can cut back the value by an enormous margin, conjointly by statement the sale in terms of units and in terms of quantity it will deduce the worker price over the product and may conjointly diminish the dead inventory stock problems.

CRM has to be additional intelligent and analytical thus on draw additional comparisons between the

sales and also the promoting efforts for explicit areas and teams.

### V. Acknowledgment

We have provided a brief introduction in each page on the products and services. The reference articles and links are not exhaustive by any means, but may help. We list reference articles from several of these that we find helpful to educate ourselves and keep our understanding as current as possible. Grateful to open source knowledge sites such as Wikipedia.com, Khanacademy.org and public sites such as the Facebook.com, Twitter.com, Linkedin.com, Google.com, and a host of others that provide valuable information, social interaction and helpful knowledge on a lot of topics and subjects.

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