

# Predictive Analysis as a Tool in Marketing and Sale with Special Reference to Case Study of Supply Chain Co.

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## **Abstract**

*The predictive analysis deals with creation of models and equations which help the company to predict the future. This output is based on raw data of the past. It is very efficient tool which many companies are employing to get the best out of their production. Its specific use in marketing has become a great are of companies to get into as it helps the company to predict their customers future behavior and thus help them to satisfy their needs effectively. With this research paper, we intend to discover the various ways in which predictive analysis could be used by a company for marketing and sale and we have given a special reference of a case study which will help us to understand this tool in a better way.*

**Keywords:** *Predictive analysis, technique, Predictive analysis in marketing and sales.*

## **Introduction**

Predictive analysis is not a new concept and has been used for a long time. But the excitement on discovering and using predictive analysis and in particular with marketing is new because of the fact that never before has been time when the source of data has been this huge. There are lots of signals to play with and the processing power of company is increasing day by day.

In predictive analysis we analyze the data first and then predict the trends in future. Combining this with marketing, the future becomes a huge possibility where anything can happen. In general, predictive analysis deals with identifying what the future holds by analyzing the historical data. It is in human nature to want to know and predict about what future holds. Predictive analytics includes the prediction of future events based on past observed data by applying different techniques/ methods like machine learning. The process of prediction can be divided into four easy steps [1]:

- a) Collect the raw data
- b) Convert the raw data into a form which can be easily understandable and handle by machine learning method
- c) Create the training model using converted data

d) Analyze and report about the prediction to the user who is using the previous created model

When combined with marketing, it deals with what the marketing trends in future can be based on the past trends of customers preferences. Predictive marketing process of data driven that helps the marketers to identify market buyers earlier in buying cycle and it also helps in coordination throughout the entire life cycle of customer and increase conversion rates and generates revenue. Predictive marketing process also involves the customer data collected automatically by using data to build and modify the models and for each individual prospect responding with personal messages. So it is the vast amount of data and science to predict which marketing actions have high probability and which have low probability to succeed.

### **Objective of research paper**

- i. To understand about predictive analysis, process of conducting predictive analysis and building a predictive analytical model
- ii. To discover predictive analysis as a tool for marketing and sales
- iii. To better understand the industry trends and how they are using predictive analysis as a tool to develop their business by taking two case studies from the market

### **Research methodology**

This research is based on secondary data collection. The sources of data is from previous published research papers, articles, and news.

### **Introduction to predictive analysis**

Predictive analysis involves use of cutting edge technologies present today and applying concept of organizational learning to predict the future with use of past trends and data. The availability of the data has always been there but it was not possible earlier for humans to manually compare those data, build models on them and learn from each change. With the help of growing technology this has become an easy task where the result is present within minutes.

The data available is huge but it's not always that all the data present is useful for an organization. The key is to pick useful data combine them together and make sense out of it. This is where predictive analysis comes to play. The predictive analysis in layman term pick the huge chunk of data present, eliminate the wasteful data which is of no use, and combine the remaining useful data together to make sense. This helps any organization to predict what the customer's next move will be. In fact predictive analysis so deeply rooted in the industry that many organization practice it on daily basis to keep themselves up-to-date and to have an edge over their competitors.

This all is done by the help of data model which is solely based on data mining. Data mining is based on data base management, pattern recognition and artificial intelligence. This mining uses techniques such as algorithms, decision tree and network of data.

With the help of predictive analysis, we try to predict future probabilities and trends. It tries to automatically analyze the data fed into it with various techniques such as regression, decision trees, algorithmic, hypothesis formation and testing etc. the tool regression which is widely used for predictive marketing was developed by Sir Frances Galton which tends to develop relationship between one or more independent variable with dependent variable.

All of these techniques only provides us with inputs for decision. This input has to be combined with strategic and business knowledge to provide an insight to decision maker. This insight is crucial for decision maker to understand how people behave, act and react.

*Alison Murdock VP Marketing of 66 Sense* once said in an interview that with the help of predictive analysis it is possible to track and predict with 85% accuracy who are the customers, what will they buy and when will they buy the product.

It is essential for predictive analysis to function well, it is essential that data provided to the tool is correct. The source of data should be of quality in order to build a model which stands trustworthy with time. The source of data can be either directly from the company data or marketing platforms or it can be indirect from across the world with the help of web.

In order to develop predictive model one requires special skills and eye for detail. The common step involved in developing model is:

*Defining the project:* the first step is to define the objectives of the project and what one is likely to achieve out of it. It also defines what one has to do to achieve those objectives in terms of tasks

*Exploring:* to analyze the data, one requires correct model. This step is related to exploring the options to select most appropriate approach to develop model

*Preparing data:* this step requires extracting raw data and transforming it into something which then becomes valuable to the organization

*Building model:* after creating data, we analyze options where we create and validate various models to test the best fitted model for the data which we have created

*Deployment of model:* after building successful model, we start using it for business perspective and then use the information to take decisions

A detailed modeling process requires following steps:

Step 1: Define purpose and objective of using the model

Step 2: Obtain the data from various sources depending on the costing and usability in future

Step 3: Classify the data in terms which is easily understandable. These terms can be in short form which can later be fully explained. This helps us to easily manage the data.

Step 4: in this step, we simplify the data by clubbing them together into groups with each group containing similar data

Step 5: we divide the data for training purposes and to check how well the previous designed model works on the data. This step is essential as it tells us if any modification is required on the model so that we can get best out of the data.

Step 6: use the algorithm to perform the task of analysis. This algorithm uses the existing data to predict the future data and trends.

Step 6: the final step is to interpret the result in the way which makes proper sense and it also helps the business to grow.

With the help of predictive analytic company in actual learn from their mistakes and thus grow. This happens because the artificial intelligence involved takes in account both good and bad examples and situations so that the next decision they make is best situation possible.

The need for predictive analysis is felt because of the fact that it helps us to achieve strategic objective of an organization which can either be to sustain, to grow, to compete or to improve.

### **Use of Predictive analysis in marketing and sales**

The sale and marketing force currently face the challenge of attaining new customer and keeping the old one. Apart from this, they are also forced to keep their customer loyal and save them from competitions. For this, many companies are now turning towards predictive analysis. This tool is now providing the companies with winning edge where they know in advance what the customers desire and fulfil their demand on time.

Predictive analysis is best way for the companies to make sense of the huge chunk of data which keeps on coming their way. This data is available because of the multichannel marketing where they come in touch with customer at various points and at each point they get some information about the customer. This huge information does not make sense and are often ignored if it is not processed by a tool.

Social media has created a huge option for companies to get in touch with customer as it is a big platform for wither interacting with vendor or with clients. The clients and vendors express their ideas, suggestions and problems without any filter all the time on the social platforms. Apart from social media, mobile marketing has also become a big touch point for companies in order to connect with customer and collect data related to them. With the help of mobile marketing the company is now able to deliver personalized messages to the clients instantly.

As more and more mediums are emerging, the sources of collecting information from customer is also increasing. This is good for the organization if we ignore one basic issue of unstructured data. Unstructured data are those data which does not make sense if not analyzed properly.

This is where predictive analysis comes in place. With employing right tool at right time, the company will be able to collect all the data from all multichannel sources irrespective of its structure and get to information which is required i.e. who the customers are, what they desire, when they desire and what is that one factor which will make them buy your product. With the help of predictive analysis, the company will be able to segment their customers into predictable group and target them in personalized way which has never been done

before. This will help the company to make correct choices about medium of communication and promotion to attract and retain the customers.

The areas where predictive marketing is turning out to be of great help in marketing are:

1. Acquiring the customers:

Obtaining the customer has always been a costlier affair than retaining the customers. But it is essential process in order to expand their customer base with time. With the help of predictive analysis the organization gets two fold benefit- one is increase in the number of customer obtained and second is reduction in the cost associated as it reduces the number of wasteful attempts which one makes to increase their customer base.

2. Customer retention:

Customer attrition is one of the biggest problem of the organization. This leaves company helpless and in loss of billions of the dollars. Yet the company fails to understand the importance of retaining the customers. With the help of predictive analysis company can employ those selective tools which will help to increase and retain the customers which would have otherwise left the company in times of recession.

3. Up-selling:

Up selling is a tool which helps the customer to increase their profit by selling high end product to the customer who would have otherwise not brought it or to sell more products to the customer. By this way the company can increase their customer base and also their profit. Effective upselling requires a deep insight into customer and creating a combination of good which is based on need and wants of the customer. This is possible by long and deep study of the customer buying habit and then predicting their future need by predictive analysis.

4. Price optimization:

With the help predictive analysis, sales and marketing team tend to take proactive approach, to maximize price where they tend to reduce the cost in order to increase the volume of sales. They also become more enable to respond to market changes by adapting quickly and knowing what future holds.

Predictive analysis is still in early cycle with many of the marketers entering into it and experimenting to get the results. But with ease of use, and delivering the result at faster rate the company is able to capture the needs and hence understanding the importance of this tool in marketing.

### **Case study: Predictive analysis as a tool in *SupplychainCo***

SupplychainCO was a middle company which used to buy inventory at a price and added their markup cost and sold to retailer and sold to retailer at price B. A special operation department in SupplychainCo was responsible for finding out new innovative methods to solve the problem which other team were facing in the company and how to help company to generate more revenue. One of the goal of this department was to predict price changes. If the company could in advance predict future price changes then they can buy inventory in advance at old cost and sell them later to retailer at new price thus making more profit. This method was called “Inventory hold gain”.

For this the company decided to involve predictive analysis where they used both internal and external data. Internal data consisted of the quantity of the product, the price at which it was sold and the external data

consisted of the weather changes, regulatory changes, problem faced in agriculture and so on. The decision to involve full-fledged predictive was based on the fact that for some products company had been using predictive analysis techniques manually and had good result which gave them confidence.

For this the department hired two IS (Information software) analyst and first task assigned to them was to consider how much the company could make if they used predictive analysis technique. The analyst worked with the merchandising managers to build upper and lower limit of profitability. The data built was too much for excel and existing software making the data usability limited. This was solved when the analyst came up with *Perfect Knowledge Model* which helped them to identify maximum limit of the inventory to be held before price change and maximum profit they could derive from this and kept in consideration the holding cost, perishability of material etc.

After this the analyst worked to discover the vendor which was best suited for their company and could help them to build this tool and with the help of predictive analysis they found such seven vendors who could help them to achieve their goals. Out of these seven companies, five were interested to work with the SupplychainCo and they were then interviewed. The problem they faced here was that most of the vendors wanted the company to work on predesigned tool and were not keen to develop specific tool for them. They then shortened the list to three vendors based on their experience, geographical closeness to the company and a vendor which even though was small fish, was enthusiastic to work with the company, and asked them to provide proof of concept. The goal was to test them and see if they can predict the increase in price. The vendors were provided with past five year data and were asked to predict the change based on the external data. The company already knew the answer but the goal was to check the working of the model designed by vendors.

The results were not up to the expectation of the company as out of three vendors not one was able to deliver up to the expectation of the company. One of the vendor told the management that they had clash with the NDA of different model which they were expecting to use, the other vendor told the management that the data was too big for them to work on and suggested to focus on KSU. One of the vendor was able to find little relation with the commodities and price change but their work was of little to no value to the company.

The company decided to create a table to see the problem from external point of view as seen in the table

	Vendor A	Vendor B	Vendor C
Local Office	No	Yes	Yes
Access to external data needed	Yes	Yes	Yes
Supply Chain experience	No	Yes	No
Ability to analyze qualitative and unstructured data	Yes	Yes but with additional cost	Yes
Vendor analytics available	Yes	Yes	Yes
Working with existing	Yes	Yes	Yes

architecture			
Ability to create custom solution	Had the required ability	Had the ability but preference was to use out of the box solution	Did not had the required ability, performed from out of the box solution and did not deliver

TABLE 1: Pros and cons of Vendors

From this the company could decide that vendor B and C were out of the race and since vendor A was well suited, it could help the company to make a better model.

### Conclusion

Predictive analysis is a tool which has helped a lot of companies to gain benefit either by reducing cost or increasing customer base or by simply making more profit. It is yet in developing phase because earlier the companies were skeptical about getting into it because of the cost involved. But lately more and more companies have realized that return on investment is more than the cost involved which has prompted many companies to try this analysis and incorporate the tool into their working.

Predictive analysis has helped many companies to achieve marketing goals and has helped them to understand who their customers are, what they want and when do they want it. This has helped the company to capture the market, increase their customer base and do u selling. The predictive analysis has become special tool for companies to deal with their vendors and have more profit in return.

The scope of this form of analysis is unlimited and companies have just started to discover the use of various methods. It will be interesting to see what all the companies can achieve by employing artificial intelligence and data gathering into the system and developing more and more advanced tools to achieve their goals.

### References

- [1] D. S. S. Nishchol Mishra, "Predictive analysis: A survey, trend, Application, Opportunities and challenges," (*IJCSIT*) *International Journal of Computer Science and Information Technologies*, Vol. 3 (3), pp. 4434- 4438, 2012.