

Predictive Analytics in **Manufacturing Industry**



Nowadays, many manufactures are facing problems like Quality of products, Demand of products, Equipment failures and Machine utilization etc. Predictive analytics can be very helpful in these areas. Predictive analytics is an area of data mining which uses Data, Statistical algorithms and Machine learning methods to identify the unknown future events. In the world of manufacturing, predictive analytics plays a major role.



Quality Improvement

Quality improvement is a very big challenge for any manufacturing industry. For a manufacturing industry, it is important to focus in determining the final product quality. Inspecting for quality at the end of the process is costly to the industry. Statistical Process Control (SPC) is a way of using statistical methods which helps in understanding the variations in a process. By understanding the types of variations in the process, we can make improvements to the process to predict better outcomes. SPC can also then be used to see whether our predictions were correct.





Every manufacturer wants to sell their products more and more. But, they don't know the demand of many products. Sometimes the demand is high, sometimes the demand is low. When the demand is high for particular product and there is no stock available, at that time the manufacture faces loss. Also, at times when the Demand of a product is less but the stock quantity is high it causes financial loss to the manufacturer. If the manufacturer knows the demand of the product, he can produce the product according to the demand. Predictive analytics can find the future demand of a product using the past and current pattern of the sales.



Preventive Maintenance

In any manufacturing company, when a machine fails unexpectedly the productivity is lost. So, the business needs a better way to predict the downtime of the machine so that the impact can be minimized. Predictive analytics can also help the manufacturing companies to identify the future failures by comparing the sensor data from the machines so as to identify the patterns before any breakdowns occurs. When the manufacturer knows that a machine is likely to break down in the near future then the manufacturer can perform the needed maintenance of the particular machine without shutting down the production.

CONCLUSION

These are the few areas where predictive analytics can be used in the manufacturing companies. Any manufacturing industry can use predictive analytics to optimize their operations and to increase the revenue. There is a lot of scope of Predictive Analytics in the manufacturing industry as there are different techniques which vary from company to company.



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