Demand Forecasting and Price optimization using ARIMA

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**Abstract:**

A time series is a set of observations on the values that a variable takes at different times.Such data may be collected at regular time intervals, such as, monthly (eg. CPI),weekly (eg. Money supply), quarterly (eg. GDP) or annually (eg. Government Budget).This type of data is primarily used in statistics, econometrics, mathematical finance, weather forecasting, earthquake prediction. This data is used to forecast the future values this series is going to take. Forecasting demand and sales is often of tremendous commercial value. This analysis drives the fundamental business planning , procurement and productional activities. It is called **Univariate time series forecasting**, if we use only the previous values of time series to predict it's future values. Most demand and sales forecasting in small scale business organisations are considered univariate. We use ARIMA ,short for ‘ AutoRegressive Integrated Moving Average’ ,a forecasting algorithm based on the idea that the information in the past values of the time series can alone be used to predict the future values. Using the insights gained from the analysis,we try to develop pricing and promotion strategies.