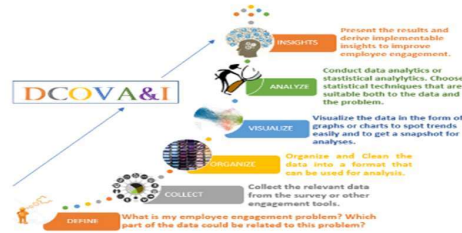




**Case Study 10** – How a manager used Analytics to forecast actuarial reserve.

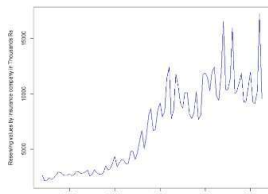
**Industry** – Banking and Financial Services

We follow DCOVA and I methodology to solve the problem. To Understand this methodology, check this whitepaper - <https://pexitics.com/download/dcova-i-whitepaper/?wpdmdl=2970>



**Business Problem** – A manager of an Insurance company wants to forecast actuarial reserve for the next quarter so as to arrange for the funds. An actuarial reserve is used to account the amount of money that an insurance company will be liable to pay (in the event of a claim) based on an estimate of the present value of all future income that is derived from an adverse event.

The manager approaches the analytics team with the problem and shares the data which has details of the past quarters actuarial reserves. The analytics team gets the data and then **explores** the data to **treat the data for missing values and outliers**. The team comes out with visualization. One of the visualization is shown below -



This chart plots the value on Y axis against the time in X-axis which shows a trend of the value against time.

The analytics team then does **statistical analysis to forecast** the actuarial reserve. The team segregates the data into training and testing sets and uses the training set data to build a time series model using different methods. The team then forecasts the value for the period in the test set and then compares the forecasted value against the actual values. Based on the results and the minimum “Root Mean Squared error” , it proposes the best method for forecasting and forecasts the amount for the next quarter and presents the report to the manager for further action.

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