ANALYSIS FOR FINDING AN EFFICIENT SALES FORECASTING METHOD IN THE PROCESS OF PRODUCTION PLANNING, OPERATION AND OTHER AREAS OF DECISION MAKING

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ABSTRACT

Forecasting is the first major activity needed in planning and scheduling process. Accuracy measures and the evaluation are the vital points of the forecasts. Many forecasters and decision makers such as executive managers, planners, production managers, sales managers, and inventory managers have different needs in terms of the following: The timing of an event , e.g., when the next recession will start; the magnitude of a variable (e.g., sales volume next month); the timing and quantities of some variables (e.g., when and how many raw materials to order); and the monitoring of some quantity (e.g., market share). Managers need the above predictions and are faced with the problem of having to select forecasting techniques among the many that are available. Forecasting techniques range from naive models, moving average, exponential smoothing (single, double, etc.), adaptive techniques and econometric models to sophisticated techniques (Box-Jenkins, Parzen's Method, etc.). In addition, forecasts can be made judgmentally. The obvious question is what is the best way of predicting the future. This paper deals with the different accuracy measures and forecasting technique evaluation, based on the past sales data of a manufacturing company. A review of research studies in the area of forecasting methods and their implication in evaluating forecasts have been provided and the reliability of the data sources available for forecasting is discussed. The different accuracy measures described and the field of their uses are summarized. The paper then considers the selection of the few parameters and the adjustment of the forecasts through monitoring of forecast accuracy on a continuous basis. Finally, a general discussion has been made before drawing a conclusions along with future directions of research.

KEY WORDS: POM: Production and Operations, Management, Forecasting, Demand Data, Regression, TSA: Time Series Analysis, ESM: Exponential Smoothing Method, MAD: Mean Absolute Deviation, MSE: Mean Squared Error, TS: Tracking Signal SE: Sum Error, BIAS: Mean Error, CFE: Cumulative Forecast Error.