ABSTRACT

The essence in forecasting is to deliver forecasters the quality results. Forecasting software is developed to increase the performance of calculation and to generate the local optima forecasting results. The software calculation will be based on five forecasting methods (Moving average, Weighted moving average, Exponential smoothing, Adjusted exponential smoothing). The results from those methods will be determined by six accuracy-measuring methods (Mean absolute error, Mean absolute percentage error, Mean forecasting error, Mean percentage error, Mean square error, and Standard error).

Those forecasting methods and accuracy measuring methods are included in literature review with system analysis and design. User interface had developed first and then, Data flow diagram with six main processes (Setting, Forecasting calculate, Accuracy measuring calculate, Chart plotting, Select demand data, and Automatic forecast) was created. Proposed software was developed on Borland Delphi 5.0.

The system evaluation was applied to the program. Verification was made by comparing software results with the manual calculation. Verification cases were generated by the varying of the input demand data and the setting. We had verified 14 cases and the results were accurate. Validation made by comparing the software results with the problem in textbook and actual case from BTS. The validation processes have less than 5% error, which come from round value of the results.

This software can be a tool for the business, but it cannot calculate for optimum results because of the heuristic nature of forecasting methods. The accuracy of this software can be improved by selecting appropriate forecasting methods for different applications and recognizing the various characteristics of input demand data.