

Sales forecast using Artificial Intelligence & Robotic Process Automation

Overview:

The objective of this project was to predict the weekly sales for a Retail corporation by store type, store location based on past data and future economic parameters like CPI, fuel price, unemployment. This helped the client to improve cash flow and manage the Supply-demand for the products sold. The future economic forecast data is collected from external sites and databases using Robotic Process Automation (RPA).

Key Benefits (Minsky):

- User-Friendly, cloud based AI platform
- No coding skills are required for results or predictions.
- Provides you a list of % dependency features that can be used to optimize your business
- Ability to fine tune or optimize the models by trying different algorithms / prediction attributes
- Easy integration with other third party solutions such as TABLEAU for data.

Results:

- Improved Supply-Demand forecast accuracy
- Increase in ROI
- Minimizes obsolete inventories
- Budgets business expenses.
- Justifies hiring decisions.
- Executes strategic planning.
- Improves production scheduling.
- Manage cash flow and credit.

Executive Summary:

The client is a US based Multinational Retail Corporation that has a chain of hypermarkets, discount department stores and grocery stores. The objective was to predict the weekly sales by store type, store location based on economic parameters like CPI, fuel price, unemployment that helps them to make more detailed analysis and improve their sales forecast accuracy. After a detailed evaluation of their operations, **Ai Labs** (www.ailabsinc.com) used its proprietary **Minsky** AI Engine to optimize the models by using a combination of AI algorithms and prediction attributes. In this case, Minsky used historical data for model creation and created weekly sales forecasts by using real time economic data along with store specific information. This solution was optimized and implemented in less than a week.

Typical Sales Forecast Challenges:

- Manufacturing the wrong product mix.
- Wastage of perishable items.
- Increase in obsolete inventories.
- Uncertain forecasts leads to wrong hiring decisions.
- Excessive time for generation of forecasts
- Unable to maximize profit margins /ROI
- Inability to manage fluctuations between demand and supply.

Solution:

After thoroughly evaluating the client's challenges, we used Minsky to accurately model historical data to generate weekly Sales Forecasts. This process includes using weekly sales historical data of past years by store locations and store types. The data also includes weekly economic data, holidays and Sales Promotions. Economic data included parameters like CPI, Fuel price, Unemployment rate in the region of each store which helped us to make more detail analysis. Once the AI Models were generated by Minsky for the selected Algorithms, future economic data along with Store Promotions and holidays were used by Minsky to generate future sales Forecasts. The future economic forecast data is collected using Robotic Process Automation (RPA) from 3rd party sites. Prediction data from Minsky was also integrated with 3rd Party application like Tableau. In addition, RPA was also used to email weekly Sales Forecast generated by Minsky to desired personnel.