NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Computer Science and Engineering
College of Engineering

Predictive Analytics of Chemical Material Pricing

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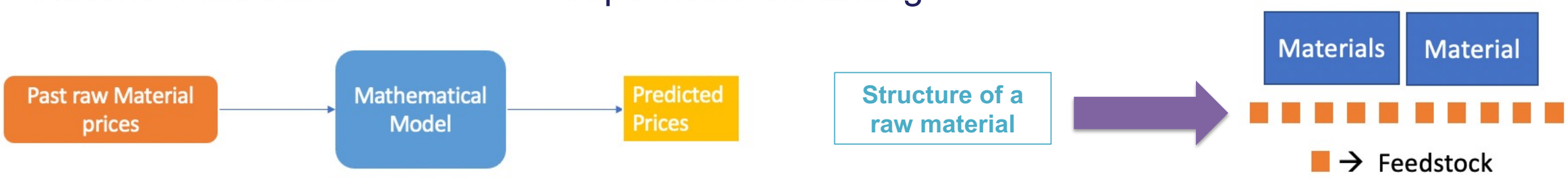
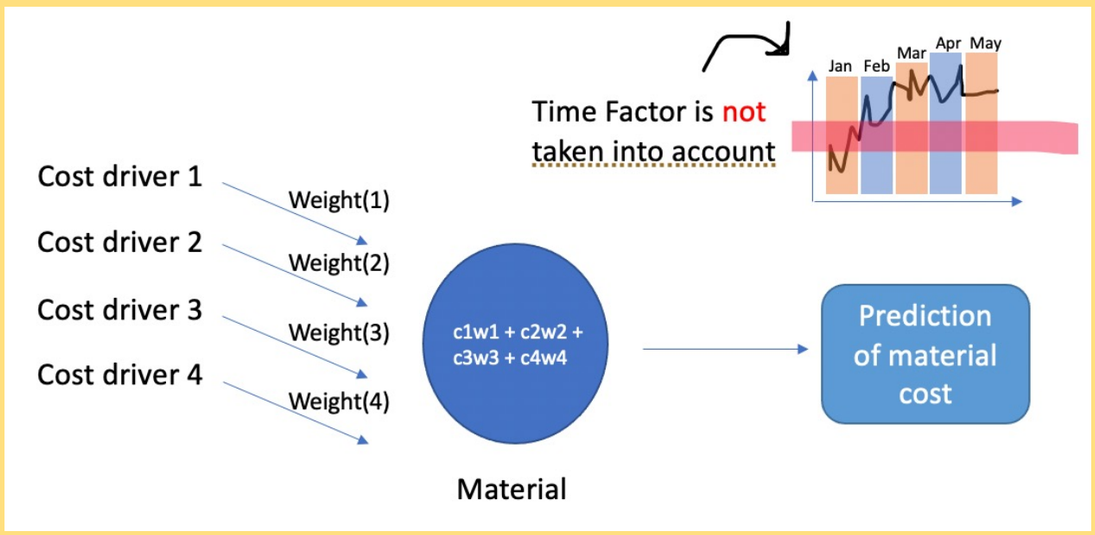


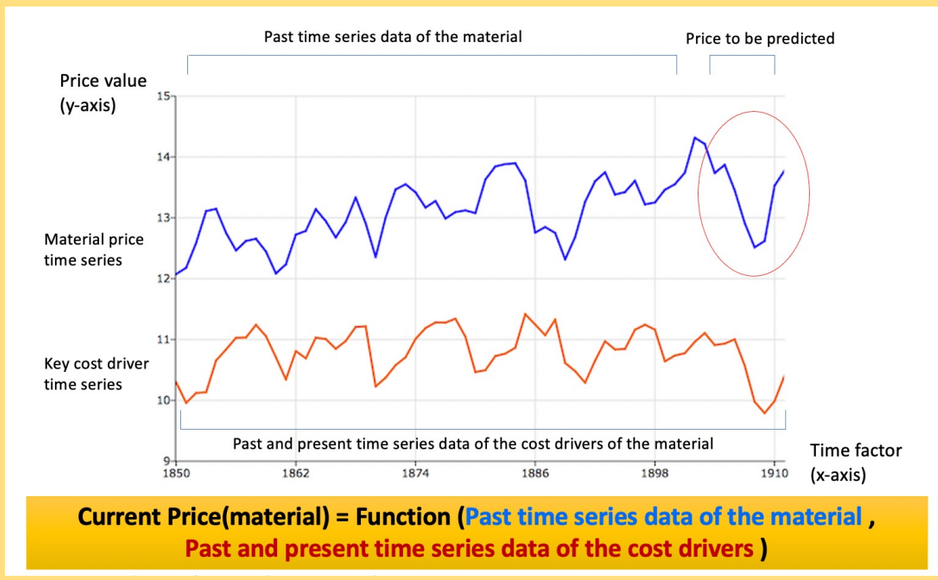
Predictive analytics has become a catalyst to drive strategic decision making in most businesses today. As shown above, each raw materials is made up of different feedstocks.

AIM: This project focuses on material price prediction based on time series forecasting that aims to bridge the gap between the predictive model and its time factor.

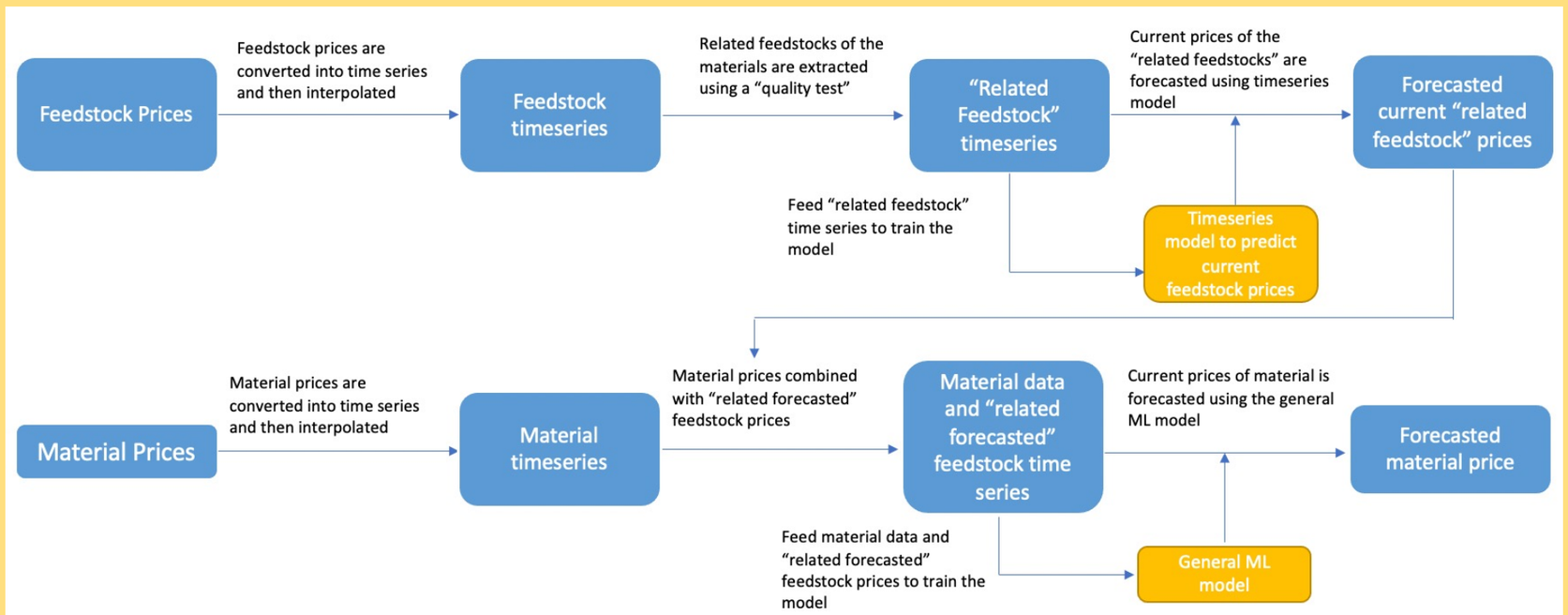
Existing Solution: *Rule Based*



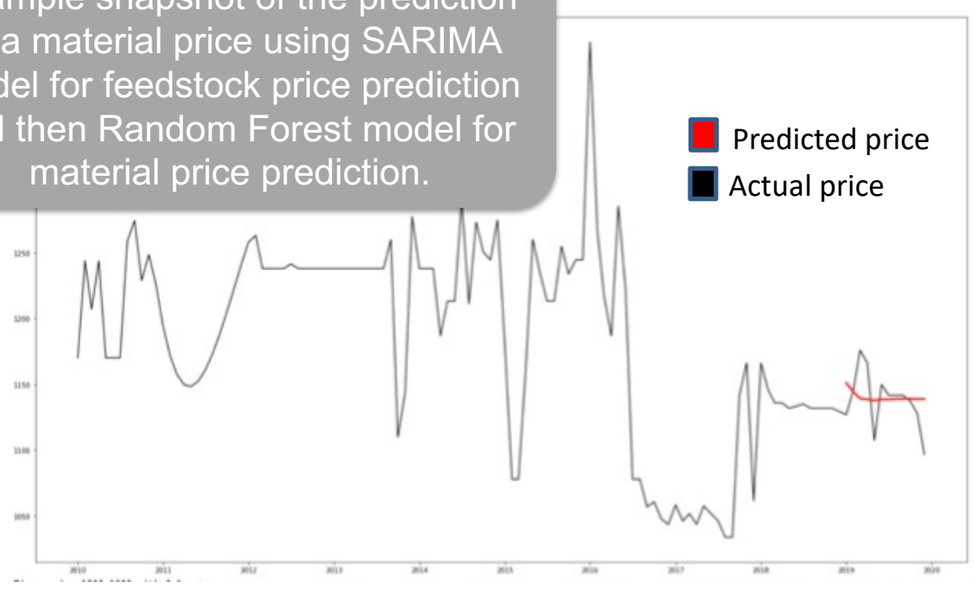
Proposed Solution: *ML model using timeseries analysis*

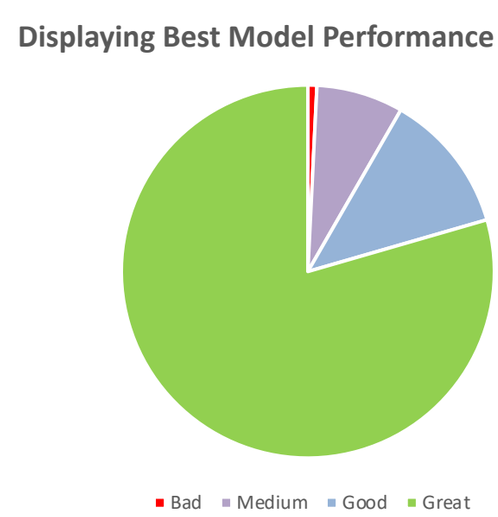


Prediction Pipeline Logic



Example snapshot of the prediction of a material price using SARIMA model for feedstock price prediction and then Random Forest model for material price prediction.





The pie chart displays the evaluation of the quality of the prediction of material price using accuracy metric. If the accuracy of the material price predicted is 0-49%: Bad, 50-79%: Medium, 80-89%: Good, 90-100%: Great

Bad: 0.78%
Medium: 7.5%
Good: 12.2%
Great: 79.5%

Feedstock prices predicted by SARIMA model and material prices predicted by Random Forest Model