

Part 1: Project Proposal Criteria:

1. Project Title

- What is your Project Theme?
Wire rod and steel for construction products market price forecast using both internal and external data.
- What is an Abstract - 1 paragraph Executive Summary of your Solution?
Our solution is to create a 6-month forecast for wire rod and steel construction products market prices and company's sales. We will evaluate which variables have a significant impact on the market price and sales drivers for Deacero. Using this information, along with internal sales data, we will use different machine learning model techniques to evaluate which model performs better.

2. Problem Statement & Business Case

- What is the technical problem you are solving?
We are providing valuable information to make better commercial strategy decisions concerning price setting, demand planning and production rates.
- What is the applied business case for this problem?
 - Business perspective (I.e., Likelihood, sentiment, demand, price, market strategy, groups, automation)
Market strategy; demand; price.

3. Data Science Workflow

- What Null/Alternative Hypothesis are you testing against?
 - Does X Predict Y? (I.e., Distinct groups, key components, outliers)
Does cement production, residential building and scrap prices predicts Deacero's sales?
- What solutions would you like to deliver against?
- What benchmarks are you looking to automate?
- What is the business case for your project?
- How will your solution help generate revenue, reduce costs, or impact another Key Performance Indicator or Objective Key Result?
We can generate more revenue if we anticipate market prices and adjust our strategies to maximize sales. If we can forecast sales more precisely, we can reduce inventory and production costs.
- Who will be impacted (Executive Stakeholders/Sponsors) by your solution? Who is your ideal client/customer?
Executive stakeholders.

4. Data Collection

- How will you collect the data?
Internal Deacero's data (sales)
National statistics agency (INEGI)
Construction agencies

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5. Data Processing, Preparation, & Feature Engineering

- What techniques will you use to improve your data quality?
Pandas, Numpy.
- How will you handle missing data and outliers?
- What calculations/formulas would you like to create, that may not yet exist?

6. Machine Learning: Model Selection

- Which model architecture(s) will you use to solve your problem?
Times series models: neural networks
Linear regression
Cluster analysis
- How will you validate the model performance?

7. Model Persistence: Deployment, Training, & Data Pipelines

- How would your results operate LIVE in a production environment?
- What technology stack, what integrations, and which Engineers would you cooperate?
- Where will you share your results internally or externally to stakeholders through Marketing, Implementation and Deployments?
- How will you validate your machine learnings with a timeline from development to production? How will you generate more data to train?
- Import your Data in-memory from SQL Databases, APIs, or Files with Pandas IO and Camelot PDFs