FORECASTING SALES USING AI MODELS

Sales forecasting is the process of estimating future sales.
Most clients/businesses I interact with would love to know the exact count of future sales of a given product, Especially in the retail and the CPG world.

Why is it so important?
Accurate sales forecast enable companies to make informed business decisions.
This helps to better manage their people, pricing strategy and revenue, and other resources.
(including SCM planning etc.)

How can we predict sales?
There are many ways of predicting sale values. Instead of predicting the actual sale possible, it usually makes sense to predict the demand and then apply business specific logic to arrive possible sales.
In fact, we have used such models not just to support predicting sales but also in assisting make pricing decisions, quite effectively.

I attempt to demonstrate the CONCEPT of the code for those models that I think can be cross-utilized (time-series predictions etc.) and not necessarily an executable code.

Some of them are:

- **Historical Prediction** (Sales) - If a large data set, spread across a considerable period of time, is available then this method could be employed. Just to set perspective – the term ‘considerable time’ depends on the sale-cycle time.

    Example: sales-cycle of bananas VS sales-cycle of rain-coats.

    My preference is to have at least (I actually, insist) 3 non-continuous full sale-cycles’ information. Remember AI models learn on variety.
- Market research and **competitive intelligence**-based inputs - Inputs from market trends, news and sentiments. Example - a weather report impacting on sale of raincoats.

    I call them the controllers; they are extremely difficult to gauge. Let's reserve this for future.

    Example: a popular brands' off-season sale impacting the competitor's on time sales.

HISTORICAL PREDICTION (SALES)

Note:

1. This is a basic code to introduce predictive models.

2. Following Data/AI concepts are not dealt with in detail
Feature analysis
Model Selection

3.Date field
Since I have chosen minimal data, as if the quantity of sales is only dependent seasons, date field is broken down to generate more features.

4. Feature set
In real scenarios, we will be able to break down more features into details. However, care should be taken to avoid a correlative feature set. Functional understanding of the scenarios are very important.

If you find all this interesting, go ahead and take a look at the code.