Agent AI PoC – topic choice

This document provides a brief overview on the chosen topic for developing and exploring machine intelligence.

Background

Cogitaas has developed a method for determining consumers' willingness to pay for a brand. This method has been used by hundreds of brands across the globe to guide their strategic pricing decisions. Details of this approach is explained in a series of steps from data to decisions.

Approach

- Step-1: Data processing
  - Process
    - Data required for our pricing analytics is obtained from our clients. The data comprises of 2- or 3-year weekly time series data on volume sales, price, distribution (product availability), along with competition sales and distribution.
    - This data is available at different granularities - brand/variant/pack group, for analysis. The raw data is converted into a model ready format.
  - Automated/ human intervention?
    - yes, once the data is received, it is sent through a code to transform it into a model ready format
    - no human intervention is required in this step.
- Step-2: Exploratory Data Analysis (EDA)
  - Process
    - Multiple line charts and bar charts are created for understanding market context and for creation of hypotheses.
  - Automated/human intervention
    - The process is automated; there is a code to prepare the required charts
    - Human intervention to understand these charts and to create hypotheses about the brand and its competitors.
  - Need of machine intelligence?
    - Maybe. It will be nice to have a summary based on data and charts along with some hypotheses on what may be happening to a brand.
- Step-3: Modelling and validation
  - Process
    - Forms the core of the analysis. This step is a series of variable transformations, cleaning, creation of new variables to include all possible variable combinations and ends with an ensemble modelling approach.
    - Statistical hygiene checks and model selection is performed in this step. The output of this step is a final set of models that are statistically valid.
    - These models are fed into a planner for determining business outputs.
  - Automated/ human intervention?
    - Process from data transformation to final set of statistically valid models is automated.

- On this valid set of models another round of filter is applied by a human combining business sense checks, EDA and planner results
    - o Need of machine intelligence?
        - Ideally yes, but it will be too complicated at this stage of exploration.
- Step-4: Business recommendations and storyline
    - o Process
        - The model outputs are woven into a narrative to form a story.
        - It is about landing the model recommendations in a business-friendly language with reasons.
        - Kind of a structured output.
    - o Automated/human intervention?
        - No automation. Completely manual and time consuming
    - o Need of machine intelligence?
        - Yes, to reduce the time taken to build the narrative. Most likely choice for developing agent ai.