Define and recommend the optimal portfolio for each of the 220K stores for 682 Coca-Cola beverage products.

**Choice Model**

- **Steps**:
  1. Develop Multinomial Logit Model to get likelihood of a store buying a product in the future.
  2. Run low rank matrix factorization to cross-learn preferences from similar stores and products by identifying underlying latent features.
  3. Generate optimal portfolio by incorporating business constraints.

**Results**

- New products added vs original portfolio:
  - 25% average % of added products.
- Products removed vs original portfolio:
  - 5% average % of removed products.

**Order Quantity Model**

- **Steps**:
  1. Develop predictive models (by product) to identify expected demand based on store's characteristics.
  2. Identify high and low performing stores by comparing the expected demand (based on store's characteristics) with the forecasted demand (based on historical sales data).
  3. Optimize order quantities by allowing low performing stores to imitate high performing stores.

**Prescriptions**

- Sales driven by product category:
  - Suggested vs forecasted sales:
    - 19% average % increase in suggestions over forecasts.

**Implementation**

- Model's outputs are integrated with an existing order taking application.

**Work Plan**

- Tasks:
  - Data:
    - Initial data exploration and scoping
    - Data cleaning and first insights
  - Modeling:
    - Literature review and model structure
    - Models development
    - Business constraints definition
    - Results review with stakeholders and iterations
    - Integration of the model with the app
  - Implementation:
    - Market visits and validation of models' outputs
    - Results measurement and feedbacks for improvement
    - Define pilot and control group (10-20K stores)
    - Implementation on pilot group

**Impact**

- Results from market visits:
  - 1-2 new products sold to stores (4% of average number of products in the current portfolio)
  - 1 case of each new products sold monthly (16% of the average quantity sold monthly by product)
- Increase in sales:
  - 95% increase in suggested volumes compared to forecasted volumes if business as usual is run
- Increase in revenues:
  - $14MM