Hello,

Listing out the basic Goal & Scope document for the Hackathon. Feel free to comment & give suggestions.

We are basically targeting for Inventory Management & Dynamic Pricing challenges in the Hackathon. The reason for choosing these domains is that its in our competence area & also probably useful to build other things atop this in future.

Inventory Management Goal: Highest Monthly income to the Retailer
Dynamic Pricing Goal: Increase Monthly profitability on regular items & decrease losses in the slow & soon-expiring inventory.

Limitations:

Retailer level:

a. Capital available with the Retailer (Rupees in Lakhs)
b. Space available to store goods (Cubic Meter)
c. Order processing & delivery capacity (No. of orders per hour)

Product Level

a. Expiry date (No. of days)
b. Lead time - Time taken from order to receipt of goods (No. of days)
c. MOQ - Minimum Order Quantities (Batch Sizes)

Solution brain storming:

At surface level, for maximum ROI just going for products with highest profit margin (Sales Price / Cost Price) seems to be solution. But for a slow moving product, retailer might earn the highest gross margins but on factoring the fixed costs, this seems like a bad solution.

Neither can we go for just the most fast selling products. Diapers are one of the fastest selling products but they take up a lot of space for a very low capital commitment. For example, Rs. 50k of Diapers might fillup the whole shop @ 20% margin, the retailer would earn 10k out of this. For a retailer who has capital of 5Lakh, this is gross under utilisation. For 5lakh capital, even @ 10% margin, the retailer has the potential to earn 50k.

Similarly if any extra discount in products can increase the sales materially, sometimes lower margin would work to be a better metric to increase per day/month income for the same capital & other resources. With an added advantage of customer stickiness due to good deals.

Similarly in dynamic pricing the best pricing needs to be given the future weather, season, events, expiry dates of products, demographics & competition. In the sense that in summers, jackets & sweaters need to be discounted & viceversa. Similarly products which have a close expiry date need to heavily discounted.

Using network effects of ONDC:

1. We can suggest products that are not being sold by the retailer if the sales in a different area with similar demographics is good of that product.

   So along with inventory planning, new product discovery is also solved for retailers
2. Suggest more alternatives based on the stock held by shops around. No point in creating competition within the same locality. Need to decide earning potential of an inventory based on max uptake of a product in one area.

Needed Features

1. Weather - Toggle buttons
2. Select Input Data - Dropdown

3. Seasonality / Festivals / Holidays
4. Supply & Demand → Category / SKU wise
5. Credit Availability
6. Select day & time (For dynamic pricing only)
7. Future calendar along with season, festivals & holidays & expected sale trends in coming months.

Output:

Inventory Management:

1. Create purchase order for suggested inventory
2. Should highlight expected revenue & earnings increase compared to previous months.

Dynamic Pricing

a. Export of data - json format - dynamic pricing
b. Should highlight SKUS where the prices have been changed along with displaying old & new prices
c. Should highlight expected revenue & earnings increase compared to previous days.