Demand Forecasting for RETAIL: Challenges and Best practices

With monoprix

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DEMAND FORECASTING

Demand forecasting is a segment of predictive analytics that uses data to understand and predict customer demand. The data helps businesses make informed decisions about product planning and inventory management, keeping their supply chain optimized at all times.

DEMAND FORECASTING

Demand forecasting retail is one of the toughest jobs. One has to look into the existing market data, store performance, marketing performance, the changing patterns of the target market and more to be able to predict consumer behavior and demand - even if it is for a single product line.

challenges:

1. Inaccurate Demand Forecasting

2. Ineffective Promotional Forecasting: Holiday season sales, flash sales or BFCM, retailers have the toughest time forecasting the impact of promotions.

3. Mismanagement Of Inventory Levels: Most retailers are not able to ensure the right product is available at the right time.

4. Increase In Safety Stock

5. Lack Of A Single View Of Demand

Best practices:

1. Establish A Continual Process: To achieve accuracy in demand forecasting retail, a retailer must invest in establishing a monthly process to analyze data.

2. Identify What To Measure: But a few data points that you should consider taking into account while using a demand forecasting solution are competitor sales data, amount of obsolete stock, frequency of stockouts, shipments, orders, and POS data.

3. Decide The Frequency Of Measurement: You can set up a routine or a process to measure those data points on a weekly or a monthly basis.

4. Integrate Data From All Your Sales Channels

6. Ensure Up-To-Date Data In Real-Time

Project planning: (agile development)

Step 1 : research on state of the art approaches and documentation : 1 week

Step 2: Pipeline architecture (ITIL) : 1 week

Step 3: EDA and feature engineering : 2 weeks

Step 4: modeling and features selection: 2 weeks

Step 5: Model Evaluation : 1 week

Step 6: Automating model update periodically with real-time data : 1 week

Step 7: Model deployment and creating dashboard: 1 week

Technologies:

- SCALA
- sparkML

Deliverables:

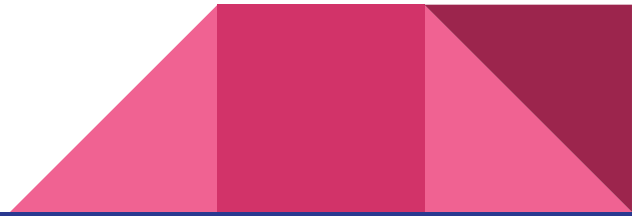
- Web app
- Open-source code
- Presentation
- Report

Questions:

-Frequency of measurement?

-More informations on business processes? (inventories)

-Data?



THANK YOU !

Any questions?