

## AI based Sales Forecasting and Inventory Management For Quick Service Restaurants







NableIT's Artificial Intelligence (AI) based Sales Forecasting and Inventory Management Platform allows Quick Service Restaurants (QSR) to optimize their product inventory i.e. to minimize both stock-out and over-stock events. In addition, our flagship facial recognition product helps in implementing the loyalty program and in turn increases the customer retention and profitability. We have developed customized models to address unique requirements of various types of QSR clients deploying AI based predictive analytics tools.

A typical QSR has outlets at various locations. There are also kitchens or third-party suppliers in local hubs that supply to various outlets replenishing stocks of semi-cooked items and ingredients as per recipes, several times a week. The supplies, inventory or items are categorized either as perishable (viz. bakery) or non-perishable (viz. cups, cutlery, boxes for take-out) items. Our Al models can better predict optimum level of inventory by considering hundreds of impacting variables. By training our Al/ML models, utilizing past data and creating neural network patterns using deep learning algorithms, superior prediction replenishment cycles are computed.

Advantages of NablelT's Al/ML based Sales Forecasting and Inventory Management Platform:

- Accurate forecasting.
- Selection of menu items while keeping account of demographic areas by income, by location type (office complex or a mall), by food preferences of the settled community (e.g. vegan) etc.
- Optimizing product inventory i.e. minimizes both stock-out and over-stock events, reduces wastage, improves service levels and maximizes on time delivery
- Increase in sales and improvement in profitability
- Increased understanding of customer data henceforth providing better service

Models can further be expanded with the following additional functionality:

- Ideal location of a new outlet among many locations
- Menu card for an outlet (each outlet could have a different menu)
- Ideal location and number of kitchens
- Replenishment cycle from kitchen to outlet as well as quantities supplied
- Ideal pricing of recipes for maximizing profit and/or revenue (market share)
- Introducing and recommending new recipes
- Ideal stocking of nonperishable items to reduce excess storage cost





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Use case: Forecasting product mix and quantity trends at given locations for a QSR:

Based on the client's requirements, the Sales Forecasting and Inventory Management models were customized with the following features:

- Forecasted the products mix and quantities at given locations.
- Benefits accrued:
  - Reduced wastage.
  - Reduced stock-outs.
  - Reduced shrinkage.
  - Standardized quantity per serving; avoiding overuse.
  - o Reconciling inventory.
  - Reducing unreported sales.
  - Increased profitability and customer satisfaction.



For a demonstration and inquiries

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