



Predictive Analytics for Retail Businesses

Cenacle Research India Private Limited



What customers want?

- Few reasons customers come to your shop:
 - The shop has what they are looking for available in stock
 - The shop is accessible to them near by
 - The shop has optimal price structure
 - The shop has attractive promotional campaigns
 - The shop is receptive to the needs of customers and reacts in timely manner

What business owners want?



- Gain new customers
- Retain old customers and make them come back (again and again)
- Edge out the competition



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- **The Million Dollar Question: How?**

- **Enter Big Data Analytics.**

The Key to Success



- Basic principle: Understand your customers and give them what they want



The Key to Success

- Basic principle: Understand your customers and give them what they want, when they want it, how they want it and where they want it
- Biggest Challenge:
 - Not all customers are equal, nor are their requirements
 - Nor a given customer's requirements stay the same always - they evolve
 - Customers are not living in isolation – influence of external factors is too high



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- Solution: Profile your customers
 - **Big Data Analytics** can help you understand and serve each of your customer's need uniquely
 - At the same time it also helps you optimize your business operations and reduce cost



Big Data Analytics

Empowering the Retail Businesses make Right Decisions at the right time

Big Data Analytics: A Match in the Darkness

- Gain Insight
- Take Proactive action
- Reduce waste
- Plan better strategy

Big Data Analytics – Gain Insight

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 - Business dynamics

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 - What will they need tomorrow?
 - What has been this particular customer's needs in the recent past?
 - When are my customers more likely to ask for this particular item again?
 - Business dynamics

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 - How are my sales today?
 - What are items that need restocking?
 - What is the item that is getting more demand lately?
 - Which of my promotional campaigns is driving more traffic to my shop?
 - How would my sales get affected if I increase this item's cost by x%?

Big Data Analytics – Act Proactively

- Custom retention
 - Act in-time before loosing a customer
- Churn analysis
 - Understand what went wrong for those already left customers
- Effective marketing campaigns
 - Target the right audience
 - Invest in the right promotional medium
- Our **Recommendation Engines** help your business run smooth in selling the right products for the right customers at the right time

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- Optimal work-labor costs

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- **Solution:** Our Order Prediction System

Big Data Analytics – Plan Better

- What-if Analysis for better business strategy
- Social media sentiment analysis for better reach

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- What-if Analysis for better business strategy
 - Simulate alternate business models without disrupting the operations
 - Design optimal price modelling strategies
- Social media sentiment analysis

Big Data Analytics – Plan Better

- What-if Analysis for better business strategy
 - Simulate alternate business models without disrupting the operations
 - How would my incoming orders vary if I stop selling an item in my shop?
 - How would my sales get affected if I introduce new promotional offer ?
 - What happens if I replace one sourcing partner with another?
 - Design optimal price modelling strategies
 - E.g.: Dynamic pricing models that vary with volume, loyalty and season ...
 - Explore new/alternate subscription offerings and price point opportunities
- Social media sentiment analysis

Big Data Analytics – Plan Better

- What-if Analysis for better business strategy
- Social media sentiment analysis
 - Retain your loyal customers and top-performing assets
 - Evaluate your services/products against your competitors'
 - Gain new customers and identify potential sale leads

Big Data Analytics – Plan Better

- What-if Analysis for better business strategy
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 - Retain your loyal customers and top-performing assets
 - Know what is it that your customers like (and dislike) most about your service
 - What is making them leave (or stay with) your service
 - Evaluate your services/products against your competitors'
 - Know how your new product list might be received (before hand)
 - Identify cross-sale and up-sale opportunities
 - Gain new customers and identify potential sale leads
 - Capture the Buy intents
 - Convert casual interests into buy intents

Big Data Analytics – End Result

- Big Data is a match in the darkness

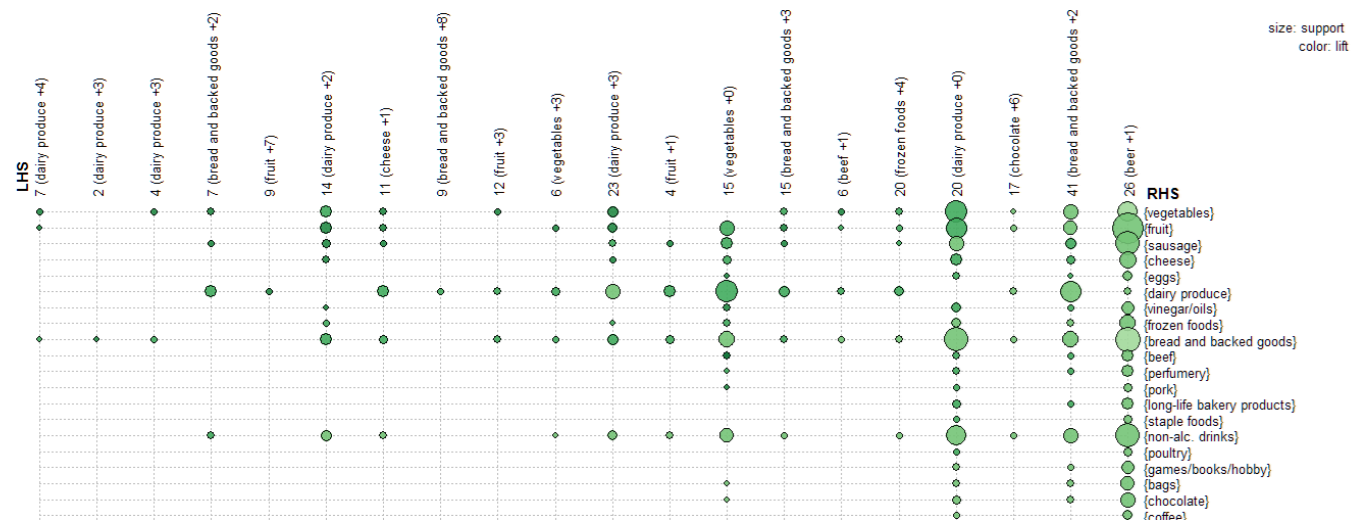
Big Data Analytics – End Result

- Big Data is a match in the darkness
 - Once lit, it provides you

✓ *Actionable Insights* that let you make *Informed Decisions*

CUSTOMER ORDER PREDICTION SYSTEM

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Agenda

- Model Demonstration
 - Order Prediction
 - Association Rules
 - Features:
 - Single-line command interface
 - CSV I/O – ready for any pipeline integration
 - Robust forecasting algorithms
 - Analysis on multiple levels
 - Forecast results from multiple models
 - Vast output of auxiliary data (useful for further analysis)
- Discussion for adjustments in I/O
- Future Model possibilities

Model

- Order Prediction
 - How many orders expected in the next 7 days?
 - Results from multiple prediction algorithms
- Association Rules
 - Which items are being frequently ordered together?
 - Can lead to better pricing strategy
- Note:
 - Input data format:
 - Dates to be in 'YYYY-MM-DD' format
 - CSV files to be clean
 - Input Order data
 - Reasonable order quantity to get accurate predictions

Features

- Item-wise sale predictions
 - Cost-cutting
 - Drop the low sale items from menu for specific days
 - Inventory management
 - Right levels of stock reduces waste, improves quality
 - Labor schedules
 - Improves customer satisfaction, increases work-life balance for employees
- Customer churn analysis
 - Who are the customers most likely to stay, who would deflect?
 - Design custom loyalty programs to increase sales
 - When is the next customer visit most likely?
 - Price analytics: what would be the effect of price increase on each?

Features

- **Exploratory Analysis**
 - What are the top-3 drivers for my sales during Holiday Season?
 - Which section needs more labor and during which period?
 - What are the effects of Weather on my business?
 - If I drop an item from my product list, how would it affect other item sales?
- **Social Network Sentiment Analysis**
 - What are people talking about my brand?
 - How many people are feeling positive about my products?
 - How are my competitor's products faring against my products?
 - What is the most (dis)liked feature about my product/service?
 - If I release new product, how many people are likely to buy it?

Big Data + Predictive Analytics

- At **Cenacle Research** we build Analytics Engines for
 - **Automotive**
 - E.g.: Predictive Maintenance (CBM) systems
 - **Healthcare**
 - E.g.: Personalized Medicine Regimes and Decision Support Systems
 - **Retail**
 - E.g.: Real-time Recommendation Engines
 - **Energy**
 - E.g.: Demand Planning using Smart Metering Systems
 - **BFSI**
 - E.g.: Usage-based Insurance Systems

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 - Big-data is what powers these engines

Big Data

It Lets you do More ...



Cenacle Research

Do More.