

LEVERAGING ANALYTICS TO  
MAKE INFORMED CHOICES

# Retail Analytics



The Big Data wave has put the spotlight on analytics as an enabler for improved decision-making. Retail Analytics solutions work on top of legacy systems to deliver insights that traditional information systems are not equipped to handle.

The large amounts of retail data generated from multiple sources can provide rich insights that retail companies can use to increase revenue and profitability. Retail Analytics tools and techniques help to store, process, cleanse, and transform this huge dataset into actionable insights.

# Structured & Unstructured Data

## Customer Data

Psychographic Data, Demographic Data  
Call Center Data, Mobile Data

## In-store Data

Point of Sale (PoS) data, Video Analytics  
Customer Interactions

## Digital Media

Website, Print, Television, Advertising  
Social Media, Internet

## Data from Devices and IoT

Sensors, Beacons, RFID tags, GPS, WiFi

## Geo-Location Data

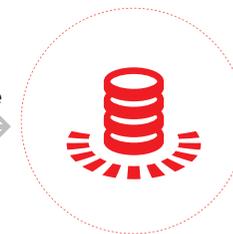
## Product, Supply Chain and Inventory Data

Data from CRM, ERP, and other  
Business Applications

## Research Data

Data Ingestion Pipeline

(Flume, Sqoop)



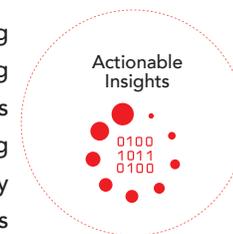
Data Storage  
(Cassandra, MongoDB)



Processing/Analysis  
(Hadoop, Apache Giraph)

From Raw Data to  
Actionable Insights

Demand Forecasting  
Inventory Planning  
Customer Trends  
Dynamic Pricing  
Product Strategy  
Offers & Promotions



Business  
Software

# Gaining Value from Data-Driven Insights

## Use Cases

### Redefining In-Store Experience

How easily shoppers are able to navigate around the store, how much time they spend at a particular area, queue at the billing counter, are aspects that can be analyzed to define in-store strategies.

Proximity marketing efforts help to understand how much time customers spend at specific locations in the store. Data from sensors, beacons, and security cameras can be used to analyze shopping patterns, frequency of visits, and effectiveness of marketing promotions.

### Seamless Experience Across Digital Platforms

Customers interact with retailers through multiple channels. Retail Analytics helps to gain insights from data spread across various platforms (web, mobile, contact centers, social media, and in-store) and helps retail businesses to deliver a single view of the brand across all channels. These insights help retailers create behavioral targeting models based on channel preferences, cross-sell, and customize offers.

### Business Requirement

*Our client, a leading technology company, wanted to recreate the convenience and efficiency of online shopping in a physical store. They required a solution that gives customers a more personalized shopping experience while providing retailers with precise data to make informed business decisions.*

### Our Solution

*The solution utilizes micro-location beacon technology that helps retailers reach customers with promotions, based on their proximity to certain products or departments. The solution helps in analysis of in-store marketing campaigns, effectiveness of advertisements, positioning of end caps, and sales information from locations throughout a store.*

## Personalized Recommendations

Offering customers what they need, recommending alternatives, suggesting products that are often bought along with another, are strategies that don't just improve customer experience, but bottom lines as well.

Techniques such as behavioral targeting, price optimization, and clustering can be used to personalize offers. Taking into consideration attributes such as demographic data, psychographic data, and purchase behavior, retail companies can deliver personalized recommendations to shoppers.

## Website Analytics

Be it an eCommerce store or an online marketplace, the way customers use a site can provide valuable insights into customer behavior and preferences.

Information such as product views, purchase history, sales by SKUs, viewed and abandoned products, negative/positive reviews, path taken to reach product, can be used to make significant improvements that positively impact sales and ROI.

## Social Media Sentiment Analytics

Social media provides customers with a great platform to tap into the Voice of the Customer (VOC). Monitoring sentiment trends alerts retail businesses about changes in customer perceptions (about brand, product, or service) giving them an opportunity to do what it takes to keep customers happy. Retail Analytics tools gather information from social media sites, organizing raw data into a structured format, viewable using simple reports and graphs.

## Pricing Strategy

Retail Analytics offers demand-based pricing and predictive analytics for pricing optimization. Retail Analytics can help identify specific customers who qualify for tailored pricing, taking into consideration their purchase history and loyalty. Additionally, Retail Analytics also offers solutions to effectively plan and manage markdowns based on aspects such as price sensitivity, inventory levels, opportunity cost, seasonality, and market conditions. Clickstream analytics, demographics, and other relevant data can be used to determine dynamic pricing strategies.

## Business Problem

*Our client, a leading social bookmarking service, required a solution that would take into account browsing behavior of visitors and serve content that is most relevant to their interests.*

## Our Solution

*The easy-to-deploy personalization solution uses collaborative filtering algorithms to deliver content recommendations. The solution analyzes the web history of users and uses a custom-built URL classifier to predict user interests. The recommendation engine, which runs on a Hadoop cluster, records user behavior on the site and returns a set of recommendations based on defined parameters.*

“3dotDigital has been providing us social media analytics for our client Airtel across Africa for the last 8 months. The daily reports and monthly analysis they deliver have helped us recommend marketing strategies that has helped Airtel engage better online. We are happy to be working with 3dotDigital.”

## SAMUEL KARANJA

Managing Director

Hill+Knowlton Strategies

## Diving into Retail Analytics

Retail businesses today realize the significance of Retail Analytics in driving customer satisfaction as well as increasing revenue and profitability; but many are yet to take the plunge. It is now evident that the value derived from Retail Analytics is well worth the investment.

If you think you are ready to dive into Retail Analytics, we can provide you with a 'Retail Analytics Readiness Assessment' that includes a 3-week exploratory analysis of your business data. The readiness assessment will deliver expert recommendations and a Retail Analytics roadmap to help your business stay ahead with data-driven insights.



## 3dotDigital Advantage

- 100+ big data and analytics experts.
- Rich experience working with retail clients. Successful engagements with Simba Retail, Burberry, Elmec, Dell, Airtel, UniQlo, and LuLu International Shopping Mall.
- One of the fastest-growing technology companies in Asia Pacific.
- Keen focus on SMAC technologies.

## Expertise in Big Data Analytics

### Data Collection/Ingress

Flume, Sqoop, Pentaho

### Predictive Analytics

Mahout, Weka, Custom solutions, Scikit-learn

### Scraping

Apache Nutch, Phantom.js, Selenium, Scrapy

### Real time Processing

Spark Streaming, Storm, VoltDB

### Store

MongoDB, CouchDB, HBase, Cassandra, Neo4J, Titan, Riak, OpenTSDB, DynamoDB, BigTable

### Process

Hadoop, Apache Giraph, Apache Camel, Presto

### Visualize

Tableau, Pentaho, D3.js, Highcharts



**3dotDigital** provides an end-to-end ICT solutions and service platform. We partner with our clients to understand business needs, uncover hidden value, improve customer experience, facilitate higher return on investments, and increase productivity through technology.

Apart from guiding our clients with technology recommendations and best practices to stay competitive, we utilize web-based project management and collaboration tools such as Trac, JIRA, and Redmine to ensure transparency in project delivery. Clients are given access to these tools so that they can track progress as we design, develop, test, and deliver applications.

We follow agile methodologies such as SCRUM for product engineering and development. By breaking down projects into smaller iterations, we effectively speed up the delivery process.

As a product development and consulting partner to global retail conglomerates, we offer well-planned and skillfully engineered software solutions to ensure business success



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