ORACLE

Oracle Retail Affinity Analysis

Shopping patterns have changed over the last two years. What once was important to one consumer may not be anymore. It's critical for retailers to have a constant pulse on their consumer shopping patterns as well as understand what people are buying together. Determine what actually is in their basket and leverage these insights to drive decisions across the enterprise.

Oracle's Retail Affinity Analysis is a component of Oracle's Retail Al Foundation which provides analytical insights to drive planning, buying, moving, and selling decisions. These capabilities enable retailers to drive profit and remain flexible to the changing retail environment.

ANALYZE SHOPPING PATTERNS

Affinity Analysis is used to gain insights into customer shopping patterns. A key component of Affinity Analysis is the process of Association Rule Mining (ARM). This process examines sales transaction data and identifies associations between types of products. Such information can help a retailer understand that promoting one product is sufficient to help drive sales of another product, given the sales associations they exhibit.

Market basket rules are used to improve the assortment recommendation by showing the potential lift (or halo effect) on your overall sales due to any known affinities on recommended item additions.

For example, if Attribute Analysis is analyzing an assortment for coffee, and a particular item is part of a market basket rule that drive sales for milk, then that item has a greater potential value for the lift it brings to the milk category. Attribute Analysis may then recommend that item over other items in the category, because including it will bring in additional revenue to other assortments without changing those assortments directly.

UTILIZE MACHINE LEARNING

As shopping patterns and behaviors are ever shifting, Oracle's Affinity Analysis utilizes machine learning techniques to continuously learn and fine tune recommendations. The processing of running these Affinity Analysis algorithms occurs each week as part of the weekly batch execution, and a set of output files are provided to expose the association rules that have been discovered by the process, giving you first insight into any shifts in demand. Short term sensing can enable you to get ahead of the curve of your customers responses.



The Oracle Retail Analytics and Planning family of cloud services includes:

- Oracle Retail Al Foundation
- Oracle Retail Insights
- Oracle Retail Assortment and Space Optimization
- Oracle Retail Promotion and Markdown Optimization
- Oracle Retail Offer Optimization
- Oracle Retail Merchandise Financial Planning
- Oracle Retail Assortment Planning
- Oracle Retail Demand Forecasting
- Oracle Retail Inventory Optimization

ORACLE CLOUD INFRASTRUCTURE

All Oracle Retail Analytics and Planning cloud services are deployed as cloud-native Software-as-a-Service solutions within Oracle Cloud Infrastructure (OCI) upon Oracle's Autonomous Data Warehouse, and are based upon an architecture and technology stack that is optimally engineered for rapid, low-cost deployments and exceptional performance and scalability, and the highest levels of system availability and security from storage to scorecard.

ORACLE RETAIL AI FOUNDATION

Core retail Al and machine learning (ML) powers all Oracle Retail Analytics and Planning cloud services. For example:

Forecasting Engine - Provide an intelligent starting point for your planners, increasing automation and accuracy. Move to a more touchless and exception management planning process.

Customer Segmentation - Group customers based on attributes, behaviors, and transactions to tailor offers, pricing, and assortments accordingly, incorporating previously hidden patterns in your data.

Advanced Clustering - Cluster your stores based upon traditional approaches of volume, square footage, region, etc., or leverage machine learning techniques to cluster stores based upon similar selling patterns, truly creating a customer-centric assortment.

Profile Science - Determine the best size ratio for your buys by understanding the true demand of your sizes while considering stock-outs.

Attribute Extraction and Binning - Extract item attributes from free-form descriptions, correcting short forms, misspellings, and other inconsistencies, and apply them to Demand Transference, Customer Decision Trees, Advanced Clustering, and more.

Customer Decision Trees - Understand how your customers are shopping your assortments to drive attribute-based alternate hierarchies and effectively plan your assortment the way your customer shops.

Demand Transference - Understand how unique your items are and the incremental revenue that item brings to determine the most optimal assortment for your customer.

Affinity Analysis - Determine how items interact with each other to drive a more effective promotional strategy within your financial planning process.

Innovation Workbench - Leverage open source along with your data science team to create your own AI and ML models. Utilize the language of your choice with Jupyter/Zeppelin notebooks.

Key Features

- Embedded Retail AI Foundation, powering Oracle Retail Demand Forecasting Cloud Service with:
 - o Forecasting Engine
 - Customer Segmentation
 - Advanced Clustering
 - o Profile Science
 - Attribute Extraction & Binning
 - Customer Decision Trees
 - o Demand Transference
 - o Affinity Analysis
 - o Innovation Workbench
- Further extensibility with:
 - o Oracle Retail Home
 - o Oracle Analytics
 - o Oracle Application Express
 - o Oracle REST Data Services
 - o Oracle Machine Learning

ORACLE RETAIL HOME

Oracle Retail Home is a single access point, to simplify a user's interactions with the data and applications that are most relevant to their roles, and to better empower them to

anticipate informed actions, and to inspire engagement.

Based on a robust and flexible portal framework, Retail Home is intended first to provide timely and role-specific high-level insights, and second to enable selectively drilling into relevant applications for more details.



ORACLE ANALYTICS

Oracle Analytics can be used to generate and consume analytics from Oracle Retail Al Foundation data, and in turn can also surface dashboards to Oracle Retail Home.

Oracle Analytics is a comprehensive platform that parlays data into information to provide business insights, federating a broad array of features to suit business users, power users and data scientists:

| Governed | Self-Service | Augmented |
|-----------------------------|--|---------------------------------------|
| • Corporate Dashboards | Data Preparation | Natural Language Processing |
| Pixel Perfect Report | Data Visualization | Voice and Chatbot |
| • Semantic Models | Storytelling | Data Enrichment |
| • Role-based Access Control | Sharing and Collaboration | • One-Click "Explain" |
| Query Federation | Mobile Apps | Adaptive Personalization |

Beyond the extensibility afforded by the Oracle Retail Al Foundation's Innovation Workbench, Oracle Analytics, and Oracle Retail Home, also included are Oracle Data Store, Oracle APEX, and Oracle REST Data Services.

ORACLE DATA STORE AND APPLICATION EXPRESS

Oracle Retail Data Store can supply data for Oracle Application Express (APEX) apps and Oracle REST Data Services, which both are included. APEX is a low-code development platform that enables you to build scalable, secure enterprise apps with world-class features that can be deployed anywhere.

Developers can quickly develop and deploy compelling apps that solve real problems and provide immediate value using APEX. You won't need to be an expert in a vast array of technologies to deliver sophisticated solutions. Focus on solving the problem and let APEX take care of the rest.

ORACLE REST DATA SERVICES

Oracle REST Data Services bridges HTTPS and your Oracle Database, providing, among other things, a REST API, SQL Developer Web, a PL/SQL Gateway, SODA for REST, and the ability to publish RESTful Web Services for interacting with the data and stored procedures in your Oracle Database.

ORACLE MACHINE LEARNING

Oracle Machine Learning supports data exploration, preparation, and machine learning modeling at scale using SQL, R, Python, REST, AutoML, and no-code interfaces. It includes more than 30 high-performance in-database algorithms producing models for immediate use in applications.

By keeping data inside the database, organizations can simplify their overall architecture and maintain data synchronization and security. It enables data scientists and other data professionals to build models quickly by simplifying and automating key elements of the machine learning lifecycle.

Learn more or request 1:1 demo

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