Oracle® Retail Insights Cloud Service Suite

User Guide

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Preface

The *Oracle Retail Insights Cloud Service Suite User Guide* helps Retail Insights users to build, use, and modify reports using the Retail Insights repository in Oracle Business Intelligence (Oracle BI). It includes a user reference to the dimensions, attributes, metrics, and terminology of the Retail Insights metadata. The guide also provides minimal introduction to the Oracle BI user interface.

This guide does not include:

- End user documentation for Oracle BI. This is provided through the Oracle BI documentation library and user training.
- Details of the Retail Insights data model. The *Oracle Retail Insights Data Model* contains this information.
- Information about tasks and responsibilities of system administrators, systems analysts, operators, and programmers who install, configure, and support the Retail Insights software. This information is provided in the *Oracle Retail Insights Implementation Guide* and *Oracle Retail Insights Operations Guide*.

Audience

This user guide is for use by business analysts, the primary end users of Retail Insights, as well as for merchandising and finance executives who rely on those reports on a daily basis. The principal users of this guide are those who have responsibility to create and modify Retail Insights reports. They may study these reports themselves, and they may also prepare reports for distribution to other users such as managers, buyers, and other analysts who study and plan business activities. The particular user group for Retail Insights depends on each retailer's unique organization structure and individual job assignments.

This guide assumes that the user knows how to use the Oracle BI user interface. End user documentation is provided in the Oracle BI documentation library, and this guide provides references to pertinent documents.

End users need the following prerequisite skills:

- An understanding of data warehousing
- Knowledge of business intelligence concepts
- Oracle Business Intelligence training

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- Exact error message received
- Screen shots of each step you take

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Oracle Retail product documentation is available on the following web site:

https://docs.oracle.com/en/industries/retail/index.html

An updated version of the applicable Oracle Retail document is indicated by Oracle part number, as well as print date (month and year). An updated version uses the same part number, with a higher-numbered suffix. For example, part number E123456-02 is an updated version of a document with part number E123456-01.

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Oracle Retail product documentation is available on the following web site:

https://docs.oracle.com/en/industries/retail/index.html

(Data Model documents can be obtained through My Oracle Support.)

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Introduction to Oracle Retail Insights

This chapter introduces the role of business intelligence and data warehousing in a retail environment. It briefly describes the implementation of Oracle Retail Insights and its data sources, and the Retail Insights user interface through Oracle Business Intelligence Enterprise Edition (Oracle BI EE).

Business Intelligence in the Retail Environment

Business intelligence includes the processes, methods, and technologies adopted by organizations to answer complex business questions and build comprehensive decision support systems. Business intelligence enables all users in a retail organization to answer questions about the business, for example:

- How do actual sales this period compare to the current plan?
- What is the retail value of inventory on hand, and how does it compare to the same period last year?
- What are the best-selling items in a division or department?
- How effective was the last promotion?

The answers to these questions and others are embedded in the enormous volume of sales and returns, price changes, receipts, and other transactions generated by your retail organization. These transactions are the raw material for business intelligence. Transaction-level data must be converted to information to support decisions in a retail enterprise.

These systems help organizations in maintaining secure, conformed, and highly available data for all levels of users, from top-level executives who make decisions based on corporate-level information to managers and analysts who analyze their areas and take actions based on their findings. Business intelligence is built using several processes, and applications that maintain these processes, using the latest tools and technologies. One of the main components of business intelligence is a data warehouse. A data warehouse is the repository that stores data extracted from multiple source systems, modeled to perform for both data loading, reporting, and ad hoc analysis needs.

Data Warehousing and Business Intelligence

The data warehouse is the central repository for the data that is required for business intelligence in a retail environment. The applications and components that make up the data warehouse perform these functions:

- They organize and standardize data so that it can be stored in a consistent format in the data warehouse.
- They load data to a relational database management system that is specially constructed for business intelligence.
- They provide analytical tools and interfaces necessary to deliver information throughout the retail organization.

Online transaction processing (OLTP) applications, such as Oracle Retail Merchandising Foundation Cloud Service (RMFCS), are designed for efficient record-keeping. They generally hold only a small amount of historical information. The data warehouse, on the other hand, consists entirely of historical data organized by business area. (Collections of data organized to support particular business areas are sometimes called data marts.) These business areas consist of a relatively small number of very large tables.

This type of organization is optimal in the business intelligence environment, where large quantities of historical data must be stored and made available to users in summary form. The tables that make up the data warehouse contain the information that is needed to create a picture of the organization at any point during the period for which data is kept.

Oracle Retail Insights

Oracle Retail Insights offers a rich business intelligence solution to retail industry users. Retail Insights is built using latest Oracle technologies and uses Oracle Data Integrator (ODI) for extracting, transforming, and loading (ETL) the data to Oracle Business Intelligence Enterprise Edition for end user reporting and analysis. This solution provides complete, enterprise-wide insight for retail users, enabling fact-based actions and intelligent interactions.

Retail Insights starts with customer and merchandising data. It embraces existing corporate data sources, and it integrates with Oracle Retail solutions to increase effectiveness across the entire merchandising life cycle.

Retail Insights can integrate with Oracle applications, as well as applications from other vendors. It can be implemented alone, or integrated with other applications, to accommodate each retailer's unique information needs and applications environment. The prebuilt nature of the solution allows you to achieve fast time to value, by reducing deployment time and helping to lower total cost of ownership.

Oracle Retail Insights is a software product that includes the following modules:

- Merchandise Insights
- Customer Insights
- Consumer Insights

Merchandise Insights Module

The Merchandise Insights module is a merchandising-specific business intelligence module of the Retail Insights application. It provides insight to critical performance indicators such as item sales, store performance, markdowns, inventory turns, sales and profit trends, and current and potential out-of-stocks.

Merchandise Insights dashboards provide the ability to act on those insights. They enable you to order more stock, reallocate merchandise, or begin a promotion, triggered by metric thresholds.

The Customer Order subject area of the Merchandise Insights module facilitates analysis of Oracle's Commerce Anywhere solution. Commerce Anywhere integrates Oracle Retail applications with on-line order capture (OOC) and order management (OMS) applications to support the ability to do real-time available inventory lookups into Oracle Retail applications, creation of customer orders fulfilled from suppliers or retailer locations, and fulfillment of these customer orders.

Customer Insights Module

The Customer Insights module enables you to perform retail analysis of customers and customer segments.

For each subject area, there are relevant metrics that can be used to answer business questions such as the following:

- Who are my most profitable customers? Who are my most frequent shoppers?
- Which items in my category should I promote together?
- How did my promotion perform compared to my plan? How profitable was it?
- How are my products selling across various customer demographics?
- How are my products selling across various customer behaviors?
- Which items should I promote, and using which methods?
- What is my promotional lift?

The Customer Insights module provides fact-based insight into the following:

- Customer price sensitivity
- Customer loyalty to merchandise
- RFM scores
- Overall promotion effectiveness

You can use this insight to manage and track event performance, and to segment and retain your most valuable customers. You can assess the effectiveness of promotions, track and analyze key promotion sales and promotion metrics, and generate a complete picture of customer-centric promotion performance.

Customer segment analysis in Customer Insights is available based on the following:

- Demographics, the ability to analyze segments by income, ethnicity, geography, and other factors.
- RFM scoring, used for analyzing customer behavior and defining market segments. The following metrics are given a score of 1 through 5:
  - Recency – How recently did the customer purchase?
  - Frequency – How often does the customer purchase?
  - Monetary value – How much does the customer spend?
- Behavior – Are customers considered environmentally green? Would they be considered frugal? Do they tend to be health-conscious? Based on their behavioral attributes, you can make informed decisions about products or promotions that are of interest to your customers.
- Customer loyalty analysis and scoring – Retail Insights provides the ability to classify and report on customers by loyalty programs and accounts, as well as pre-defined loyalty scores.

Market basket analysis (executed through a separate Science platform user interface) provides insight into which products might make effective bundles. Customer behavior information is obtained from mining transaction history, and it is correlated with customer segment attributes to inform promotion strategies. The ability to understand market basket affinities allows marketers to calculate, monitor, and build promotion strategies based on critical metrics such as customer profitability.

Promotion analysis can be done based on the following:

- Promotional halo and cannibalization, which will highlight the promotions effect on other items in the category.
- Promotional try and repeat, which shows the promotion's effect on initial and repeat purchases.
- Promotional response rate and offer conversion, which will speak to the effectiveness of the promotion.

Consumer Insights Module

The Consumer Insights module enables you to perform analysis of consumers and consumer segments, using data provided by Oracle Data Cloud (ODC). RI provides ways to load enriched customer attributes which ODC sends to your CRM, allowing for a greater understanding of your customer base. RI can also receive information about prospective customers from the larger pool of consumers in ODC. These consumers are selected using your own customer base as a way to identify others who are likely to shop at your business.

Customer Enrichment

ODC offers the ability to enrich first-party customer data with a wealth of attributes and profiles accumulated from hundreds of third-party consumer datasets to help you better understand your customer base. This could be anything from identifying frequent online shoppers to finding people who are "Fitness Fanatics". This data is typically provided to your CRM system (such as Oracle Retail Customer Engagement) and can then be interfaced into RI for enhanced customer analytics and segmentation.

You can take advantage of this consumer data in RI to answer questions about your customers that may not have been possible before:

- Do my customers have any common hobbies, activities, or spending behaviors *outside* my stores which may influence their purchasing decisions with me?
- Do my customers tend towards specific consumer profiles that can influence how I interact with them through targeted offers and marketing campaigns?
- How do my customers break down by age, gender, family composition, and other demographics which can impact their response to my advertisements and promotions?
- Are my customers highly seasonal shoppers with preferences for specific holidays or events, which could indicate opportunities for new promotions targeted to those times of the year?

Consumer Prospecting

ODC also provides a service for analyzing your current customers to locate potential consumers that could be converted through outreach and promotional activity. The service takes a subset of your own customers and matches them to other consumers who share common attributes or behaviors, making them ideal candidates for consumer conversion activities. Most importantly, the consumers returned by this

process will have Oracle Person IDs (which are also applied during customer enrichment), allowing you to link new prospects with ODC-enriched customer data over time. Converted consumers may begin to appear as known customers with sales transactions, which can be rolled up to the Consumer Segment level to analyze conversion rates of a segment that you have been actively targeting with marketing or outreach.

Retail Insights will automatically link consumer prospects with ODC-enriched customers using the Oracle Person ID, providing new insights into the effectiveness of targeted offers and the characteristics of first-time buyers. ODC will also provide the same set of enrichment attributes and profiles on all new prospects that you already get on your first-party data, giving you deeper insights into the individuals that we've identified as prime potential customers for your business.

Characteristics

These are some characteristics of Oracle Retail Insights:

- Rich reporting capabilities

  Retail Insights offers report creation capabilities using two different analysis methods in the same environment:

  - Historical (as-was)
  - Current (as-is)

  See Chapter 4, "Creating and Modifying Reports" for more information about these analysis methods.

  Packaged reports are provided as a reference for creating customized reports and serve as the baseline reports for Retail Insights. Retailers may use the packaged reports as-is but it is expected that new reports will be created as part of the implementation process to fit the business's specific reporting needs.

- Comprehensive Solution

  Oracle Retail Insights is an end-to-end solution for reporting and retail business intelligence needs through the following:

  - Data integration with source applications
  - Loading and transforming the fact and dimension data
  - Rolling up the data for improved query performance
  - The Web-based Oracle BI user interface for report creation
  - Shell scripts for setting up the batch schedule
  - An automated installer

- High-performance extract, transform, and load (ETL) code

  Using Oracle Data Integrator, Retail Insights offers high performance for the Oracle Database batch processes.

- Extensibility

  Retail Insights ETL code can be customized and extended for customer-specific needs.

- Flexibility

Oracle Data Integrator and Oracle BI EE code promote flexibility during implementation based on customer-specific needs and help in improving batch and report performance.

- High-performance reporting

  Retail Insights metadata is built using Oracle BI EE and designed to perform in complex reporting scenarios.

- Robust data model

  The Retail Insights data model is designed to support a retailer's data needs in a business intelligence environment. Data model elements are designed to perform with Oracle BI EE architecture.

Retail Insights Data Sources

Retail Insights uses several data sources including Oracle Retail Merchandising Foundation Cloud Service (RMFCS) and Oracle Retail Price Management System (RPM). Data is extracted, loaded, and transformed into the Retail Insights data model to support reporting requirements. The first step after installing Retail Insights is to load the data into data warehouse tables using packaged Oracle Data Integrator ETL programs.

Figure 1–1 illustrates the data sources for Oracle Retail Merchandise Insights. The data sources can be Oracle Retail applications or other data sources specific to each retailer's systems environment.

Figure 1–1 Data Sources for Oracle Retail Merchandise Insights

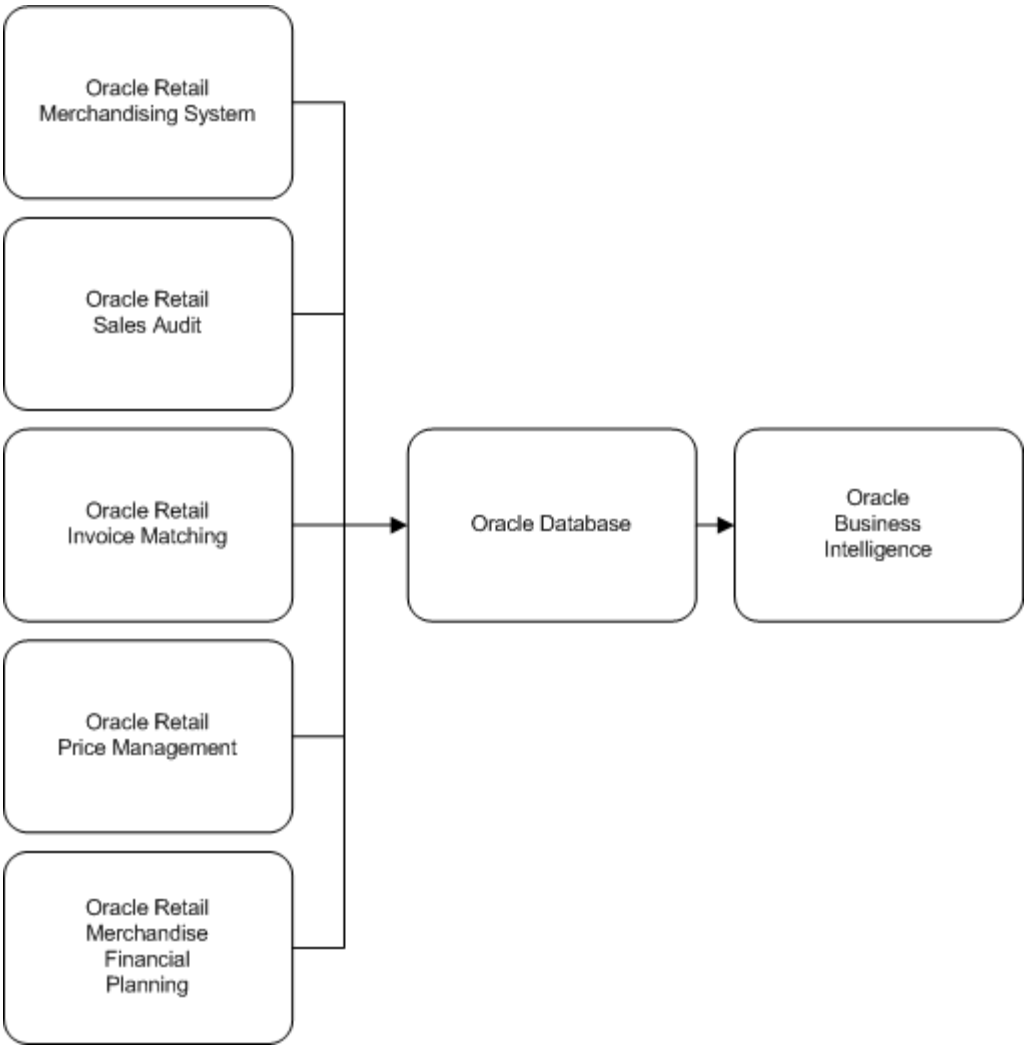


Figure 1–2 illustrates the data sources for Oracle Retail Customer Insights. The data sources can be Oracle Retail applications or other data sources specific to each retailer's systems environment brought into RI via different interfaces.

Oracle Retail Customer Insights is integrated via various interfaces with Oracle Retail Customer Engagement (ORCE) to obtain customer, customer segment and customer household data. Previous to 16.0, Oracle Retail Science Platform (RSP) was the source for customer segment data to RI. From 16.0, an alternative integration between RSP - ORCE - RI provides a tight coupling of customer, customer segment and customer household data between the three systems. The customer data flows from ORCE to RI. RI in turn passes this data to RSP. RSP create segment information based on different algorithms and sends it to ORCE. ORCE in turn publishes the customer segment data to RI.

In addition to customer data, RI receives a file for all active promotions and deals initiated in CE, loyalty accounts and programs, and loyalty and award transactional activity.

Figure 1–2 Data Sources for Oracle Retail Customer Insights

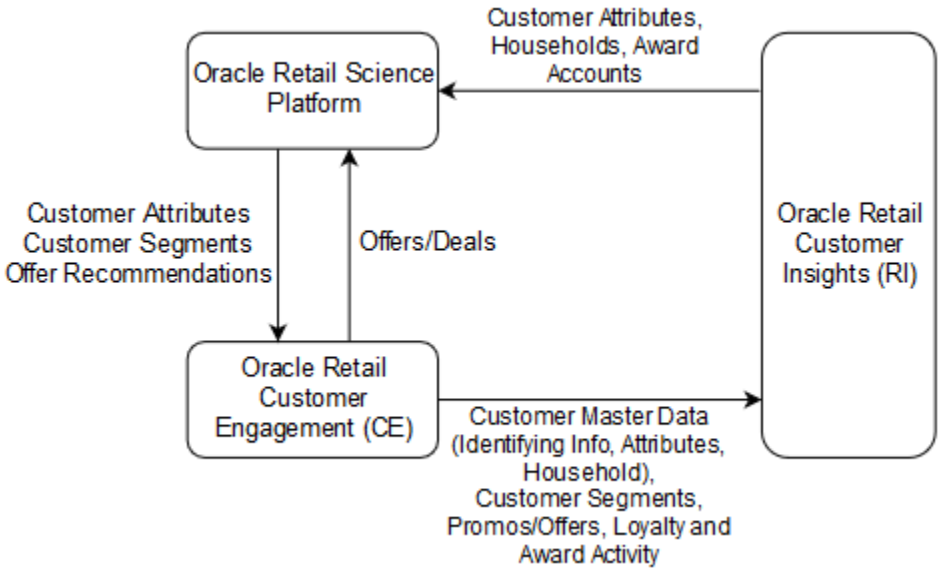
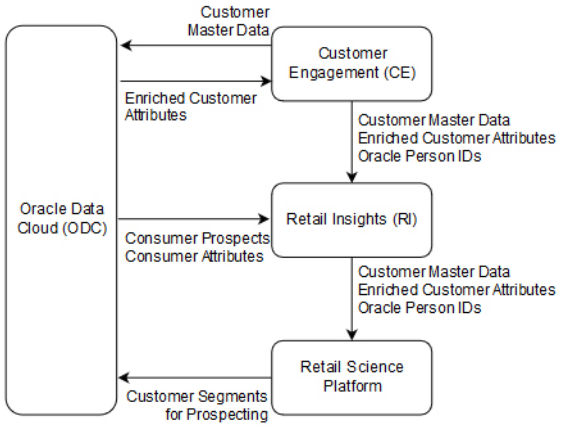


Figure 1–3 illustrates the data sources for Oracle Retail Consumer Insights. The data sources can be Oracle Retail applications or other data sources specific to each retailer's systems environment brought into RI via different interfaces.

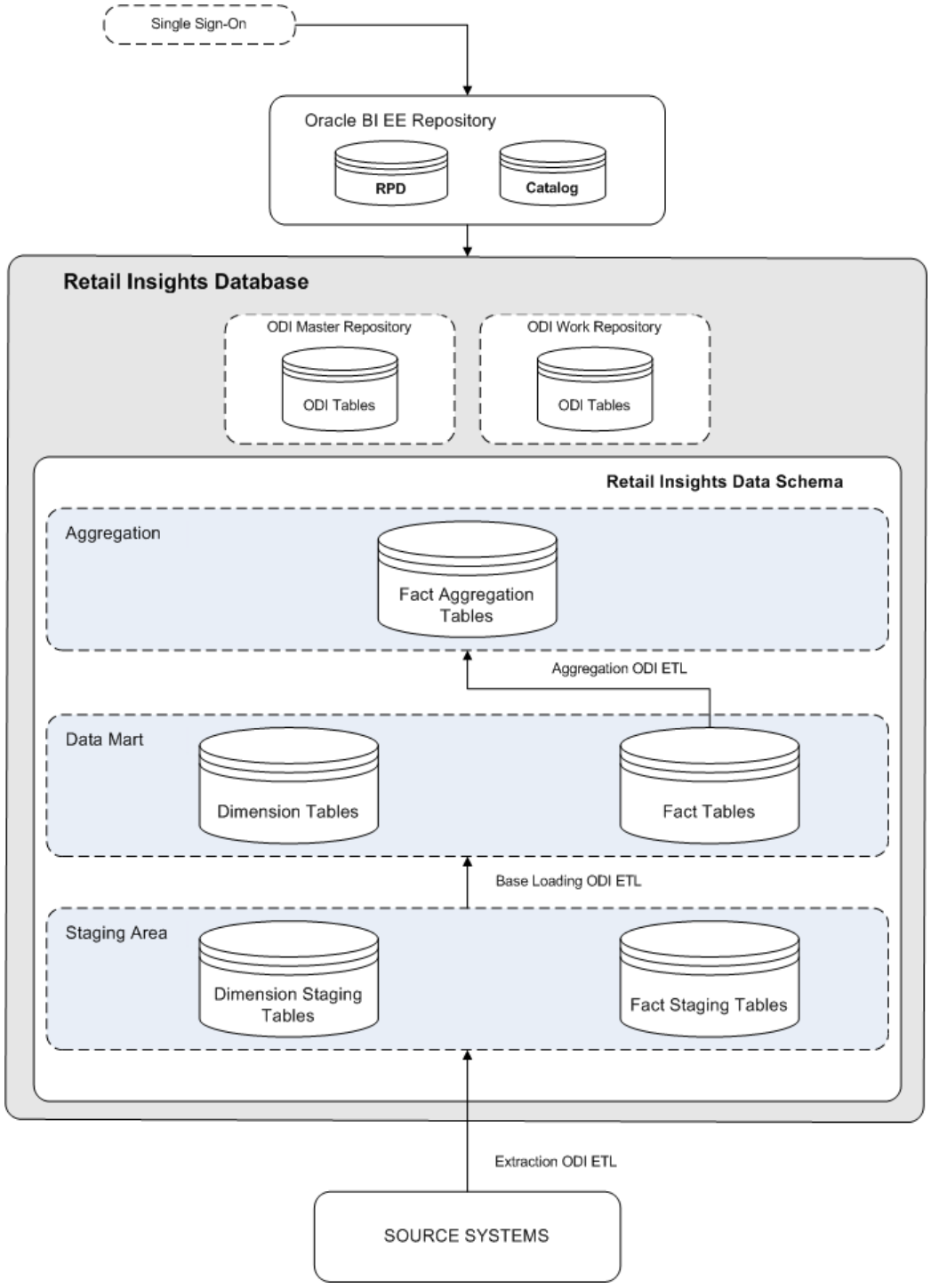
Figure 1–3 Data Sources for Oracle Retail Consumer Insights



Oracle Retail Insights Architecture

Figure 1–4 represents how the Oracle Retail Insights data model interfaces with other Oracle Retail Applications, and how an Oracle BI user accesses the Retail Insights metadata. See the *Oracle Retail Insights Implementation Guide* and *Oracle Retail Insights Data Model* for more details about the data model.

Figure 1–4 Retail Insights Architecture



Oracle Retail Solutions

Oracle Retail Insights integrates with any combination of the following Oracle Retail applications:

- Oracle Retail Merchandising Foundation Cloud Service (RMFCS)
- Sales Audit

- Oracle Retail Invoice Matching (ReIM)
- Oracle Retail Price Management (RPM)
- Oracle Retail Merchandise Financial Planning (MFP)
- Oracle Retail Science Platform (RSP)
- Oracle Retail Customer Engagement (ORCE)

See the *Oracle Retail Insights Installation Guide* for information about the release levels of Oracle Retail products that integrate with Oracle Retail Insights.

An online transaction processing (OLTP) application such as Oracle Retail Merchandising Foundation Cloud Service (RMFCS) is the principal source of data for Retail Insights. The OLTP application provides the majority of attribute data for most dimensions, including organization, product, and time calendar dimensions. The OLTP application supplies facts for many data marts including inventory, pricing, cost, and supplier compliance. For more details, see the *Oracle Retail Insights Operations Guide*, which maps source data to its corresponding target table in Retail Insights.

Oracle Retail Sales Audit provides the tools to evaluate point-of-sale data, to ensure the accuracy and completeness of information exported to downstream systems used in optimization processes, financial reporting, and analysis.

Oracle Retail Invoice Matching (ReIM) is a solution that provides the data necessary to support invoice verification, minimizing interface development and maintenance costs. ReIM can serve as the source of invoice cost data. This information must be extracted from another application if you do not use ReIM.

Oracle Retail Price Management (RPM) is a solution that assists with pricing decisions. RPM can serve as the source of promotion data. This information must be extracted from another application if you do not use RPM.

Oracle Retail Merchandise Financial Planning (MFP) provides strategic and financial product planning functions. These functions support industry planning standards for preseason and in-season processes. MFP facilitates the creation of financial plans in a structured method.

Oracle Retail Science Platform (RSP) provides strategic clustering functions. Based on various rules and algorithms customer segments are derived and customers are grouped. RSP facilitate creation of customer segments based on various customer attributes.

Oracle Retail Customer Engagement (ORCE) enables storage of customer data to track their shopping preferences, habits, and tendencies. This information can be analysed in a structured way in RI that allows retailers to have a better understanding of their customer base and to target promotions to customers who are most likely to react.

Data Granularity

Data granularity is decided for fact tables based on reporting requirements. Currently, data granularities are set for generic report requirements. Data may be available at lower levels in source systems and may not be available in Retail Insights because of requirements. Dimension data exists at the lowest hierarchy levels.

The data from transaction systems is transformed to accommodate the Retail Insights database structure. This data serves as the foundation for business measurements, but by itself it is not sufficient to answer many business questions.

Typically, data is held at a low granular level in Retail Insights. For example, sales data is held by location, item, and day attributes. There is one row in the sales fact table for

every combination of these attributes. In most cases, however, the analyst wants to view data at higher levels in the product and organization hierarchies, and for a longer span of time than a single day.

Effective business intelligence requires facts to be held at a low granular level, while allowing measurements at any level in the organization where they are needed. For example, a location manager making an assessment of monthly sales at the department level wants a report showing total sales for each department. When the location manager spots a potential problem at the department level, the manager may want to focus analysis on the subclass, or even the specific items, for which problems exist. Retail Insights permits analysis at any level by storing information at a low granular level, while allowing reporting at higher summary levels.

In some cases, Retail Insights holds data at multiple levels, to facilitate analysis and improve performance. For example, sales facts are held by subclass and week, as well as by item and day (the location attribute is present in both tables). The result is that the same data exists in more than one fact table in the database. While redundant data improves performance by reducing the number of queries that must be serviced, it also requires more maintenance. Retail Insights uses redundant data in a few cases in which all customers benefit in terms of performance; in most cases, however, retailers must determine where redundancy is needed, based on their own requirements.

Metadata Organization

The Oracle Retail Insights presentation model is implemented in the form of two subject areas, as-is and as-was. (a subject area is also called a presentation catalog in the repository.) The following are the categories of data in the Retail Insights subject areas:

- Merchandise Insights

  Merchandise Insights is supported for sales and sales promotion, supplier, product, employee, and organization for as-is and as-was time analysis. Much of the data for merchandise insights is sourced from an OLTP system such as RMFCS.

- Customer Insights

  The Customer dimension is supported for sales, sales promotion, customer loyalty, and promotions for as-is and as-was analysis. Data for customer analysis is usually sourced from a CRM system such as ORCE.

- Consumer Insights

  The Consumer Segment dimension is supported on the same facts which are used for Customer (assuming a common link using Oracle Person IDs). The Consumer dimension is used with the Consumer Segment dimension. Data comes from a combination of ORCE and Oracle Data Cloud.

The subject areas are as follows:

- Retail Insights As-Was
- Retail Insights As-Is

See Appendix B, "Reporting on Oracle BI Repository Objects," for information about how to produce documentation about repository objects.

As-Was

The supporting attributes and metrics for as-was reporting are available in this subject area. On the reports on this subject area, the historical data is associated with the

hierarchy of an attribute before a reclassification. For example, if an item is reclassified from the Snacks Department to a new Grocery Department, the previous history of the item stays with the old department (Snacks), which shows how the SKU performed in that department. Future transactions for the item will belong to its new department (Grocery).

As-Is

The supporting attributes and metrics for as-is reporting are available in this subject area. On the reports on this subject area, historical data is associated with the new hierarchy of an attribute after a reclassification. For example, if an item is reclassified from the Snacks Department to a new Grocery Department, the previous history of the item moves to the new department (Grocery).

Oracle BI User Interface

Oracle BI is the interface that provides the OLAP tools for Oracle Retail Insights. Oracle BI is a comprehensive solution that you can use to create, modify, schedule, and distribute reports to end users throughout your retail enterprise. You access Oracle BI through your Web browser. Oracle BI is the metadata built on top of the Retail Insights data model, and it can be used for executing and scheduling existing reports or creating ad hoc reports.

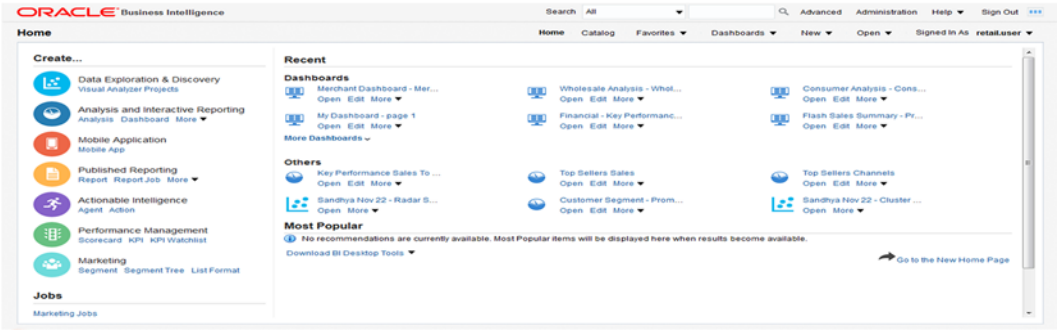
For information about creating reports with Oracle BI, the primary reference is the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

The Oracle BI interface can be customized in many ways for your enterprise. The illustrations in this guide show the default installation of Retail Insights dashboards and reports. You can create your own dashboards to organize your reports and other objects you create. You can also develop report schedules and automated distribution mechanisms, to direct reports to the people who need them.

Note: The specific URL and login requirements for Oracle BI depend on how Oracle BI is configured in your enterprise. Your system administrator can supply the information you need to access Oracle BI and Retail Insights.

Figure 1–5 shows an example of the interface you use to create and modify reports.

Figure 1–5 Oracle BI Presentation Interface



Use the Oracle BI Presentation interface for tasks such as the following:

- To create and modify reports, prompts, and filters

- To perform ad hoc analyses and experiment with metrics and filters
- To experiment with different report presentations, including tables and charts of many types
- To schedule and distribute finished reports to the end users who need them
- To administer presentation layer security, which limits the reports, dashboards, and report elements users can access

The Oracle BI interface displays attributes, facts, and metrics as logical columns. When a report is executed, the results (rows of data) are grouped by the attribute columns on the report, such as 'Sales $ by Year, Department.' You can include any of the logical columns in your reports. You can modify your report columns with your own metrics, filters, and prompts.

Numerous predefined reports are packaged with Retail Insights and can be used with little to no modifications. You can also enhance these reports for your specific requirements and use them to create your own custom reports. For more information about predefined reports, see Chapter 3, "Predefined Retail Insights Reports."

Supported Languages

Oracle BI provides numerous language options for users; however, not all languages supported by Oracle BI are supported by Oracle Retail Insights. The following languages are supported for Retail Insights users:

- Chinese (Simplified)
- Chinese (Traditional)
- Croatian
- Dutch
- English
- French
- German
- Greek
- Hungarian
- Italian
- Japanese
- Korean
- Polish
- Portuguese (Brazilian)
- Russian
- Spanish
- Swedish
- Turkish

User Roles and Responsibilities

To support numerous business decision-making processes, Retail Insights reports are designed for different categories of users such as:

- Merchandising executives and analysts
- Buyers
- Pricing executives and analysts
- Planning executives and analysts
- Inventory control managers

In the standard Retail Insights installation, the predefined reports are organized in multiple dashboards to facilitate role-based implementation.

See the *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition* to learn about authentication and user role configurations for an enterprise.

User-Based Data Filtering

Retail Insights supports automatic filtering of report results based on users and groups mapped to levels of the merchandise or organization hierarchy. For example, users may be assigned specific stores or districts for which they are responsible. When executing reports at this level of detail in RI, they will automatically be limited to results matching their assigned locations. The levels of the organization hierarchy that are supported with this functionality include Chain, Area, Region, District, or Store. Merchandise hierarchy includes division, group, department, class, and subclass (but not below that).The retailer is responsible for populating the user, group, and organizational mapping tables as part of the nightly file uploads to RI. Refer to the Retail Insights Interfaces Guide in My Oracle Support for more details on these interfaces.

Note that the data filtering is not applied to reports which are not at the specified level of the user/hierarchy mappings, as the identifiers would not be present on the tables used by such queries. Additionally, users that are not present on the data filtering tables will not have any restrictions applied to query results.

More Information

For each dashboard, additional measures can be inserted into the existing reports or used to create custom reports based on specific business requirements. These additional measures are available in each application's subject area in Oracle BI Answers. For more information on creating custom reports, see the following:

- *Oracle Retail Insights Implementation Guide*
- *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*

2

Report Components

A report is primarily constructed of logical columns. Logical columns include:

- Facts
- Attributes
- Metrics

You can constrain (limit) the data to be included in a report with filters and prompts:

- A filter constrains the data in the report so that the report shows only the information that the user of the report wants to see. For example, you can use filters to limit reports to show information only about certain locations, items, and time periods. See "Filters" later in this chapter.
- A prompt allows the user of a report to select how to filter data in the report. For example, a prompt can ask the user to select a time period or location. See "Prompts" later in this chapter.

Facts

A fact is a column that contains numeric data in one or more database tables. For example, the Sales fact SLS_AMT_LCL (sale amount) allows access to the corresponding column in the sales tables in the Retail Insights database.

Facts are the basis for the formulas used to construct business metrics. For example, the formula SUM(SLS_AMT_LCL) is the basis for the calculation of gross sales amount.

By themselves, facts have no meaning. The statement “inventory on hand was 10” only has meaning when given the context of time and place. Attributes place facts in context and make them meaningful. An attribute is the general description of some aspect of the business, such as location, day, or item. Examples are Minneapolis (location), April 16, 2011 (day), and scarves (item). Facts become useful only when qualified by one or more attributes. Facts are most often qualified by multiple attributes (see "Attributes and Dimensions" later in this chapter).

Additive Facts

The majority of facts are additive, meaning that two facts of the same type can be added to create a meaningful number. For example, the sum of total sales for each of the days in a week gives the total sales for that week, and the sum of total sales for each month can give the total sales for a quarter or year.

Semi-Additive Facts

Some facts are semi-additive, meaning that facts of the same type cannot be added in all circumstances. For example, adding receipts of an item to existing inventory produces a meaningful result, a new count of inventory on hand. On the other hand, adding the number of units on hand for every day during a week does not result in a meaningful weekly total; rather, the amount of inventory is expressed as a position for some time period such as day or week.

Positional Facts

The data in positional fact tables reports the state of an entity at a certain point in time, rather than the total activity of an entity, these facts cannot be simply summed over time.

For example, you could ask the question: "What was my total unit retail for this week?" This is not the correct question. Aggregations of positional facts along the axis of time take end-of-period snapshots that answer the question: "What was my unit retail at the end of this week?"

For all aggregations along the time axis, aggregation programs run daily. For aggregations of positional facts within a period, this results in a period-to-date position, rather than an end-of-period position. After the period is complete, the last run for that period results in the desired end-of-period position.

Attributes and Dimensions

An attribute describes some characteristic of an entity such as a product, a time period, or a store location. Attributes are used to aggregate data and constrain data in a report.

Attributes that are not part of the same dimension are related when they exist in the same fact table. The attributes item, location, and week are not formally related in a hierarchy; however, all of these attributes exist in the sales fact table. This means that questions can be answered by one or more of these attributes.

For example, you might ask first to see sales data by location and week. Because the fact table contains the attribute Item as well, the data can be reorganized using the Item attribute. As a general rule, information can be referenced by any attribute, or combination of attributes, present in the fact table.

Dimensions are collections of related attributes. These are some examples of Retail Insights dimensions:

- Organization
- Product
- Promotion
- Business Calendar

Dimensions and Drilling

Attributes can be related to each other through parent-child relationships. In a relationship of this type, the child attribute belongs to only one parent attribute. For example, the Location attribute in the Organization hierarchy is defined as the child of the Region attribute. All elements of the Location attribute exist in only one region. Because the Region attribute is also defined as the child of another attribute, the relationship of the Location attribute to all other attributes in the hierarchy can be predicted.

Through these relationships, you can drill into data. Investigation of a business problem often begins at a summary level and moves to a detailed level as analysis progresses. Drilling allows you to focus on parts of the data set where problems are identified.

Metrics

Oracle Retail Insights contains an extensive set of metrics (measures) and key performance indicators (KPIs) designed for business intelligence in a retail environment.

Metrics are performance measurements, typically numeric, that allow you to analyze business performance. Metrics range in complexity, from a simple metric that sums the values in a single fact column, to highly complex calculations that contain mathematical operators.

A metric can be viewed as a statement that specifies how a performance measure is calculated. The basic component of a metric is a formula that specifies the calculation to be made. A metric can contain other components that specify additional criteria for calculating the metric.

Formulas

Each metric has a formula that specifies how the metric is calculated. The formula for a simple metric specifies a fact and a function for the fact. For example, the following formula calculates a sum of values in the sales fact column:

```
SUM(SLS_AMT_LCL)
```

where SLS_AMT_LCL is the fact and SUM is the function to be performed.

In a compound metric, the formula contains two or more metrics and a formula for calculation. For example, a formula for a compound metric might calculate the average sales value by dividing the net sales metric by another metric that calculates the number of units sold.

As another example, the following compound metric formula calculates average sales value per unit using two simple metrics:

```
Sales Value / Sales Units
```

Compound metrics can also be used to create other compound metrics. For example, the formula for the stock turn metric employs a simple metric (Sales Value) and a compound metric (Avg Stock Retail Value):

```
Sales Value / Avg Stock Retail Value
```

Avg Stock Retail Value in the preceding formula is itself a compound metric, constructed from three simple metrics that access base formulas for the facts used in the calculation:

```
(SUM(BOH Retail Value + EOH Retail Value ) / (No of Weeks with Stock + 1))
```

Variance metrics are common compound metrics in Retail Insights. Variance metrics compare the change or difference in two different data points.

“Percent change” and “percent variance” metrics in Retail Insights are defined as:

```
(A-B)/B
```

The following are some examples of percent change and percent variance metrics.

Table 2–1 Percent Change and Percent Variance Metrics

Metric	Formula
Gross Sales Amt Var LY	(Gross Sales Value - Gross Sales Value (Last Year))/Gross Sales Value (Last Year)
Gross Sales Qty Var LY	(Gross Sales Qty / Gross Sales Qty LY) - 1
Gross Profit Var LY	(Gross Profit / Gross Profit LY) - 1
Net Sales Amt WTD Var LY	(Net Sales Amt WTD / Net Sales Amt LY WTD) - 1
Net Reg Sales Qty MTD Var LY	(Net Reg Sales Qty MTD / Net Reg Sales Qty LY MTD) - 1

Level Metrics

The level component of a metric specifies the attribute level to which a metric aggregates. By default, a metric aggregates to the level of the attributes on the report.

Some complex metrics require more than one level of aggregation in formulas. For example, you might want a report that shows the percent contribution sales value of each location to its region. You must know the sales value for each location and the total sales value for region to which it belongs to create the formula for this metric:

```
Sales Value (Location) / Sales Value (Region)
```

A metric that specifies a level of aggregation other than the default level for the report is called a level metric. Retail Insights includes many level metrics for sales and profit for attributes in the Organization and Product dimensions. In Retail Insights, when a metric has a predefined dimension level, the name of the attribute level appears in parentheses after the metric name. The following are some example level metrics for sales value in the Product hierarchy.

- Sales Value (Company)
- Sales Value (Group)
- Sales Value (Department)
- Sales Value (Class)

You can use level metrics to build compound metrics that measure the contribution of lower-level elements to higher or parent levels. The following are some examples of these contribution metrics.

Table 2–2 Contribution Metrics

Metric	Formula
Sales Amt Item Contribution to Department	Sales Value /Sales Value (Department)
Sales Amt Contribution to Location	Sales Value/Sales Value (Location)
Sales Amt Division Contribution to Tot	Sales Value/Sales Value (Division)
Profit Item Contribution to Department	Profit Value/Profit Value (Department)
Profit Division Contribution to Tot	Profit Value (Division)/Profit Value (Company)

Time Series Conversion Functions

Time-based comparisons are an essential part of analysis at almost every level in a retail environment. Typical examples are the comparison of sales value for the current season-to-date to the same period last year, or the retail value of inventory compared to the previous week.

Retail Insights time conversion functions use the following Oracle BI time series aggregation functions:

- Ago()

  This function calculates the aggregated value from the current time back to a specified time period.

- ToDate()

  This function aggregates a measure attribute from the beginning of a specified time period to the currently displayed time.

The Ago() and ToDate() functions are described in the following documents:

- *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*
- *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*

See Appendix A, "Time Series Conversion Functions," for information about the time series conversion functions.

Filters

A filter constrains the data that is retrieved from the database. The filter attached to a report limits the data that is retrieved for the metrics in the report. For example, a filter can limit the information in a report to a particular month, department, and location.

Filters generally constrain all of the metrics in a report. In some cases, however, it is necessary to place additional constraints on individual metrics in a report. When a condition is applied to a single metric, it does not affect the other metrics in the report. A metric condition plays the same role in a metric that a filter plays in a report, limiting the data that is retrieved based on one or more conditions.

In Retail Insights, sales and return amounts are segmented by price type according to the retail price type: regular, promotion, or clearance. Sales fact tables hold sales and return amounts in two fact columns, SLS_AMT_LCL and RET_AMT_LCL. The retail price type is indicated by a code for each row in the table. A sales metric retrieves all values, regardless of type, unless a price type is specified. To specify the price type, a filter is attached to the metric. For example, regular price type is indicated in the fact table by a value of 1. A filter stating that price type must equal 1 is attached to a metric. Queries for this metric limit the data to rows in the fact table that have a retail type of 1.

You can build your own filters with Oracle BI. Retail Insights does not include any packaged filters.

Prompts

Prompts allow any end user of a report to select the data used in the content of a report. Using prompts, you can customize filter criteria and other parts of a report, allowing multiple users to use the same report to answer different business questions.

In Oracle BI, there are two kinds of prompts:

- Dashboard prompts

  A dashboard prompt filters all reports on a dashboard page. A dashboard prompt can prompt the end user for multiple filter criteria.

- Inline prompts

  An inline prompt applies to only one report. You can use an inline prompt to prompt the user about the content of an individual report column.

An inline prompt can prompt only for the dimensions that exist in the report. A dashboard prompt can prompt about any dimension, even if it does not exist in a particular report.

3

Predefined Retail Insights Reports

Predefined reports are packaged with Retail Insights and available on several sample Oracle BI dashboards. You can use these packaged reports without modifications to begin reporting on your retail measures. You can also use these reports as foundations or examples for building your own custom reports. Each packaged report includes dashboard prompts, to allow a user to refine and focus the data in the report for the subset of the retailer's business measures that you need to investigate.

In addition to the predefined reports, Retail Insights includes a variety of predefined, fundamental metrics that are common throughout the retailing industry. Some of these are used in the packaged reports, and you can use any of the metrics in your own custom reports. See Chapter 6, "Metrics" for more information.

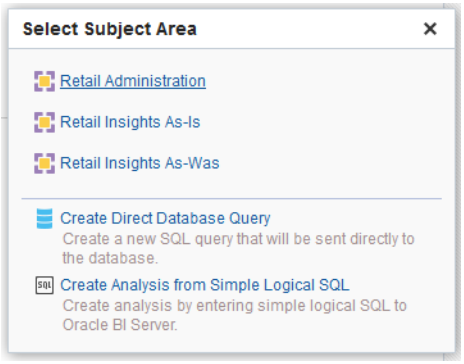
Notes: Before viewing reports, ensure that the Retail Insights nightly batch runs have completed successfully for the report subject area, so that you can analyze the most up-to-date data.

Moving, removing, or re-ordering of the columns or prompts on any predefined report is not recommended as they have only been tested as they are currently configured. Make a copy of a report if you would like to modify it or re-use it elsewhere.

As-Is and As-Was Reporting

The packaged Retail Insights metrics used in these sample reports are found under the different Retail As-Is and Retail As-Was subject areas.

Figure 3–1 As-Is and As-Was Reporting



See Chapter 4, "Creating and Modifying Reports" for more information about as-is and as-was analysis methods.

See the *Oracle Retail Insights Implementation Guide* for information about adding reports in different subject areas.

Empowered Commerce Dashboards

Retail Insights includes a set of reports and analyses referred to as the Empowered Commerce dashboards. These dashboards provide a broad overview of some of the core features and functionality available in Retail Insights while demonstrating report design best practices and numerous visualization methods.

The table below lists all of the pages in this dashboard. The table identifies each main reporting area along with the sections in each tab.

Table 3–1 Empowered Commerce Dashboards

Dashboard Page	Sections
Dashboard	Overview Top 10 Items Failed Items Missed Opportunities Projected OOS High Returns Category Analysis
Sales Performance	Company Daily Sales Divisions with Exceptions Departments with Exceptions Classes with Exceptions Stock Ledger
Pre Season Planning	Planned Sales Last Quarter Planned On Hand Last Quarter Planned Margin Last Quarter Store Recap Monthly Returns
In Season Planning	Selling Styles Projected Sales Brand Recap Inventory Aging
Channel Sales	Daily Sales Daily Comp Sales Daily Non-Comp Sales Top 10 Stores Regional Exceptions Online Sales Wholesale

Table 3–1 (Cont.) Empowered Commerce Dashboards

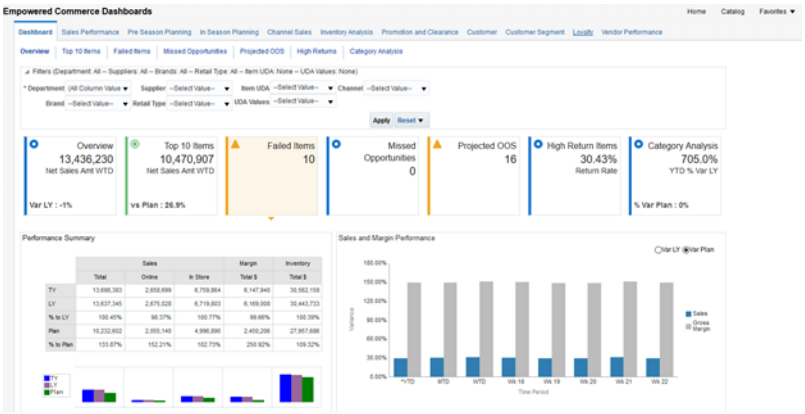
Dashboard Page	Sections
Inventory Analysis	On Hand Unavailable On Order Order Exceptions
Promotion and Clearance	Active Promotions Active Campaigns Planned Promotions Past Promotions Past Campaigns Promotion Sales Promos with Exceptions Clearance Sales Non-Clearance Sales
Customer	Active Customers New Customers At-Risk Customers Attribute Analysis Channels Analysis Backorders Coupons Customer Inquiry
Customer Segment	Customer Spend Top Bottom Styles Returns Analysis Promotion Geographic Analysis Market Analysis
Loyalty	Loyalty Daily Flash Points Analysis Top Stores Bottom Stores Member Spend Overall Spend
Vendor Performance	Vendor Summary ASN Compliance Ship Compliance PO Compliance

Dashboard

The Dashboard tab is intended to provide a high-level overview of company performance as of the current business date, and provides an area for KPIs that are

important to monitor on a regular basis, such as sales, inventory and margin performance to Plan and LY. Each section within this tab aims to highlight exception-level reporting where the user may need to take action or further analyze data. Filters can be applied to limit the results to a specific department or by various product attributes.

Figure 3–2 Empowered Commerce Dashboards



Overview

The Overview section includes a table and bar graph showing this year, last year, and planned values for sales (by channel), inventory, and margin. It also shows a bar graph for variances to last year and plan with multiple timeframes (week, month and year).

Top 10 Items

This report shows the top selling items for the current week, compared to LY and Plan. This section is intended to highlight the best items relative to the filter criteria, and could be extended with additional KPIs specific to how a retailer analyzes their top items.

Failed Items

This report shows the worst items for the current week compared to LY and Plan. This section is intended to highlight items which are not selling well or not performing to plan, and the criteria for identifying failed items could be tailored to meet business needs.

Missed Opportunities

This report shows items which could be considered missed opportunities for additional sales, due to historical performance of the item relative to on-hand and on-order inventory levels. Thresholds are provided to filter for items meeting specific sell through or on-order criteria.

Projected OOS

This report shows currently selling items that will be going out of stock within a certain number of weeks, and could require additional orders be placed to replenish inventory levels.

High Returns

This report shows products with the highest return rates in the company or departments viewed. High return rates for a product could be indicative of poor quality, fit, materials, or other issues that need to be addressed

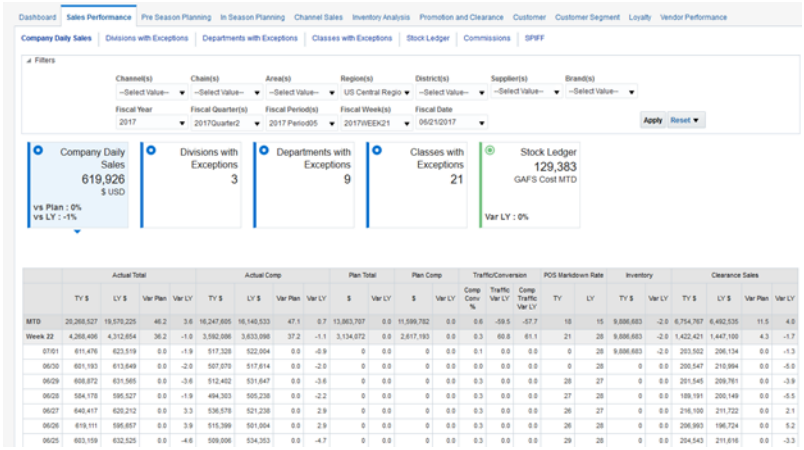
Category Analysis

This report shows a summary of department level performance which can be further drilled into in order to analyze Class and Subclass exceptions where the performance data warrants it.

Sales Performance

The Sales Performance tab is intended to provide more detailed coverage of sales activity and how the company is tracking to LY or Plan. Sections in this page could be focused on executive level reporting of daily/weekly sales analysis, as well as discovery of exceptions in a department or class that could be cause for concern.

Figure 3–3 Sales Performance Tab



Company Daily Sales

This report shows daily sales performance to LY and Plan with weekly rollups for the current month to-date, alongside a variety of business KPIs such as store traffic and clearance sales.

Divisions with Exceptions

This report aims to highlight major sales exceptions at the division level where data has deviated from LY by a certain threshold across all to-date timeframes.

Departments with Exceptions

This report aims to highlight major sales exceptions at the department level where data has deviated from LY by a certain threshold across all to-date timeframes.

Classes with Exceptions

This report aims to highlight major sales exceptions at the class level where data has deviated from LY by a certain threshold across all to-date timeframes.

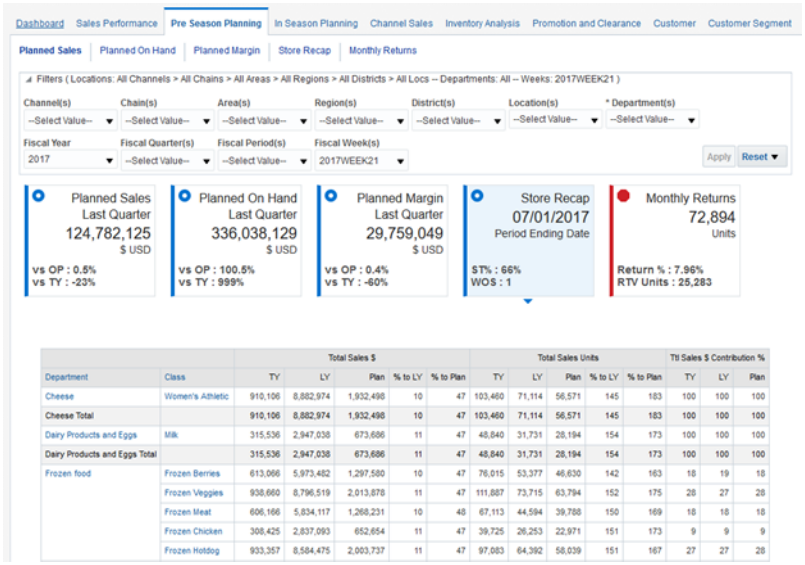
Stock Ledger

This report shows a variety of metrics from the merchandising stock ledger that is synchronized between RMFCS and RI for weekly and monthly data. The RMFCS stock ledgers may not be used, depending on a retailer's merchandising processes.

Pre Season Planning

The Pre Season Planning tab contains several reports intended to analyze the last completed historical period or quarter to review how the company performed to plan. The goal of this tab is to provide details around where sales and inventory measured up to the plan, in order to account for it in future plans being generated outside of RI.

Figure 3–4 Pre Season Planning Tab



Planned Sales Last Quarter

This report shows how sales units and amounts compared to Plan and LY, as well as class contributions to department sales.

Planned On Hand Last Quarter

This report shows how on hand units and receipts compared to Plan and LY by department and class.

Planned Margin Last Quarter

This report shows how sales margin and percents compared to Plan and LY, as well as class contributions to department sales.

Store Recap

This report shows how stores performed over the last period this year versus last year, at the store level and by store format.

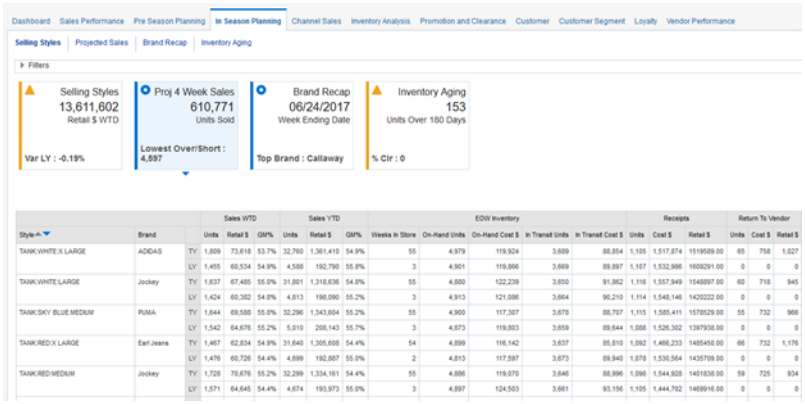
Monthly Returns

This report analyzes monthly returns by department and class, including measures of return rate contributions and returns to vendor (RTVs).

In Season Planning

The In Season Planning tab contains several reports intended to analyze the current period's performance across different intersections of data that may be relevant to various in-season planning activities.

Figure 3–5 In Season Planning Tab



Selling Styles

This report show current week and year to-date performance of the top selling styles, limited to the filter criteria on the dashboard. The report provides a snapshot of where the styles are in their lifecycle, covering sales, inventory, receipts, and RTVs.

Projected Sales

This report shows the last 4 weeks of sales along with a moving average and projection of future sales. It also compares this projection to current inventory levels to identify where the largest overages/shortages may occur.

Brand Recap

This report analyzes the current sales and inventory performance of selling brands, along with KPIs such as sell-through and weeks of supply.

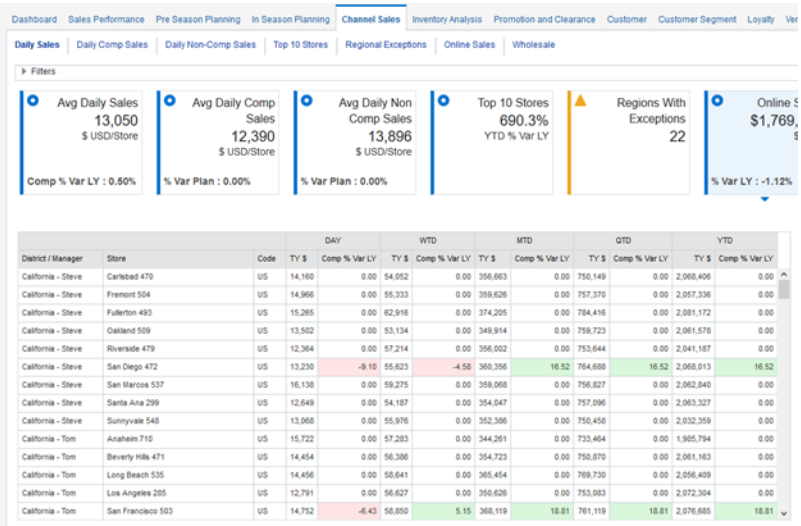
Inventory Aging

This report shows the current amount of inventory held by the company at various age levels, based on the last time a receipt occurred for that inventory. Aging inventory can be a candidate for further markdowns or liquidation.

Channel Sales

The Channel Sales tab contains several reports intended to analyze performance geographically, such as by store or region. It also reports on data by selling channel, such as Online and Stores. It is a common business practice to report and plan channels individually, as well as analyze individual store performance.

Figure 3–6 Channel Sales Tab



Daily Sales

This report shows store-level performance across all timeframes from day to year, with exception-based highlighting to quickly identify major variations from LY.

Daily Comp Sales

This report shows only comparable store performance based on the Comp Store configuration defined in RI. Retailers may customize the comparable store flags to control which stores are used in comp/non-comp analyses throughout the solution.

Daily Non-Comp Sales

This report shows only non-comparable store performance based on the Comp Store configuration defined in RI. Non-comparable stores can be flagged as such if they recently opened or underwent major renovations.

Top 10 Stores

This report shows the top-performing locations in the company, further limited by the filter criteria, such as when analyzing a specific region or country.

Regional Exceptions

This report shows an example of using exception-based reporting to highlight problem areas based on regional performance compared to last year, which could be an indication of external influences on sales, such as natural disasters or changing demographics.

Online Sales

This report provides an example of channel-based analysis with a focus on online/store sales with additional breakdowns by sales type (regular or clearance) and by customer segments.

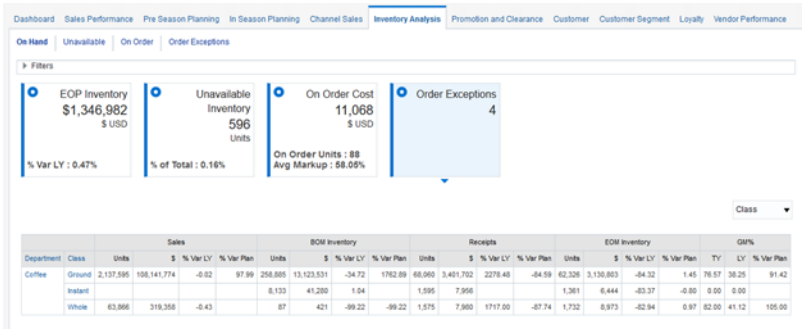
Wholesale

This report shows performance specifically for the wholesale part of a retailer's business. RI can be configured to identify and report on wholesale data separately from regular sales, using additional metrics just for this purpose.

Inventory Analysis

The Inventory Analysis tab contains several reports intended to analyze inventory at various points in the lifecycle, such as On Order, On Hand, and Unavailable inventory. Monitoring inventory levels and costs from the time it's ordered until it is sold or returned is an important function of every business, and RI provides many different views into this data.

Figure 3–7 Inventory Analysis Tab



On Hand

This report provides an overview of inventory movement within a fiscal period, covering beginning and ending on-hand, as well as sales and receipts, by department or class. Comparisons to LY and Plan provide an exception-based tool for spotting large variances in inventory levels.

Unavailable

This report describes the inventory that has been placed into an unavailable status in the merchandising system, such as products that are in dry-cleaning or have been damaged and need to be pulled from the store.

On Order

This report shows details of all active Purchase Orders sent from the merchandising system, including important attributes about the order such as approval and not-after dates, items already received, and remaining units on order.

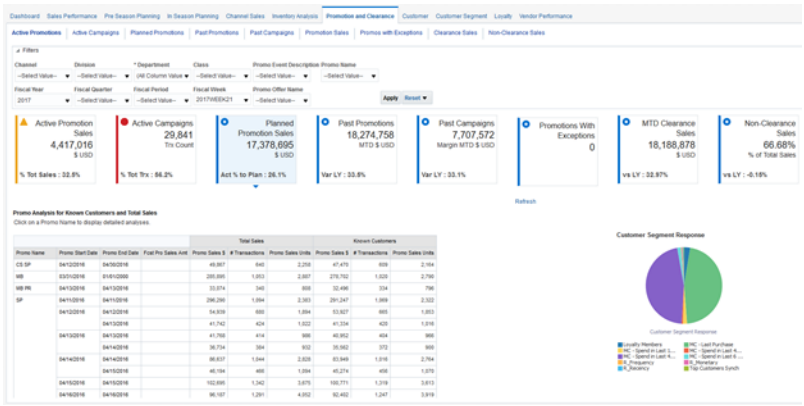
Order Exceptions

This report highlights orders which have been over-received, meaning that the number of units that arrived in the warehouse was greater than what the buyer ordered. Over-receipts can be a cause of confusion when looking at aggregate order and receipt data, as only when reviewing the individual orders can you see which ones caused more receipts than expected.

Promotion and Clearance

The Promotion and Clearance tab contains reports focused on discounted sales due to promotions or clearances, as well as analyzing specific events and campaigns. Across the sections in this dashboard, it is possible to see all sales for different promotions and drill into the customers or segments generating those sales, as well as compare to planned promotional sales and review trends over time.

Figure 3–8 Promotion and Clearance Tab



Active Promotions

This report shows all active promotions generating sales transactions, along with details of the sales and number of transactions for each promotion. It is also possible to drill into a specific promotion to see the different offers and deals associated with it and the performance of each one. This data is further split by customer segment to understand which customers are participating in the promotions.

Active Campaigns

This report shows all active campaigns generating sales transactions, along with details of the sales and number of transactions for each campaign. It is also possible to drill into a specific campaign to see the different promotions associated with it and the performance of each one. This data is further split by customer segment to understand which customers are participating in the campaigns.

Planned Promotions

This report shows the weekly trend of promotional sales compared to LY and Plan, to quickly identify exceptions where actual sales are over- or underperforming. The data is further split by channel to see performance across stores or web only.

Past Promotions

This report provides a method for comparing this year and last year promotions over a period of time. The retailer may have run a number of promotions for the first time this year, and is interested in seeing how the sales look compared to the same timeframe last year, to see how effective the new promotions were.

Past Campaigns

This report provides a method for comparing this year and last year campaigns over a period of time, similar to the past promotions report.

Promotion Sales

This report provides a high-level summary of promotional sales performance over a period of time, alongside the promotional markdown amount incurred due to the price changes.

Promos with Exceptions

This report show a comparison of promotional sales with forecasted and baseline sales calculations. Forecasts can be fed into RI and used for sales analysis, while the promotional baseline is a calculated measure of average sales during the period without promotional effects. This report provides insights into how good or bad a promotion performed relative to regular sales patterns and external predictions.

Clearance Sales

This report provides a high-level summary of clearance sales performance over a period of time, alongside the clearance markdown amount incurred due to the price changes.

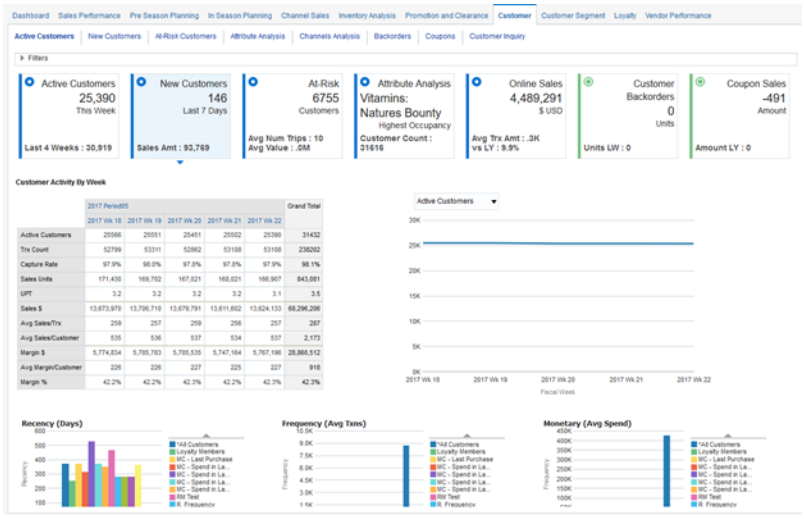
Non-Clearance Sales

This report provides a high-level summary of clearance and non-clearance sales, in order to review the percentage of sales occurring in clearance or non-clearance statuses over time.

Customer

The Customer tab contains reports focused on the behavior of a retailer's customer base over time. These reports look at various parts of a customer's lifecycle, such as new customers making their first purchase, or customers that have not made a purchase in a long time and are at risk of lapsing.

Figure 3–9 Customer Tab



Active Customers

This report focuses on reviewing the sales patterns of known customers over time. A known customer could be any person that has a unique identifier in a retailer's POS system, and the system has linked that ID to sales transactions. Comparing known

customers to your overall sales patterns can reveal key insights, such as known customers having a higher spend per transaction or generating higher margins.

New Customers

This report looks at new customers, based on the first purchase date of a customer falling within a certain timeframe. Understanding what new customers are purchasing can describe who you're attracting to your business and how much they are spending.

At-Risk Customers

This report shows the historical sales generated by customers that have lapsed, meaning they have not made a purchase in some time. It further breaks the sales out by type (regular, promotional, and clearance) to understand what these lapsed customers were buying.

Attribute Analysis

This report provides a summary of customer attribute data gathered by a retailer's CRM systems, alongside a measure of occupancy, or how many customers have data for a certain attribute. A marketer can use this data to focus on specific attributes of their customer base that is very well known across a large number of customers, or they can identify data they would like to gather from customers that they do not have today.

Channels Analysis

This report analyses customer sales by channel, such as comparing Online and Store sales just for your known customers. The report also adds a specific category for omnichannel sales, which is any customer that has made purchases both online and in-store.

Backorders

This report looks at any customer orders which are in a Backordered status in the order management system and provides a way to drill into the specific customers and orders which are not being fulfilled. It also shows a trend of backordered units over time to identify any patterns or highlight spikes in backorders during certain periods.

Coupons

This report shows sales relating to coupons issued by the retailer, as well as the customers redeeming those coupons. This can be used to analyze specific coupons that the retailer wishes to track, such as birthday coupons.

Customer Inquiry

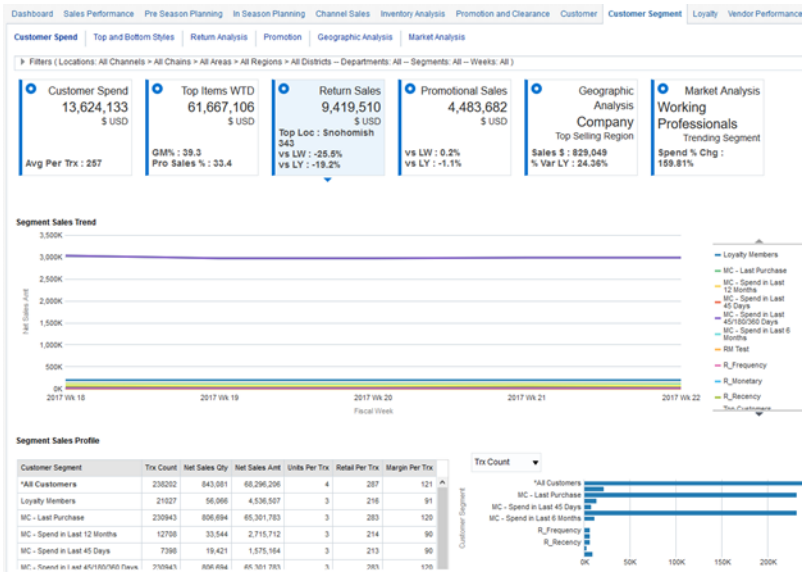
This report provides a way to query the customer data in RI in a fashion similar to a CRM system, for the purposes of looking up a specific customer's data based on an attribute or identifier.

Customer Segment

The Customer Segment tab contains reports focused on the behavior of individual customer segments defined by the retailer. Customer segments could be defined by the Customer Engagement solution or through the Science platform. Grouping customers by segment exposes patterns not easily identifiable when looking at the entire

customer base, such as a particular segment spending much more than average during holiday promotions.

Figure 3–10 Customer Segment Tab



Customer Spend

This report focuses on analyzing sales patterns by customer segment, such as the total sales generated by a segment over time, what products each segment is buying, and how they compare to each other.

Top Bottom Styles

This report looks at the top and bottom items being sold by segment, ranked by metrics such as sales or margin. Identifying the most popular items sold to a particular segment can be a driver of targeted offers and promotions and give insights into the buying behaviors of those customers.

Returns Analysis

This report analyzes the products that are being returned by different customer segments, further broken down by locations receiving those returns. Certain segments may be generating the bulk of a retailer's product returns, or the returns may only be occurring at one or two locations, and the retailer will want to dig into the cause of those returns.

Promotion

This report focuses on promotional sales trends by customer segment, to identify segments that are participating in promotional activity. It further breaks down the data by channel, in order to see where the promotional sales are occurring for each segment.

Geographic Analysis

This report breaks down customer segment data across geographic regions, identifying where the customers in a segment are shopping, as well as the top locations for the segment.

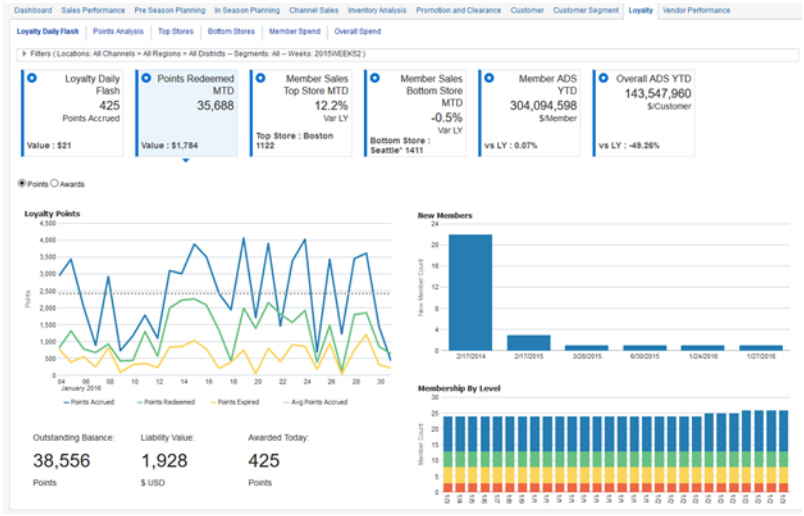
Market Analysis

This report shows market consumer data generated by a 3rd-party provider, for use in understanding market trends and target segments that are being analyzed. The retailer may use market data when determining which customer segments they will create and use in RI for reporting over a period of time.

Loyalty

The Loyalty tab contains reports focused on the loyalty programs and accounts defined in a retailer's CRM system, such as Customer Engagement, along with the transactions relating to points and awards for the programs. Analyzing the activity of customers in a loyalty program can be a major driver of sales and customer retention and is a useful tool for marketers when planning promotions and advertising.

Figure 3–11 Loyalty Tab



Loyalty Daily Flash

This report shows a snapshot of current loyalty program status, including point balances, issue/redemption rates over time, and customer counts by program level.

Points Analysis

This report gives a detailed breakdown of loyalty point usage over time by program level, such as points redeemed, issued, or expired within a period. Understanding how your loyalty program is being used, which levels are the most active, and how many points are expiring is critical to a successful and profitable program.

Top Stores

This report looks at the top stores based on loyalty member activity year over year. Since loyalty programs are often focused in specific regions, it is useful to know which locations are most frequented by loyalty members and how much they are buying.

Bottom Stores

This report looks at the bottom stores based on loyalty member activity year over year. Store which are participating in the loyalty program but not generating any loyalty sales may require corrective action by the retailer.

Member Spend

This report shows sales performance for loyalty members using an RFM (recency, frequency and monetary spend) style analysis, in order to understand how much and how often your loyalty members are shopping at your stores.

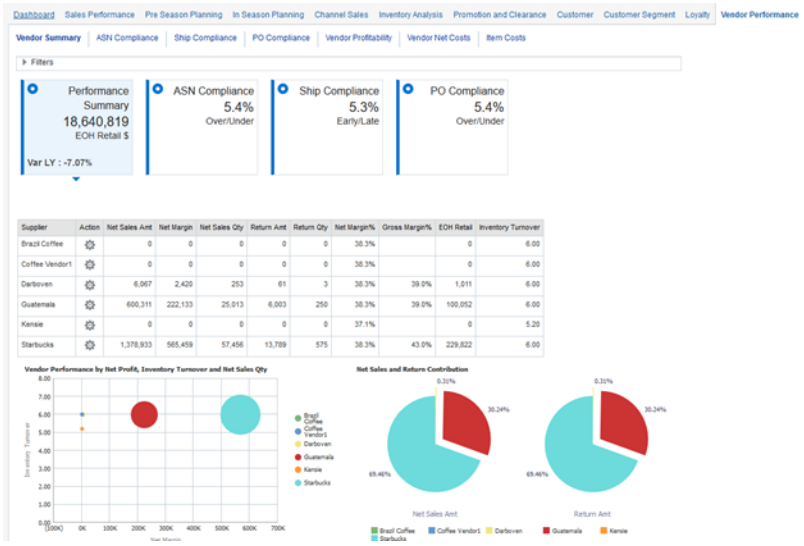
Overall Spend

This report analyzes spending patterns of your known customers and loyalty members as compared to the overall sales trends, in order to understand if each of these groups are generating more or less sales, what their average spend and shopping frequency is, and what proportion of sales can be attributed to each group.

Vendor Performance

The Vendor Performance tab shows a supplier-centric view of sales and inventory, as well as several measures of supplier compliance such as ASN and PO timeliness. Monitoring supplier performance can be an early indicator of problems with specific vendors, as well as a tool for negotiating future deals.

Figure 3–12 Vendor Performance Tab



Vendor Summary

This report shows performance of sales and inventory by supplier. When working with many suppliers, it is useful to know the inventory levels and sales margins associated with each one.

ASN Compliance

This report shows how well a supplier has met or deviated from their ASNs, depending on how this information is tracked by the merchandising system.

Ship Compliance

This report shows how many shipments from a supplier have been on time or deviated for the scheduled delivery dates.

PO Compliance

This report shows how many purchases orders were met by the supplier, and how many were over or under count.

Retail Home Templates

RI includes several catalog objects intended to support integration with Retail Home. These objects can be located in the **Shared Folders > Retail Home** folder in the catalog.

The sample objects include:

- Dashboard Tiles – these analyses are provided to demonstrate the two-metric BI tile format used in Retail Home
- LOVs – these pre-defined filters are provided to enable Retail Home filtering on the department, class, and subclass levels of an RI-based metric tile
- Sample Dashboard – this RI dashboard provides an example of how the two-metric analyses can be tested in RI before they are linked with a tile in Retail Home

For more information on creating RI analyses for Retail Home, refer to the Custom Tile State Reports Configuration chapter of the *Oracle Retail Home Administration Guide*.

4

Creating and Modifying Reports

This chapter describes some of the reporting features of Oracle BI and Oracle Retail Insights. It also describes a number of considerations for creating Oracle Retail Insights reports.

The primary reference for Oracle BI users is the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*. For more information, see that guide, particularly chapters about creating and formatting analyses, views, and dashboard pages.

Analysis Methods

The Retail Insights presentation model is designed in two different subject areas based on the reporting scenarios and analysis methods that Retail Insights supports:

- Retail As-Is
- Retail As-Was

A single instance of Retail Insights offers as-is and as-was analysis for the slowly changing dimensions Product and Organization. *Slowly changing dimensions* are dimensions with data that changes slowly, rather than changing on a time-based, regular schedule.

Although facts and dimensions appear similar across these subject areas, they are modeled differently in the Oracle BI repository. For example, Item or Subclass or Class might appear similar in all subject areas, but their sources and join conditions are different to support the appropriate method of reporting.

As-Is Reporting

This type of reporting reflects the current nature of facts and dimensions as they are known to be true today. The performance of a dimension is tracked according to the current state of the dimension in a hierarchy without regard to time period.

If hierarchies have changed or items have been reclassified, as-is reporting shows history as if it had occurred under the current hierarchy or parent. Performance of the previous hierarchy or parent cannot be seen in as-is reporting.

See "Reclassification" in Chapter 5, "Dimensions and Attributes" for more information.

As-Was Reporting

As-was reporting reflects the current values of transactions tied to a dimension value that was applicable at a former point in time. The performance of a dimension is tracked along the changes it has undergone in a hierarchy over a period of time. One

of the effects of reclassification is that the presence of two hierarchies or parents makes it possible to compare an entity's performance before and after it undergoes this change.

In fact tables, all history is kept under the former hierarchy or parent, while all data after a reclassification is under the current hierarchy or parent.

Drilling allows you to see a particular report at a given level, and then view the same report at a lower level, to examine data at a finer level of granularity. This type of analysis makes well-defined hierarchies extremely important. Drill paths must be clear, and facts must add up between levels of aggregation. This requirement explains why changes to the position of an entity in the hierarchy are considered major.

Features of Oracle Retail Insights Reports

Through Oracle Business Intelligence Enterprise Edition, Oracle Retail Insights provides capabilities to deliver contextual and actionable insight to retail business users. These capabilities and features can result in improved decision-making, better-informed actions, and more efficient business processes. Reporting capabilities of Oracle BI are featured in Retail Insights predefined (packaged) reports. You can also make use of these Oracle BI features in your own custom reports.

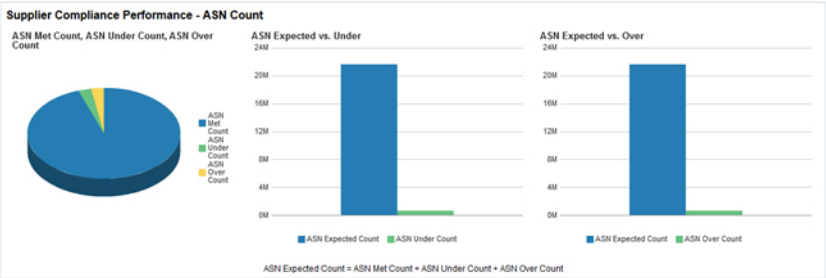
Interactive Dashboards

Retail Insights provides a number of levels of prompts, charts, tables, pivot tables, and graphics for each of its reports. You can further drill through and interact with various levels of Organization, Product, and Time hierarchies on these business objects and refine their data analysis. Retail Insights reports present intuitive access to information based on a user's role.

The following topics describe some interactive features used in Retail Insights reports.

Charts

Various reports use interface features such as graphs and charts. For example, Supplier Compliance reports graphically represent various key performance indicators (KPI) related to purchase orders, which can help buyers to promptly assess the performance of a supplier.



Conditional Formatting

Some reports use conditional formatting to indicate the performance of predefined KPIs. For example, in the Sales Performance Exception reports, the thresholds are defined for the low and high sales amount variances. The results are formatted based on these thresholds. Threshold amounts can be configured by users when executing these reports.

	0 - DAY		1 - WTD		2 - MTD		3 - QTD	
Department / Class	TY $	Comp % Var	TY $	Comp % Var	TY $	Comp % Var	TY $	Comp % Var
Chocolate and Sugars / Ground	119,727	0.00	119,727	0.00	71,529,946	0.00	220,813,616	0.00
Chocolate and Sugars / Whole	0	0.00	0	0.00	0	0.00	0	-100.00
Cleaning Supplies * / Ground	0	0.00	0	0.00	0	0.00	1,207,264	-0.97
Coffee / Ground	0	0.00	0	0.00	7,665,518	-85.66	30,662,136	-85.75
Coffee / Instant	0	0.00	0	0.00	0	0.00	373,603	-5.13
Coffee / Whole	0	0.00	0	0.00	319,358	-0.43	499,954	-5.76

Drilling

Retail Insights reports permit drilling on various attribute hierarchies. By default, reports display the results at the summary level or a preconfigured attribute level. The user can further move to a detailed level of analysis by drilling to focus on parts of the data set where problems are identified.

The following example demonstrates the drilling capability on the Inventory Analysis On Hand report, by clicking on a Department name to drill into the Class level.

	Sales				BOM Inventory			
Department	Units	$	% Var LY	% Var Plan	Units	$	% Var LY	% Var Plan
Cheese	7,530	67,455	0	22	17,693	181,050	-3	-86
Dairy Products	4,476	29,830	36	17	5,898	60,485	-3	-87
Frozen food	32,867	282,107	5	18	64,947	686,443	2	-86
Golf	6,717	5,611,724	-1	43	15,399	12,266,186	-1	-61
Home Theatre	5,037	4,173,716	-1	25	11,585	9,362,596	0	-65
Meat and Poultry Products	5,649	31,109	-29	58	11,711	119,477	-1	-72
Snack Foods	18,425	75,324	-51	9	35,031	368,032	-1	-72
Women's Activewear	75,620	3,135,838	1	24	240,400	7,066,449	-0	-81
Yogurt	11,700	29,128	-70	60	23,427	247,021	1	-44

	Item As Was	Sales				BOM Inventory			
Department	Class	Units	$	% Var LY	% Var Plan	Units	$	% Var LY	% Var Plan
Women's Activewear	Active Apparel	75,620	3,135,838	1	24	240,400	7,066,449	-0	-81

Return - Create Bookmark Link

Note: There is no value in drilling below the transaction level for an item. The transaction level can be identified if "no level" appears at drilling, which means the previous level was the transaction level.

Guided Navigation

Some Retail Insights reports use the guided navigation feature of Oracle BI, which allows you to navigate from one source report to other target reports, based on certain preconditions or data points on the source report. This helps a business user to inspect a complete logical workflow, and possibly determine the root causes of problematic key performance indicators.

Several reports in the Dashboards make use of this feature, such as the Backorders report in the Customer dashboard.

When clicking on the gear icon next to the order number, a link is provided to navigate to the order details for that number.

	Backorder			Picked	
Order # *	Units	Retail $	Profit $	Units	Retail $
A1200013				757	728

View Customer Order...

Customer Number to view additional customer information.

Clicking the action link will navigate to another report which is automatically filtered to the selected order number. In this way the user is guided to the data they wish to see, without requiring new reports or filters be executed manually.

For more information about extending the use of Oracle BI guided navigation features, see the *Oracle Fusion Middleware User's Guide for Oracle Business Intelligence Enterprise Edition*.

Map Viewer

Retail Insights reports can be customized to render geographical maps, using spatial data managed by Oracle Spatial. These custom reports can help a user to visualize geographical data. For example, when analyzing comparable sales for a particular region, maps on such a report can provide additional topographic information about the location.

To use these features, you must load the topographic data about warehouses, stores, and other locations into Oracle Spatial, and then use Oracle MapViewer to create maps.

Support for Multiple Currencies

Oracle Retail Insights supports five currencies:

- Local Currency
- Document Currency
- Global 1 Currency
- Global 2 Currency
- Global 3 Currency

During installation, these currencies are defined for your organization. You need to know how these currency mappings are used when you design reports. For example, currencies could be defined as follows:

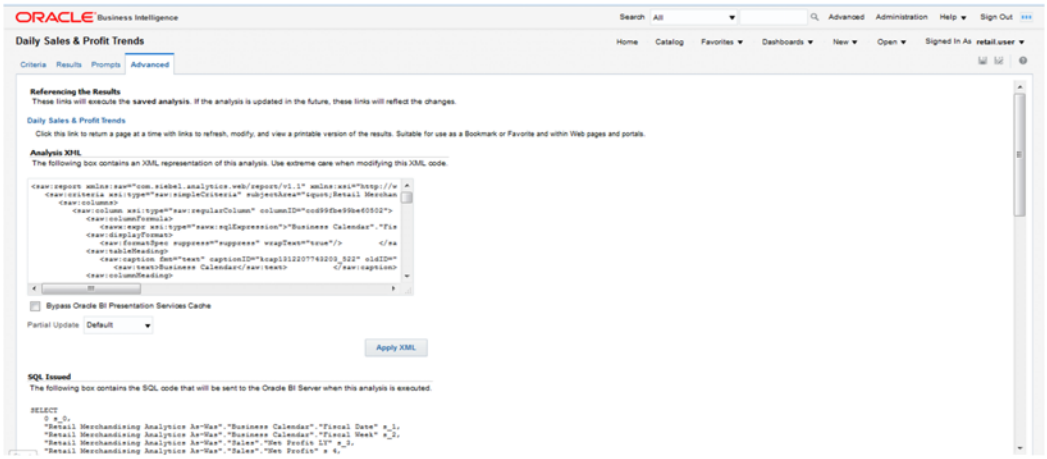
Table 4–1 Currency Mapping

Currency Mapping	Currency
Document Currency	EURO
Global 1 Currency	USD
Global 2 Currency	CAD
Global 3 Currency	AUD

Retail Insights includes a prebuilt prompt (Currency) and a report (Daily Sales and Profit Analysis) that enables support for multiple currencies. All the amount metrics are defined to support these five types of currencies.

To use this functionality, in a report, follow these steps:

1. Create the report with required amount metrics.
2. Select the **Advanced** tab.



3. Under **Advanced SQL Clauses**, in the **Prefix** text box, add the following:

```
SET VARIABLE PREFERRED_CURRENCY = '@{Currency}';
```

4. At the top, select the check box **Bypass Oracle BI Presentation Services Cache**.
5. At the bottom, click **Apply SQL**.
6. Save the report.
7. Create a dashboard and add this report, along with the currency prompt (located in Shared Folders > Merchandising Analysis > RA As-Was Prompts).

The currency prompt has five currencies preloaded. Select the preferred currency, click **Apply**, and the metrics will be calculated accordingly to the currency selected.

> **Note:** As of OBIEE 12.2.1, changing a variable prompt does not trigger an automatic refresh of report data. If the currency prompt is the only prompt in the dashboard, you may need to manually Refresh the dashboard from the options menu in the upper right corner.

Support for Multiple Calendars

Oracle Retail Insights supports two variations of the business calendar for the purposes of last year (LY) reporting.

- Unshifted Calendar
- Shifted (or Restated) Calendar

During installation, a default calendar setting can be applied to use either the shifted or the unshifted calendar. This setting is held in C_ODI_PARAM and can be changed after installation, if needed.

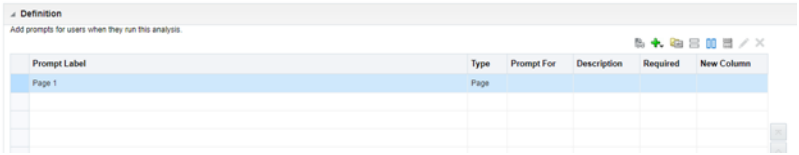
Table 4–2 Calendar Type Options

LY_SHIFT Parameter	Calendar Type
UNSHIFT	Unshifted Calendar
SHIFT	Shifted Calendar
GUNSHIFT	Gregorian Unshifted Calendar

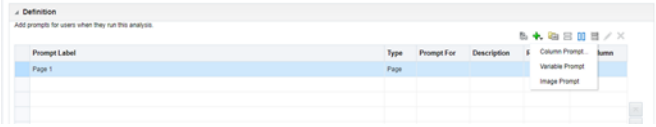
Retail Insights allows users to build a variable prompt to switch between either calendar type per-analysis, giving users the ability to compare shifted and unshifted data using the same metrics. For the Gregorian calendar, only the GUNSHIFT setting is supported, so a variable prompt is not needed.

To use this functionality in a report, or create it as a dashboard prompt, follow these steps:

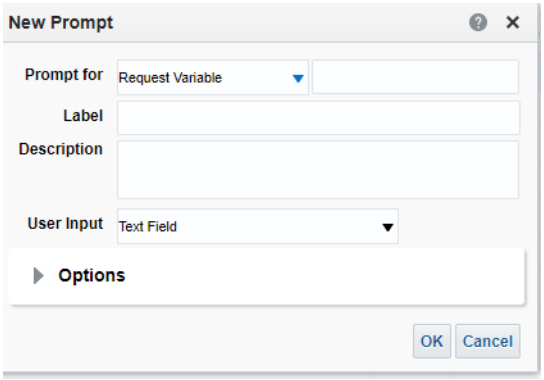
1. Create a New Prompt or Edit an existing one from the Prompts tab.



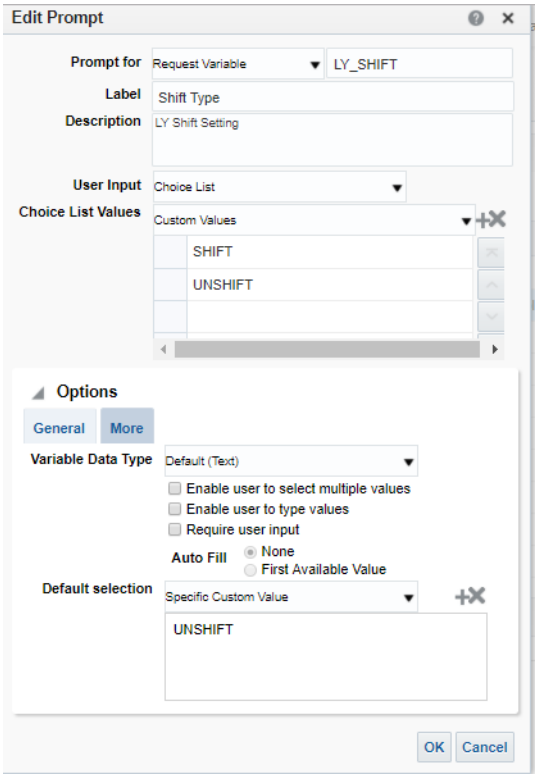
2. Select Variable Prompt as the type of prompt to create.



3. Select Request Variable from the drop down for Prompt For.



4. Select and fill all fields like below. Give the Variable Name as LY_SHIFT. Select User Input as Choice List and enter Custom Values as SHIFT & UNSHIFT. Give a Default value if needed.



5. Save this prompt and use it to switch the value of the session variable LY_SHIFT, which will change how LY metrics are displayed in your analysis or dashboard.

Creating Reports for Sales Transactions

One of the most common uses of Retail Insights is reporting on your business's sales transactions. RI maintains a historical record of all sales transactions which occur both in your retail stores and in non-retail channels such as your web store and warehouses. It is therefore critical to understand the many ways in which RI presents sales data to the user, so that you can quickly and accurately report on the information that's relevant to you.

Types of Sales Metrics

RI broadly splits sales metrics into three basic types: Gross Sales, Net Sales, and Returns. Net Sales metrics are always calculated as (Gross - Returns) for a given quantity. Within each type, RI provides four basic measures of sales: Quantity, Retail Amount, Cost, and Profit. Examples of these basic metrics are provided in the table below.

Table 4–3 Sales Metrics

Sample Metric	Explanation
Gross Sales Qty	Total sales units, not accounting for returns.
Gross Profit	Difference between the retail selling value and cost of goods sold, equivalent to Gross Margin $.
Net Sales Amt	Net retail sales amount, calculated as gross sales amount minus returns.

Table 4–3 (Cont.) Sales Metrics

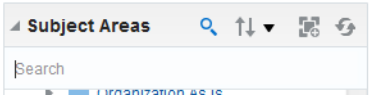
Sample Metric	Explanation
Return Profit	Difference between the retail amount of returns and the cost value of those returns. Represents the profit lost due to returned units.

Adding these metrics to an analysis allows us to easily see how they relate to each other. For example, we can create an analysis with gross, net, and returned sales units and validate that net = gross - returns.

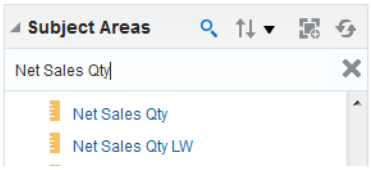
1. Start a new analysis in the Retail Insights As-Is subject area.
2. Locate the Sales folder in the left side panel of the Criteria tab and expand it.

3. Scroll down until you locate the Gross Sales Qty metric, and double-click it to add it to the analysis.

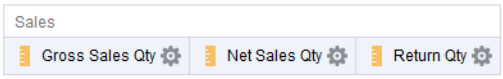
4. As you can see, there are quite a lot of sales metrics available. A quicker way to locate a metric is by using the Search box at the top of the metrics panel. Click the magnifying glass icon to access the Search panel.



5. Type Net Sales Qty into the search box and wait a few seconds for the search to complete. Scroll through the search results and double-click on the Net Sales Qty metric.



6. Repeat the previous step for the Return Qty metric. You should now have all three metrics in your Criteria.



7. Click on the Results tab to view the analysis. Note that net sales = gross - returns.

Gross Sales Qty	Net Sales Qty	Return Qty
892,389	881,357	11,032

8. Repeat the steps for Sales Amt and Profit metrics if desired. It is important to note that "Qty", "Amt", and "Profit" are very common terms used throughout RI to represent these types of measures.

Dimensionality of Sales Metrics

All data in RI is represented by one or more dimensions, such as the Item or Organization dimensions. When we report on business data such as sales or inventory, we generally want to categorize it using these dimensions, however different types of data use different dimensions. It is important to understand which dimensions can be used with each set of measures in RI, as dimensions not supported by the data will not return results in your analysis. We refer to this as the "dimensionality" of the data.

For sales transactions, the available dimensions which can be used are shown below:

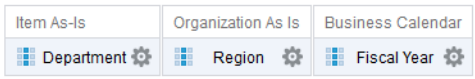
Table 4–4 Sales Transactions Dimensions

Dimension Name	Example Attributes
Item	Department, Style, Brand
Organization	Region, Loc Number, Store Grade
Fiscal Calendar	Fiscal Year, Fiscal Week, Fiscal Date
Supplier	Supplier Num, Parent Supplier
Retail Type	Retail Type
Customer	Customer Number

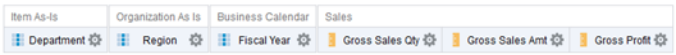
Not all dimensions will be available, depending on your business data and the way it is categorized in the source systems. The most commonly used dimensions are the Item, Organization, and Fiscal Calendar (a.k.a. Product/Location/Day levels).

1. From the Criteria tab of an analysis, first remove any existing metrics by clicking the "double X" icon to the far right of the screen.

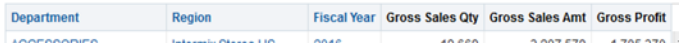
2. Using the Search box in the Subject Areas panel, locate the Department, Region, and Fiscal Year attributes and add them to the analysis.



3. Now add one or more sales metrics, such as Gross Sales Qty, Gross Sales Amt, and Gross Profit.



4. Click on the Results tab to view the results.



5. Note that this returns quite a lot of data, so let's also add filters to it. Return to the Criteria tab, click on the "gear" icon next to Fiscal Year, and set a filter of 2017. Repeat the process for Department and Region to add the filters to your analysis.
6. Now click on the Results tab to view the changes to your analysis.

Transaction Types

RI also separates sales into different groups based on the type of sales transaction that was recorded at the point of sale, or by the auditing and merchandising systems. These transaction types are listed below, along with the abbreviations commonly used in RI to represent them.

Table 4–5 Transaction Types

Transaction Type	Metric Abbreviations Used	Also Known As
Regular	Reg, R	Full Price, Non-Clearance
Promotional	Pro, P	
Clearance	Clr, C	Markdown

Net sales metrics in RI are further divided by the three main types of sales transactions (Reg, Pro, Clr). For example, it is possible to report only on Net Reg Sales Qty or Net Clr Profit. If a metric is not explicitly provided, then you may also use the Retail Type dimension to report on all sales metrics by their type, as shown below.

Retail Type	Gross Sales Qty	Gross Sales Amt	Gross Profit
C	2,322	347,371	81,226
P	88	12,121	2,808
R	19,345	4,325,791	2,557,654

What this data represents may vary depending on your business practices. For example, promotional sales could represent sales from coupons, one-off discounts, loyalty award redemptions, or web-only events. Regular sales are typically any item sold at full price and not under promotion or clearance, while clearance sales are only for items sold on clearance.

Calendar Transformations

Sales metrics are further aggregated across various periods of time that are commonly used in business reporting. In order to perform side-by-side reporting of data using different time periods, it is necessary to use the specific metric for those periods. The metrics will generally be named using the abbreviations in the following table.

Table 4–6 Calendar Transformation Sales Metrics

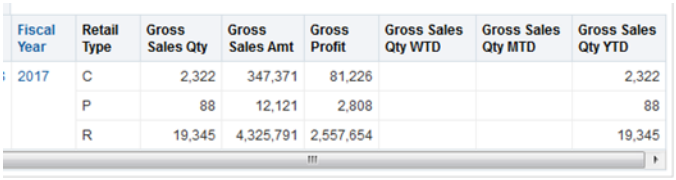
Abbreviation	Description
(no abbreviation)	Base metric (all time)
LW	Last week
WTD	Week to date
MTD	Month to date
QTD	Quarter to date
HTD	Half year to date
YTD	Year to date
LY	Last year
LY LW	Last week last year
LY WTD	Week to date last year
LY MTD	Month to date last year

Table 4–6 (Cont.) Calendar Transformation Sales Metrics

Abbreviation	Description
LY QTD	Quarter to date last year
LY HTD	Half year to date last year
LY YTD	Year to date last year

Time transformation metrics also require a point of reference to calculate against, such as a fiscal date. This reference point can be provided either as an attribute in the analysis (e.g. report on department sales by month, using WTD and MTD metrics), or as a filter on the analysis (report on department sales filtered to fiscal year 2017, and use QTD, HTD, and YTD metrics).

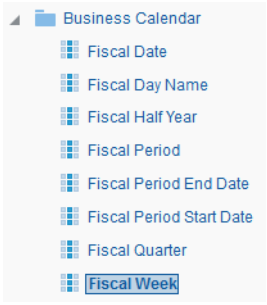
1. Using the department/region/year sales report we setup in the previous section, search for the metrics listed below and add them to your analysis.
   - Gross Sales Qty WTD
   - Gross Sales Qty MTD
   - Gross Sales Qty YTD
2. Click on the Results tab. Notice how only the YTD metric is returning data. This is because we currently have only the Fiscal Year specified as part of the analysis, so the other time transformation metrics have no point of reference.



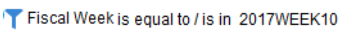
Fiscal Year	Retail Type	Gross Sales Qty	Gross Sales Amt	Gross Profit	Gross Sales Qty WTD	Gross Sales Qty MTD	Gross Sales Qty YTD
2017	C	2,322	347,371	81,226			2,322
	P	88	12,121	2,808			88
	R	19,345	4,325,791	2,557,654			19,345

3. Return to the Criteria tab, and click the "create a filter" icon  on the far right of the Filters panel, and then select More Columns.

4. Locate and expand the Fiscal Calendar folder, and select the Fiscal Week attribute.



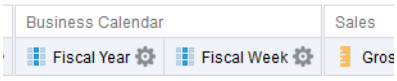
5. In the filter setup window, enter a value of 2017WEEK10 and click OK.



6. Click on the Results tab. Notice how your time transformation metrics have now been populated with values. This data is linked to the fiscal week you specified in your filter condition.

Fiscal Year	Retail Type	Gross Sales Qty	Gross Sales Amt	Gross Profit	Gross Sales Qty WTD	Gross Sales Qty MTD	Gross Sales Qty YTD
2017	C	85	14,352	5,207	85	85	1,197
	R	1,336	264,627	144,914	1,336	1,336	10,862

7. In order to see time transformations across more than one period, you must include a lower level calendar attribute in the analysis. Return to the Criteria tab and remove the filter on Fiscal Week. Then locate the Fiscal Week attribute in the Fiscal Calendar folder, and drag and drop it into your analysis.



8. Click on the Results tab. Note how the report shows many weeks of data, and your time transformations vary depending on the row.

Gross Sales Qty WTD	Gross Sales Qty MTD	Gross Sales Qty YTD	Fiscal Week
145	145	145	2017WEEK01
122	267	267	2017WEEK02
122	389	389	2017WEEK03
143	532	532	2017WEEK04

Non-Merchandise Sales

The sales transaction metrics described so far are specifically for reporting on the sale of merchandise, such as the physical products held in your retail locations. Non-merchandise sales may not be captured as part of this data, depending on how your merchandising system is configured.

One example of non-merchandise sales which are not available in the sales transaction metrics are Gift Card sales. If you need to report against the sales of gift cards, a separate set of metrics are provided in the Gift Card Sales folder. The gift card sales metrics can be used at a level of Location and Fiscal Date, allowing you to see the total amount of gift cards sold by store/day.

Loc	Fiscal Date	Gift Card Amount Sold
01-FIFTH AVENUE 440001	6/1/2017	450

Other Useful Sales Metrics

RI contains many calculated sales metrics in addition to the basic performance measures. Some commonly used calculations are listed below with their associated metric in RI.

Table 4–7 Calculated Sales Metrics

Calculated Value	Related RI Metric Name
Gross Margin %	Gross Profit to Sales Amt
Net Margin %	Net Profit to Sales Amt
AUR	Avg Net Retail
Employee Discounts	Net Emp Disc

Table 4–7 (Cont.) Calculated Sales Metrics

Calculated Value	Related RI Metric Name
Transaction Count	Trx Count

Creating Reports for Inventory Positions

Retail Insights holds stock position at a very low level, which is the ending position for every day for every item at every stockholding location. RI maintains a large variety of inventory metrics which span the entire lifecycle of your merchandise (from the initial order to in-transit, on-hand, RTV, and several others).

Types of Inventory Metrics

The stock position measures include quantity, retail value, and cost amount (usually interfaced from source systems based on weighted average cost calculation). There are three distinct groupings of stock position in Retail Insights:

- On-hand stock (goods owned by the retailer and received in a location)
- In-transit stock (goods owned by the retailer, received into one location such as a distribution center, but currently in transit to another store or warehouse)
- On-order stock (goods on an approved Purchase Order which have not yet been received)

Two examples of on-hand measures are ending on-hand (EOH) for a time period, as well as beginning on-hand (BOH) for a time period. The EOH position for week 1 is the BOH position for week 2. On Order positions are tracked only at the end-of-period level, as the primary reporting method for those values is to show the current position at a given point in time.

Metrics pertaining to owned inventory (such as on-hand and in-transit) are further broken down by their clearance status. RI use the nomenclature "Clr" and "Non-Clr" to represent inventory that is either on clearance or at regular price.

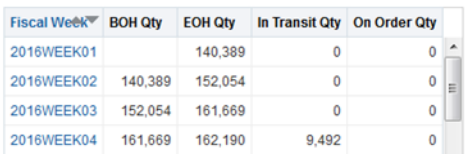
Combining these metrics in an analysis will allow us to comprehensively track the position of our inventory over time.

1. Start a new analysis in the Retail Insights As-Is subject area.
2. Locate the Inventory Position folder in the left side panel of the Criteria tab and expand it.

3. Using the Search box, find and add the following metrics and attributes to the analysis:

   Fiscal Week, BOH Qty, EOH Qty, In Transit Qty, On Order Qty

4. Note how BOH and EOH Qty match their positions over time, but the others are just a single positional value.



Fiscal Week	BOH Qty	EOH Qty	In Transit Qty	On Order Qty
2016WEEK01		140,389	0	0
2016WEEK02	140,389	152,054	0	0
2016WEEK03	152,054	161,669	0	0
2016WEEK04	161,669	162,190	9,492	0

5. Now search for and add the metrics EOH Clr Qty and In Transit Clr Qty. Note that they are a subset of the total quantities shown in the base metrics, as they represent only merchandise which is in clearance status.

Fiscal Week	BOH Qty	EOH Qty	In Transit Qty	On Order Qty	EOH Clr Qty	In Transit Clr Qty
2016WEEK01		140,389	0	0	27,163	0
2016WEEK02	140,389	152,054	0	0	29,805	0
2016WEEK03	152,054	161,669	0	0	26,123	0
2016WEEK04	161,669	162,190	9,492	0	31,141	897

Dimensionality of Inventory Metrics

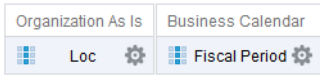
For inventory position, the available dimensions which can be used are shown below:

Table 4–8 Dimensionality of Inventory Metrics

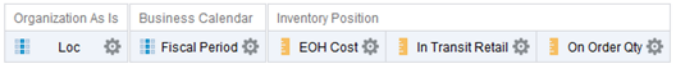
Dimension Name	Example Attributes
Item	Department, Style, Brand
Organization	Region, Loc Number, Store Grade
Fiscal Calendar	Fiscal Year, Fiscal Week, Fiscal Date
Supplier	Supplier Num, Parent Supplier
Retail Type	Retail Type

1. From the Criteria tab of an analysis, first remove any existing metrics by clicking the "remove all columns" icon to the far right of the screen.

2. Using the Search box in the Subject Areas panel, locate the Loc and Fiscal Period attributes and add them to the analysis.



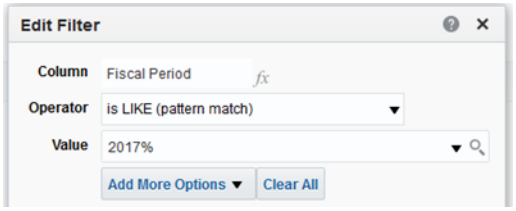
3. Now add one or more inventory metrics, such as EOH Cost, In Transit Retail, and On Order Qty.



4. Click on the Results tab to view the results.

Loc	Fiscal Period	EOH Cost	In Transit Retail	On Order Qty
01-FIFTH AVENUE 440001	2016 Period01	516,921	71,549	0
	2016 Period02	589,187	73,268	0
	2016 Period03	514,590	73,085	0
	2016 Period04	503,132	35,972	0

5. Note that this returns quite a lot of data, so let's also add filters to it. Return to the Criteria tab, click on the "gear" icon next to Fiscal Period, and add a LIKE filter which gets any periods in 2017. In RI, the percent symbol (%) is used in pattern matching to mean "any character".



6. Now click on the Results tab to view the changes to your analysis.

Loc	Fiscal Period	EOH Cost	In Transit Retail	On Order Qty
01-FIFTH AVENUE 440001	2017 Period01	624,023	93,316	0
	2017 Period02	698,537	68,729	0
	2017 Period03	593,860	37,436	0
	2017 Period04	599,930	6,870	0
	2017 Period05	621,685	143,246	719

7. While still in the Results, find the Supplier folder and add the Supplier attribute to the report, by dragging it after the Loc attribute.

Loc	Supplier	Fiscal Period	EOH Cost	In Transit Retail	On Order Qty
01-FIFTH AVENUE 440001	10 CROSBY	2017 Period05	18,832	0	0
	360 SWEATER	2017 Period05	208	0	0
	3X1 DENIM	2017 Period05	3,391	0	0

Calendar Transformations

Inventory metrics are further aggregated across certain periods of time that are commonly used in business reporting. In order to perform side-by-side reporting of data using different time periods, it is necessary to use the specific metric for those periods. The metrics will generally be named using the abbreviations in the following table.

Table 4–9 Calendar Transformations - Inventory Metrics

Abbreviation	Description
(no abbreviation)	Base metric (any time)
LW	Last week
LY	Last year
VAR LW	Variance this week/last week
VAR LY	Variance this year/last year

Because inventory is positional, the behavior of time transformations is somewhat different from sales metrics. When reporting on EOH Qty by itself, you will always get the ending on-hand position relative to the time period in your analysis. Adding EOH Qty LY to the analysis will get the ending on-hand position for the same time period last year. Positional metrics cannot be added together over time, so you will not see transformations such as MTD or YTD.

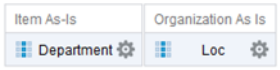
Time transformation metrics usually require a point of reference to calculate against, such as a fiscal date. This reference point can be provided either as an attribute in the analysis (e.g. report on department inventory by month, using EOH and BOH metrics), or as a filter on the analysis (e.g. report on department inventory filtered to fiscal year 2017, and use EOH, EOH LY, and EOH Var LY metrics).

The exception to this rule is Current metrics. Current inventory metrics (such as Current EOH Qty) must NOT have a calendar attribute, as they are programmed to always return the most recent position of that inventory quantity, regardless of time. For example, if you simply want to know the current position of inventory for items at a location, and you don't want the report tied to any particular period of time, then it is best to use Current metrics.

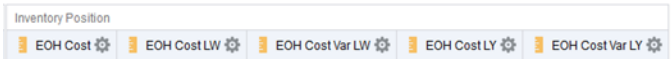
In order to practice with inventory metrics using time transformations, we can create a report which looks at inventory position for a week in 2017, and compares it to last week and last year.

1. From the Criteria tab of an analysis, first remove any existing metrics by clicking the "remove all columns" icon to the far right of the screen. Do the same for the filters.

2. Using the Search box in the Subject Areas panel, locate the Department and Loc attributes and add them to the analysis.



3. Now add all of the time transformation metrics for an inventory position measure of your choice, such as EOH Cost.



4. Add a filter to specify a period of time to report against. Click the "add filter" icon, and go to More Columns. Locate the Fiscal Week attribute, and enter a value of 2017WEEK13. Click OK to save it.

5. Click on the Results tab to view your analysis.

Department	Loc	EOH Cost	EOH Cost LW	EOH Cost Var LW	EOH Cost LY	EOH Cost Var LY
ACCESSORIES	01-FIFTH AVENUE 440001	7,486	8,088	-7	11,842	-37

Inventory Receipts

In some cases, it is necessary to report on inventory receipts separately from the positional status of inventory. For this purpose, RI has a separate set of metrics specifically for receipts. These metrics are NOT positional, and as such can be used in the same way as sales metrics to get sums and averages over time. For example, an analysis by Department and Fiscal Period will show the total receipts which occurred for each department/month combination.

Receipts are further split by type, as described below:

Table 4–10 Inventory Receipt Types

Receipt Type	Description
Allocation	Receipts at a location due to an allocation
PO	Receipts at a location due to a purchase order
Transfer	Receipts at a location due to a non-allocation transfer

Unavailable Inventory

The metrics in the Inventory Position folder generally represent total inventory, such as the total owned inventory at a location, or the total amount on order. In order to report on inventory at a location that has a non-sellable status, you must use the Inventory Unavailable folder of metrics.

Unavailable inventory metrics use a similar format and nomenclature as the inventory position (EOH, BOH, Clr and Non-Clr), and can be combined with Inventory Position in an analysis to get a better sense of sellable vs. non-sellable inventory. It is also possible to calculate the "available" inventory by subtracting an unavailable measure from the same-named total value (e.g. Available EOH Qty = EOH Qty - Unavailable EOH Qty).

Returns to Vendor

RTV units are units returned to the vendor for any reason (overstock, poor quality, etc.). Return to vendor analysis gives the retailer valuable insights for evaluating vendor performance. RI maintains a record of RTV units and the value of RTV units in cost and retail amount. RTV facts are held at the item/supplier/location/day/return-reason level.

Reason Code	Reason Description	RTV Units	RTV Retail	RTV Cost
O	Overstock	17	3,065	3,296
W	Externally Initiated RTV	4	136	326

Additional Notes for Creating or Modifying Reports

The following are additional considerations and suggestions for designing Oracle Retail Insights reports.

- Stock ledger reports cannot be created below subclass and week, because data for these fact areas have the lowest levels of subclass and week.
- Comp and BOH (beginning on-hand) metrics are only supported at week level. You must also use a prompt or filter on week or a higher level of the time dimension.
- When reporting on any transformation metrics, you must have a prompt or filter on the time calendar.
- To compare as-is and as-was results for the same report, create a single dashboard with these reports on different pages. The same report cannot include both as-is and as-was results.
- Wherever there are many-to-many relationships, you must have prompts or filters on one value to avoid double-counting. For example, there can be overlapping seasons, and the same items can belong to both seasons. If there is no filter or prompt on season, the items common to both seasons can be double-counted. Another example of this is an item list, where the same item can be in multiple item lists. A filter or prompt on item list will ensure that correct data is displayed.
- Retail Insights does not store attribute values that do not have associated facts. For example, Retail Insights will not consume location lists that do not have any associated locations.
- Customer Order Demand cannot be analyzed by the Fulfillment Channel.
- Order Fulfillment cannot be analyzed by the Demand Channel.

- Demand and Fulfillment analysis is not supported by Season Dimension.
- Market Item and Retail Item side-by-side analysis is not supported.
- Season Based reporting is not supported for Market Item and Consumer Reports.
- Market Item reporting is only supported for the As-Is Subject area.
- Users should not drill from Customer Segment to Customer, even though this drill path has been enabled in Oracle BI EE. Drilling may cause performance issues if the proper aggregates have not been created for Customer attributes.
- When combining data from multiple facts which make use of different dimensions (for example, Inventory Position and Purchase Orders), go into the Advanced tab of the analysis and select the checkbox for Show Total value for all measures on unrelated dimensions. This is required to see results when a dimension is not present on some facts, such as viewing EOH Qty with Purchase Order Number and PO Ordered Qty.

5

Dimensions and Attributes

Retail Insights dimensions and attributes represent the structure and activities of a retail organization and make measurement possible. Data is stored at low levels to allow maximum flexibility in reporting. Dimensions and their attributes allow you to summarize this information at higher levels where it is needed to support business decision-making. For example, the Sales fact table holds data at the location, item, and day level. The time, product, and organization dimensions allow you to summarize this data at any level at which it is needed.

Note: This chapter contains selective lists of dimensions and attributes. See Appendix B, "Reporting on Oracle BI Repository Objects" for information about producing comprehensive listings of Oracle BI repository objects.

Business Calendar

The business calendar (fiscal calendar) is a dimension based on a retailer's calendar and is not aligned with the Gregorian/solar calendar. It is used in place of the Gregorian calendar to eliminate discrepancies in the number of days per month, as well as number of weekend days per month. The business calendar is sometimes just called the time calendar.

The business calendar can be based on a variation of the 4-5-4 calendar or the 13-period calendar. Both of these types of calendars allocate exactly seven days to every week, unlike the Gregorian calendar. Most facts are qualified by a calendar attribute.

The following is the hierarchy of the Business Calendar dimension.

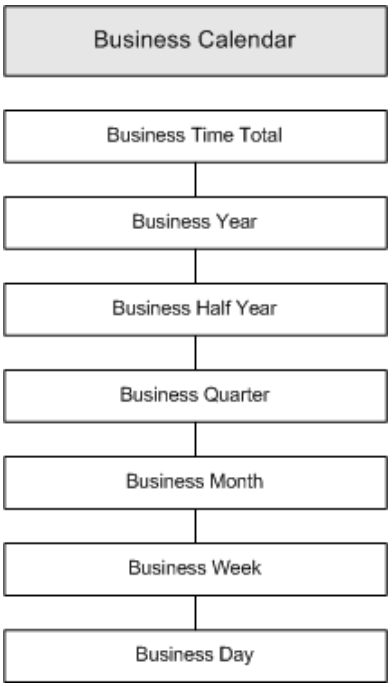


Table 5–1 lists the attributes of the Business Calendar dimension.

Table 5–1 Business Calendar Dimension Attributes

Attribute	Definition
Fiscal Period	The period of time, generally a month, reflected in financial statements.
Fiscal Year Number	Represents the period of year which company uses for calculating its annual fiscal statement.
Fiscal Year	Represents the period of year which company uses for calculating its annual fiscal statement.
Fiscal Year Start Date	Represents the start date of fiscal year for the company.
Fiscal Year End Date	Represents the end date of fiscal year for the company
Fiscal Half Year	Fiscal half-year period name.
Fiscal Quarter	Represents the fiscal quarter for the company
Fiscal Period Start Date	Represents the start date of fiscal period for the company.
Fiscal Period End Date	Represents the end date of fiscal period for the company.
Fiscal Week	Represents the fiscal week for the company.
Fiscal Week Start Date	Represents the start date of fiscal week for the company.
Fiscal Week End Date	Represents the end date of fiscal week for the company.
Fiscal Day Name	Fiscal Day Name
Fiscal Date	Represents the fiscal date.

4-5-4 Calendar

The 4-5-4 calendar is the default calendar. The calendar can be implemented as 4-5-4, 4-4-5, or 5-4-4, depending upon your needs. In addition, you determine the day of the

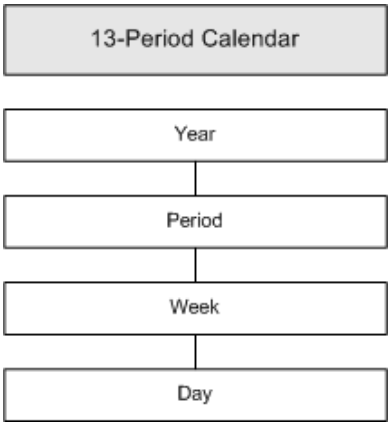
week on which each week begins and ends. Every quarter contains 13 full weeks. Quarters have two 4-week months and one 5-week month.

This calendar also has special handling of 53-week years, which can occur due to each fiscal year being shorter than a Gregorian year. The 53rd week of such a year can be placed into a 4-week or 5-week period depending on the business processes being followed, resulting in a 5 or 6-week period, respectively. Choosing where to place the extra week is an implementation decision.

Because fiscal periods normally have the same number of days/weeks from year to year, Retail Insights provides additional calendar interfaces for defining a mapping between the current year and last year, known as "shifted" and "unshifted" calendars. In an unshifted calendar, the first 52 weeks of each year are aligned with each other, and the 53rd week is left out of LY comparisons. In a shifted calendar, the 53-week year is restated for LY comparisons, such that weeks 1 through 52 of the following year align with weeks 2 to 53 of the 53-week year. Week 1 of the 53-week year can be used as the LY for Week 53, or it can be left out, depending on the configuration specified.

13-Period Calendar

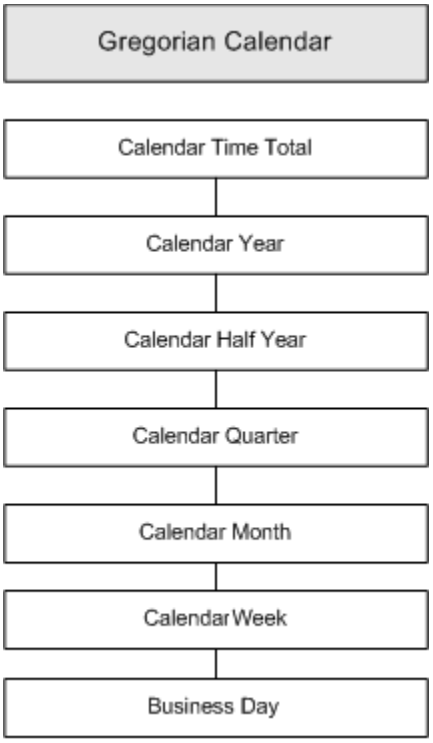
A 13-period calendar year is divided into 13 periods of four weeks (28 days). Every fifth or sixth year, there are 53 weeks. The calendar has a 28-year cycle of 6 years, 5 years, 6 years, 6 years, and 5 years. The 13-period calendar hierarchy is as follows.



Gregorian Calendar

The Gregorian calendar is a solar calendar that is based on the length of the earth's revolution around the sun. The Gregorian calendar is divided into 11 months of 30 or 31 days, plus February. February has 28 or 29 days, depending on whether the year is a leap year (occurring every four years). Thus, the Gregorian year is either 365 or 366 days.

The following is the hierarchy of the Gregorian calendar.



Note: Only one type of business calendar (4-5-4 or 13-period) can be installed for Retail Insights, in addition to the Gregorian calendar.

Table 5–2 Gregorian Calendar Dimension Attributes

Attribute	Definition
Gregorian Year	This is the Gregorian Year
Gregorian Half Year	This is the Gregorian Half Year
Gregorian Quarter	This is the Gregorian Quarter
Gregorian Month	Indicate the month.
Gregorian Month Start Date	This is the start date of the gregorian month.
Gregorian Month End Date	This is the end date of the gregorian month.
Gregorian Week	This is the Gregorian Week
Gregorian Week Start Date	This is the Gregorian Week Start Date
Gregorian Week End Date	This is the Gregorian Week End Date

The Gregorian calendar attributes within the Business Calendar allow for reporting against this-year and last-year historical data for Gregorian periods, making use of the LY mapping for Gregorian calendar to determine how each period aligns with it's last-year equivalent. For more information on loading the TY-to-LY mappings, refer to the *Oracle Retail Insights Operations and Interface Guide*.

Time of Day

The Time of Day dimension permits analysis in the areas of loss prevention and store productivity, where identifying problems and trends requires the use of hourly or smaller time increments. In addition, the Time of Day dimension allows analysis of sales and return transactions on an hourly basis.

The following is the hierarchy for the Time of Day dimension.

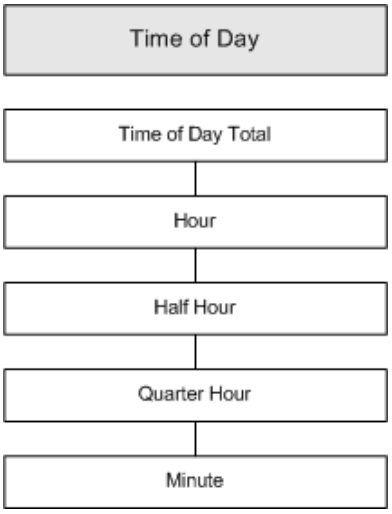


Table 5–3 lists the attributes of the Time of Day dimension.

Table 5–3 Time of Day Dimension Attributes

Attribute	Definition
Hour Number 24 Hour Format	Hour portion in 24-hour format.
Qtr Hour Interval	A quarter-hour time slice within the 24-hour period, starting at 0:00 - 0:15to 23:45 - 23:59, numbered from 1 to 4 to indicate the quarter of that hour.
Minute Number	Minute portion in 24-hour or 12-hour format, numbered from 1 to 60 to indicate the minute of that hour.

Employee

The Employee dimension stores data about the employees who work for a retailer. The Employee dimension is attached to sales transactions and is used for productivity and loss prevention reporting.

The employee data that is supplied by Oracle Retail Sales Audit relates only to headquarters employees. In case retailer wants to have all the store and warehouse employees the retailer has to load them into Retail Insights. Other types of employee data that do not exist in Sales Audit, but are desirable for reporting, pertain to employee hours worked and compensation.

RI can be configured to create employee records during the nightly batch process, such that employee IDs included on a transaction (such as the cashier and salesperson) will be usable in reports even when the employee master data file is not provided separately. In this case, reporting on sales by Cashier or Salesperson ID is possible, but the other information like names will not be available.

The primary ways to use the employee attributes for sales reports are:

- Employee Number along with Sales metrics, to report on employee discounts for employee-purchased items
- Cashier Number along with Sales metrics, to report on sales by cashier that was logged into the POS
- Salesperson Number along with Sales metrics, to report on sales by salesperson who was given credit for the sale (or line-item on the sale if multiple salespersons are credited).

Table 5–4 lists the attributes of the Employee dimension.

Table 5–4 Employee Dimension Attributes

Attribute	Definition
Cashier Flag	Indicator of whether if the employee is a cashier, with values of "Y" for yes and "N" for no. An employee can be both a cashier and a salesperson at the same time.
Sales Rep Flag	Indicator of whether the employee is a salesperson, with values of "Y" for yes and "N" for no. An employee can be both a cashier and a sales person at the same time.
Employee Name	Name of the employee.
Employee Number	Number assigned to the employee.
Cashier	Name of the cashier.
Cashier Number	Number assigned to the cashier.
Salesperson	Name of the salesperson.
Salesperson Number	Number assigned to the salesperson.

Cluster

Understanding consumer shopping behavior is important to help retailers when planning assortment, pricing, promotions and other key merchandising decisions.

This includes understanding:

- Who shops (or is expected to shop) the merchandise area (Department or Class)
- How they would shop the merchandise area as well as other merchandise areas when in the store

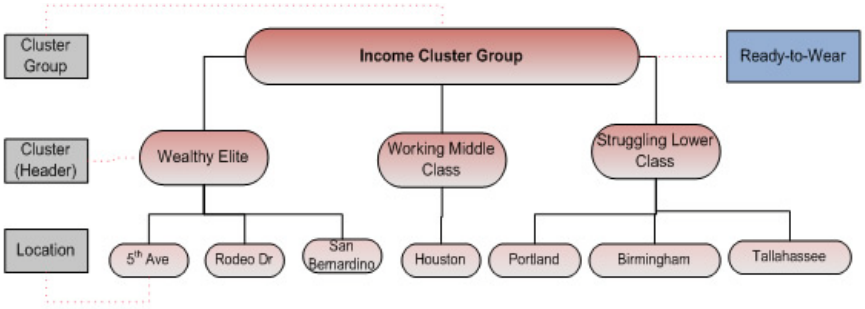
This information helps retailers develop strategies and tactical execution plans that are tailored to meet specific customers' needs, thus maximizing customer satisfaction while meeting retailers overall business objectives around increased profitability and growth.

Understanding the makeup of the local consumers shopping each individual store is important in developing assortment, pricing and promotion strategies that are tailored to the local consumer needs. However, given the number of stores at a typical retailer, it is not possible to manually plan these at the individual store level. Hence the need for the intelligent grouping of similar stores into clusters.

Clustering stores enables retailers to manage large chains (that is, greater than 500 locations) in an efficient manner. Effective clustering should involve a small number of clusters providing maximum differentiation among one another, while minimizing the difference between the locations within each cluster. In other words, stores in a single cluster should be fairly homogeneous, while the clusters themselves should be heterogeneous.

Stores can be clustered based on their similarity in attributes such as performance, size or format of store, weather, or based on similarity in customer make up based on their demographic attributes.

Clusters are organized into the following hierarchy: Cluster Group - Cluster - Location: below is an example hierarchy.



Cluster Attributes

Table 5–5 Cluster Attribute Dimensions

Attribute	Definition
Cluster Group Code	The cluster group code is a business code that is also a unique identifier for a cluster group
Cluster Group Label	The cluster group label is a short description of why the cluster group was built.
Cluster Group Type	Cluster groups are built for multiple reasons, the cluster group type states what the cluster group was built for. Valid cluster group types could be promo, price, markdown, assortment, inventory, replenishment, performance, etc. The cluster group type should be considered required, as it is the only attribute to make sure cluster groups are unique.
Cluster Code	The cluster code is a business code that is also a unique identifier for a cluster within a cluster group.
Cluster Name	The cluster name is a short description of the cluster.
Cluster Description	The cluster description is a long description of the cluster.
Primary Life-stage	Primary life-stage is the most prominent life-stage within a cluster - since clusters can be made up of multiple customer segments - there can be more than one life-stage present. Hence this attribute being the primary or most prominent life-stage attribute value.
Primary Ethnicity	Primary ethnicity is the most prominent ethnicity within a cluster - since clusters can be made up of multiple customer segments - there can be more than one ethnicity present. Hence this attribute being the primary or most prominent ethnicity attribute value.
Primary Education Level	Primary education level is the most prominent education level within a cluster - since clusters can be made up of multiple customer segments - there can be more than one education level present. Hence this attribute being the primary or most prominent education level attribute value.

Table 5–5 (Cont.) Cluster Attribute Dimensions

Attribute	Definition
Primary Typical Lifestyle	Primary typical lifestyle is the most prominent typical lifestyle within a cluster - since clusters can be made up of multiple customer segments - there can be more than one typical lifestyle present. Hence this attribute being the primary or most prominent typical lifestyle attribute value.
Primary Income Level	Primary income level is the most prominent income level within a cluster - since clusters can be made up of multiple customer segments - there can be more than one income level present. Hence this attribute being the primary or most prominent income level attribute value.
Primary Dwelling Type	Primary dwelling type is the most prominent dwelling type within a cluster - since clusters can be made up of multiple customer segments - there can be more than one dwelling type present. Hence this attribute being the primary or most prominent dwelling type attribute value.
Primary Age Class	Primary age class is the most prominent age class within a cluster - since clusters can be made up of multiple customer segments - there can be more than one age class present. Hence this attribute being the primary or most prominent age class attribute value.

Price Zones

Price zones are a way of grouping stores together for use in pricing decisions. They appear functionally similar to Clusters. Price zones are typically created in a retailer's pricing management solution (such as Pricing Cloud Service or RMFCS). Oracle Retail Insights supports loading price zones into the Cluster interfaces using RDE, or through externally interfaced data files. This data will make use of the same attributes outlined above, as well as following the same data structures and formats.

Consumer Attributes

Growing retailers need to attract new customers, and the key to attracting customers is understanding them. Oracle Retail Insights offers a means for retailers to understand and attract new customers and in so doing grow their businesses, through the use of consumer data from Oracle Data Cloud.

Retailers can use Oracle Retail Insights' Consumer analysis to develop a deep understanding of consumers (that is, those shoppers who are their potential customers). It helps retailers understand the types of purchases each consumer segment makes, where the most desirable consumers live and shop, and in which product categories they should be competing for consumers. Building on that knowledge, retailers can build effective strategies to induce consumers to buy their products, and convert them from out-of-reach, obscure consumers to familiar, loyal, and revenue-producing customers.

Getting Consumer Data

The process starts by identifying and segmenting your best customers in order to make requests to ODC for consumer data. The Customer Segmentation module of the Science Platform can be used to create these customer groups. Once a request is made to ODC for a given list of customers (represented with Oracle Person IDs), they will return a group of consumers who best align to the characteristics of those individuals and represent ideal targets for consumer conversion. This consumer data is loaded into RI (using the W_RTL_CONSUMER_DS interface) for analysis, using a set of

flexible attributes which can be relabeled to match the data you get back on the ODC responses.

RI also provides an optional Consumer Segment interface (W_RTL_CONSUMERSEG_DS) for directly loading details you may want to add to an ODC consumer group after creating it, such as a name or description for future reference. Lastly, the interfaces W_RTL_CONS_METADATA_GS and W_RTL_CONS_DOMAIN_LKP_DS are used during implementation to configure which ODC attributes you have requested, so that RI can appropriately display the translatable text strings for them in reporting.

The following table summarizes the available Consumer attributes in RI:

Table 5–6 Consumer Dimension Attributes

Attribute	Definition
Consumer Segment Attributes	
Consumer Segment ID	Unique identifier of a consumer segment, as provided from the source system for consumer data.
Consumer Segment Name	Short name or description of a consumer segment, to be provided manually for use in reporting.
Consumer Segment Type	The type of consumer segment, such as one sourced from ODC or another external system.
Consumer Segment Desc	Detailed description or supplemental details about a consumer segment, such as the purpose of the segment or the actions taken on it.
Consumer Segment Created Date	System date when a consumer segment record was first established.
Consumer Segment Updated Date	System date when a consumer segment record was last updated.
Consumer Segment Rank	The ranked position of a consumer within a given segment. A value of 1 means that the consumer record was identified as the best fit for a segment.
Consumer Segment Size	The number of consumers belonging to a consumer segment at the time the segment was processed.
Consumer Attributes	
Consumer ID	Unique identifier of a consumer.
Consumer UDA 1 to 100	Consumer attribute value as provided by the source system. The specific attributes in these fields will vary by implementation.
Consumer UDA 1 to 100 Desc	Consumer attribute description which can be translated or updated over time for the same attribute value.
Consumer Create Date	The date a consumer record was first established in this system.
Consumer Update Date	The date a consumer record was last updated in this system.

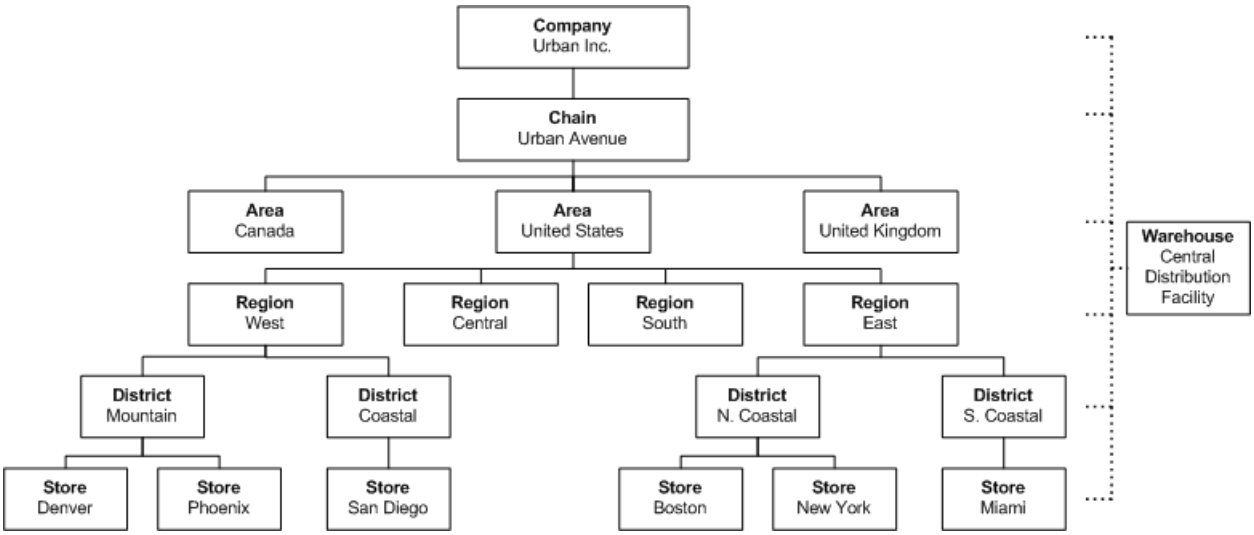
Organization

The Organization dimension mirrors the structure of the retail company, allowing analysis at every level of the organization. Assessing the contribution of a child attribute to its parent attributes (for example, location to region or chain) allows an analyst to identify the segments of the larger organization that are performing as planned, and those where performance is below expectations. In addition, the

Organization hierarchy makes it possible to analyze sales by channel and perform comparable stores analysis.

The majority of business measurements in Retail Insights reference data by attributes of the Organization dimension. Sales and profit, markdowns, stock position, and most other data is held by location, the lowest-level attribute in the Organization dimension hierarchy.

The following diagram illustrates an example organization hierarchy.



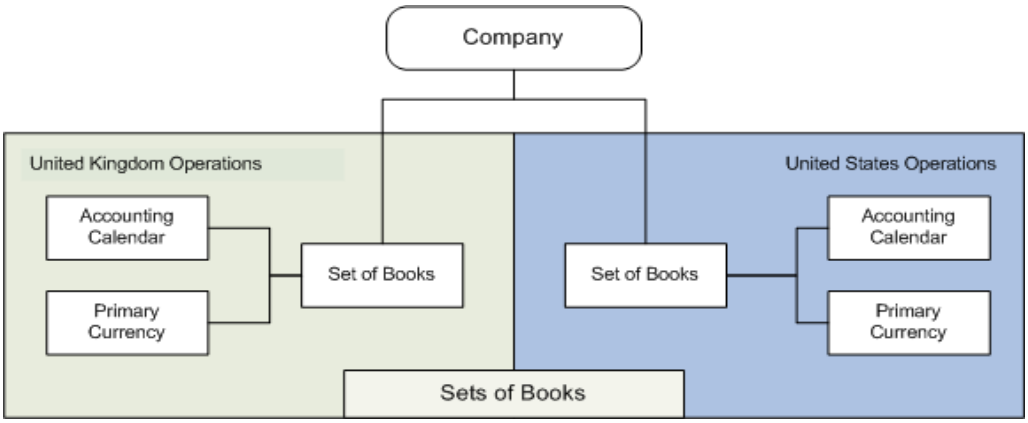
Organization starts at company level, with chain, area, region, district, and store at the lower levels of the hierarchy. A warehouse is a physical storage and distribution facility where inventory may be received, held, and transferred to other locations such as stores. A warehouse can be attached to any level of the organizational hierarchy for reporting purposes, but this is not a requirement.

Sets of Books

Multinational retailers need to maintain multiple sets of books in their financial systems. This need can be driven by a number of different factors such as the following:

- A company divided into different legal entities (such as brands)
- A company having operations in different countries (with different currencies and calendars)

When a company operates with multiple sets of books, they may have different physical instances of their business and accounting systems to support this segregation, or they may use a single physical instance of their systems to support the different sets of books. When operating with multiple sets of books in a single installation, a company partitions its general ledger according to the sets of books. Each set of books has its own chart of accounts and other identifying characteristics, such as the primary currency and accounting calendar. The company may also partition other data along these lines to help segregate data more efficiently. Sets of books can segregate structural data as well as the chart of accounts.



Wholesale

Wholesale functionality, that is, the selling and distribution of products to independently owned customers in a business-to-business transaction, is a market need for many retailers. In contrast to franchise locations, wholesale customers are not owned or licensed by the retailer. Oracle Retail Insights allows retailers who do a significant amount of wholesale business to perform analysis separately from the rest of their regular retail business, with attributes and metrics that are specific to the wholesale business. This enables focused analysis by a retailer who has more than one distinct line of business (retail and wholesale) that have different performance indicators and metrics.

Wholesale Customer Attributes

Table 5–7 lists the attributes of the Wholesale Customer dimension.

Table 5–7 Wholesale Customer Dimension Attributes

Attribute	Definition
DUNS Number	The DUNS number is a nine-digit number assigned to each business location that has a unique, separate, and distinct operation.
Organization Size Code	This attribute is the organization size code.
Competitor Flag	This attribute indicates the organization is a competitor.
Partner Flag	This attribute indicates the organization is a partner.
Prospect Flag	This attribute indicates the organization is a prospect.
Supplier Flag	This attribute indicates the organization is a supplier.
Sales Account Flag	This attribute indicates the organization has a sales account with the retailer.
Sales Ref Flag	This attribute indicates that sales exist for this organization.
Existing Sales Account Flag	This attribute indicates the organization has an existing sales account.
Sales Account Type Code	This field indicates the type of sales account.
Internet home page	This is the URL for the organization's home page.
Customer Since Date	This is the date the organization became a customer.

Table 5–7 (Cont.) Wholesale Customer Dimension Attributes

Attribute	Definition
Customer End Date	This is the date the organization's customer relationship ended. It could be something like the end of the latest sales contract that was not renewed.
Customer Category Code	This field indicates to which category the customer belongs.
Line of Business	Line of business.
SIC Code	This is the Standard Industry Classification code, a four-digit code used by the US government for classifying industries.
SIC Name	Standard Industry Classification name.
Govt ID Type	Government ID Type
Govt ID Value	Government ID Value
Service Provider Flag	This attribute indicates the organization is a service provider.
Potential Sales Volume	This is the potential sales volume of the organization. This should be a range of volume amounts. For example [0-500,000], [500,000-1,000,000] and [1,000,000+].
Annual Revenue	This is the organization's annual revenue amount.
Supplier ID	This is the supplier ID if the organization is a supplier.
Customer Number	This is the internal customer number assigned to the organization.
Primary Contact Name	This is the primary contact name for the organization.
Primary Contact Phone Number	This is the primary phone number for the organization.
Base Currency Code	This is the base currency code of the organization.

Stockholding Franchise Locations

Franchising is the sales and distribution of products to customers who license a retailer's trade name or services, or both, for a fee. Example services provided could include assortment planning, ordering, and store inventory management. A franchise leases the name of the operating retailer but is not owned by them; however in many situations a retailer manages its franchise stores very similarly to how it manages its own corporate stores, including managing its inventory. In such a situation retailers should create stockholding franchise locations as a way to manage their inventory. Because stockholding franchise locations and corporate locations function similarly, Oracle Retail Insights enables retailers to analyze them similarly while retaining the ability to segregate sales at franchise locations from sales at corporate locations.

Non-Stockholding Franchise Locations

If a retailer does not wish to manage the inventory of its franchise locations, those locations can be set up as non-stockholding franchise locations and analyzed accordingly. The retailer will retain the ability to analyze franchise sales separately from sales at corporate locations.

New/Remodelled Stores

New or recently remodelled stores tend to be more volatile and can have a skewing effect on business performance indicators. Sales and profits from new or recently

modelled stores are not really comparable in business analysis and a retailer may decide to exclude them for analysis.

A store may be flagged as a New or Remodeled store in the Organization dimension. The flag can either be received from the merchandising source system or in case the retailer does not have the capability in the merchandising system to calculate the flag, RI can flag the stores as New or Remodeled through an RI driven logic. The flags can be set to 'Y' or 'N' by utilizing the variable RA_NEW_STORE_DT and RA_REMODEL_STORE_DT in C_ODI_PARAM and the RI existing attributes - remodeled store date (W_INT_ORG_ATTR_D. ORG_ATTR1_DATE) and new store date (W_INT_ORG_ATTR_D. ORG_ ATTR2_DATE).

When supplying new/remodeled store dates directly (as well as store close dates on ORG_ATTR3_DATE), these first three date columns on W_INT_ORG_ATTR_D must be used, as all RI attributes used in reporting on these dates will only source data from these columns.

Organization Attributes

Table 5–8 lists the attributes of the Organization dimension.

Table 5–8 Organization Dimension Attributes

Attribute	Definition
Company	Name of a company. Company is the highest attribute within the Organization hierarchy. A company consists of one or more chains.
Company Number	Unique ID from the source system that identifies a company.
Chain	Name of a chain. A chain consists of one or more areas.
Chain Number	Unique ID from the source system that identifies a chain.
Chain Mgr	Name of a chain manager.
Area	Name of an area. An area consists of one or more regions.
Area Number	Unique ID from the source system that identifies an area.
Area Mgr	Name of an area manager.
Region	Name of a region.
Region Number	Unique ID from the source system that identifies a region.
Region Mgr	Name of a region manager.
District	Name of a district. A district consists of one or more locations.
District Number	Unique ID from the source system that identifies a district.
District Mgr	Name of a district manager.
Loc	Lowest attribute within the organization hierarchy. It identifies a warehouse, store, or partner within the company.
Loc Number	Unique ID from the source system that identifies a location.
Loc List	Name of a location list. A location list is an intentional grouping of locations for reporting purposes.
Loc List ID	Unique ID from the source system that identifies a location list. A location list is an intentional grouping of locations for reporting purposes.

Table 5–8 (Cont.) Organization Dimension Attributes

Attribute	Definition
Loc Trait	Name of a location trait. A location trait is an attribute of a location that is used to group locations with similar characteristics.
Loc Trait ID	Unique ID from the source system that identifies a location trait. A location trait is an attribute of a location that is used to group locations with similar characteristics.
Tsf Entity ID	Unique ID from the source system that identifies a transfer entity. A transfer entity is a group of locations that share legal requirements around product management. A location can belong to only one transfer entity, and a transfer entity can belong to multiple organization units.
Org Unit ID	Unique ID from the source system that identifies a financial organization unit. An organization unit can belong to only one set of books.
SOB ID	Unique ID from the source system that identifies a financial set of books. A set of books represents an organizational structure that groups locations based on how they are reported from an accounting perspective.
Tsf Entity Desc	Detailed description of a transfer entity. A transfer entity is a group of locations that share legal requirements around product management. A location can be associated with only one transfer entity, and a transfer entity can be associated with multiple organization units.
Comp Flag	Indicator of whether a location has been opened for configurable time, with values of “Y” for yes and “N” for no. Generally, comparable stores are locations that are in operation for at least 53 weeks.
Comp Anchor Year	When using the "same stores" method of comp store analysis, the anchor year specifies which year of comp flag statuses should be applied across previous years. This attribute is required in analyses which use that method of comp reporting, and is generally set to the current fiscal year.
New Store Flag	Indicator of whether a location has been opened newly, with values of "Y" for yes and "N" for no.
Remodeled Store Flag	Indicator of whether a location has been remodeled recently, with values of "Y" for yes and "N" for no.
Store Type	Indicator of the type of store, with values of “Company,” “Wholesale,” and “Franchise.”
Address Type	Type of address. Values are as follows: ■ 01 – Business ■ 02 – Postal ■ 03 – Returns ■ 04 – Order ■ 05 – Invoice ■ 06 – Remittance
Loc Name3	Three-character abbreviation of a location name.
Loc Name10	Ten-character abbreviation of a location name.
Loc Name Secondary	Secondary name of a location.
Address Line 1	First line of street address.

Table 5–8 (Cont.) Organization Dimension Attributes

Attribute	Definition
Address Line 2	Second line of street address.
Address Line 3	Third line of street address.
City	City of a location.
Postal Code	Postal code of a location.
Phone Number	Primary phone number of a location.
Loc Type	Type of location, with values of “Store,” “Warehouse,” and “External Finisher.”
Linear Distance	Total merchandisable space of a location. Feet is the unit of measure.
VAT Region ID	Unique ID from the source system that identifies the Value Added Tax (VAT) region in which a store is located.
VAT Included Flag	Indicator of whether Value Added Tax (VAT) is included in the retail price, with values of “Y” for yes and “N” for no.
Currency Code	Base currency code of the organization.
Break Pack Flag	Indicator of whether a warehouse is capable of distributing less than the supplier’s case quantity, with values of “Y” for yes and “N” for no.
Stockholding Flag	Indicator of whether a location can hold stock, with values of “Y” for yes and “N” for no. In a non-multichannel environment, the value is always "Y".
Loc Mgr	Name of the manager of the organization.
Mall	Name of the mall in which a store is located.
Loc Open Date	Open date of a location.
Loc Close Date	Close date of a location.
Selling Area	Total square footage of a store's selling area.
Remodel Date	Date that a location was last remodeled.
Tsf Zone ID	Unique ID from the source system that identifies a transfer zone. A transfer zone is an intentional grouping of locations for transferring owned inventory from one location to another. A location can belong to only one transfer zone.
Promo Zone ID	Unique ID from the source system that identifies a promotion zone. A promotion zone is an intentional grouping of locations for promotion activity. A location can belong to only one promotion zone.
Total Area	Total square footage of a location.
Default WH ID	Warehouse that can be used as the default for creating cross-dock masks. This determines which stores may be sourced by a warehouse, and it only contains virtual warehouses in a multichannel environment.
Store Format Desc	Description of a store format. Examples are Conventional Store, Supermarket, Virtual Store, Catalog Store, and Hard Discount.
Store Format ID	Unique ID from the source system that identifies a store format.
State	State name of a location.
Country	Country name of a location.

Table 5–8 (Cont.) Organization Dimension Attributes

Attribute	Definition
Banner ID	Unique ID from the source system that identifies a banner. A banner is the name of a retailer's subsidiary.
Banner	Name of a banner. A banner is the name of a retailer's subsidiary.
Channel	Name of a channel. A channel is a method for a retailer to interact with a customer, and it is an outlet for sale and delivery of goods and services to the customer. A retailer can have multiple outlets, such as brick-and-mortar stores, Web sites, and catalogs.
Channel ID	Unique identifier associated with a channel.
Channel Type	Type of channel to interact with a customer. The values are "Brick and Mortar," "Webstore," and "Catalog."
Virtual WH Flag	Indicator of whether a location is a virtual warehouse, with values of "Y" for yes and "N" for no.
Physical WH ID	Unique ID from the source system that identifies a physical warehouse that is assigned to a virtual warehouse.
State Code	Code that identifies the state of the location.
Sister Store ID	Location that will be used to relate a current store to the historical data of an existing store.
Store Class	Type of store class, which retailers can use to group their stores. The best stores are typically considered "A" stores, the next-best "B" stores, and so on. Values can be "A," "B," "C," "D,""E," and "X".
WH Delivery Policy	Contains the delivery policy of the warehouse.
WH Redistribution Indicator	Indicates that the warehouse is a re-distribution warehouse. Used as a location on Purchase Orders in place of actual locations that are unknown at the time of Purchase Order creation and approval. Valid values are Y or N.
WH Replenishment Indicator	This indicator determines if a warehouse is replenishable.
WH Finisher Indicator	Indicates if this virtual warehouse is an internal finisher.
Virtual WH Type	Indicates the type of virtual warehouse. Codes vary by retailer and are specified in the source system.
WH Inbound Handling Days	Warehouse inbound handling days are defined as the number of days that the warehouse requires to receive any item and get it to the shelf so that it is ready to pick.

Comparable Store

Comp stores are really established stores as opposed to new or closed stores. Comp store measurements are important to an analyst because profits and sales from the more established stores provide stable indicators of business performance. New or closed stores tend to be more volatile and can have a skewing effect on business performance indicators. Sales and profits from new or closed stores are not really comparable in business analysis, and as a result, they are not included in the comp store measurements.

The Comparable Store Flag can be sent from the retailer's merchandising source system or manually derived and loaded into the RI interface for W_RTL_LOC_COMP_MTX_DS. Note that RI does not load comp flag information from RMFCS in either

case; it is either sourced externally and interfaced to RI, or derived by hand and uploaded as-needed. In both cases, the data should consist of a pipeline delimited flat file containing Store ID, Comp Store Flag, Effective From Date, which will form the interface file that must be loaded to W_ RTL_LOC_COMP_MTX_DS table. This file can contain flag values in (N, Y, C), representing non-comparable, comparable, and closed stores respectively.

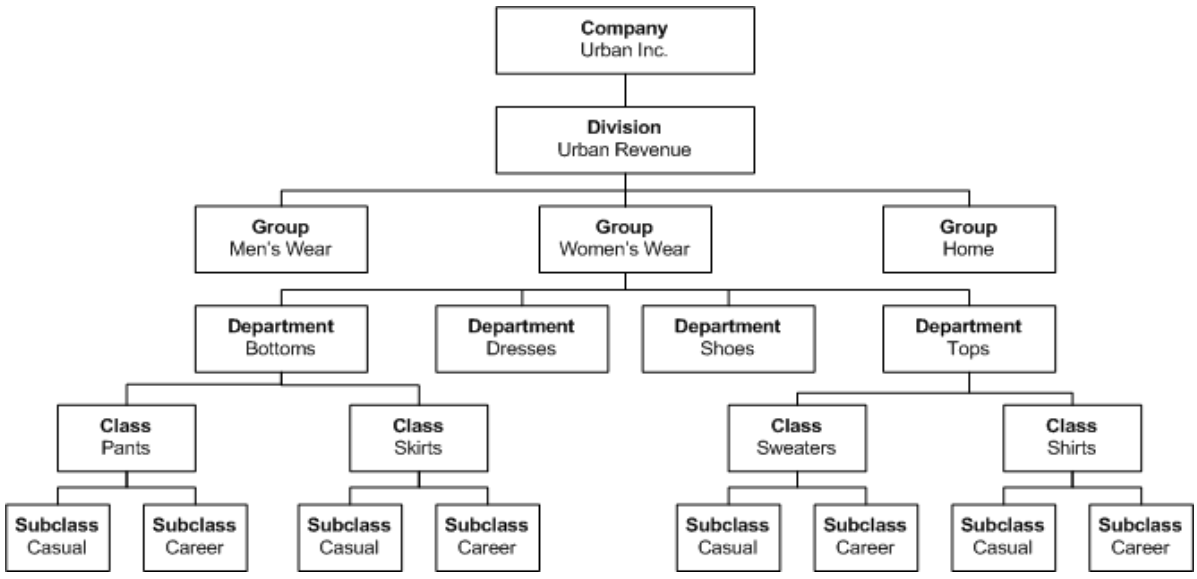
RI provides multiple methods for reporting on comparable stores, depending on the retailer's business needs. In the "Same Store" method of comparison, the stores designated as comp/non-comp/closed in a reporting period have their history grouped under the same statuses for previous years as well, allowing the retailer to always be comparing the same stores this year versus last year in comp reporting. This option is enabled using the SAME_STORES variable in C_ODI_PARAM. If set to 'Y' then this method is enabled for both As-Is and As-Was reporting. The number of years of history to "duplicate" the comp statuses across is configured with the ANCHOR_TO_YEARS variable, which defaults to 2 years (this year and last year).

If Same Stores comp reporting is disabled, then the following two options for Comp Store reporting are available. As-Is comp reporting will take the current value of the Comp Flag and use it regardless of the reporting period. As-Was comp reporting (also known as Group Comp) will consider the historical values of the Comp Flag and directly report a store's history based on its comp status at that point in time. The primary difference in these methods is that As-Is reporting will group all history under a single comp status per store, while As-Was reporting may split a store's history across different comp statuses.

Product

The Product dimension represents the product lines that the company sells. The Product dimension is essential to the department manager who needs to know which items turn the highest profit, or how an item performs within the market as a whole. Because of its importance for analysis in the retail environment, attributes from the Product dimension are present in nearly every data mart in Retail Insights. In most cases, data is kept at the lowest level in the hierarchy (item), to allow maximum flexibility and detail in reporting.

The following diagram illustrates an example product hierarchy.



Product Differentiators

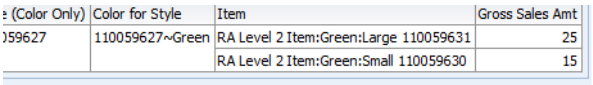
Differentiators are used to define the characteristics of an item. Characteristics such as size, color, flavor, scent, and pattern are attached to items as differentiators within Oracle Retail Merchandising Foundation Cloud Service (RMFCS). Differentiators hold all item differentiator identifiers, along with their associated National Retail Federation (NRF) industry codes.

Oracle Retail Insights comes with the following differentiators as an example for reference:

- Style (Color only)
- Color for Style

They are arranged in the following hierarchy: Style (Color only) > Color for Style > Item.

These are just an example and can be added to or modified as needed to make them relevant to a specific retail business.



e (Color Only)	Color for Style	Item	Gross Sales Amt
)59627	110059627~Green	RA Level 2 Item:Green:Large 110059631	25
		RA Level 2 Item:Green:Small 110059630	15

For retailers that do not use Style and Color differentiators, a more generic set of attributes is available which captures any diff (or combination of diffs) that are selected in RMFCS when creating SKUs from a Level 1 item. This combination of diffs is referred to as the "item diff aggregate". RI captures the diff values used to define all of the SKUs under a Level 1 item, and creates an intermediate reporting level in between Level 1 and Level 2 (SKU). In the typical Style/Color configuration of a fashion retailer, this is the same as the Color level of reporting, but it has the flexibility to support whatever combination of diffs are used in RMFCS.

The following attributes allow for building reports at the Item Diff Aggregate level:

- Item Diff Agg ID
- Item Diff Agg Desc

They are arranged in the following hierarchy: Item Level 1 > Item Diff Agg > Item.

Product Attributes

Table 5–9 lists the attributes of the Product dimension:

Table 5–9 Product Dimension Attributes

Attribute	Definition
Company Number	Unique ID from the source system that identifies a company.
Company	Name of a company. A company consists of one or more divisions.
Division Number	Unique ID from the source system that identifies a division.
Division	Name of a division. A division is the highest category of merchandise within an organization. Typically a division is used to signify the overall category of merchandise, such as hardlines or apparel.
Division Buyer Number	Unique ID from the source system that identifies a division buyer.

Table 5–9 (Cont.) Product Dimension Attributes

Attribute	Definition
Division Buyer	Name of a division buyer, an executive responsible for purchasing merchandise to be sold in a store or retail channel for a particular division.
Division Merchant Number	Unique ID from the source system that identifies a division merchant.
Division Merchant	Name of a division merchant.
Group Number	Unique ID from the source system that identifies a group.
Group	Name of a group. A group is the next level of merchandise in a hierarchy below division. A group consists of one or more departments. A group can belong to only one division.
Group Buyer Number	Unique ID from the source system that identifies a group buyer.
Group Buyer	Name of a group buyer. A group buyer is an executive responsible for purchasing merchandise to be sold in a store or retail channel for a particular group.
Group Merchant Number	Unique ID from the source system that identifies a group merchant.
Group Merchant	Name of a group merchant.
Department Number	Unique ID from the source system that identifies a department.
Department	Name of a department. A department is the next level below group in the merchandise hierarchy. A group can have multiple departments. Key information about how inventory is tracked and reported is stored at the department level.
Department Buyer Number	Unique ID from the source system that identifies a department buyer.
Department Buyer	Name of a department buyer, an executive responsible for purchasing merchandise to be sold in a store or retail channel for a particular department.
Department Merchant Number	Unique ID from the source system that identifies a department merchant.
Department Merchant	Name of a department merchant.
Profit Calc Type	Indicator of the profit calculation type, with values of “Direct Cost” and “Retail Inventory”.
Purchase Type	Indicator of the purchase type of merchandise, with values of “Owned”, “Consignment”, and “Concession.”
OTB Calc Type	Indicator of the open–to-buy calculation type, with values of “Cost” and “Retail.”
Class Number	ID within a department that uniquely identifies a class.
Class	Name of a class. A class is the next level below department in the merchandise hierarchy. A department can have multiple classes. A class provides the means to group products within a department. A class consists of one or more subclasses.
Class Buyer Number	Unique ID from the source system that identifies a class buyer.
Class Buyer	Name of a class buyer, an executive responsible for purchasing merchandise to be sold in a store or retail channel for a particular class.
Class Merchant Number	Unique ID from the source system that identifies a class merchant.

Table 5–9 (Cont.) Product Dimension Attributes

Attribute	Definition
Class Merchant	Name of a class merchant.
Subclass Number	ID within a department number and class number that uniquely identifies a subclass. A class can have multiple subclasses.
Subclass	Name of a subclass. A subclass defines the type of merchandise sold in a department and class.
Subclass Buyer Number	Unique ID from the source system that identifies a subclass buyer.
Subclass Buyer	Name of a subclass buyer, an executive responsible for purchasing merchandise to be sold in a store or retail channel for a particular subclass.
Subclass Merchant Number	Unique ID from the source system that identifies a subclass merchant.
Subclass Merchant	Name of a subclass merchant.
Item Number	Unique ID from the source system that identifies an item.
Item	Detailed description of an item. Item is the lowest-level attribute within a product hierarchy. Sales and inventory facts are tracked at one of the predetermined levels within the Item attribute.
Pack Sellable Number	Unique code from the source system that identifies a sellable pack. A sellable pack is a collection of items that is sold as a single unit.
Pack Simple Number	Unique code from the source system that identifies a simple pack. A simple pack is a pack in which the component items are the same.
Pack Orderable Number	Unique code from the source system that identifies an orderable pack. An orderable pack is a collection of items that is ordered as a single unit.
Pack Flag	Indicator of whether an item is a pack. A pack item is a collection of items that can be ordered or sold as a single unit.
Package Size	Size of the product printed on packaging.
Package UOM	Unit of measurement in which a package size is measured.
Item Level	Indicator of the level within an item family, with values of 1, 2, and 3.
Transaction Level	Indicator of the level within an item family that inventory is tracked, with values of 1, 2, and 3.
Item Level 1 Number	Item number of the highest level in an item family.
Item Level 1 Desc	Item description of the highest level in an item family.
Item Level 2 Number	Item number of the second level in an item family.
Item Level 2 Desc	Item description of the second level in an item family.
Item Level 3 Number	Item number of the lowest level in an item family.
Item Level 3 Desc	Item description of the lowest level in an item family.
Item Diff Agg ID	Combination of item differentiators used to define the aggregate reporting level between Level 1 and Level 2.
Item Diff Agg Desc	Description of item differentiators used to define the aggregate reporting level between Level 1 and Level 2.
Color Item Diff Agg	The color of an item, when used as an item diff aggregate.

Table 5–9 (Cont.) Product Dimension Attributes

Attribute	Definition
Size Item Diff Agg	The size of an item, when used as an item diff aggregate.
Flavor Item Diff Agg	The flavor of an item, when used as an item diff aggregate.
Brand Item Diff Agg	The brand of an item, when used as an item diff aggregate.
Style Item Diff Agg	The style of an item, when used as an item diff aggregate.
Fabric Item Diff Agg	The fabric of an item, when used as an item diff aggregate.
Scent Item Diff Agg	The scent of an item, when used as an item diff aggregate.
Original Retail	Original retail price of an item per unit and is stored in the primary currency.
Mfg Recommended Retail	Recommended manufacturer's retail price of an item per unit, stored in the primary currency.
Pack Number	Item number where PACK_FLG = Y. A pack item is a collection of items that can be ordered or sold as a single unit.
Pack Item Quantity	Quantity of a pack component item units that make up a pack.
Pack Desc	Item description where PACK_FLG = Y. A pack item is a collection of items that can be ordered or sold as a single unit.
Pack UOM	Standard unit of measurement for a pack item.
Item List ID	Unique ID from the source system that identifies an item list. An item list is an intentional grouping of items for operational purposes.
Item List Desc	Detailed description of an item list. An item list is an intentional grouping of items for operational purposes.
UDA Head ID	Unique ID from the source system that identifies a user-defined attribute of an item. A UDA head is a parent of a UDA detail.
UDA Head Desc	Detailed description of a user-defined attribute of an item. A UDA head is a parent of a UDA detail.
UDA Detail ID	Unique ID from the source system that identifies a user-defined attribute detail of an item. A UDA detail can be a child of only one UDA parent.
UDA Detail Desc	Detailed description of a user-defined attribute detail of an item. A UDA detail can be a child of only one UDA parent.
Diff Type	Indicator of the differentiator type, with example values of "Size," "Color," "Flavor," "Scent," and "Pattern." A differentiator type is a parent of a differentiator.
Diff ID	Unique ID from the source system that identifies an item differentiator. Differentiators define the characteristics of an item. A differentiator can be a child of only one differentiator type.
Diff Desc	Description of an item differentiator. A differentiator can be a child of only one differentiator type.
UOM	Standard unit of measurement for an item.

Table 5–9 (Cont.) Product Dimension Attributes

Attribute	Definition
Item Number Type Code	Indicator of the type of numbering system used to identify an item. Values are as follows: ■ Oracle Retail Item Number ■ UCC12 ■ UCC12 with Supplement ■ UCC8 ■ UCC8 with Supplement ■ EAN/UCC-8 ■ EAN/UCC-13 ■ EAN/UCC-13 with Supplement ■ ISBN-10 ■ ISBN-13 ■ NDC/NHRIC – National Drug Code ■ PLU ■ Variable Weight PLU ■ SSCC Shipper Carton ■ EAN/UCC-14 ■ Manual ■ Custom Item Type
Item Input Flag	Indicator of whether an item holds inventory for an item transformation, with values of “Y” for yes and “N” for no.
Merchandise Flag	Indicator of whether an item is merchandise, with values of “Y” for yes and “N” for no.
Pack Retail Flag	Indicator of whether a pack has its own unique retail price, or if a pack retail price is the sum of its components’ retail prices, with values of “Y” for yes and “N” for no.
Class Alternate	Alternate version of the Class attribute which operates only on the description of the class, allowing for grouping of same-named classes onto the same result row in an analysis.
Subclass Alternate	Alternate version of the Subclass attribute which operates only on the description of the subclass, allowing for grouping of same-named subclasses onto the same result row in an analysis.
Item Desc	Descriptive text for the transaction-level item from the merchandising system, without any appended values such as item numbers.
Item UDA ID 1 - 50 Item UDA Desc 1 - 50	User-defined attributes which have been "pivoted" into a column-based structure, allowing for side-by-side usage in reporting. Content of the attributes is determined by populating the W_RTL_UDA_METADATA_G interface.
Item Diff ID 1 - 8 Item Diff Desc 1 - 8	User-defined differentiators which have been "pivoted" into a column-based structure, allowing for side-by-side usage in reporting. Content of the attributes is determined by populating the W_RTL_UDA_METADATA_G interface.
Item Supplier Label	The descriptive label for an item as provided by the supplier to the merchandising system.
Item Supplier VPN	The vendor product number as provided by the supplier to the merchandising system.

Table 5–9 (Cont.) Product Dimension Attributes

Attribute	Definition
Item Supplier Origin Country	The origin country as provided by the supplier to the merchandising system.
Item Supplier Pickup Lead Time	The pickup leadtime as provided by the supplier to the merchandising system.
Item Supplier Inner Pack Size	The inner pack size of an item as provided by the supplier to the merchandising system.

Table 5–10 Product Split Dimension Attributes

Attribute	Definition
Style	This attribute displays the style of an item.
Color	This attribute displays the color of an item.
Size	This attribute displays the size of an item.
Fabric	This attribute displays the fabric of an item.
Flavor	This attribute displays the flavor of an item.
Scent	This attribute displays the scent of an item.
Color Alternate	This attribute displays the description of a color in primary language, for use in grouping report results by the color label.
Size Alternate	This attribute displays the description of a size in primary language, for use in grouping report results by the size label.
Season Alternate	This attribute displays the description of a season in primary language, for use in grouping report results by the season label. This has been copied over from the Season Phase dimension for use in item/season based reports.
Phase Alternate	This attribute displays the description of a season phase in primary language, for use in grouping report results by the phase label. This has been copied over from the Season Phase dimension for use in item/season based reports.

Product Images

RI is capable of displaying item images that have been configured for use in RMFCS. RI directly captures the URLs which have been assigned to items and exposes them to OBI EE. The URLs can be displayed as images by changing the column's Data Format option to either Image URL or HTML. The Image URL format will directly perform a GET browser request on the URL and return the image exactly as it is formatted on the host system. The HTML format allows you to enter custom HTML tags to change the format of the image, such as the width or height. All URLs must use the HTTPS protocol, image URLs using HTTP will not be rendered in RI. The image URLs are a concatenation of the file path and file name from RMFCS, without any manipulation. Ensure that this concatenation results in a valid URL before using it in RI.

An example column formula that can be used in conjunction with the HTML data format is provided below:

```
'<img src='||"Item As Is"."Item Image"||' width=100 height=100 />'
```

This formula will display the image at a forced 100x100 pixel size, which is a typical viewing size in reports where the image is just a reference (e.g. to see the color or silhouette) rather than the focus of the analysis.

Table 5-11 lists the attributes for item images.

Table 5–11 Product Image Attributes

Attribute	Definition
Item Image	Image representing a transaction item.
Style Image	Image representing a style or parent-item.
Subclass Image	Image representing a subclass.
Class Image	Image representing a class.
Department Image	Image representing a department.
Group Image	Image representing a group.
Division Image	Image representing a division.
Company Image	Image representing a company.
Item Attribute Image	Image representing an item attribute.
Default Item Attribute Image	This is the default Item Attribute image.
Second Half Item Image	This attribute displays the description of the Item image used in the item similarity comparison.

Product Org Attributes

Table 5–12 lists the attributes of the Product Org Attributes dimension. These values are sourced from the item/loc traits data in RMFCS.

Table 5–12 Product Org Dimension Attributes

Attribute	Definition
Backorder Indicator	Contains a value of Y to indicate the item is backorderable.
Electronic Marketing Club	Code representing the electronic marketing club the item belongs to at the location.
Food Stamp Indicator	Contains a value of Y when the item is eligible for food stamps.
In Store Market Basket	Contains the in store market basket code for the item/location.
Manual Price Entry	Contains a value of Y when the item is expected to have manual price entries at the POS for a location.
National Brand Comparison Item	Nationally branded item to which you would like to compare the current item.
Refundable Indicator	Contains a value of Y to indicate the item is refundable at that location.
Returnable Indicator	Contains a value of Y to indicate the item is returnable to that location.
Reward Club Eligible Indicator	Whether the item is valid for various types of bonus point or award programs at the location.
Store Reorderable Indicator	Contains a value of Y to indicate the item is reorderable to that location.
WIC Indicator	Contains a value of Y to indicate the item is eligible for the Women, Infants, and Children (WIC) program.

Promotion

A promotion is an attempt to stimulate the sale of particular merchandise. This can be accomplished by temporarily reducing its price, advertising it, or linking its sale to offers of other merchandise at reduced prices or free. A promotion can take place for many different reasons, such as the desire to attract a certain type of customer, increase sales of a particular class of merchandise, introduce new items, or gain competitive advantage. Tracking of sales and demand by promotion allows retailers to assess the success in attracting customers to purchase items that are placed on promotion.

A single promotion can be part of a larger effort or event. Several promotions can be associated with an event. For example, a summer sale event might consist of multiple promotions.

There are a number of formats in which a promotion can be offered. Some common examples of these formats are as follows:

- Get a specific percent off the price of an item
- Buy a certain quantity of an item and get a certain amount off the total purchase value
- Buy a certain item and get a discount on another item
- Get free shipping and handling

Typically, a promotion on an item is not applied universally. It might be triggered only for certain stores, for certain media, for certain customer types, or for certain offer coupons. The type of circumstance that triggers a promotion is called the promotion trigger type. In a brick-and-mortal market, a promotion is always triggered by the store. In a direct-to-consumer market, there can be different trigger types such as Source Code, Media Code, Selling Item Code, or Customer Type. One promotion can be triggered by only one promotion trigger type.

It is also possible that the retailer has multiple sources of promotions both internal and external to their Oracle applications. RI has the ability to source promotions directly from the RPM and Customer Engagement applications. It can also accept external promotions through a separate interface. Regardless of the source of the promotion data, it is assumed that the retailer will ensure uniqueness of the promotions across all source systems, such that the sales transactions occurring under a specific promotion can be correctly identified and reported on.

Table 5–13 lists the attributes of the Promotion dimension.

Table 5–13 Promotion Dimension Attributes

Attribute	Definition
Promo Source	Identifier for the source system of the promotion data, in cases where multiple source systems are generating promotions (such as RPM, CE, and OMS).
Promo Event ID	Unique ID from the source system that identifies a promotion event, an event for which one or more promotions are offered.
Promo Event Desc	Description of a promotion event, an intentional grouping of promotion parents.
Promo Event Start Date	Date from which the source record (in the source system) is effective. This represents the start date of a promotion event.
Promo Event End Date	Date until which the source record (in the source system) is effective. This represents the end date of a promotion event.

Table 5–13 (Cont.) Promotion Dimension Attributes

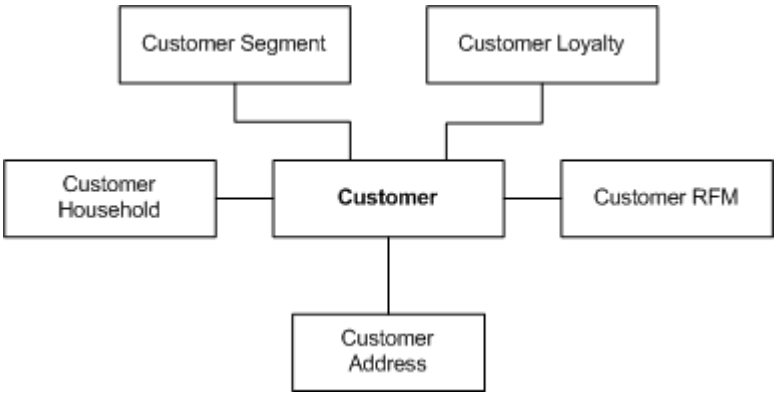
Attribute	Definition
Promo Event Theme Desc	Description of a promotion event theme that is used to further identify and describe the promotion event.
Promo ID	Unique ID from the source system that identifies a promotion. A promotion is an intentional grouping of promotion offers. A promotion can only be a child of a single promotion event. Multiple promotions within a promotion event can have overlapping timeframes within the event.
Promo Name	Name of a promotion. A promotion is an intentional grouping of promotion offers. A promotion can only be a child of a single promotion event. Multiple promotions within a promotion event can have overlapping timeframes within the event.
Promo Description	Description of a promotion. A promotion is an intentional grouping of promotion offers. A promotion can only be a child of a single promotion event. Multiple promotions within a promotion event can have overlapping timeframes within the event.
Promo Start Date	This represents the start date of a promotion. This value is determined by the timeframes of the promotion offers within a promotion.
Promo End Date	This represents the end date of a promotion. This value is determined by the timeframes of the promotion offers within a promotion.
Promo Offer ID	Unique ID from the source system that identifies a promotion offer. A promotion offer is an intentional grouping of promotion details within a promotion. A promotion offer is always a child of a single promotion, which is a child of a single promotion event. Multiple offers within a promotion can have overlapping timeframes within the promotion.
Promo Offer Name	Name of a promotion offer. A promotion offer is an intentional grouping of promotion details within a promotion. A promotion offer is always a child of a single promotion, which is a child of a single promotion event. Multiple offers within a promotion can have overlapping timeframes within the promotion.
Promo Offer Start Date	This represents the start date of a promotion offer. Individual offers may have overlapping timeframes within a promotion.
Promo Offer End Date	This represents the end date of a promotion offer. Individual offers may have overlapping timeframes within a promotion.
Promo Offer Type	Promotion offer type that is applied to a promotion offer, with values such as 0 (simple item offer), 1 (simple transaction offer), and 2 (buy/get transaction offer). A promotion offer type is the method to implement a price discount, reward, or credit/financing.
Coupon Code	A static number or code used to identify a set of coupons associated with an offer. May be used to generate serialized coupon numbers that will be issued to customers or redeemed at the point of sale.
Target Name	Describes the customer segment that is targeted for a particular promotion. The promotion offers may only be delivered to the customers in the specified segments.
Promo Detail ID	Identifier of a detail of a promotion offer, usually either a condition or reward attached to the offer, but may include other details such as rules, constraints, or limits on the offer.

Table 5–13 (Cont.) Promotion Dimension Attributes

Attribute	Definition
Promo Detail Type	Identifies the type of detail record associated with an offer, with values such as "C" for condition or "R" for reward. The available types will vary depending on the source of promotion data.
Promo Condition/Reward Type	Identifies the type of condition or reward rule, such as Buy/Spend X or Give Percent Off.
Promo Condition/Reward Amount	Identifies the amount associated with a condition or reward, such as the price change amount or percent off.
Promo Condition/Reward Quantity	Identifies the number of units associated with the condition or reward, such as the quantity to buy before getting the reward, or the quantity eligible for discount.
Promo Condition/Reward UOM	The unit of measure for the condition or reward quantity.
Promo Flex Attrib 1 through Promo Flex Attrib 60	60 flexible promotion fields are available for externally sourced promotion data, which may contain a variety of promotion-specific attributes and values.

Customer

Knowledge of the customers' preferences and buying behavior allows the retailer to increase sales through up-selling efforts, target customers for promotions, and prevent defection to competitors. In Retail Insights, customer information and transaction history can be used to segment the customer base by one of several methods. This analysis yields important information about who the best customers are, and the affinity of customer segments to particular products.



Customer addresses and personal information will be sourced from an external customer management system or from Oracle Retail Customer Engagement (ORCE). Oracle Retail Insights will provide Source Independent Load interfaces (W_PARTY_PER_DS and W_RTL_PARTY_PER_ATTR_DS) to feed customer master data, addresses, and other customer attributes from the Oracle Retail Insights staging tables to the customer dimension. Some or all of this data could be loaded into the CRM system by Oracle Data Cloud, and then passed down from there to RI.

If detailed customer data is not available, it is also possible to seed customer numbers directly from sales transactions (if the POS system is capable of providing such identifiers). This allows for a simple form of customer analysis that uses just the unique identifiers from the point of sale to analyze your data.

Customer addresses and personal information will be sourced from an external customer management system or from Oracle Retail Customer Engagement (ORCE).

Oracle Retail Insights will provide Source Independent Load interfaces (W_PARTY_PER_DS and W_RTL_PARTY_PER_ATTR_DS) to feed customer master data, addresses, and other customer attributes from the Oracle Retail Insights staging tables to the customer dimension. Some or all of this data could be loaded into the CRM system by Oracle Data Cloud, and then passed down from there to RI.

Table 5–14 lists the attributes of the Customer dimension.

Table 5–14 Customer Dimension Attributes

Attribute	Definition
Customer Individual Gender Code	Code for an individual's gender.
Customer Individual Gender	An individual's gender, for example: male, female, not declared.
Customer Individual Marital State Code	Code for an individual's marital state (marital status).
Customer Individual Marital State	An individual's marital state (marital status), for example: single, married, divorced, widowed.
Annual Income	Customer's annual income.
Education Background Code	Code for the education background code of the customer.
Recency Category	Recency category of the customer.
Customer Primary City	Customer primary city of residence.
Customer Primary State Code	Code for customer primary state.
Customer Primary State	Customer primary state.
Customer Primary Postal Code	Customer primary postal code.
Customer Primary Country	Customer primary country.
Address ID	Customer address ID.
Churn Score	Score indicating the likelihood of customer retention.
Customer Status Code	Status code for a customer.
Customer Status Code Description	Status of a customer, for example: potential, first-time, regular.
Education Background	Education background of a customer, for example: bachelor's degree, master's degree).
Ethnicity Code	Code for the ethnicity of the customer, for example: H = Hispanic, G = German, U = Unknown.
Nationality Code	Code for the nationality of the customer.
Customer Type	Type of customer
Nationality	Nationality of the customer.
Occupation Code	Code for the occupation of the customer.
Occupation	Occupation of the customer.
Prospect Flag	Flag to indicate someone who has visited or shopped online, but has not purchased. The retailer may have some information about such prospect customers.
Recency Category Code	Code indicating how recently the customer purchased.

Table 5–14 (Cont.) Customer Dimension Attributes

Attribute	Definition
Recency Category	Score indicating how recently the customer purchased.
Frequency Category Code	Code indicating how often a customer purchases.
Frequency Category	Score indicating how often a customer purchases.
Monetary Category Code	Code indicating the monetary value of a customer's purchase.
Monetary Category	Score indicating the monetary value of customer's purchase.
RFM Categories Code	Code indicating the customer's total RFM Score.
RFM Categories	Score indicating the combined recency, frequency, and monetary value of a customer.
Churn Score Range Sort	Sort range for churn score.
Churn Score Range	Range of churn score.
Customer Address Type Code	Code for the type of customer address.
Customer Address Type	Type of address, for example: billing address, delivery address.
Years at Address	Number of years for which the specific address has been in use.
Customer Address Class Code	Code indicating the class of the address.
Customer Address Class	Class of address, for example: residential address, commercial address.
Primary Address Flag	Flag that indicates if the address can be used for all customer communication and reporting purposes.
City	Indicates the City.
State Code	State code.
State	State.
Postal Code	Postal code.
Country	Indicates the Country.
Opt Out Flag	Flag indicating if the address or e-mail address may or may not be marketable.
Customer Birth Month	Customer month of birth.
Customer Birth Year	Customer year of birth.
Age	Indicates the age of customer based on year and month of birth.
Age Range	This demographic attribute for customer represent the range in which his age lies. This attribute will be typically configured by user based on their business needs.
Customer Income Band	Range in which customer's income falls.
Ethnicity Name	Ethnicity of the customer, for example: H = Hispanic, G = German, U = Unknown.
Dwelling Status	The dwelling status classifies all dwellings according to whether they are occupied, unoccupied, or under construction during the time period of the data collection.
Dwelling Size	This attribute lists the floor area for a dwelling unit expressed in the standard unit of measure.

Table 5–14 (Cont.) Customer Dimension Attributes

Attribute	Definition
Dwelling Type	This attribute lists the dwelling unit occupied by, or intended for occupancy by, one household. Examples include: detached house, flat, apartment, tenement, trailer park, etc.
Dwelling Tenure	The dwelling tenure attribute refers to the period of the occupancy of a private household in a dwelling. It is expressed in number of years.
Religion	This attribute identifies a customer's religion.
Religion Code	This attribute is the code for a customer's religion.
Social Class	Status hierarchy by which customers are classified on the basis of esteem and prestige. Values - Upper Class, Upper Middle class, Lower middle class, Upper lower class, lower class.
Social Class Code	Code indicating the status hierarchy by which customer are classified on the basis of esteem and prestige.
Family Lifecycle	Indicates the family lifecycle of the customer, Examples include: bachelor, married with no children (DINKS: Double Income, No Kids), full-nest, empty-nest, or solitary survivor.
Family Lifecycle Code	Code indicating the family lifecycle of the customer.
Metro Area Size	Size of population in the metro area where the customer lives.
Activity	Activity based on AIO survey.
Activity Code	Activity code based on AIO survey.
Attitude	This attribute indicates the customer's attitude.
Attitude Code	Code indicating customer's attitude.
Benefit Sought	The main benefits the customer looks for in a product. For example, health, taste, and so on.
Benefit Sought Code	Code based on benefits sought.
Climate	This indicates the weather patterns for the customer's area.
Climate Code	The code indicates the weather patterns.
Customer Lifetime Value	This attribute is a forecast of customer profitability.
Customer Lifetime Value Code	This is the code for customer lifetime value.
Customer Lifetime Value Range	This is the range in which the customer's value falls, for example, Very High/High/Medium/Low
Customer Profitability Code	This is the code for customer profitability.
Customer Profitability	This attribute is a historical analysis of customer profitability, for example, High/Medium/Low.
Interest	This attribute indicates interest based on AIO survey.
Interest Code	Code indicating customer's interests.
Occasion	This attribute indicates when a customer tends to purchase or consume the product. It can be holidays and events that stimulate purchases
Occasion Code	Code indicating when customer tends to purchase or consume the product.

Table 5–14 (Cont.) Customer Dimension Attributes

Attribute	Definition
Opinion	This attribute indicates (but is not limited to) customer's political opinions, environmental awareness, sports, arts and cultural issues.
Opinion Code	Code indicating customer opinions.
Readiness to Buy	This attribute indicates customer buying mindset.
Readiness to Buy Code	Code indicating the customer buying mindset.
Hours Worked	The number of hours the customer works.
Age of Kids	This attribute will contain predefined ranges for a customer. The generic range of values will be Range - 0-3, 3-6, 6-10, 11-18, 0-16.
Population Density	Population density of the customer's area. Possible values can be urban, suburban, or rural.
No of Teens	This attribute is the number of teens in the customer's household.
Usage Rate	This indicates light, medium and heavy product usage by the customer.
Years Primary Store	This attribute is the number of years the customer has shopped at their primary grocery store.
Customer Active Flag	Flag indicating if the customer is active.
Citizenship	This indicates the citizenship status of the customer.
Citizenship Code	Code indicating the citizenship status of the customer.
Customer Address Effective Date	The date a customer's primary address is effective from.
Annual Revenue	A customer's annual revenue or net worth.
Call Flag	Flag indicating if this customer can be called.
Contact Active Flag	Flag indicating if this contact is active.
Contact Business Name	Name of the business or organization associated with this customer.
Contact Formed Date	The date that this customer's information was first recorded.
Customer End Date	The effective end date for the customer.
Customer Since Date	The effective start date for the customer.
Customer Birth Date	The birth date of the customer.
Customer Email Address	The primary email address of the customer.
Customer Phone Number	The primary phone number of the customer.
Customer End Date	The effective end date for the customer.
Customer First Name	The first name or given name of a customer.
Customer Middle Name	The middle name of a customer.
Customer Last Name	The last name or surname of a customer.
Customer Name Prefix	The prefix on a customer name.
Customer Name Suffix	The suffix on a customer name.
Customer Nickname	The nickname of a customer.
Customer Full Name	The full name of the customer.

Table 5–14 (Cont.) Customer Dimension Attributes

Attribute	Definition
Customer Home Location	The name or number of the customer's chosen home or preferred retail location.
Customer Signup Location	The name or number of the location where the customer signed up or had their data entered into the system.
Last Transaction Date	The last recorded transaction date for the customer, as registered in source system for the customer data.
First Transaction Date	The first recorded transaction date for the customer, as registered in source system for the customer data.
Enterprise Flag	Flag indicating if this customer is an individual or an organization.
Suppress Call Flag	Flag indicating if this customer should not be contacted by phone.
Suppress Email Flag	Flag indicating if this customer should not be contacted by email.
Suppress Fax Flag	Flag indicating if this customer should not be contacted by fax.
Suppress Mail Flag	Flag indicating if this customer should not be contacted by mail.
Customer Oracle ID	The identifier assigned by Oracle Data Cloud to track the data for a known individual across systems.
Customer Oracle Address ID	The identifier assigned by Oracle Data Cloud to track the data for a known household across systems.

Customer Segmentation

Customer segmentation is the process of identifying and classifying customers according to their current and future value to your business. Segmentation identifies your most and least valuable customers based on how frequently and recently customers have purchased, and the monetary value and profitability of their business. You can use this information to establish programs and policies that protect your most valued customers against defecting to a competitor. In addition, segmentation assists the marketing analyst in identifying customers whose purchasing history indicates the potential to become more profitable, as well as those who contribute little value to your business.

Your best customers are those who:

- Have purchased goods or services from you recently
- Purchase from you frequently
- Spend a large amount of money

Table 5–15 lists the attributes of the Customer Segment dimension.

Table 5–15 Customer Segment Dimension Attributes

Attribute	Definition
Customer Segment Name	Name of the customer segment.
Customer Segment Type	Indicates the type of customer segment.
Customer Segment Age Range	This attributes indicates the age group for customer segment. This attribute can be used by marketers devise, and endorse items specifically for the needs and perceptions of age groups.

Table 5–15 (Cont.) Customer Segment Dimension Attributes

Attribute	Definition
Customer Segment Gender Code	The code indicating gender of customer segment.
Customer Segment Gender	This attributes defines the gender of customer segment. Gender drives marketing decisions for categories like clothing, hairdressing, magazines and toiletries and cosmetics, and so on.
Customer Segment Family Size	Indicates the Family Size for a demographics based segment.
Customer Segment Generation Code	Generation code for creating demographic segments.
Customer Segment Generation	Generation for creating demographic segments. Possible value can be Baby-boomers, Generation X ans so on.
Customer Segment Annual Income Range	The attribute defines target customer segment income range. Retailers will use this attribute to potentially target affluent customers with luxury goods and convenience services. Low Income range customers may be targeted with every day value or discounted items and services.
Customer Segment Occupation Code	Occupation code to classify customer into occupational categories.
Customer Segment Occupation	Occupation for purposes of segmenting into occupational categories.
Customer Segment Education Background Code	Educational background code to classify customer into different education categories.
Customer Segment Education Background	Educational background to classify customer into different education categories.
Customer Segment Ethnicity Code	The code to identify ethnic groups to find customers with special interests.
Customer Segment Ethnicity	This attribute identifies ethnic groups to find customers with special interests.
Customer Segment Nationality Code	Nationality code for the purpose of demographics based segmentation.
Customer Segment Nationality	This attribute identifies nationality to find customers with special interests.
Customer Segment Religion Code	Religious code for the purpose of demographics based segmentation.
Customer Segment Religion	This attribute identifies religious groups to find customers with special interests.
Customer Segment Social Class Code	Code indicating the status hierarchy by which customer are classified on the basis of esteem and prestige.
Customer Segment Social Class	Status hierarchy by which customer are classified on the basis of esteem and prestige. Values - Upper Class, Upper Middle class, Lower middle class, Upper lower class, lower class.
Customer Segment Family Lifecycle Code	Code indicating the family lifecycle of the segment.
Customer Segment Family Lifecycle	Indicates the family lifecycle of the segment, Examples include: bachelor, married with no children (DINKS: Double Income, No Kids), full-nest, empty-nest, or solitary survivor.

Table 5–15 (Cont.) Customer Segment Dimension Attributes

Attribute	Definition
Customer Segment Region Code	Region code for the purpose of geographic based segmentation. Possible value can be continent, country, state, or even neighborhood.
Customer Segment Region	Region value for the purpose of geographic based segmentation. Possible value can be continent, country, state, or even neighborhood.
Customer Segment Metro Area Size	Size of population for creating geographic based customer segments.
Customer Segment Population Density	Population density for creating geographic customer segments, Possible values can be urban, suburban, or rural.
Customer Segment Climate Code	The code indicates the weather patterns.
Customer Segment Climate	This indicates the weather patterns for the purpose of geographic based segmentation.
Customer Segment Benefit Sought Code	Benefits sought code for purposes of segmentation based on benefits sought.
Customer Segment Benefit Sought	The main benefits consumers look for in a product. For example, health, taste, and so on.
Customer Segment Usage Rate	This indicates light, medium and heavy product usage segments.
Customer Segment Readiness To Buy Code	Code indicating the customer segment's buying mindset.
Customer Segment Readiness To Buy	This attribute indicates customer segment's buying mindset.
Customer Segment Occasion Code	Code indicating when segment tends to purchase or consume the product.
Customer Segment Occasion	This attribute indicates when segment tends to purchase or consume the product. It can be holidays and events that stimulate purchases
Customer Segment Activity Code	Activity code based on AIO survey.
Customer Segment Activity	Activity based on AIO survey. This attribute can be used to create Psychographic segments.
Customer Segment Interest Code	Code indicating customer segment's interests.
Customer Segment Interest	Indicates interest based on AIO survey. This attribute can be used to create Psychographic segments.
Customer Segment Opinion Code	Code indicating customer segment's opinions.
Customer Segment Opinion	This attribute indicates (but is not limited to) customer segments political opinions, environmental awareness, sports, arts and cultural issues.
Customer Segment Attitude Code	Code indicating customer segment's attitude.
Customer Segment Attitude	This attribute indicates the customer segment's attitude. This can be used to create Psychographic segments.
Customer Segment Value Code	Code indicating customer segment's value.

Table 5–15 (Cont.) Customer Segment Dimension Attributes

Attribute	Definition
Customer Segment Value	This attribute indicates the customer segment's value. This can be used to create Psychographic segments.
Customer Segment Source Type	This attribute indicates whether the customer segment was based on customers or households.

Customer Segment Allocation

The customer segment allocation folder under Customer Insights in Oracle Retail Insights enables analysis of the association of a retailer's customer segments to its merchandise and organization hierarchies. That association enables the targeting of specific customer segments with promotions by indicating in what locations and what products a customer segment is most likely to purchase. Note that this is purely for dimensional reporting.

For example, if a merchant sees a strong association between customer segment: farmer; subclass: plows; locations: Midwest Region, she will want to ensure that she has an extended assortment of the plows subclass for that Region. That way she is driving sales as well as meeting or exceeding customer expectations.

The Customer Segment Allocation association itself is done by external systems and interfaced to Oracle Retail Insights. The association level needs to be predefined in the configuration file to determine at what level of the merchandise and organization hierarchy customer segment allocation should be tracked. For example, a retailer could configure association at subclass and store level, or department and region level, or whatever levels are appropriate for their organization. Regardless of what level is chosen during configuration, it is not recommended to drill up or down on those merchandise or organization hierarchy levels during reporting, as that will provide incorrect results.

Customer Behavior

Retail Insights exposes a set of metrics describing customer behavior, which are calculated using the Retail Science Platform. These metrics are calculated using customer-linked transaction data. In addition to helping understand how customers have behaved in past, these metrics can also help predict future behavior.

Table 5–16 Customer Behavior Metrics

Attribute	Definition
Customer Latency	The number of days between each of a customer's transactions sales or return.
Customer Lifespan	The time between a customer's first and last purchase.
Customer RFM	The RFM (recency, frequency, monetary) score determines quantitatively which customers are the best ones by examining how recently a customer has purchased (recency), how often the customer purchases (frequency), and how much the customer spends (monetary).
Customer Projected Next Purchase Date	Prediction of the next likely customer purchase date.
Customer Location Loyalty	How loyal are customers to a specific location? A value of 100% indicates that they always shop at a particular location.
Customer Style Loyalty	How loyal are customers to a particular style? A value of 100% indicates that they always prefer one specific style.

Table 5–16 (Cont.) Customer Behavior Metrics

Attribute	Definition
Customer Color Loyalty	How loyal are customers to a particular color? A value of 100% indicates that they always prefer one specific color.
Customer Brand Loyalty	How loyal are customers to a particular brand? A value of 100% indicates that they always prefer one specific brand.
Customer Price Efficiency Loyalty	How efficient are customers in getting a promotion price? A value of 100% indicates that the customer always buys items on promotions or is very efficient in obtaining a good price.
Customer Projected Lifetime Value	The projected total lifetime value of a customer, which is modeled by predicting the number/value of future purchases a customer will make and combining that with their purchase history.

Customer Loyalty Scores

Loyal customers are among the retailer's most precious assets. A loyal customer contributes to your business on a regular basis over an extended period of time and almost always ranks as one of your best customers.

When used in conjunction with RFM analysis, these metrics allow you to assess the importance of various items to your best customers.

In Retail Insights, customer's loyalty scores are tracked at individual customer as well as customer segment level for various grains of promotion, calendar, style, brand and merchandising hierarchy.

Loyalty score attributes indicate the likelihood of purchase of merchandise by a given customer or customer segment for the supported attributes.

Table 5–17 lists the attributes of the Customer Loyalty dimension.

Table 5–17 Customer Loyalty Score Dimension Attributes

Attribute	Definition
Seg Dept Loyalty Score	Customer Segment's loyalty scores for Department, Location and Day. This score is an indication of customer segment's experience of purchase of products or services.
Seg Dept Loyalty Score by Promo	Customer segment's loyalty score for Department, Location and Day by Promotion Component Type. This score is an indication of customer segment's experience of purchase of products or services.
Seg Class Loyalty Score	Customer segment's loyalty score for Class, Location and Day. This score is an indication of customer segment's experience of purchase of products or services.
Seg Class Loyalty Score by Promo	Customer segment's loyalty score for Class, Location and Day by Promotion Component Type. This score is an indication of customer segment's experience of purchase of products or services.
Seg Subclass Loyalty Score	Customer segment 's loyalty score for Subclass, Location and Day. This score is an indication of customer segment's experience of purchase of products or services.
Seg Subclass Loyalty Score by Promo	Customer segment's loyalty score for Subclass, Location and Day by Promotion Component Type. This score is an indication of customer segment's experience of purchase of products or services.

Table 5–17 (Cont.) Customer Loyalty Score Dimension Attributes

Attribute	Definition
Seg Style Brand Loyalty Score	Customer segment's loyalty score for Style, Brand, Location and Day. This score is an indication of customer segment's experience of purchase of products or services.
Seg Style Brand Loyalty Score by Promo	Customer segment's loyalty score for Style, Brand, Location and Day by Promotion Component Type. This score is an indication of customer segment's experience of purchase of products or services.
Cust Dept Business Month Loyalty Score	Customer's loyalty score for Department, Location and Business Month. This score is an indication of customer's experience of purchase of products or services.
Cust Dept Business Month Loyalty Score by Promo	Customer's loyalty score for Department, Location and Business Month by Promotion Component Type. This score is an indication of customer's experience of purchase of products or services.
Cust Class Business Month Loyalty Score	Customer's loyalty score for Class, Location and Business Month. This score is an indication of customer's experience of purchase of products or services.
Cust Class Business Month Loyalty Score by Promo	Customer's loyalty score for Class, Location and Business Month by Promotion Component Type. This score is an indication of customer's experience of purchase of products or services.
Cust Style Business Month Brand Loyalty Score	Customer's loyalty score for Style, Brand, Location and Business Month. This score is an indication of customer's experience of purchase of products or services.
Cust Style Business Month Brand Loyalty Score by Promo	Customer's loyalty score for Style, Brand, Location and Business Month by Promotion Component Type. This score is an indication of customer's experience of purchase of products or services.
Cust Dept Greg Month Loyalty Score	Customer's loyalty score for Department, Location and Gregorian Month. This score is an indication of customer's experience of purchase of products or services.
Cust Dept Greg Month Loyalty Score by Promo	Customer's loyalty score for Department, Location and Gregorian Month by Promotion Component Type. This score is an indication of customer's experience of purchase of products or services.
Cust Class Greg Month Loyalty Score	Customer's loyalty score for Class, Location and Gregorian Month. This score is an indication of customer's experience of purchase of products or services.
Cust Class Greg Month Loyalty Score by Promo	Customer's loyalty score for Class, Location and Gregorian Month by Promotion Component Type. This score is an indication of customer's experience of purchase of products or services.
Cust Style Greg Month Brand Loyalty Score	Customer's loyalty score for Style, Brand, Location and Gregorian Month. This score is an indication of customer's experience of purchase of products or services.
Cust Style Greg Month Brand Loyalty Score by Promo	Customer's loyalty score for Style, Brand, Location and Gregorian Month by Promotion Component Type. This score is an indication of customer's experience of purchase of products or services.

Household

Table 5–18 lists the Customer Household attributes supported by Retail Insights.

Table 5–18 Customer Household Attributes

Attribute	Definition
Household Income	Indicates the household income.
Household Class Id	Code for household class.
Household Class	Household class for a customer. Possible values are Nuclear/Joint/Single Parent, Double Income/Single Income.

Supplier

A supplier is a company that supplies goods or a service to another company. In the retail industry, the supplier supplies the retailer with goods, and the retailer sells those goods to customers. The same item can be supplied by multiple suppliers. As a result, a primary supplier is assigned to an item. When reporting by supplier, all items that are sold are attributed to the primary supplier.

Retail Insights supports multiple supplier sites for each supplier. A supplier site is the location from which the supplier ships merchandise. Terms and conditions can be defined at the supplier site level.

The attributes in the Supplier dimension allow the business analyst to rate supplier performance based on delivery history and the quality of products. This information can be used to identify suppliers whose performance is below standard, as well as those who are in compliance with expectations.

The following is the hierarchy of the Supplier dimension.

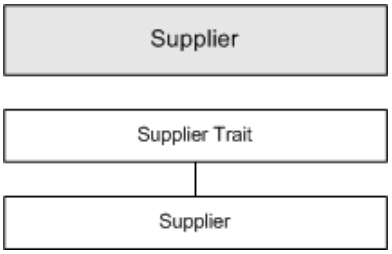


Table 5–19 lists the attributes of the Supplier dimension.

Table 5–19 Supplier Dimension Attributes

Attribute	Definition
Supplier Number	Unique ID from the source system that identifies a supplier.
Supplier	Trading name of a supplier.
Supplier Parent	Supplier level. For a supplier site, this value contains the parent supplier number. Sites represent physical locations from which suppliers ship. A null value indicates that this is a supplier.
QC Flag	Indicator of whether orders from a supplier require quality control, with values of “Y” for yes (unless overridden by the user when the order is created) and “N” for no, indicating that no quality control is required for this supplier unless indicated by the user during order creation. Quality control for suppliers involves checking the quality of the merchandise received (for example, damaged or over-ripened) and whether received shipments contain the quantity on the receiving label.

Table 5–19 (Cont.) Supplier Dimension Attributes

Attribute	Definition
VMI Status	Status with which vendor-managed inventory (VMI) purchase orders are created, with values of "A" for approved and "W" for worksheet. A null value indicates that the supplier is not a VMI supplier. A VMI supplier does inventory planning for the retailer. A VMI supplier is also responsible for replenishing and reordering the retailer's supply.
Pre Mark Flag	Indicator of whether a supplier's premarked inventory is in separate containers for cross-dock shipping to stores, with values of "Y" for yes and "N" for no.
EDI Flag	Indicator of whether a supplier electronically sends advance shipping notices (ASN), with values of "Y" for yes and "N" for no.
Intl Currency Flag	Indicator of whether a supplier operates in the same currency as the retailer's primary currency, with values of "Y" for yes and "N" for no.
Currency Code	Code of the currency that a supplier uses for business transactions.
Supplier Status	Indicator of whether supplier is currently active, with values of "A" for active and "I" for inactive.
Supplier Start Date	Date the supplier record was first inserted into the data warehouse.
Supplier End Date	Date the supplier was deleted from the source system.
Currency Description	Description of the currency that a supplier uses for business transactions.
Supplier Name 2	Secondary name of a supplier.
Primary Flag	Indicator of whether the supplier is the primary supplier for the item, with values of "Y" for yes and "N" for no. Each item has only one primary supplier. This field does not apply to sub-transaction-level items.
Pack Size	Number of items in a pack. Orders for the item must be placed in multiples of this quantity.
In Order Qty	Minimum quantity of the item that can be ordered at one time.
Max Order Qty	Maximum quantity of the item that can be ordered at one time.
Lead Time	Number of days needed between the date an order for an item is written and the delivery from the supplier to the store or warehouse.
Pickup Lead Time	Number of days needed between the date an item leaves a supplier and the delivery to an initial receiving location.
Inner Pack Size	Break pack size for an item. A break pack is a pack within a larger container.
Supplier Trait ID	Unique ID from the source system that identifies a supplier trait. A supplier trait is an attribute of a supplier, used to group suppliers with similar characteristics.
Supplier Trait Desc	Description of a supplier trait. A supplier trait is an attribute of a supplier, used to group suppliers with similar characteristics.

Retail Type

The Retail Type attribute represents the price type at which items were sold or held as inventory. There are seven values for Retail Type:

- Regular
- Promotional
- Clearance
- Employee
- Intercompany
- Book Transfer
- Normal Transfer

This attribute segments a number of business measurements by price type, including sales and profit, stock position and value, markdowns, markups, transfers and competitor pricing. This information is valuable when determining a pricing strategy, analyzing inventory value, or evaluating a competitor.

It is important to note that inventory data is not held for all values of Retail Type. In RMFCS, stock on hand is considered to be in clearance or non-clearance status. In Retail Insights, non-clearance inventory is associated with the Regular value of Retail Type, while clearance inventory is associated with the Clearance value. Similarly, transfers can only be classified using one of the (I, B, N) values.

Table 5–20 describes the Retail Type attribute.

Table 5–20 Retail Type Attribute

Attribute	Definition
Retail Type	Price type of an item. Values are as follows: ■ R - Regular ■ P - Promotion ■ C - Clearance ■ E - Employee ■ I - Intercompany ■ B - Book ■ N - Normal If an item is on promotion and clearance at the same time, the retail type is “C”.

Product Season

Product season functionality allows you to categorize each item according to different seasons, and phases within seasons. For example, you can assign a season of "Spring" to a group of items, according to the supplier's deliveries of fashion items. Those relationships can be further broken down into the phases, such as "Spring I" and "Spring II." These item-phase-season relationships are then loaded into Retail Insights. You can query sales and inventory data, for example, based on all items in the spring season, or just items in the Spring II phase.

Note: On a given day, an item can belong to more than one season and more than one phase within a season. Seasonality is designed to group by item/location/day to avoid double-counting.

Retail Insights provides two versions of Season Phase attributes to support different business practices. The first version is called Season Phase Operational attributes. These attributes should be used when your merchandising system is managed to align buying and selling activities to fixed periods of time, such as a set of items being sold only during the Spring 2017 season. When using these attributes in reports, the start and end dates of the seasons and phases will be used to limit the data returned, similar to using calendar attributes. For example, if you want to see the net sales and profit for the Spring 2017 season, you could use the operational Season ID attribute to limit results to the effective dates of that season (without worrying about what those dates are).

The second set of attributes is called Season Phase Planning. These attributes should be used when a season or phase is used informationally, such as to describe when the item will first be received into stores, but not necessarily the window of time the item is selling for. Using these attributes will not limit reports to the start and end dates, it is more similar to using item or location attributes.

The following is the hierarchy of the Product Season dimension.

Table 5–21 lists the attributes of the Product Season dimension.

Table 5–21 Product Season Dimension Attributes

Attribute	Definition
Season ID	Unique ID from the source system that identifies a season. A season is a designated timeframe that may or may not correspond with the Gregorian or business/fiscal calendars.
Season Desc	Description of a season. A season is a designated timeframe that may or may not correspond with the Gregorian or business/fiscal calendars.
Season Start Date	Date from which the source record (in the source system) is effective. This represents the start date of a season.
Season End Date	Date until which the source record (in the source system) is effective. This represents the end date of a season.
Phase ID	Unique ID from the source system that identifies a phase. A phase is a designated timeframe that may or may not correspond with the Gregorian or business/fiscal calendars; however, it falls within a season and is always a child of a single season. Multiple phases within a season may have overlapping timeframes within the season.

Table 5–21 (Cont.) Product Season Dimension Attributes

Attribute	Definition
Phase Desc	Description of a season phase. A phase is a designated timeframe that may or may not correspond with the Gregorian or business/fiscal calendars; however, it falls within a season and is always a child of a single season. Multiple phases within a season may have overlapping timeframes within the season.
Phase Start Date	Date from which the source record (in the source system) is effective. This represents the start date of a phase.
Phase End Date	Date until which the source record (in the source system) is effective. This represents the end date of a phase.
Phase Desc Alternate	Alternate grouping of phase descriptions based only on the names, which allows for grouping multiple same-named phases onto the same report line.

Trade Area

A trade area is the geographic area serviced by a retail store or proposed retail store. A trade area is defined by whether a consumer shops at the store, and a retailer may have multiple trade areas for the site (primary, secondary, tertiary). Trade areas should be defined in such a way that retailers can determine the demographic, psychographic, or population data for the geography served by the store. This data is pulled from market area data, which is usually based on census blocks in the U.S. The trade area provides a mechanism to map market area data to a specific store because the census blocks (or other method used to store market area data) do not correlate directly to the geographic area served by a store. Examples of ways to define a trade area include using traffic flow studies, a retail gravity model, a zip code method, or commuting data.

Table 5–22 Trade Area Dimension Attributes

Attribute	Definition
Trade Area Name	Indicates the name of the trade area
Trade Area Description	This attribute provides a description of the trade area.
Trade Area Type	This attribute describes the type of trade area. Valid values could include Urban, Suburban, Rural, and others.
Pull factor	Pull factors are ratios that estimate the proportion of local sales that occurs in a town.
Commuter population	Number of people who commute in this trade area.
Peak Season Population	The number of people in the Trade Area during peak 'population' season. This is common in Trade Areas with high tourist population ebb and flow.
Tourist Population	The number of people that are tourists in a Trade Area.
State Population	The number of people in the state that the Trade Area resides.
Number of Households	The number of households within a trade area.
Average Family Size	The average number of people within a household that reside in a trade area.
Per Capita Income	The income divided by the total population of a Trade Area.
Avg Num of Vehicles	Average number of vehicles per household in this trade area.

Table 5–22 (Cont.) Trade Area Dimension Attributes

Attribute	Definition
Average Drive Time	This attribute indicates the average time in minutes consumers must drive from their homes to shop.

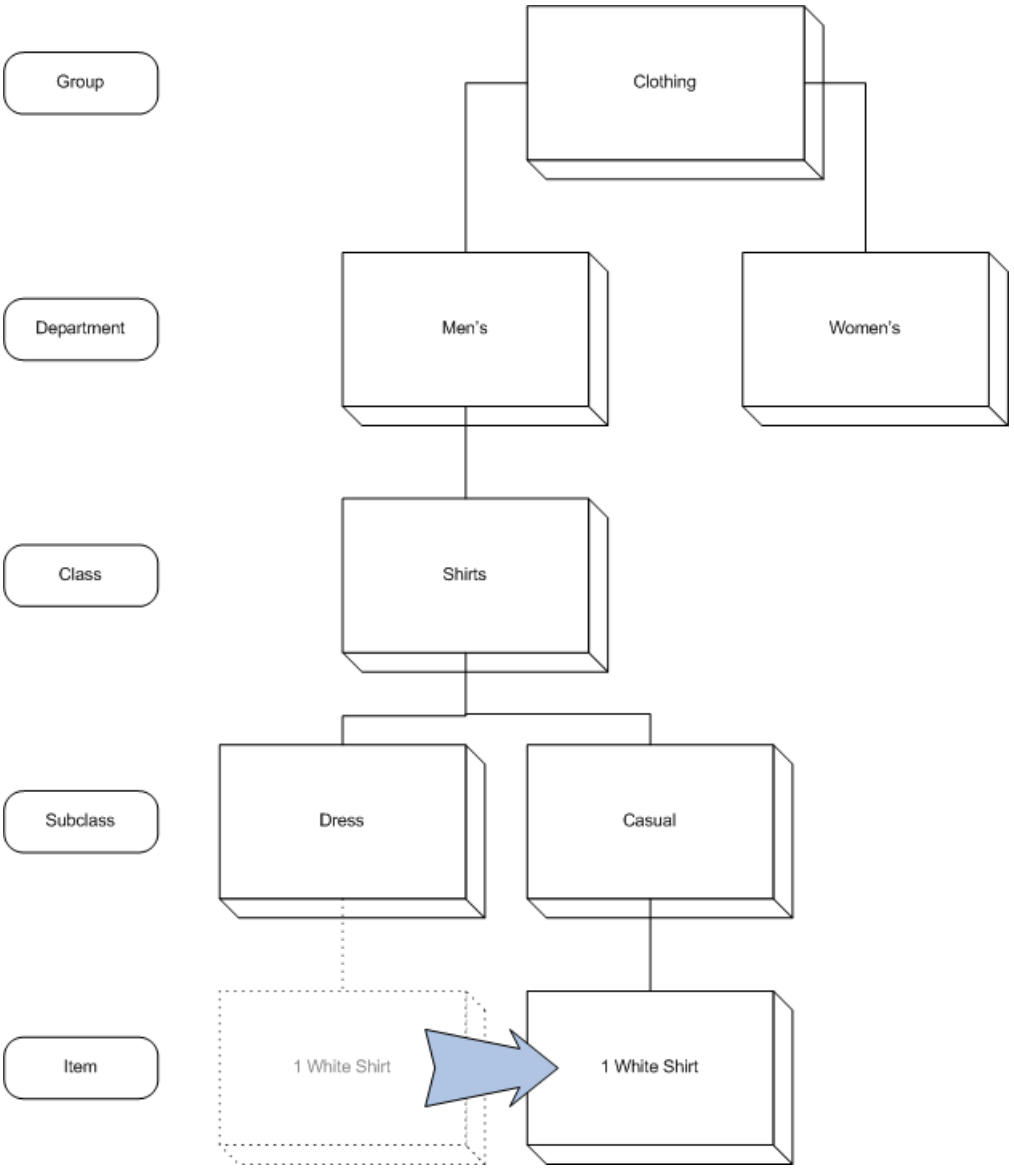
Reclassification

Reclassification occurs when any entity in a dimension changes its place in the dimension hierarchy, or when one or more attributes of an entity are changed. Reclassification affects Retail Insights reporting, whether you are using as-is, as-was, or point in time analysis. See "Analysis Methods" in Chapter 4, "Creating and Modifying Reports" for more information.

Major Reclassification and Lower-Level Dimensions

A major change occurs whenever an entity changes its place in the product hierarchy (group, department, and item can be reclassified) or in the organization hierarchy (area, region, district, and location can be reclassified). This type of reclassification alters the relationship among entities in a hierarchy.

For example, a single item (white shirt) might be reclassified from the Dress to the Casual subclass.



Only the Product and Organization dimensions can undergo major changes, and they are referred to as lower-level dimensions. They are dimensions with major changeable lower levels. Because Product and Organization are aggregating dimensions, a major change results in an altered data aggregation within their hierarchies.

The history of an entity before and after the major change can be tracked and compared. For example, an item can be moved from one subclass to another within its product hierarchy of department and class. While there are many good reasons for a retailer to move, or reclassify, an item in this way, Retail Insights still needs to track sales for that item from its new location in the product hierarchy, both before and after the change.

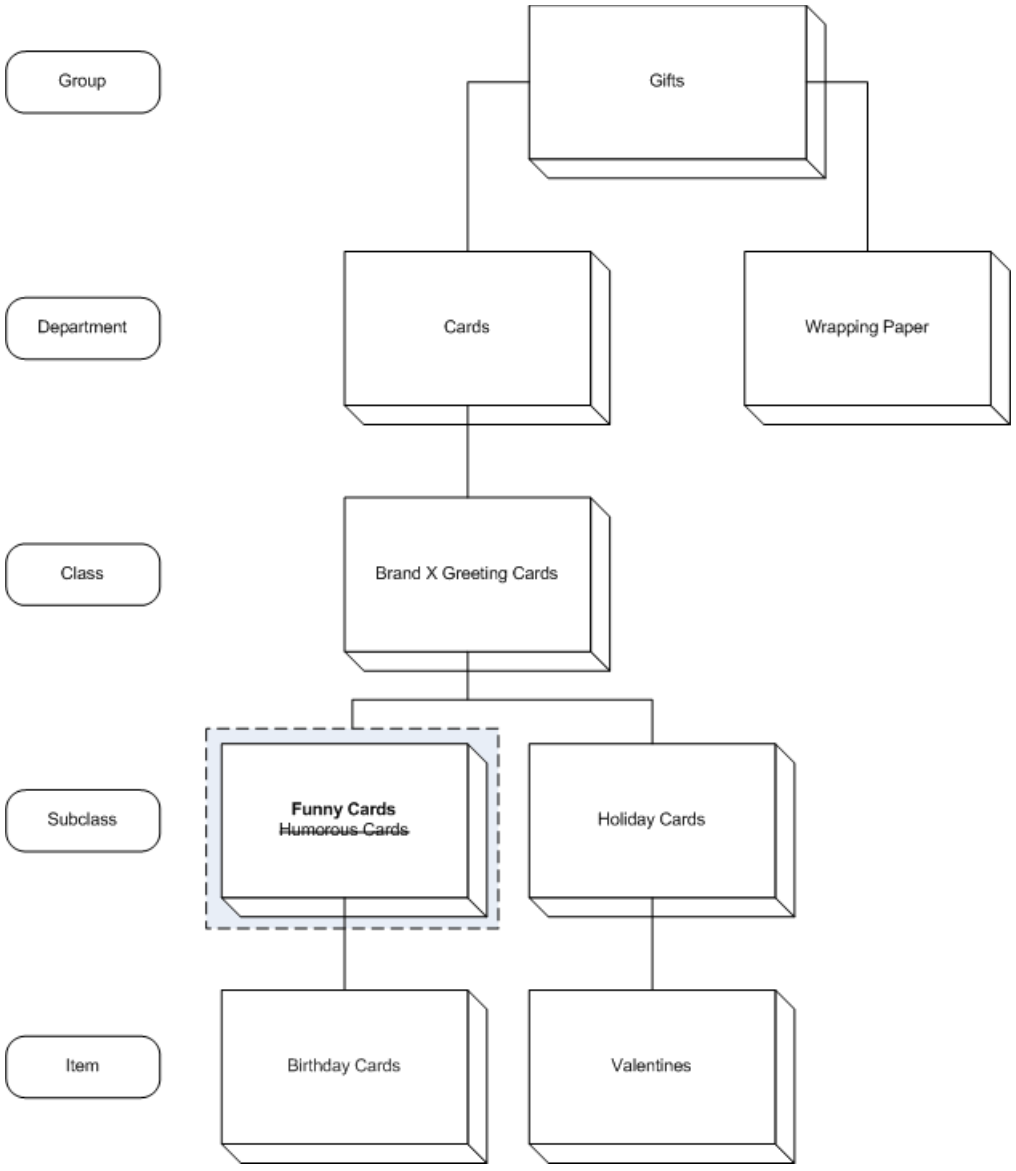
Retail Insights handles major changes by assigning the reclassified item (to use the same example) a new surrogate key. The surrogate key, along with the dimension's identifier, allow a means to track the dimension, and all transactions related to it, at any point in time.

Minor Changes and Top-Level Dimensions

A minor change means that an attribute of an entity is changed, but its position in the hierarchy remains the same. The dimensions that can only undergo minor changes are known as top level dimensions and consist of every dimension except organization and product. The levels of the top level dimensions cannot be reclassified; they are static.

Product and organization dimensions can undergo minor changes, but minor changes are not significant enough to alter their hierarchies.

For example, a description of a subclass might be changed from "Humorous Cards" to "Funny Cards."



This type of change does not alter the relationship of a subclass to any other level of the hierarchy above or below it. The record is simply updated to reflect the description change; a new surrogate key does not need to be inserted. Minor change dimension processing in Retail Insights is less complex than major change processing.

Customer Order

Oracle Retail Insights' customer order functionality allows retailers to analyze transactions that cross multiple channels, and enables analysis of Oracle's Commerce Anywhere capabilities. It has two dimensions: customer order demand and customer order fulfillment.

For most retailers, effective customer order management has become critical as customers no longer shop only in brick and mortar stores, but expect the ability to interact with retailers across a variety of channels. A customer order is an agreement between the retailer and the customer in which the customer pays for an item and the retailer agrees to make the item available for pickup or delivery at a later date. It consists of two parts, demand and fulfillment. Demand involves facilitating the capturing of customer orders via an e-commerce site, a mobile device, an in-store kiosk or any other similar method. The order fulfillment process, in which the customer takes possession of the product, must be properly managed across those channels to avoid jeopardizing relationships with valued customers who want a seamless experience. An order management system, such as DOO (Distributed Order Orchestration) and GOP (Global Order Promising), is used to manage the order throughout its lifecycle. When an order is initially taken, this application will determine where the order should be sourced based on customer preferences and rules related to fulfillment options set by a retailer (e.g. cost, lead times). Oracle Retail Insights provides a comprehensive set of metrics to help retailers achieve customer satisfaction. Included are key performance measurements for customer order demand and customer order fulfillment.

Oracle Retail Insights' customer order dimension supports a number of different attributes of a customer order to allow performance analysis of retailer's business across all channels. A complete list of these attributes and their descriptions is in the following sections. These attributes allow a user to slice and dice customer order data for analyses by order delivery information, order status, and other customer order details.

For example, if an item in an order line is sold as a substitute for another item (perhaps the original item is unavailable), then both the original item and the substitute item will be identified as such. These attributes can be used to analyze the demand for the original item the customer wanted and the alternative items that were actually ordered and delivered.

Order status is also captured so that retailers can track the order lifecycle and analyze orders based on whether they are backordered, complete, canceled, etc. to discover potential issues involved with customer satisfaction that excessive backorders or cancellations might indicate. A large amount of canceled orders, for instance, could mean there is a group of upset customers who are returning items with which they are unsatisfied or for which delivery time was too late to be acceptable.

Finally, a retailer can identify how an order was shipped, through the requested shipment type and requested shipment method attributes, which identify the carrier and the service type being used to fulfill the order. This could be used in conjunction with the order status analysis to determine if customer dissatisfaction correlates to a specific shipment type or method.

Note: When using Customer Order Promotion Transaction, Customer Order Transaction, Customer Order Status, and Customer Order Fulfillment dimensions, Salesperson and/or Cashier attributes should be used to represent an employee. Employee Name should not be used with these facts.

Table 5–23 Customer Order Demand Attributes

Attribute	Definition
CO Header Demand Status	This attribute provides the status of the customer order header, which could be unique to the retailer's order management system. Using this attribute a user can identify the status of customer order. Some of the statuses could be "Order Initiate", "Back-ordered", "Partial Picked", "Picked", "Partial Shipped", "Shipped", "Completed" and "Cancelled".
CO Line Demand Status	This attribute provides the status of the customer order line, which could be unique to the retailer's order management system.
Sales Person	This attribute lists the retailer's sales person who was responsible for the transaction and was credited with originating the sale.
Cashier	This attribute lists the employee who processed the sales transaction by receiving the tender from customer.
Customer Service Representative	This attribute lists the employee who helped the customer with any questions or sold them value-added services (re-packaging, gift packing, gift cards, etc).
Origin Demand Channel	This attribute lists the location deemed the point of origin for the customer order. There are several channels, such as call center, website, SMS advertisement, store cashier, and sales person that could be considered the Origin Demand Channel.
Submit Demand Channel	The location deemed the generation of demand or point of submission for the customer order. There are several channels, such as customer service center, website, kiosk at store, and store POS system that could be considered the submit demand channel. The origin demand channel and submit demand channel may or may not be the same for a customer order.
CO Header Number	Each customer order has header information that is primarily customer-related, pertains to the entire order, and is uniquely identified by a Customer Order header number. Header information also contains information about the conditions that affect how the system processes an order, such as fulfillment type, fulfillment method and delivery dates. Most of the remaining header information consists of default values from the Address Book, Customer Billing Instructions, and Customer Master, such as tax code and area, and shipping address information.
CO Line Number	The customer order line number is used to uniquely identify the customer order line information, which includes detailed information about the items on the order, such as quantities, prices, status, and shipped quantities. It also contains the customer order header number to identify the order to which the line belongs.
Requested Shipment Type	This attribute provides the type of requested shipment for the customer order line. Some shipment types could be "Direct Ship to Customer", "Store Pickup", etc.

Table 5–23 (Cont.) Customer Order Demand Attributes

Attribute	Definition
Requested Shipment Method	Requested Shipment Method is more granular information about the Requested Shipment Type attribute. It defines the method of shipping to the customer. If the shipment type is "direct ship to cust" the method might be "overnight" or "ground". If the shipment type is "Store Pickup" the method would refer to how the goods were made available at the store, such as "WH-to-Store transfer", or "Stock from Store", etc.
CO Line Original Item	If an item is not available it may be replaced with a substitute item. In that case Oracle Retail Insights stores the original item as the CO Line Original Item attribute.
CO Line Substitute Item	If a customer orders an item that is not available, a retailer may decide to substitute a similar item that is available to be shipped immediately. This attribute displays the substitute item.
CO Retail Type	This attribute displays the price type that was recorded for the line item. The possible values could be R-Regular, P-Promotion, and C-Clearance.
CO Cancel Reason	This attribute is the reason given by the customer for canceling an order. Examples could be "Backorder Abandon," "Late Delivery," etc.

Table 5–24 Customer Order Fulfillment Organization Dimension Attributes

Attribute	Definition
Fulfillment Company Number	This attribute displays the unique ID from the source system that identifies a fulfillment company.
Fulfillment Company	Name of a fulfillment company. Fulfillment Company is the highest attribute within the fulfillment Organization hierarchy. A fulfillment company consists of one or more fulfillment chains.
Fulfillment Chain Number	This attribute displays the unique ID from the source system that identifies a fulfillment chain.
Fulfillment Chain	This attribute displays the name of a fulfillment chain. A fulfillment chain consists of one or more areas.
Fulfillment Area Number	This attribute displays the unique ID from the source system that identifies a fulfillment area.
Fulfillment Area	This attribute displays the name of a fulfillment area. A fulfillment area consists of one or more regions.
Fulfillment Region Number	This attribute displays the unique ID from the source system that identifies a fulfillment region.
Fulfillment Region	This attribute displays the name of a fulfillment region. A fulfillment region consists of one or more districts.
Fulfillment District Number	This attribute displays the name of the unique ID from the source system that identifies a fulfillment district.
Fulfillment District	This attribute displays the name of a fulfillment district. A fulfillment district consists of one or more locations.
Fulfillment Location Number	This attribute displays the unique ID from the source system that identifies a fulfillment location.

Table 5–24 (Cont.) Customer Order Fulfillment Organization Dimension Attributes

Attribute	Definition
Fulfillment Location	This attribute displays the lowest level within the fulfillment organization hierarchy. It identifies a fulfillment warehouse, fulfillment store, or partner within the fulfillment company.
Fulfillment Channel ID	The ID of channel in which a customer order is fulfilled.
Fulfillment Channel	The channel in which a customer order is fulfilled.

Table 5–25 Customer Order Tender Attributes

Attribute	Definition
Sales Transaction Number	This attribute displays a unique number through which the sales transaction can be identified. The transaction number is used to add detailed information about the item sales on the transaction, such as quantities, prices, discounts and tender amounts.
Tender Type	The form of payment made for a customer order sales transaction. Examples of tender types include cash, credit card, or gift card.
Transaction Type	This attribute differentiates cross channel liability transactions from normal sales, return transactions, and wholesale sales and return transactions. This is an internally generated attribute used by Oracle Retail Insights.

Reason

The Reason dimension makes it possible to track why a particular action was taken in the areas of inventory adjustment and sales. Return reasons such as "wrong item shipped" or "defective" are tracked by Return Reason. Inventory adjustments are tracked by Inv Adjustment Reason. The Reason attributes do not form a drillable hierarchy.

Both sets of reason codes exist within the same attributes, but only the codes associated with a specific metric will display in a given analysis. For example, Reason Code and Return Amt will show the return reason codes. Reason Code and Adjustment Units will show the inventory adjustment reason codes. Status Codes will behave similarly for Unavailable Inventory and Customer Order facts.

Table 5–26 Reason Attributes

Attribute	Definition
Reason Code	To identify the reason why a particular action had performed depending on the subject area used (For example: Inv Adjustments, Return to Vendor, cost change, price change etc.)
Reason Description	A detailed description of the reason why a particular action had performed depending on the subject area used (For example: Inv Adjustments, Return to Vendor, cost change, price change etc.)
Status Code	To identify the status of the element depending on the subject area used. (For example: Inv Status, Customer order status etc.)
Status Description	A detailed description of the status depending on the subject area used. (For example: Inv Status, Customer order status etc.)

Table 5–26 (Cont.) Reason Attributes

Attribute	Definition
Status Class	This Attribute can be used to identify the different functional areas that status is used for. (For example: Inv Status, Customer order status etc.)
Reason Category	This attribute gives the category of reason for different functionalities (For example: Inventory Adjustment, RTV etc.)

Inventory Transfer

Inventory Transfers are stock movements between a retailer's locations. Inventory Transfers analysis will enable retailers to improve sales and avoid out of stocks by moving stock to locations where it is most needed. Depending on the transaction codes used in creating Inventory Transfers the transfer type is captured in Retail Insights as Normal, Book and Inter Company transfer types. Retail Insights will not support Transfers functionality for Transformable items. Retail Insights holds the inventory Transfers at item, to location, from location, transfer type and day level.

Table 5–27 Inventory Transfer Attributes

Attribute	Definition
Transfer Type Code	Indicates the code for Transfer Type. This is based on the origin of the transfer request and determines how transfer behaves.
Transfer Type Description	Indicates the description for Transfer Type. This is based on the origin of the transfer request and determines how transfer behaves. Different Transfer Types that are supported are - Normal Transfer, Book Transfer, Inter Company.
Tsf Zone ID	Unique ID from the source system that identifies a transfer zone. A transfer zone is an intentional grouping of locations for transferring owned inventory from one location to another. A location can belong to only one transfer zone.
Tsf Zone Desc	Detailed description of a transfer zone. A transfer zone is an intentional grouping of locations for transferring owned inventory from one location to another. A location can belong to only one transfer zone.
Tsf Entity ID	Unique ID from the source system that identifies a transfer entity. A transfer entity is a group of locations that share legal requirements around product management. A location can belong to only one transfer entity, and a transfer entity can belong to multiple organization units.
Tsf Entity Desc	Detailed description of a transfer entity. A transfer entity is a group of locations that share legal requirements around product management. A location can belong to only one transfer entity, and a transfer entity can belong to multiple organization units.

Transfer from Organization

The Transfer from Organization dimension allows tracking of inventory transfers from a location or other organizational attribute. This permits analysis of the number of units transferred and the retail and cost value of the transfer in the organization.

Table 5–28 Transfer From Organization Attributes

Attribute	Definition
From Chain Number	Chain in the company from which a transfer originates

Table 5–28 (Cont.) Transfer From Organization Attributes

Attribute	Definition
From Chain	Name of the chain from where the transfer originated.
From Area Number	Area in the chain from which a transfer originates.
From Area	Name of the Area under the chain from which a transfer originates.
From Region Number	Region in the area from which a transfer originates.
From Region	Name of the Region under the area from which a transfer originates.
From District Number	District Number from which a transfer originates.
From District	Name of the District under the region from which a transfer originates.
From Loc Number	Warehouse, store, or partner location number from which a transfer originates.
From Loc	Warehouse, store, or partner location name from which a transfer originates.
From Tsf Entity ID	Transfer entity ID from which a transfer originates.
From Tsf Entity Desc	Transfer entity description from which a transfer originates.
From Tsf Zone ID	Transfer Zone ID from which a transfer originates.
From Tsf Zone Desc	Transfer Zone description from which a transfer originates.

Market Item

One of the critical components available with Oracle Retail Insights reporting is the ability for a retailer to compare its own performance to that of the market. Market Item attributes allow the retailer to make assortment, promotional and space allocation decisions within a wider context. By comparing its own trends to that of the market it is possible to identify and respond to opportunities and problems quickly and effectively.

Table 5–29 Market Item Dimension Attributes

Attribute	Definition
All Store	Represents the highest level of Market Item hierarchy.
Market Dept	Indicates the second level of Market Item hierarchy.
Market Category	The range of products purchased by a business organization or sold by a retailer is broken down into discrete groups of similar or related products; these groups are known as product categories (examples of grocery categories might be: tinned fish, washing detergent, toothpastes).
Market Subcategory	Each market category divides into sub-categories. A pre requisite to defining the sub-categories is that trends behind the categories are known. Subcategory is defined as grouping of common differentiating characteristics within a larger category.
Market Segment	The next level below Market subcategory. Key information about how inventory is tracked and reported is stored at the Market Segment level.
Market Sub-segment	The next level below Market Segment. This is equivalent to Subclass level of Retailer's merchandising hierarchy.

Table 5–29 (Cont.) Market Item Dimension Attributes

Attribute	Definition
Market Item Description	Description of the item including characteristics of the market item.
Market Item Brand	Displays the brand associated with the market item. This is level 10 of Market Item hierarchy.
Market Sub Brand	A subcomponent of a brand. For example, if a brand were "Super Cola", the subbrand might be "Super Cola Light".
Market Brand Owner	Brand owner for the Item.
Market Brand Owner Number	Brand owner for the Item.
Market Item Flavor	Indicates the flavor of Market Item.
Market Item Pattern	Indicates the pattern of Market Item.
Market Item Scent	Indicates the scent of Market Item.
Market Item Size	Indicates the size of market item.
Market Package Type	The package type defines as the packaging method chosen by the market item. After choosing the packaging type, retailer should specify the dimensions of the item. The following types of packaging types are available Case Pallet Each.
Market Parent Company	The next level below Market Sub-segment. It Indicate the parent company for the given market item hierarchy.
Vendor Name	The name of the vendor who supplies the market item.
Multi Pack	The multi-pack is defined as package of several individual pack items sold as a unit. This can be broken into multiple pack items.
Universal Product Code	Twelve-digit barcode printed or affixed on virtually everything sold in supermarkets or retail stores, including books, magazines, candy, etc., for automatic checking-out at the cashier counter. UPC not only identifies an item, it also provides real time information on quantity sold, and inventory and ordering information.

Competitor Pricing

A competitor is a retailer with a product range and customer base similar to those for the organization business unit [Store location in RI] and its channels. The competitor entity holds information about each competitor store and associates it with a location in the organization. Competitor pricing details can be associated with a specific competitor location and mapped to an item in the product hierarchy. This structure provides the means to compare competitor prices for similar or identical items, at a direct competitor location. With this type of timely information, promotion and pricing strategies can be implemented by retailers to prevent potentially costly customer defections.

Sample questions that Competitor Pricing Analysis can help answer:

- How do my prices compare, for specific items, against nearby competitor locations? Against average competitor prices across all competitor locations?
- How do my prices vary for an Item at the competition, when that Item has regular price, or when it's on promotion, or on clearance at the competitor?

One of the critical components available with Oracle Retail Insights reporting is the ability for a retailer to compare its own performance to that of the market. Market Item attributes allow the retailer to make assortment, promotional and space allocation decisions within a wider context. By comparing its own trends to that of the market it is possible to identify and respond to opportunities and problems quickly and effectively.

Buyer

The Buyer dimension stores data about buyers who are responsible for raising purchase orders. The buyer dimension is attached to the Purchase order transactions and is used to report on order quantity, received quantity, cancelled qty against purchase orders created by the given buyer.

Table 5–30 lists the attributes of the Buyer dimension.

Table 5–30 Buyer Attributes

Attribute	Definition
Buyer Name	The name of the person authorized to create purchase order.
Buyer Phone	The current telephone number of the buyer.
Buyer Fax	The current Fax number of the buyer.

Purchase Order

A Purchase order (PO) is a request issued by a Retailer to a supplier, indicating types, quantities, and agreed prices for products. Sending a purchase order to a supplier constitutes a legal offer to buy products or services.

The purchase order dimension stores key details of the purchase orders such as Supplier, Buyer, Order Type, import order indicator etc for orders that have been approved at least once are stored in the dimension.

The purchase order dimension is used with Buyer, Supplier, Item, Organization, Calendar dimensions to report on cost and quantity of ordered, cancelled, received purchase orders against a supplier/Buyer/Item/Location/Time period. The dimension can also be used with the Sales fact, if there are matching customer order numbers on both the PO header record and a sales transaction record.

Table 5–31 lists the attributes of the Purchase Order dimension.

Table 5–31 Purchase Order Attributes

Attribute	Definition
Appointment Date Time	This column will hold the date and time of the receiving appointment at the warehouse.
Backhaul Allowance	This field will contain the backhaul allowance value.
Backhaul Type	This field contains the type of backhaul allowance that will be applied to the order. Some examples are Calculated or Flat rate
Close Date	This contains the date when the order is closed.
Contract Number	This contains the contract number associated with this order.
Currency Code	This contains the currency code for the order.

Table 5–31 (Cont.) Purchase Order Attributes

Attribute	Definition
Customer Order Number	The customer order identifier associated with a purchase order, typically used for drop shipments where the PO is placed to fulfill the customer order.
Delivery Supplier	This field holds the supplier/supplier site from where the goods are delivered.
Earliest Ship Date	The date before which the items on the purchase order cannot be shipped by the supplier. Represents the earliest ship date of all the items on the order
EDI PO Indicator	This indicates whether or not the order will be transmitted to the supplier via an Electronic Data Exchange transaction.
Import Country ID	The identifier of the country into which the items on the order are being imported.
Import Order Number	This indicates if the purchase order is an import order. Valid values are Y (Yes) and N (No).
Latest Ship Date	The date after which the items on the purchase order cannot be shipped by the supplier. Represents the greatest latest ship date of all the items on the order
Not After Date	This contains the last date on which the delivery of goods in purchase order will be accepted.
Not Before Date	This contains the first date on which the delivery of goods in purchase order will be accepted.
Order Number	This is the purchase order number that uniquely identifies an order within source system.
Order Type	Indicates the type of order and which Open To Buy bucket will be updated. Valid values include: N/B - Non Basic ARB - Automatic Reorder of Basic BRB - Buyer Reorder of Basic.
Original Approval Date	This contains the date that the order was originally approved.
Originated Indicator	Indicates where the order originated. Valid values include: 0 - Current system generated (used by automatic replenishment) 2 - Manual 3- Buyer Worksheet 4 - Consignment 5 - Vendor Generated
Payment Method	Indicates how the purchase order will be paid. Valid options are LC (Letter of Credit), WT (Wire Transfer), OA (Open Account).
Pickup Date	Contains the date when the order can be picked up from the Supplier. This field is only required if the Purchase Type of the order is Pickup.
Pickup Location	Contains the location at which the order will be picked up, if the order is a Pickup order.
Pickup Number	This contains the reference number of the Pickup order.
PO Type	This contains the value associated with the PO_TYPE for the order.

Table 5–31 (Cont.) Purchase Order Attributes

Attribute	Definition
Purchase Type	Indicates what's included in the suppliers cost of the item. Valid values include C (Cost), CI (Cost and Insurance), CIF (Cost, Insurance and Freight), FOB (Free on Board).
QC Indicator	This indicator determines whether or not quality control checking is required when items for this order are received. Valid values are Y and N.
Reject Code	This contains a code for the reason why the order was rejected during the automatic replenishment approval process. Valid values include: VM (Vendor minimum not met), NC (Negative cost calculated on an item), UOM (UOM convert error due to incomplete data).
Ship Method	The method used to ship the items on the purchase order from the country of origin to the country of import. Valid values include 10 (Vessel, Non container), 11 (Vessel, Container), 12 (Border Water-borne (Only Mexico and Canada)), 20 (Rail, Non-container), 21 (Rail, Container), 30 (Truck, Non container), 31 (Truck, Container), 32 (Auto), 33 (Pedestrian), 34 (Road, Other, includes foot and animal borne), 40 (Air, Non-container), 41 (Air, Container), 50 (Mail), 60 (Passenger, Hand carried), 70 (Fixed Transportation Installation), 80 (Not used at this time).
Ship Pay Method	Code indicating the payment terms for freight charges associated with the order. Valid values include: CC - Collect, CF - Collect Freight Credited Back to Customer, DF - Defined by Buyer and Seller, MX - Mixed, PC - Prepaid but Charged to Customer, PO - Prepaid Only, PP - Prepaid by Seller
Split Reference Order Number	This column will store the original order number from which the split orders were generated from. It will be for references purposes only. The purpose is to allow users a means of grouping orders that were split from an original super order. The original order, once split, will however be removed from the system.
Status	Indicates the status of the purchase order. Dimension only holds POs with the following status: A - Approved C - Cancelled
Vendor Order Number	This contains the vendor's unique identifying number for an order. These orders may have originated by the vendor through the EDI process or this number can be associated to an Oracle Retail order when the order is created on-line.
Revision Date	The date that an existing purchase order was revised. A revision could include major changes such as a cancellation of ordered units, or a minor change such as a modification to the unit cost amount.

Allocation

An allocation helps allocate merchandise against each store or warehouse after determining the inventory requirements for the given item, location, and week using real time inventory information. An allocation can either be done in advance of the

order's arrival or at the last minute to leverage real-time sales and inventory information. Pre-distribution of product quantities on a purchase order can be done to support faster delivery of goods from a warehouse location to stores. This is tracked via allocations against a given purchase order. Multiple allocations can be raised against a given PO that help distribute the ordered quantity among the stores sourcing from the warehouse.

The Allocation dimension holds details of a given allocation such as the order number against which the allocation was done, the status etc. The Allocation dimension is linked to the Purchase order dimension to report allocations and the allocated quantities against a purchase order.

Table 5–32 lists the attributes of the Allocation dimension.

Table 5–32 Allocation Attributes

Attribute	Definition
Alloc Number	Contains the unique identifier for the allocation
Order Number	The purchase order number against which the allocation has been raised. This is a common attribute between the Purchase Order Dim and the Allocation Dim.
Status	Status of the allocation. Valid Values: 'R' = Reserved 'A' = Approved 'C' = Closed
PO Type	The PO_Type of the order associated with the allocation
Alloc Method	Contains the preferred allocation method, which is used to distribute goods when the stock received at a warehouse cannot immediately fill all requested allocations to stores. Valid values for this field are: A - Allocation quantity based P - Prorate method C - Custom
Release Date	Contains the date on which the allocation should be released from the warehouse for delivery to the store locations.
DOC	The ASN or BOL number for an ASN or BOL sourced allocation.
DOC Type	The source of the Allocation. Valid Values: PO, TSF, ALLOC, ASN, BOL

Tender Type

The tender type dimension holds the various tender types that may be utilized during sales transactions.

Table 5–33 Tender Type Dimension Attributes

Attribute	Definition
Tender Type	Represents the tender type code.
Tender Type Group	Represents the tender type group to which the tender type ID belongs to.

Table 5–33 (Cont.) Tender Type Dimension Attributes

Attribute	Definition
Tender Card Number	Represents the identifier of a gift card or voucher that was purchased (such as for gift card sales) or used as tender (such as gift card redemption). Does not include other tender types such as credit cards.

Coupon

A coupon is a voucher entitling the holder to a discount for a particular product.

Coupons are important vehicles for targeted offers and for driving sales of a desired category. An analysis of coupon use can help retailers understand if the cost of producing and distributing coupons is worthwhile.

Table 5–34 Coupon Dimension Attributes

Attribute	Definition
Coupon Description	Contains the description of the coupon associated with the coupon number.
Coupon Reference Number	Holds the coupon barcode - only an EAN13 or free text can be entered.
Coupon Maximum Discount Amt	Contains the Maximum Discount value that can be gained from the coupon.
Coupon Amt	Contains the percent or dollar value of the coupon.
Percent Ind	Specifies whether the coupon amount is a percent or a dollar value.
Promotion	Holds the promotion ID. Any open promotion can be selected to be associated with coupons
Promotion Component ID	Promotion Component ID field required for RPM. Will be required if a promotion has been selected.
Transaction Level Ind	Indicates if this is a transaction level coupon.
Coupon Effective Date	The effective from-date of the coupon.
Coupon Expiration Date	The date the coupon expires.

Transaction Code

The Transaction Code attribute represents the codes used in merchandising systems to differentiate different types of transactions which occur during daily operations. In Retail Insights, these codes are also used to separate Inventory Receipts based on their associated transaction type.

There are three values for Transaction Code which are used in conjunction with Inventory Receipts:

- Purchases (20)
- Allocation Transfer Receipts (44~A)
- Transfer Receipts (44~T)

Table 5–35 Transaction Code Dimension Attributes

Attribute	Definition
Transaction Code	Code which describes the transaction type that generated the inventory receipts.
Transaction Description	Description of the transaction type that generated the inventory receipts.

Customer Loyalty Program

Loyalty Programs define the rules used for tracking the purchases of Customers belonging to location loyalty programs, usually through a system of "points". These points can then be redeemed for discounts of a fixed amount (though the points alone have no intrinsic value). The discounts can be distributed through the mail as paper coupons, or made available to customers as an E-Award coupon or Entitlement coupon associated with an Award Program. Loyalty program data can be extracted from Oracle Retail Customer Engagement.

Table 5–36 Loyalty Program Dimension Attributes

Attribute	Definition
Loyalty Program Number	The number associated with the customer loyalty program.
Loyalty Program Description	The name of the customer loyalty program.
Loyalty Points Description	The name of the points used in a point-based loyalty program.
Loyalty Points Currency Value	The currency amount required to earn a point in a point-based loyalty program.
Loyalty Program Active Flag	A flag indicating if a loyalty program is currently active.
Loyalty Program Start Date	The effective start date for the loyalty program.
Loyalty Program End Date	The effective end date for the loyalty program.
Loyalty Program Level Number	The number associated with a level in a customer loyalty program.
Loyalty Program Level Description	The name of a level in a customer loyalty program.
Loyalty Program Level Active Flag	A flag indicating if a loyalty program level is currently active.
Loyalty Program Level Default Flag	A flag indicating if a loyalty program level is the default level a member of the program will start at.
Loyalty Program Currency	The primary currency used for the loyalty program.

Customer Loyalty Account

Loyalty Accounts are used to assign customers to one or more Loyalty Programs. A loyalty account may contain details about the customer's use of the program, such as their points balance, program level, and account open and expiration dates. A customer must have a loyalty account in order to take advantage of the benefits of a loyalty program. Loyalty account data can be extracted from Oracle Retail Customer Engagement.

Table 5–37 Loyalty Account Dimension Attributes

Attribute	Definition
Loyalty Account Number	The number associated with the customer loyalty account.
Loyalty Account Card Serial Number	The sixteen-digit number embossed on a loyalty account card.
Loyalty Account From Date	The date that a loyalty account became active at a loyalty program level.
Loyalty Account To Date	The date that a loyalty account was no longer active at a loyalty program level.
Loyalty Account Active Flag	A flag indicating if the loyalty account is active in the source system.
Loyalty Account Expiry Flag	A flag indicating if the loyalty account has expired, such as due to inactivity or account closure.
Loyalty Account Points Balance	The number of points available on a loyalty account.
Loyalty Account Escrow Balance	The number of points in escrow to a loyalty account.
Last Award Processed Date	The last time an award was processed against a loyalty account.
Last Accrual Date	The last time points were accrued against a loyalty account.
Last Program Level Change Date	The last time the loyalty account moved to a different program level.
Last Transaction Date	The last time a transaction was recorded against the primary customer on a loyalty account

Stock Counts

A stock count (or cycle count) is an inventory auditing procedure, which falls under inventory management, where a subset of inventory, in a specific location, is counted on a specified day. Stock counts may be performed once or multiple times per fiscal year, and different locations may undergo a count at different times. The primary purpose of stock counting is to capture an accurate count of all stock on hand and compare it to the inventory management system's records for inaccuracies and losses. Major differences between the stock count and inventory records would be a cause for concern and require further investigation by the retailer, as these differences could be due to theft or poor inventory management practices by the store.

Reporting on stock counts involves collecting sales and inventory data for the range of dates between the prior count and the current one. This information can be compared to the manual counts and metrics like shrinkage can be calculated at various levels of the merchandise or organization hierarchies. Due to the dynamic nature of stock counts (in terms of when they occur and which locations have undergone them at any point in time), aggregating the sales and inventory data is not as simple as rolling up to a specific fiscal period. The reporting system will need to understand the stock count dates that occur at each retail location, and return aggregate data which is rolled up from each store's individual date ranges.

RI provides a Stock Count dimension for capturing and reporting on stock count activities as well as two Stock Count facts covered in the next chapter. The dimension consists of a list of locations associated with a stock count, as well as the window of time to analyze historical data for the count. The data for this dimension needs to be provided to RI by the retailer from an inventory system such as SIM that manages the stock count activities.

Only when the dimension is provided daily can the stock count facts be populated with data.

> **Note:** When reporting on factual data, such as sales and inventory for a stock count activity, the following OBIEE filter can be used to limit the results to the stock count period:
>
> "Business Calendar"."Fiscal Date" between "Stock Count"."Stock Count From Date" and "Stock Count"."Stock Count To Date"
>
> This filter can be added by creating a new filter, selecting the box for "Convert this filter to SQL" in the popup, and clicking OK. Copy the text above into the text box that appears. Then click OK again.

Table 5–38 Stock Count Dimension Attributes

Attribute	Definition
Stock Count ID	Number which uniquely identifies the stock or cycle count in the source system.
Stock Count Desc	Description of the cycle or stock count. This value can be used to group together stock count activities across multiple locations for reporting purposes.
Stock Count Type	Indicates the type of stock count, such as B (both unit and amount) or U (unit only).
Stock Count Status	Indicates the status of a stock count, such as whether it is scheduled but not yet executed, or already finalized and approved.
Stock Count Start Date	Contains the starting date from which data should be included for the current stock or cycle count, such as the day after the prior count occurred.
Stock Count End Date	Contains the date on which the stock or cycle count event will take place.

Discount Type

Discount types are codes defined in the point of sale system to classify a price change applied to a sale, such as manufacturer coupons, employee discounts, or manager price overrides. Discount types would be populated in the sales audit system in order to capture which discounts have been applied to a transaction, which is then loaded to RI along with the Sales Discount fact.

Table 5–39 Discount Type Dimension Attributes

Attribute	Definition
Discount Type Code	Number which uniquely identifies the discount code in the point of sale and auditing systems.
Discount Description	Description of the discount code, such as Employee Discount.

Selling Organization

It is possible for return transactions to be tagged with the original selling location and original transaction ID associated with the sale of the returned item. This information can be passed from the point of sale system, and then RI will link the selling location to the organization hierarchy for reporting. This functionality enables detailed returns

analysis following the sale and return of an item, such as identifying items which are bought online and returned in store.

Table 5–40 Selling Organization Dimension Attributes

Attribute	Definition
Selling Company Number	This attribute displays the unique ID from the source system that identifies original selling company.
Selling Company	Name of the original selling company.
Selling Chain Number	This attribute displays the unique ID from the source system that identifies original selling chain.
Selling Chain	This attribute displays the name of original selling chain.
Selling Area Number	This attribute displays the unique ID from the source system that identifies original selling area.
Selling Area	This attribute displays the name of original selling area.
Selling Region Number	This attribute displays the unique ID from the source system that identifies original selling region.
Selling Region	This attribute displays the name of original selling region.
Selling District Number	This attribute displays the name of the unique ID from the source system that identifies original selling district.
Selling District	This attribute displays the name of original selling district.
Selling Loc Number	This attribute displays the unique ID from the source system that identifies original selling location.
Selling Loc	This attribute displays the name of the original selling location.
Selling Channel Id	This attribute displays the unique ID from the source system that identifies original selling channel.
Selling Channel	This attribute displays the name of the original selling channel.

Clearances

Clearance events which are managed through a pricing solution such as RPM will be loaded into RI for detailed clearance reporting. The clearance events will be captured for the items and locations included in the event, for the range of effective dates the clearance is active for. An item-location may only be under the effects of a single clearance event at a time, but may undergo multiple clearances across the entire item lifecycle. RI will automatically manage the effective dates and eligibility of items on clearance as new clearance events are generated in the source system.

Retail Insights will maintain the full history of clearance events applied to items, allowing for in-depth analysis of sales, inventory, and similar facts grouped by individual clearances, or aggregated by the clearance groups or markdown numbers associated with multiple events. Some facts are not supported with the Clearances dimension as the fact data would not typically be used at this level, such as Base/Net Supplier Costs, Customer Orders, Purchase Orders, and Sales Promotions. Certain combinations of dimensions would also prevent Clearance analysis, such as looking at Transfers based on the From/To Locations where you could be transferring between clearance and non-clearance locations.

Table 5–41 Clearances Dimension Attributes

Attribute	Definition
Clearance ID	The display ID of a clearance event
Clearance Group ID	The group ID of a clearance event.
Clearance Group Desc	The description of a clearance group assigned to a clearance.
Clearance Markdown ID	The unique identifier of the markdown number assigned to a clearance event.
Clearance Markdown Number	The markdown number assigned to a clearance event, generally designating the sequence of the event across multiple clearances (such as first, second, final).
Clearance OOS Date	Contains the date when the item/location on clearance is expected to be out of stock. Does not mean the item will actually become out of stock on this date.
Clearance Reason	The user-provided reason for initiating the clearance event.
Clearance Change Type	The type of price change being applied, such as Amount Off, Percent Off, Fixed Price, or Exclude.
Clearance Change Amt	The amount of a price change or fixed price override on a clearance event. This value shows the item price after the change has been applied.
Clearance Change UOM	The unit of measurement for the price change on a clearance event.
Clearance Change Currency	The currency code for the price change on a clearance event.

Custom Flex Attributes

The custom flex attribute solution (CFAS) for RMFCS is a metadata driven framework that enables you to set up additional attributes on the pre-enabled RMFCS entities without having to change the existing screens or make any changes in the application code. Retail Insights has the ability to consume certain sets of commonly used CFAS attributes created using the out-of-box RMFCS framework, including Item, Location, and Item-Location attributes. RI currently supports the standard configuration of these tables using a single group-set per dimension.

Each CFAS interface is loaded from RMFCS as an extension of the associated dimension in RI. RI currently supports the following interfaces.

- Item attributes are loaded from the RMFCS table ITEM_MASTER_CFA_EXT and are exposed in OBIEE as a new set of Item dimension attributes.
- Location attributes are loaded from a combination of STORE/WH/PARTNER CFA tables and are exposed in OBIEE as a new set of Organization dimension attributes.
- Item-Location attributes are loaded from the ITEM_LOC_CFA_EXT table and are exposed in OBIEE as a new set of Item-Location attributes.

The RI attribute names for CFAS attributes are intentionally generic, and it is expected that the retailer will relabel them during implementation of RI. The naming scheme follows a standard pattern of <Dimension> Flex Attr <Number> <Datatype>. For example, Item attributes will have names such as Item Flex Attr 22 Date or Item Flex Attr 11 Number. These should be relabeled to show names that will be meaningful to RI users when building reports. Once they have been loaded and labeled appropriately, the attributes should function in the same manner as any other RMFCS-sourced attribute.

Retail Insights Attribute Metadata

The following chart provides information about Retail Insights attribute metadata. Users please be aware that you cannot mix facts across as-is and as-was subject areas.

Table 5–42 Retail Insights Attribute Metadata

Attributes	As-Is	As-Was
Business Calendar	X	X
Employee	X	X
Cluster	X	X
Consumer Group	X	X
Consumer Household Group	X	X
Organization	X	X
Stockholding Franchise	X	X
Non-Stockholding Franchise	X	X
Product	X	X
Promotion	X	X
Customer	X	X
Customer Behavior	X	
Customer Segment	X	X
Customer Segment Allocation	X	X
Household	X	X
Customer Segment Loyalty		X
Supplier	X	X
Retail Type	X	X
Season Phase	X	X
Season Phase Planning	X	X
Trade Area	X	
Market Item	X	
Buyer	X	X
Purchase Order	X	X
Allocation	X	X
Tender Type	X	X
Coupon	X	X
Competitor Pricing	X	X
Customer Order	X	X
Customer Order Origin Channel	X	X
Customer Order Submit Channel	X	X
Customer Order Tender Type	X	X

Table 5–42 (Cont.) Retail Insights Attribute Metadata

Attributes	As-Is	As-Was
Fulfillment Organization	X	X
Gregorian Calendar	X	X
Customer Order Fulfillment	X	X
Customer Order Status	X	X
Reason	X	X
Shipment Method	X	X
Shipment Type	X	X
Tender Type	X	X
Time of the day	X	X
Return to Vendor	X	X
Inventory Adjustments	X	X
Inventory Transfers	X	X
Transaction Code	X	X
Customer Loyalty Program	X	X
Customer Loyalty Account	X	X
Stock Count	X	X
Discount Type	X	X
Selling Organization	X	X
Clearances	X	X
Purchase Type	X	X

6

Metrics

Metrics (measures) are performance measurements that allow you to analyze business performance. They are usually numeric values. A metric can be as simple as the sum of the values in a fact column, or a highly complex calculation that contains mathematical operators.

A metric can be viewed as a statement that specifies how a performance measure is calculated. The basic component of a metric is a formula that specifies the calculation to be made. A metric can contain other components that specify additional criteria for calculating the metric.

Oracle Retail Insights provides an extensive set of predefined business measures and key performance indicators for business intelligence in a retail environment. You can create your own metrics with the tools available in Oracle BI.

Retail Insights metrics are stored in presentation tables. These tables contain table descriptions that include the level and nature of information provided and the functional area in which the metrics are used. For each metric, the presentation tables contain a description that includes the following:

- Metric type, such as count or system metric
- Functional area, such as net cost
- Definition (for example, base cost is defined as the initial cost before any discounts are applied)
- Constraints (for example, net profit data is only available by primary supplier)

In the Oracle BI interface, you can access a summary description of a metric as follows:

1. Right-click on the metric name.
2. Select **Properties**.

Note: See Appendix B, "Reporting on Oracle BI Repository Objects" for information about producing comprehensive listings of Oracle BI repository objects.

Note: See Appendix C, "Retail Insights Metric Definitions" for a complete list of Retail Insights metrics.

Comparable Stores Analysis

Comparable (comp) stores are stores that are open for business for a set period of time and were in operation within the time period of analysis. In other words, comp stores are really established stores as opposed to new or closed stores. Comp store measurements are important to an analyst because profits and sales from the more established stores provide stable indicators of business performance. New or closed stores tend to be more volatile and can have a skewing effect on business performance indicators. Sales and profits from new or closed stores are not really comparable in business analysis, and as a result, they are not included in the comp store measurements.

The Comparable Store Flag can be sent from the retailer's merchandising source system (not including RMFCS, which does not provide RI with comp flags), or can be provided manually through a flat file interface. Regardless of the method used to determine comparable store status, the Comp Flag attribute is provided as a means of reporting metrics based on the comp status of a location. Additionally, special Comp metrics are provided in multiple subject areas to support side-by-side reporting of comp data with other metrics. If using the Same Store type of reporting, the Comp Anchor Year attribute must be used to specify which year the comp flags will be taken from. For example, if the reporting period is March 2017, then a filter must be set such that Comp Anchor Year = 2017.

The Comp Store Measurements measure the growth in sales and profit, excluding the impact of newly opened stores. Sales and profits from new stores are not reflected in same-store comparisons until those stores are converted to comparable stores. With this approach, stores whose open dates are not captured in the source system are not included in these comparisons. Each store needs to have a store open date as well as a store close date when a store is closed. If there is no close date, the store is assumed to be still in operation.

Cost and Profit

Cost and profit analysis helps a retailer to understand the financial impact of various business decisions such as:

- Stock levels for high-profitability items
- Deals negotiation for low-profitability items
- Promotions worthiness

Profit is calculated as the difference between sales amount and cost of the item in the transaction. The cost of the item in the sales transaction is based on the weighted average cost of that item in the merchandising system at the end of the day.

Net cost (sometimes called deal cost) measures are held at the supplier level.

Net cost is populated with data from Oracle Retail Merchandising Foundation Cloud Service (RMFCS) or another source system. The data from RMFCS consists of cost values that represent different discounts on base cost that the supplier provides. These discounts can include the following:

- Deals with deal partners for items, or items at specific locations

  Deal partners can be suppliers, wholesalers, distributors, and manufacturers. Within a deal, you create deal components, specify the items for the deal component, and define thresholds.

- Fixed deals with suppliers

Your organization receives payments from suppliers in return for mentioning their products in promotions, or for displaying their products on prime shelf space.

- Bracket costing deals with suppliers

  Your organization receives a certain deal price on an order, depending on the size of the order. Different types of brackets can be established based on mass, volume, pallet, case, each, or stat case.

Markdowns and Markups

Retailers plan markdown strategies carefully, as they make pricing decisions for their products with an eye toward keeping inventories at optimal levels, while driving gross margin revenue across key areas of the merchandise hierarchy.

Retail Insights markdown analysis allows reporting on a range of data related to markdowns and markups. These include permanent and point-of-sale markdowns and markups, as well as markup and markdown cancellations, at granularities of item, location, day, and retail type (regular, promotion, employee discount, and clearance).

A buyer planning a promotion strategy for a category of goods might be interested in promotional markdown totals in a certain department, year to date. On the other hand, a finance executive might want to analyze clearance markdown amounts compared to promotional markdown amounts at the corporate level, on the same report with profit comparisons from clearance versus promotional sales.

RI also captures reference fields from RMFCS transactional data, which may contain details about markdowns initiated in Retail Price Management. For example, Ref Number 1 will contain the price change event ID and Ref Number 2 will contain the markdown number assigned to a clearance event (such as First or Second). These attributes will allow the user to report on clearance activity using the data in these fields, such as limiting an item's sales and inventory data to the time it is in First Markdown status. Such analysis is used for determining the profitability and sales patterns relating to specific markdowns on a product.

When reporting on markdown data, it is important to understand that the records for such price changes are only captured at the time the price change goes into effect (this is comparable to the time the transaction is registered in RMFCS). For example, when a clearance markdown is applied to an item, RI will record the impact of that markdown on all item-locations affected by it, in terms of the change to retail amounts for available stock on hand. Even though the item continues to be in clearance status for many weeks, the markdown data exists only for the day of the original price change event. This represents the impact to the total retail value of the stock on hand due to the change in selling price.

Sales Forecast

A sales forecast is a calculation of the potential sales of an item for a future period, based on past performance of the product. Sales forecast analysis helps a retailer to develop a marketing budget, allocate resources, and get a early sense of deviations from financial goals. Sales forecast analysis also helps the retailer to determine the effectiveness of forecasting techniques.

Retail Insights stores sales forecast data in one of two configurable planning interfaces called Plan Forecast 1 and Plan Forecast 2. The default data level of these interfaces is item-location-week level. The sales forecast quantities exclude value-added tax (VAT). Retail Insights can accept forecast data directly from Retail Demand Forecasting (RDFCS) or from an external application. Forecast data is also made available to the

Retail Science Platform for use in multiple products, such as clustering and offer optimization.

For a more detailed explanation of how configurable planning facts work, refer to the Planning section later in this chapter, as well as the *Oracle Retail Insights Cloud Service Suite Operations Guide*.

Inventory Adjustments

Inventory Adjustments are changes to inventory level in units, retail and cost value. Inventory Adjustment analysis provides visibility to Inventory analysts, Inventory controllers, Inventory managers, Category managers and store managers for analyzing the reasons and plan accordingly to overcome the potential problems that are causing the stock adjustments. Inventory Adjustments impact the stock ledger as the inventory value for a location is impacted. Ending stock value will be increase/decreased making the stock as over-valued or de-valued.

Retail Insights holds the inventory adjustment units and value by reason code at item, location and day level. Additionally, RI may hold the clearance status and clearance markdown numbers associated with the items on this fact, in order to enable clearance-based inventory reporting. The Clearance Dimension is used to maintain these status codes on the adjustments fact during nightly batch processing. If the dimension is not used, then all records will default to "N" or non-clearance status.

Inventory Transfers

Inventory transfer is the movement of stock between the retailer's locations. Inventory transfers analysis will help the retailer in taking appropriate and profitable decisions to improve the sales by initiating stock transfer from nearby locations to avoid lost sales.

Retail Insights supports three types of transfers, normal, book and intercompany, with an attribute called transfer type.

- Book transfer items are inventory units moved from one part of the retailer's location to the virtual location.
- Normal transfers are the inventory moved between the retailer's physical locations. (Store or warehouse)
- Intercompany transfer items are inventory units moved from one legal entity into another legal entity. RI holds transfer units and cost and retail values of transferred units.

Inventory transfers are held at the item or subclass, destination (to) location, shipping (from) location, and day or week levels. When you want to see total inventory transferred to a location (with no regard for the From Location) then simply use the standard Organization attributes, such as Loc Number. If you want to see the movement of inventory between locations, then you must use the From Organization dimension as well as the Organization dimension.

Inventory Receipts

Inventory receipts are units purchased and placed in inventory or units received from other retailer locations as part of a transfer or an allocation. Inventory receipts analysis provides visibility to and control of your accrued liabilities for inventory items. Inventory receipts transactions are recorded in the general ledger at the time of receipts.

Retail Insights holds the number of units received at the day and week level, at both retail and cost value. Inventory receipts are held at item level for day and week and at subclass (segment) level for day and week. Additionally, RI may hold the clearance status and clearance markdown numbers associated with the items on this fact, in order to enable clearance-based inventory reporting. The Clearance Dimension is used to maintain these status codes on the receipts fact during nightly batch processing. If the dimension is not used, then all records will default to "N" or non-clearance status.

Receipts are also differentiated by type, based on whether they are the result of a purchase order, allocation, or non-allocation transfer. A Transaction Code dimension is provided to separate inventory receipts by type, as well as metrics to allow reporting on specific types of receipts.

Inventory Unavailable

Unavailable inventory is on-hand inventory which is currently in a non-sellable state, such as damaged goods. Such inventory is still considered part of a location's total on-hand inventory, but it cannot be sold to customers. Unavailable inventory analysis provides visibility into the types and amounts of non-sellable goods currently being held at a location.

Retail Insights maintains a record of unavailable units and the value of unavailable units in cost and retail amount, grouped by status code, item, location, and day.

Return to Vendor

RTV units are units returned to the vendor for any reason (overstock, poor quality, etc.). Return to vendor analysis gives retailer valuable insights for evaluating vendor performance.

Retail Insights maintains record of RTV units and the value of RTV units in cost and retail amount. RTV facts are held at the item/supplier/location/day/return reason level.

Sales

Sales reporting helps the merchandising executive to identify sales key performance indicators and determine the operational effectiveness of sales, to evaluate whether sales achieve the results set during sales planning. This can help sales managers to take timely corrective actions when they see deviations from projected values.

Gross sales value is the total amount the retailer sells to consumers. Gross sales value is calculated by multiplying the unit price of an item by the number sold to consumers. *Returns* are the portion of sales that are returned to the store for a refund. *Net sales value* is the net value after customer returns are subtracted from gross sales value.

Retail Insights maintains gross sales and returns for amounts and numbers of units in separate fact columns. Separation of these values allows analysis of returns and the use of gross sales in calculations where this is desirable. Net sales value is required for most calculations.

In addition, the retailer may need to track sales according to price type to allow analysis of sales for promotional and clearance items. Retail Insights holds sales amount and units by retail price type to allow analysis at this level. The terms for the price types are Regular (Reg), Promotional (Pro) and Clearance (Clr). A fourth group called Non-Clr is the addition of Reg and Pro metrics into one value.

Return metrics may additionally be reported on using Reasons and Selling Location. Reason codes are the reasons that a customer returned a product, as specified at the point of sale. Analyzing returns by reason could highlight potential problems with inventory from a specific supplier or products that have poor sizing measurements. The original selling location is the location where the sale occurred for a verified return (for example, a return where the receipt was provided or the original sale could be found in the customer's history). Analyzing the original selling locations of returns can identify customer trends such as buying online and returning in store, or buying in one location and returning at a nearby different location.

RI provides fields on the sales interfaces for a number of reference values that are commonly included with transactional data. The main sales transaction interface contains 15 reference fields, which by default align to the fields available in Sales Audit for transaction headers, items, and discounts. The transaction tender interface also includes four reference fields, which default to those found in Sales Audit's tender table. RI also has fields available to capture optional attributes and descriptive elements on a transaction, such as drop shipment indicators, sales types, and price override codes.

Sales Extensions

The sales transaction fact can also be extended using a source-agnostic interface for additional facts and attributes. The interface (W_RTL_SLS_TRX_EXT_IT_LC_DY_FS) contains all of the external identifiers of a transaction line, such as POS transaction numbers and sales associate IDs, as well as 50 flex columns for data. The interface could be populated with POS data not interfaced through other means, as well as manually-generated attributes needed for advanced sales reporting. The interface also supports having multiple sales associates per transaction line, which provides reporting at a lower grain of detail than what Sales Audit provides to RI directly.

Sales Pack

A sales pack is a group of individual items grouped together by the retailer to be sold as one item. An example is a bottle of shampoo and a bottle of conditioner, both individual items on their own, but packaged together to be sold as a unique pack item.

Retailers require visibility to pack sales contribution information by regular, clearance, and promotion retail types. This analysis provides the ability to compare and contrast location performance of pack sales using retail type measures.

These metrics can help to determine:

- How a SKU sold as a single item
- How the pack itself has sold historically
- How a SKU sold when it was included in a specific pack

Retail Insights extraction, transformation, and loading processing prorates the value of a pack into its component items (see "Prorating of Packs" later in this section). This helps in analysis of component pack item contribution to pack sales.

Prorating of Packs

The prorating of a pack's value into its component items requires calculation. The following formulas are used for prorating packs:

```
Item Prorated Sales Value = Pack Sales Value * Item Prorate %

Item Prorate % = (Item Price * Pack Item Qty) / Pack Component Sales Value
```

```
Pack Component Sales Value = (Item A Price * Item A Qty) + (Item B Price * Item B
Qty) + (Item C Price * Item C Qty) + …+ (Item n Price * Item n Qty)
```

Example

Pack A has a pack sales value of $90,000. Each pack is priced at $9 and contains the following:

Table 6–1 Pack A Example

Item	Quantity	Price
Item A	2	$4
Item B	1	$2
Item C	1	$1

Calculation Steps

1. Calculate pack component sales value:
   a. Item A Price * Quantity of Item A in Pack A

      4 * 2 = 8

      Item B Price * Quantity of Item B in Pack A

      2 * 1 = 2

      Item C Price * Quantity of Item C in Pack A

      1 * 1 = 1

   b. 8 + 2 + 1 = 11
2. Calculate item prorate percent:

   8/11 = .7273 (Item A)

   2/11 = .1818 (Item B)

   1/11 = .0909 (Item C)
3. Calculate item prorated sales value:

   $90,000 * .7273 = $65,457.00 = Item A Prorated Sales Value

   $90,000 * .1818 = $16,362.00 = Item B Prorated Sales Value

   $90,000 * .0909 = $8,181.00 = Item C Prorated Sales Value

Sales Consignment and Concession

RI has a separate fact area designated for the sale of consignment and concession items, when using the consignment/concession functionality available with RMFCS version 19 or later. The Sales Consignment set of metrics will display only the sale of non-owned inventory. These sales are also included in your total sales amounts, in order to provide a complete picture of revenue and profits.

The calculation of profit and cost amounts for such sales transactions will be derived using the consignment/concession rates or unit costs configured in RMFCS (depending on the type of item cost used).

When an item's sales are portioned out based on a percent of the selling price, the general formula is: Sales Profit = Sales Amt * (1 - Purchase Rate/100)

When an item's sales are paided out using a fixed unit cost, the general formula is:
Sales Profit = Sales Amt - (Sales Qty * Unit Cost)

Supplier Invoice

Supplier invoice reporting can help retailers achieve control of a supplier's payment process and assess the discrepancies for a supplier.

Supplier invoice cost is the actual cost as shown on the supplier invoice (from Oracle Retail Invoice Matching or other source system). Supplier invoice *purchase order cost* is the expected cost previously agreed upon in the purchase order, before any deals or discounts. A difference between the two can reflect deals, discounts, clerical errors, or dishonesty.

Supplier invoice cost and supplier invoice purchase order cost are held at the supplier-item-location-day level.

Supplier Performance and Compliance

The merchandising organization must carefully select, monitor, and adjust relationships with suppliers. Before negotiations with suppliers, the retailer can prepare by running supplier performance and compliance reports.

- Supplier performance considers typical merchandising measures such as net sales, profit/margin, markups, and return rates, to compare the profitability and inventory costs of goods provided by different primary suppliers.
- Supplier compliance measures allow buyers to assess supplier delivery timeliness and purchase order fill rates. For example, how many advance shipping notices came in early, on time, and late? Were overall purchase order counts at expected levels, under, or over?

This analysis can help the retailer to negotiate supplier-funded promotion negotiations and supplier bill-backs, and reward responsive and flexible suppliers. This in turn can reduce inventory costs, prevent out-of-stock conditions, and increase profitability.

Supplier Performance

This functional area focuses on reporting that provides supplier performance information based on key performance indicators. Collection of this data makes the following types of analyses possible:

- Compare and contrast supplier performance over time
- Compare and contrast department performance by primary supplier
- Monitor department performance in terms of sales volume and value
- Compare and contrast market supplier with supplier performance

Primary Supplier

Department managers in particular need to understand sales and profit contribution information about their suppliers. Retailers can monitor supplier performance better by identifying suppliers of profitable items, measuring contributions to total department performance, and identifying how categories are performing relative to other categories, and relative to last year.

Unless facts (such as net cost) are stored by supplier, all facts in that data can only be attributed to the primary supplier.

Performance Metrics

The following types of measures are a part of supplier performance:

- Sales and profit
  - Sales value and variance in sales value from last year
  - Sales units and variance in sales units from last year
  - Profit amount and variance in percent profit from last year
  - Percent contribution to total sales value for the department
- Inventory position and movement
  - Sell-through
  - Stock turns
  - Beginning stock on hand (BOH) and ending stock on hand (EOH) retail value
  - Receipts
  - Gross margin return per dollar of inventory (GMROI)
- Net (deal) cost

  Net cost (sometimes referred to as deal cost) measures are held at the supplier level. Net cost is populated with data from Oracle Retail Merchandising Foundation Cloud Service (RMFCS) or another source system. The data consists of cost values that represent different discounts on base cost that the supplier provides. These discounts may be:
  - Deals with deal partners for items, or items at specific locations

    Deal partners can be suppliers, wholesalers, distributors, and manufacturers. Within a deal, you create deal components, specify the items for the deal component, and define thresholds.
  - Fixed deals with suppliers

    Your organization receives payments from suppliers in return for mentioning their products in promotions or for displaying their products on prime shelf space.
  - Bracket costing deals with suppliers

    Your organization receives a certain deal price on an order, depending on the size of the order. Different types of brackets can be established based on mass, volume, pallet, case, each, or stat case.

Supplier Compliance

Supplier compliance measures supplier performance based on key performance indicators such as timeliness and accuracy of deliveries. The supplier compliance functionality supports supplier evaluation based on the following parameters:

- Timeliness
- Delivery accuracy
- Order fulfillment

Supplier Invoice Cost

Supplier invoice cost is the actual cost as shown on the supplier invoice (from Oracle Retail Invoice Matching or other application). Supplier invoice purchase order cost is the expected cost previously agreed upon in the purchase order, before any deals or discounts. A difference between the two can be reflective of deals, discounts, clerical errors, or dishonesty.

Supplier invoice cost and supplier invoice purchase order cost are held at the supplier-item-location-day level.

Receipts by Supplier

Retail Insights supplier compliance data provides the ability to report receipt units grouped by supplier, item, location, and day. For example, the fact column RECEIVED_QTY contains the quantity from the qty_received column in the RMFCS SHIPSKU table.

The supplier compliance data does not contain cost or sales data, so it cannot be used to report sales or cost by supplier. The quantity in the supplier compliance data should not be confused with receipt units in the inventory movement data.

Timeliness

Timeliness measures the supplier's ability to deliver according to schedule. Early, late, and on-time shipments are tracked in the supplier compliance area. You can measure supplier timeliness on a daily basis.

```
Timeliness = No of On Time Deliveries / ( No of On Time Deliveries + No of Early
Deliveries + No of Late Deliveries )
```

For example, if the number of on-time deliveries is 75 and the total of all deliveries is 100, the timeliness rating is 75 percent.

Missed deliveries are deliveries that did not take place within the time frame specified. A late delivery is also a missed delivery. Because the timeliness measure would not be meaningful if two of its components were counted twice, missed deliveries are not included in the timeliness measure. Missed deliveries can be reported at the supplier-location-time level as a separate metric.

Delivery Accuracy

Delivery accuracy measures the supplier's ability to deliver the correct items and quantities on the order. The rating is determined by comparing the total number of deliveries for the supplier to the number of deliveries where the quantity or item was incorrect.

```
Delivery Accuracy = Number of ASN Expected Deliveries / Number of Deliveries
```

where:

```
Number of Deliveries = No of ASN Expected Deliveries + No of ASN Over Deliveries +
No of ASN Under Deliveries + No of Mismatched Deliveries
```

A mismatched delivery is a delivery that contains at least one mismatched item.

For example, if the number of on-time deliveries is 75 and the total number of deliveries is 100, the delivery accuracy rating is 75 percent.

Order Fulfillment

Order fulfillment measures the supplier's ability to deliver on order in full. The rating is determined by calculating the ratio of completely filled order to the total number of orders.

```
Order Fulfillment = No of Full Order Deliveries/ Total Orders
```

where:

```
Total Orders = Orders Received in Full + Orders Received in Part + Orders Received
in Excess
```

For example, a supplier earns an order fulfillment rating of 75 percent if the total number of orders is 4 and the number of partial deliveries is 1.

Inventory Position Analysis

Retail Insights holds stock position at a very low level, which is the ending position for every day for every item at every stockholding location. The available stock position measures include quantity, retail value, and cost amount (usually interfaced from source systems based on weighted average cost calculation).

There are three distinct groupings of stock position in Retail Insights:

- On-hand stock (goods owned by the retailer and received in a location)
- In-transit stock (goods owned by the retailer, received into one location such as a distribution center, but currently in transit to another store or warehouse)
- On-order stock (goods on an approved Purchase Order which have not yet been received)

Two examples of on-hand measures are ending on-hand (EOH) for a time period, as well as beginning on-hand (BOH) for a time period. The EOH position for week 1 is the BOH position for week 2.

Stock position is a constant state in which a value or position shifts over time. Stock on hand is at a certain position at the beginning and end of a week and at any point between. Positional values cannot be added together to arrive at a meaningful number. For example, the ending stock-on-hand values for the days in a week do not add up to the ending value for a week. Rather, there is a position at the end of each day and, in this example, the ending position for the week is the same as the position for the last day of the week. For this reason, positional measurements are semi-additive. They are not additive in the time dimension. In other dimensions, they act much like transactions. For example, the ending on-hand value for a subclass can be determined by adding the ending on-hand values for all items in that subclass.

Comparing ending inventory value to the same period last year is a typical scorecard measure, but deeper analysis and more complex calculations are also required. Retail Insights offers critical inventory calculations such as gross margin return on investment (GMROI), weeks of supply, stock turnover, sell-through, weekly average inventory, and the critical out of stock percentage measures.

A buyer might use one of these calculations to pair net sales and net profit measures on the same report with the out-of-stock percentage for the current month, to assess whether a certain department had low sales performance because of stock unavailability.

An inventory analyst can track the inventory age of existing inventory at a given location. The movement of merchandise from a warehouse to the stores in a timely

manner is critical to business. Merchandise lying in a warehouse for a long time adds to the expenses and also brings down profits. Inventory aging related metrics will provide the basis for calculating the inventory age, amount value and the percentage of inventory that has aged beyond a certain set time period.

Some of the questions that can be answered as part of the Inventory aging analyses are:

- What is Quantity/Cost/Retail of received merchandise that is still present at the given location beyond a given time period?
- How quickly is the Merchandise being distributed from the servicing DC to the stores?
- What percentage of merchandise is aging at the servicing DC and for how long?
- What is the trend of inventory aging this year compared to last year?

As of RMFCS version 19, inventory can also be maintained for consignment and concession items. RI loads the inventory position for such items with a flag identifying the ownership type (Owned, Consignment, or Concession). The Purchase Type dimension can be used to split inventory metrics by ownership status.

Wholesale

Wholesale metrics enable reporting on wholesale transactions as distinct from regular retail transactions, allowing retailers to understand how their wholesale business is working as a stand-alone operation. This will keep the wholesale business from being lost in the noise of their overall sales. The list below is unique wholesale metrics, but also all the regular sales metrics can be used to do wholesale analysis by filtering for transactions at wholesale locations.

Franchise

Oracle Retail Insights has three types of franchise metrics: Stockholding Franchise, Non-Stockholding Franchise, and Franchise. Which one a retailer uses will depend on their relationship with their franchise locations: if they manage inventory and replenishment for their franchisees, then Stockholding Franchise metrics are more useful, but if their franchisees operate relatively independently, Non-Stockholding Franchise metrics would be appropriate. Markdown and Markup metrics are simply known as Franchise metrics because there is no way to distinguish between stockholding and non-stockholding for this type of metric.

Consumer

Consumer analysis is a method by which retailers will analyze their target consumers in order to determine the most effective strategies to improve both their sales and profitability. The Consumer dimension and Consumer Segment dimension can be used together to create consumer profiles, analyze consumer attribute trends and patterns, and identify groups of consumers that are ideal for conversion and marketing activities. Additionally, the Consumer Segment dimension can be used along with Sales fact data to analyze the effectiveness of conversion activities on a specific segment.

Price

Pricing analytics can help retailers determine the optimal pricing of products. It focuses on the proposed pricing of merchandise. Cost elements and profit components are not evaluated as part of pricing.

Retail Insights holds price as a retail value for an item, day, and location. For the purpose of analysis, the price is semi-additive and calculated over the time period selected for the report. For example, if the Price metric is added to an analysis at the levels of Subclass, Loc, and Fiscal Week, then the value returned will be the average price for all items in the subclass, at that location, as of the end of that week.

Planning

Retail Insights holds facts for both preseason (original) and in-season (current) planning in several reporting areas, including sales, markdowns, receipts, inventory, gross margin, and open-to-buy, in both dollars and units. RI stores planning data at intersections of Merchandise Hierarchy, Product Attributes, Organization Hierarchy, Calendar Hierarchy, and Supplier Dimension. The Merchandise Hierarchy includes item, subclass, class, department, group, and division. The Organization Hierarchy includes store, district, region, area, chain, channel, and company. The Time Hierarchy includes day, week, period, quarter, half year, and year. The supplier dimension includes suppliers, parent suppliers, or no suppliers. Product attributes can include the brand, style, color, size, pattern, flavor, or scent (these align with the same-named attributes that exist in the Item Dimension).

RI provides up to 4 possible combinations of intersection of the 4 hierarchies (and optional attribute) per each implementation. The 4 possible combinations can be configured during the installation time to decide which level of Merchandise Hierarchy, Product Attribute, Organization Hierarchy, Calendar Hierarchy, and Supplier Dimension will be used. Multiple plan interfaces may exist at the same intersections of data if desired.

The following abbreviations are used in the names of Planning metrics:

- CP1 to CP4: Current Plan for Plan 1 through Plan 4
- OP1 to OP4: Original Plan for Plan 1 through Plan 4

Review the following example configuration:

The first plan configuration (loaded to the staging table W_RTL_PLAN1_PROD1_LC1_T1_FS) will be used to hold the primary Merchandise Financial Plan. This plan will exist at the levels of Subclass, Chain, and Week. The Subclass's unique identifier (a concatenated value of dept~cls~sbc, e.g. 10~100~5) is provided for the product hierarchy values, the Chain identifier (e.g. 1) is provide for the location hierarchy values, and the week-ending date is provided for the calendar values. Product attributes and suppliers are not being used, so they should be set to a default value of '-1'.

The Version Number field should be set as '0' for the original plan, and '1' for the current plan. Versions after 1 represent changes to the current plan that need to be captured in RI over time. For example, if my plan is revised once a month, I may want RI to hold each monthly revision as a new version so that I can see how my initial plan compared to my end-of-quarter revised plan. A version number attribute is available in each plan to perform these comparisons. The CP metrics will always show the latest plan version if more than one exists.

All of the chosen hierarchy levels would be configured in C_ODI_PARAM settings prior to running a batch with planning data. All planning files should be bundled in

the RI_MFP_DATA.zip file and uploaded to the SFTP server, where they will be picked up and processed during the nightly batch run.

Stock Ledger

Retail Insights information for stock ledger analysis comes from Oracle Retail Merchandising Foundation Cloud Service (RMFCS).

The lowest-level stock ledger facts are kept at the subclass and week level. This gives Retail Insights visibility to store/subclass/week level and subclass/month level. Stock ledger reporting is not available at the item and day levels. Reports and drills into data that are lower than the subclass/week level return null values for stock ledger facts.

If you receive stock ledger information from RMFCS, the RMFCS stock ledger feed to Retail Insights supports either a 4-5-4 fiscal calendar or Gregorian calendar.

If you have a Gregorian stock ledger, reporting in Retail Insights can be done at the subclass, location, and month levels. Reports and drills into data that are lower than the subclass/month level return null values for stock ledger facts.

If you have a 4-5-4 stock ledger, you can analyze the stock ledger at the subclass, location, week, and month levels. Reports and drills into data that are lower than the subclass/week level return null values for stock ledger facts.

Any other calendars, such as a 13-period time calendar, are not supported by the RMFCS interface to Retail Insights for stock ledger facts. If an RMFCS user customizes the stock ledger to use a 13-period calendar, there are inconsistencies with the RMFCS stock ledger interface to Retail Insights unless modifications are made.

Because the month-level stock ledger is directly related to the RMFCS MONTH_DATA table, data for a specific month is available in Retail Insights after the close of that month.

Baseline

Baseline metrics are derived from data mined during a period of time when an item is not on promotion.

The baseline process brings sales transaction data from Retail Insights into a suitable structure for performing baseline calculations. The process first transfers sales data by week, identifying which weeks are suitable to be included for baseline calculation. A set of item/location weekly sales is suitable for baseline calculation only if it does not have promotion sales for the week. The number of weeks of sales data to use for baseline calculation is configurable, with a default suggested value of 16 weeks, eight weeks prior to the promotional week and eight weeks after. You can configure both the number of weeks included and whether they are pre-promotion or post-promotion weeks. For example, 14 weeks might be included in the calculation, with eight weeks pre-promotion and six weeks post-promotion. After processing, the calculated baseline metrics are returned to Retail Insights.

These metrics are calculated at the promotion component/item/location/week level. They include baseline units, sales, profit, and transactions.

Baseline metrics can be used by a buyer during category planning, to establish expected sales for a category before promotions are added. This can help identify the level of promotion needed for the category to hit sales targets. A planner might decide that sales goals can be reached without promotions, or by promoting very little, thus saving money and adding to category margins.

Baseline metrics can also be used to calculate lift for promoted products; that is, how much over the baseline did sales increase when this category was promoted? If the difference between baseline and promoted weeks is large, and baseline sales are unacceptably low, it might be concluded that customers are shopping the category only for promoted items. Promotions might need to be cut back or changed, to avoid conditioning customers to buy items only when they are on promotion. If the difference is too small, the promotions might not be effective and not worth the cost to run them.

Trial and Repeat

Retailers want to analyze the impact of new item introductions, and item promotions, to see whether customers come back a second and third time after trying something new. Something new may be a new item introduction, or the first time an item is put on promotion, perhaps as part of raising that item (or Brand's) profile, and so on. Trial and Repeat Metrics can help to analyze the repeat purchase behavior of customer household for the merchandise.

Customer

The Customer Insights module enables you to perform retail analysis around customers and customer segments. The following are some example business questions that Customer metrics can help to answer:

- Who are my most profitable customers? Who are my most frequent shoppers?
- Are my customers only buying items from me when they are on promotion?
- What does a customer buy from me on a typical shopping trip? Does it vary by where they live or how much money they make?
- Which of my departments appeal to which of my customers? That is, who is shopping in my stores and what are they shopping for?

Customer data can be reported from the Sales, Sales Promotion, Sales Discount, and Customer Loyalty folders in Retail Insights. Combining the Customer dimension with one or more facts will display data only for known customers (those shoppers having a unique identifier in your POS and CRM systems). Unknown customer transactions are given a default customer ID of -1 and all such data will appear on a single row in reports.

Sales Promotion

Retail Insights has a number of metrics against which to measure a promotional sales, cost and forecast as well as Promotion Campaign costs. These metric provide useful insight into the processes of managing actual marketing cost, evaluating financial performance of marketing tactics, and analyzing forecast and actual spending.

The main folder for promotional activity is the Sales Promotion folder. It contains a set of metrics that must be reported on with the Promotion dimension to analyze performance of a specific promotional event or deal that was given to customers. These promotional events could come from Retail Pricing Cloud Services, Customer Engagement, or an external source such as a marketing platform or online store application.

Transactions are typically identified at the POS as being affected by one or more promotions and deals, which is then processed through Sales Audit and sent to RI with a retail type of 'P' and the ID of the promotion. Additionally, it is possible to mark

transactions as belonging to an external promotion, event, or other activity not managed through the pricing or CRM tools at the retailer. These external events must be identified on a reference field in the POSLog data (such as REF_NO3 in the RTLog interface to Sales Audit). RI must then be configured to join that reference field with the External Promotions interface data having the master records for the external event. Once the above integration path is established, transactions having the external event or promotion ID on them will be moved into the Sales Promotion area, and may be reported on just like other Promotion types.

The other Promotion facts in Retail Insights are for customers to populate on-demand with their own data, such as the Promotion Forecast and Promotion Budget facts. These interfaces have no standard Oracle data source, but may be loaded with data from an external application if desired

Note: Promotion Budget only supports as-is reporting.

Note: Amount facts are in local and primary currency only.

Cluster

A cluster is a group of stores. Retailers make store clusters for various reasons, but the general idea is that stores in a cluster should have some key element or elements in common, which differentiates them from stores in other clusters. These elements could involve business objectives like store performance benchmarking, inventory management, and assortment/space planning. Then clusters can be used for analysis of sales, inventory, and promotions. Performance, inventory, ranging, trade area analysis, and union analysis are examples of elements around which clusters are built.

Oracle Retail Insights' cluster metrics enable retailers to analyze their clusters' sales, inventory position, inventory receipts and promotions, so that any analysis that might normally be limited to some aspect of the organizational hierarchy can instead be performed on a retailers' customized store cluster, enabling precise, actionable analysis.

The Cluster dimension also supports loading of Price Zones from RPM. These price zones will look and behave the same way as other store clusters from a reporting point of view, as the structure (zone group -> zone -> location) is the same.

Customer Order

Customer orders lie at the heart of the modern retail experience. Virtually every customer transaction that takes place outside of a brick-and-mortar store is captured as part of a customer order, whether it is a normal sale, cancellation, return or exchange. A customer order consists of a customer order header that contains one or more customer order lines. Oracle Retail Insights' customer order metrics allow retailers the flexibility to analyze the performance of their business across the various selling channels their customers use.

Retail Insights supports a number of different metrics related to customer orders to allow performance analyses of omnichannel retailing. A list of the major metrics (minus the time transformations such as LY and LW) is below.

Similarity Score

Similarities calculate how likely a customer is to switch from one item to another in a range from 0 to 1. For example, if the similarity rate for Toothpaste A and Toothpaste B is 0.75 while the similarity rate for Toothpaste A and Toothpaste C is 0.21, the customer is more likely to switch to Toothpaste B than Toothpaste C.

Competitor Pricing

A competitor is a retailer with a product range and customer base similar to those for the organization business unit [Store location in RI] and its channels. The competitor entity holds information about each competitor store and associates it with a location in the organization. Competitor pricing details can be associated with a specific competitor location and mapped to an item in the product hierarchy. This structure provides the means to compare competitor prices for similar or identical items, at a direct competitor location. With this type of timely information, promotion and pricing strategies can be implemented by retailers to prevent potentially costly customer defections.

Purchase On Order

Purchase orders and pre distribution of merchandise that is on the purchase order is instrumental to a retailers inventory movement. Analyzing various aspects of merchandise that is currently on order i.e merchandise that is on an approved purchase order where the entire quantity has not yet been received is important as it can give insight into the quantity, value and status of the merchandise that will be incoming in the near future.

A key metric that the retailers would track is the on order merchandise quantity that has been pre distributed so that the merchandise reaches the stores via an allocation without any delay.

Some of the questions that can be answered as part of the On Order analyses are:

- What is the Merchandise that is on order in terms of Units/Retail/Cost by Supplier/Purchase Order/Item/location/day?
- What is quantity/Cost/Retail of ordered merchandise that has been received from supplier by Purchase Order/Item/location/day?
- What is the quantity/Cost/Retail of the ordered merchandise that is yet to be shipped by the vendor by Item/location/day?

Oracle Retail Insights Purchase On Order metrics help identify the on order, total ordered, received, cancelled merchandise quantity and value and the allocated quantity and allocated percentage of the PO on order qty.

The Purchase Order dimension may also be used in combination with Sales facts to analyze orders placed in response to a customer order (such as a drop shipment). This requires that both the sales transaction and the purchase order have a matching Customer Order Number to join the data.

Gift Card Sales

Gift cards are prepaid, stored-value money cards issued by retailers to be used instead of money for purchases. Gift cards are important for retailers because they drive foot traffic and sales, and it would be valuable for them to be able to quantify that effect and any trends up or down that could be an issue. If gift card purchases and

redemptions are not up to expectations, retailers may need to take steps like consumer education, or adding mobile platform gift cards.

Oracle Retail Insights gift card metrics provide analysis on gift card amount sold and the trend with respect to last year. Counts of gift cards sold and transactions containing gift card sales are also provided, along with last year metrics for comparison.

Transaction Tender

Transaction tender identifies the tender types that have been used to pay during a given sale or return transaction. This can be used in customer segmentation analysis, even in absence of a customer loyalty program. Unique customers can be identified by their encrypted credit card numbers and their purchase histories tracked and aggregated. Transaction tender data can be utilized to generate gift card redemption analysis.

Oracle Retail Insights transaction tender metrics provide analysis on tender amounts per tender type, gift card redemption amount and the trend with respect to last year, as well as counts of gift cards redeemed and transactions having redemptions.

Sales Discount

Sales Discount lists the various discounts that were applied for a given sales transaction. Analysis can be done on the discount amount, discount type and coupon discounts applied.

Oracle Retail Insights sales discount metrics can form a basis for analysis of coupon sales penetration that can help retailers understand if the cost of producing and distributing coupons is worthwhile. It is also possible to analyze the revenue and discount amounts created by specific discount types, in order to assess the effectiveness of a discount in generating additional sales relative to the decrease in retail value per transaction. RI further splits discounts by the retail type on the transaction, so it is possible to analyze discounts taken off full price or clearance items separately, or to understand the percentage of discounts taken off regular, promotional, or clearance-priced items.

Store Traffic

Store traffic information is used to understand the distribution of traffic by minute, hour, day of the week, store location, seasonal periods, promotion periods, total chain, etc. Retailers can also look at the conversion ratio of their store which is the total sales transactions divided by total traffic. You will be able to determine if your conversions went up, down or remained the same during the promotion.

Oracle Retail Insights store traffic metrics can be used to analyze the store traffic and conversion rate of stores in comparison to comparable stores. Traffic data is loaded and viewed in 24-hour time format, ranging from 0000 to 2359.

Customer Loyalty Activity

Customer loyalty activity refers to transactions which involve a retailer's loyalty programs, such as loyalty point accrual, redemption, expiration, and award generation. This information can be used to analyze how customers are interacting with your loyalty program and how effective the program's benefits are. For example, if customers are accruing a large number of loyalty points through sales transactions

but are not redeeming them, it could indicate that the program's rewards are not enticing enough to encourage participation. It is also useful to know how many loyalty points have been issued but not redeemed, as these represent a potential liability for the retailer in terms of future discounts and coupons that may be used to purchase products.

Retail Insights loyalty activity can be extracted from Customer Engagement, and is held by program, account, customer, location, and day.

Customer Loyalty Award Activity

Loyalty award activity tracks the distribution, redemption, value, and expiration of loyalty awards issued to a customer. Loyalty awards usually come in the form of e-awards or entitlement deals that are distributed to customers who have accumulated a certain number of points as part of a Loyalty Program. The generation and distribution of loyalty awards are done via scheduled jobs in Customer Engagement. The rules determining the award type, award frequency, award amount and the number of points that will be subtracted from the customer's account are defined in the award rules linked to a loyalty program level (rules are not extracted from CE to RI).

Retail Insights loyalty award activity can be extracted from Customer Engagement, and is held by program, account, customer, and day.

Stock Counts

A standard practice in physical retail locations is to perform regular counts of on-hand inventory to ensure that there are no major deviations between the inventory management systems and the actual available inventory. A stock count generally consists of a pre-count snapshot taken in the system of record for all inventory to be counted, followed by one or more physical counts of each unit on-hand. Counts are then reconciled with the inventory management system and adjustments to the on-hand units may be created.

Retail Insights provides two methods for analyzing stock count activities, depending on the systems used by the retailer. The first method will interface directly with RMFCS to extract the stock count snapshot and counted quantities stored by that system after a stock count is performed. The second method provides a generic interface for manually loading non-RMFCS stock count results into RI. These counts would generally be sourced from a perpetual inventory management system such as SIM.

One or both of the provided interfaces may be used to load stock count results for analysis in RI. Separate metrics are available for each interface, allowing the user to compare and contrast multiple instances of a snapshot or count. The stock count snapshots from RMFCS will be loaded automatically through RDE, and will contain all available data on the STAKE_SKU_LOC table, both for snapshots and store counts. The interface for SIM stock count results provides columns both for the SIM pre-count snapshot and the physical counted/approved quantities.

Flexible Facts

Retail Insights provides a flexible fact interface which can be configured to load data from an external source at any level of the product, location, supplier, and calendar hierarchies. These configurations should be set in the C_ODI_PARAM table during

implementation. The full list of supported levels and configurations will be comparable to the Planning fact interfaces as the architecture is the same.

The flexible fact metrics in RI are intended to provide the retailer with a way to load data from outside of Oracle and combine that data with all other areas in RI. How the data will be reported on, and which dimensions can be used, will depend on the levels configured during implementation. For example, if the external data is provided at a level of Location and Fiscal Date, then only the Organization and Fiscal Calendar dimensions in RI can be used with the flexible fact metrics. For this reason, it is recommended to provide the data at the lowest possible levels of each available dimension, to allow RI the widest range of attributes and aggregations to use in reporting. Fact data provided at a lower level (such as Store) will support any aggregation defined above it (such as Channel or Region).

The metrics for this fact are provided with generic labels that describe the datatype of the source column. It is expected that the retailer will relabel these metrics during implementation to something more meaningful to RI users. For example, the default label for the first metric is External Flex Metric 1 Number. A total of 100 metrics are provided across several data types:

- 40 numerical non-currency fields
- 20 numerical currency-enabled fields
- 30 character-based freeform fields
- 5 percent fields (using a non-scaled range like 0-1)
- 5 date fields

Retail Insights Metric Metadata

The following chart shows Retail Insights metric metadata. Users should be aware that you cannot mix facts across as-is, as-was, and point-in-time subject areas.

Note: Performance of reports that contain YTD metrics may become less optimal as the end of the fiscal year approaches, due to the increasing amount of data that accumulates. Users should be aware of this and take steps to mitigate any performance effects, such as being specific with filters and prompts to get back the smallest amount of data necessary for analysis.

Table 6–2 Metric Metadata

Metrics	As-Is	As-Was
Cost and Profit	X	X
Markdowns and Markups	X	X
Sales Forecast	X	X
Inventory Receipts	X	X
Sales	X	X
Sales Discount	X	X
Sales Consignment	X	X
Sales Extensions	X	X

Table 6–2 (Cont.) Metric Metadata

Metrics	As-Is	As-Was
Transaction Tender	X	X
Gift Card Sales	X	X
Store Traffic	X	X
Competitor Pricing	X	X
Sales Pack	X	X
Supplier Invoice	X	X
Supplier Performance and Compliance	X	X
Inventory Position	X	X
Wholesale	X	X
Franchise	X	X
Price	X	X
Planning	X	X
Stock Ledger		X
Trial and Repeat	X	X
Sales Promotion	X	X
Customer Order	X	X
Customer Order Promotion Transaction	X	X
Customer Order Status Fact	X	X
Customer Order Transaction	X	X
Touch Point	X	X
Retail Promotion Actuals	X	X
Retail Promotion Forecast	X	X
Promotion Baseline	X	X
Promotion Budget	X	X
Consumer Spend	X	X
Sales Promotion	X	X
Inventory Position	X	X
Return to Vendor	X	X
Inventory Adjustment	X	X
Inventory Transfers	X	X
Similarity Score	X	X
Purchase On Order	X	X
Customer Loyalty Activity		X

Table 6–2 (Cont.) Metric Metadata

Metrics	As-Is	As-Was
Customer Loyalty Award Activity		X
Stock Counts	X	X
POS Sales	X	X

A

Time Series Conversion Functions

There are two types of time conversions, table-based and expression-based:

- Table-based conversions use a relationship table in the data warehouse to define the conversion from one time period to another.
- Expression-based conversions perform transformations by using mathematical expressions.

All of the Retail Insights conversions are expression-based. Oracle BI does not use transformation tables to create metrics; however, some Retail Insights views in Oracle BI are created based on transformation tables. Those views are used to create some complex metrics such as Comp, Comp Base, and BOH (beginning on hand).

Time conversions are used to compare values from different time periods to discover and analyze time-based trends. Some examples of common time conversions are:

- This year versus last year
- Month-to-date comparisons

Any time conversion function can be included as part of the definition of a metric. For example, applying the Last Year conversion to a Sales Value metric creates a Sales Value (Last Year) metric that calculates the sales for last year. Multiple conversions can be applied to the same metric.

Each time conversion in Retail Insights is defined at all the levels applicable for that transformation. For example:

- The Last Week conversion is defined at the day and week levels.
- Last Month is defined at the day, week, and month levels.
- Last Year is defined at the day, week, month, quarter, half-year, and year levels.

These definitions improve query performance.

The Last Year time transformation works differently depending on whether the retailer is using the Gregorian calendar or Business calendar. For the Gregorian calendar the Last Year corresponds to the current week last year, while for the Business calendar the Last Year will be 52 or 53 weeks from the current week.

Example Time Conversions

The following are some examples of the time conversions in Retail Insights.

Table A–1 Time Conversions

Conversion	Summary
Last Month	Returns the corresponding last month fact data for the time period selected.
Last Week	Returns the corresponding last week fact data for the time period selected.
Last Year	Returns the corresponding last year fact data for the time period selected.
Month to Date	Returns the corresponding month-to-date fact data for the time period selected.

Examples of Metrics That Use Time Conversion

The following are some metrics that illustrate time conversion capabilities. You can also extend these metrics for other time transformations. For more information, see the *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition*.

Table A–2 Metrics that use Time Conversion

Metric	Summary
Net Sales Amt	Sales amount excluding returns. It indicates the actual money amount received from sales.
Net Sales Amt LY	Last year's difference of gross sales amount minus returns amount.
Net Sales Amt LY YTD	Last year's year-to-date difference between gross sales amount and returns amount.
Net Sales Amt MTD	Month-to-date difference between gross sales amount and returns amount.
Net Sales Amt LW	Last week's difference between gross sales amount and returns amount.
Net Sales Amt MTD Var LY	Month-to-date net sales amount variance compared to last year. This metric tests a retailer's sales performance on business-critical months such as holidays or the end of the financial year.
Net Sales Amt WTD	Week-to-date difference between gross sales amount and returns amount.
Net Sales Amt YTD	Year-to-date difference between gross sales amount and returns amount.

B

Reporting on Oracle BI Repository Objects

You can use the Oracle BI Repository Documentation utility to export information about Oracle BI repository objects. This information can include:

- Mappings of presentation columns to logical and physical columns
- A metadata dictionary to provide information about metrics and attributes

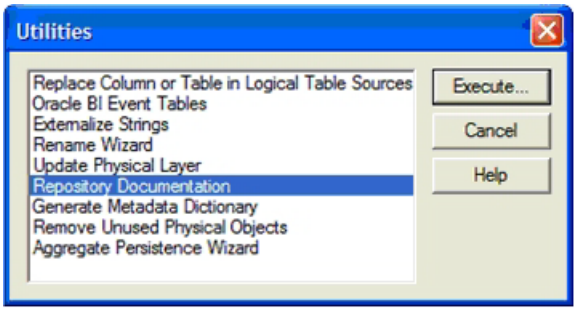
See the *Oracle Fusion Middleware Metadata Repository Builder's Guide for Oracle Business Intelligence Enterprise Edition* for information about using the Oracle BI Administration Tool and utilities. That document describes the procedures in detail.

Generating Documentation of Repository Mappings

You can save documentation of repository mappings to a .CSV (comma-separated values) file. You can import a file with comma-separated values into a spreadsheet, database, or other application.

Follow these steps:

1. From the Tools menu in the Oracle BI Administration Tool, select **Utilities**.
2. From the Utilities dialog, select **Repository Documentation**.



3. Click **Execute**.
4. When prompted, save the .CSV file in the folder you prefer.

C

Retail Insights Metric Definitions

As of the Retail Insights 18.0.002 release, the complete list of metrics has been moved to *Oracle Retail Insights Cloud Service Suite, Retail Science Platform Cloud Service, and Retail Data Extractor for Cloud Documents (Doc ID 2539848.1)* on My Oracle Support. See Chapter 6, "Metrics" for additional information about the functional areas for which RI provides metrics.

Glossary

13-period calendar

A business calendar that contains 13 equal periods, each of 4 weeks (28 days) in length. Every fifth or sixth year, there are 53 weeks. The calendar has a 28-year cycle of 6 years, 5 years, 6 years, 6 years, and 5 years. *See also* 4-5-4 calendar, Gregorian calendar.

4-5-4 calendar

The default Retail Insights business calendar, in which each quarter contains 13 full weeks in three periods of 4 weeks, 5 weeks, and 4 weeks in length. The calendar can also be implemented as 4-4-5 or 5-4-4. *See also* 13-period calendar, Gregorian calendar.

additive fact

A fact column or measure that can be summed to arrive at a meaningful value. For example, the total daily sales values for every day of a week can be added together to arrive at the total sales value for the week. *Contrast with* positional fact. *See also* semi-additive fact.

advance shipping notice

See ASN.

ASN

Abbreviation for advance shipping notice, an electronic data interface (EDI) transaction from supplier to retailer that identifies the supplier number, order number, carton contents, and store or warehouse destination for a particular delivery.

affinity

The relationship between items or groups of items in the basket of a customer.

attribute

In Oracle BI, a detail of a dimension in an Oracle BI repository. For example, Package Size is an attribute of the Product dimension. Attributes usually appear as columns of a dimension table.

baseline price

The price calculated for an item for a preconfigured duration (default 16 weeks), by calculating the average price when an item is not on promotion.

baseline sales

Sales calculated for an item for a preconfigured duration (default 16 weeks), by multiplying the baseline price times the baseline units of an item.

behavioralistic segment

A traditional form of segmentation that identifies target consumers or groups based on characteristics, including benefits sought, usage rate, readiness to buy, and occasions of purchase.

BOH

Abbreviation for beginning on-hand, an inventory position at the beginning of a time period.

buyer

A person who develops business strategies and seasonal assortment plans to maximize the development of the brand, sales, and profits for a department or assigned area. The buyer identifies opportunities and recommends new products or concepts for the department.

buyer analyst

A person who assists the buyer in developing business strategies and seasonal assortment plans to maximize the development of the brand, sales, and profits for a department or assigned area. The buyer analyst identifies opportunities and recommends new products or concepts for the department.

campaign

The entire communication strategy for a specific marketing communications program. The marketing communications program is frequently in support of promotional events and individual promotions, but it can stand alone. Retailers execute several different types of campaigns, including advertising, direct marketing, and in-store marketing.

cannibalization

The reduction in sales of one item from its baseline sales when another item is on promotion. Retail Insights calculates this metric in conjunction with affinity items. When Item A, to which Item B has affinity, is promoted, any negative impact on Item B sales during this promotion period is referred to as cannibalization .

catalog

See subject area.

comparable (comp) sales

Sales within two specific periods (usually this year and last year) that can be used as measures of productivity and to understand business trends and growth. Comparable sales metrics also help to differentiate between revenue gains that come from new stores and operations at established stores.

comparable (comp) store

A store that is open for business for a set period of time (usually at least 53 weeks) and was in operation within the time period of analysis. In other words, comparable stores are established stores, rather than new or closed stores. Comparable stores can be used for comparative analysis in various areas such as profit, sales, margin, and merchandising.

complex pack

See sales pack.

confidence

Given an association rule that if X then Y, the frequency with which, in transactions in which the customer purchased X, they also purchased Y.

consumer

Any potential shopper. Consumers are a superset of a retailer's customers.

CPC

Abbreviation for current plan for cost-based planning.

CPR

Abbreviation for current plan for retail-based planning.

customer

A shopper who has bought from a retailer. A customer has one or more associated transactions in a sales transaction table.

customer segment

A preparation step for classifying each customer according to the customer groups that have been identified in the retailer's customer data. Segmentations can be broadly classified as demographic or behavioral (customers who shop at a particular retailer).

demographic segment

A traditional form of segmentation that identifies target customers based on characteristics including age, generation, income range, family size, presence of children, race, gender, education, and occupation.

dimension

A conceptual grouping that qualifies data at a general level. Metrics such as sales do not exist in isolation, but rather in the context of dimensions such as product, geography, and time. These dimensions define what type of data is available. When considering a metric such as sales, it is important to consider what data is available. Does sales information exist for each of my products? Is there sales data for each country, region, and state? Is there sales data exist for the last five years?

In Oracle BI, a dimension is a hierarchical organization of logical columns (attributes). One or more logical dimension tables can be associated with at most one dimension. A dimension can contain one or more hierarchies. There are two types of logical dimensions: dimensions with level-based hierarchies (structure hierarchies), and dimensions with parent-child hierarchies (value hierarchies). A particular type of level-based dimension, called a time dimension, provides special functionality for modeling time series data.

EOH

Abbreviation for ending on-hand, an inventory position at the end of a time period.

filter

In Oracle BI, criteria that are applied to attribute and metric (measure) columns to limit the results that are displayed when an analysis is run. For metric columns, filters are applied before the query is aggregated. They affect the query and thus the resulting values.

franchisee

A merchant who operates under a contractual agreement with a parent company under an established name. The parent company controls major business operation decisions for a franchise location.

geographic segment

A traditional form of segmentation that identifies target customers based on characteristics including region, size of metropolitan area, population density, and climate.

GMROI

Abbreviation for gross margin return on investment, an assessment of the amount of money earned or lost compared to the amount of money invested.

Gregorian calendar

The internationally accepted civil calendar with 12 months and 365 days per year (366 days in leap years). *See also* 13-period calendar, 4-5-4 calendar.

halo

The increase in sales of one item from its baseline sales when another item is on promotion. Retail Insights calculates this metric in conjunction with affinity items. When Item A, to which Item B has affinity, is promoted, any positive impact on Item B sales during this promotion period is referred to as halo.

hierarchy

In an Oracle BI repository, a system of levels in a logical dimension that are related to each other by one-to-many relationships. All hierarchies must have a common leaf level and a common root (all) level. Hierarchies are not modeled as separate objects in the metadata; instead, they are an implicit part of dimension objects.

historic baseline

The normal expected sales in the absence of any promotion. All baseline methods are modeled using previous non-promoted sales movement of a product to model (prediction) of what the expected sales of that product will be. Baseline volume can exceed total volume if expected sales are greater than actual sales. All the baseline metrics (units, profit, and sales) are calculated for a default period of 16 weeks, or other duration specified by system options for market basket analysis. The default weight age scheme is (1/2)^n; however, it can be configured.

This duration is divided into 2 equal periods. Using a 16-week period (the default configuration), to find baseline amount, use 8 weeks of sales before the promotional week, and 8 weeks of sales after the promotional week.

If the user-specified duration x weeks is not even, then (x-1)/2 weeks are used for pre-promotion sales and (x+1)/2 weeks for after-promotional sales.

household penetration

A percentage of households in a specific market that use or consume an item. The value is calculated by dividing the total number of households that buy a product by the total number of households in the market.

inventory

Finished items intended for sale. Inventory can also include items that may not be available for various reasons, such as designated display units or defective units being repaired. Inventory is recorded as an asset on a company's balance sheet.

inventory analyst

A person who conducts in-depth review of the business to drive sales. This includes identifying specific opportunities (for example, sales/stock relationships, underperformance) and recommending actions to be taken.

inventory manager

A person who replenishes stock in stores on a daily basis, tracks supplier service levels; collaborates with the commercial team and suppliers to improve efficiency. The inventory manager reviews and recommends refinements to parameters in IT reporting.

inventory position

The measure of the current level of owned inventory. Inventory position includes on-hand inventory (including reserved inventory), in-transit inventory, and on-order inventory.

invoice

A contractual document that specifies the money owed by the buyer to the seller. An invoice is an Itemized statement given by suppliers to retailers that lists purchased products, their prices, quantities, taxes, and other fees such as shipping and handling. It may also carry any discounts applied at the time of generating the invoice.

key performance indicator (KPI)

A measurement that defines and tracks specific business goals and strategic objectives. KPIs often roll up into larger organizational strategies that require monitoring, improvement, and evaluation. KPIs have measurable values that usually vary with time, have targets to determine a score and performance status, include dimensions to allow for more precise analysis, and can be compared over time for trending purposes and to identify performance patterns.

LM

Abbreviation for last month.

LW

Abbreviation for last week.

LY

Abbreviation for last year.

margin

The difference between the cost of an item and its selling price.

markdown

A reduction in the selling price of an item. Markdowns are often planned to boost sales of an item. The three kinds of markdowns are permanent, promotion, and clearance.

market basket analysis

The value of the total market basket relating to a class or subclass. This measure is meaningful when compared to the average market basket.

markup

The increase in the selling price of an item above cost or current selling price. Markup is the measurement of profit for each item and is similar to margin, which is the difference between the cost of the item and the selling price.

merchandising executive

A person who views and manages business goals and objects; roles such as buyer report to this person.

merchandise financial planner

A person who is responsible for financial seasonal planning of sales, stock levels, production requirements, and the control of purchases relative to planned levels of (for example) color, fabric, and branch/store volumes.

metadata

Data about data. Metadata objects include the descriptions of schemas (such as tables, columns, data types, primary keys, and foreign keys) and logical constructs (such as fact tables, dimensions, and logical table source mappings). The Oracle BI repository is made up of the metadata used to process queries.

metric

Measures or facts, typically numeric, that are the focus of a business intelligence investigation. Fact columns are columns in the data warehouse that contain the facts and are used to define metrics.

MTD

Abbreviation for month to date.

NRF

Abbreviation for National Retail Federation.

OLAP

Abbreviation for online analytical processing. Oracle BI is the OLAP user interface for Oracle Retail Insights reporting and analysis.

OLTP

Abbreviation for online transaction processing. Source systems for Oracle Retail Insights data are typically OLTP systems, such as transaction-based merchandising and pricing systems.

OPC

Abbreviation for original plan for cost-based planning.

OPR

Abbreviation for original plan for retail-based planning.

Oracle BI repository

A file that stores Oracle Business Intelligence metadata. The metadata defines logical schemas, physical schemas, physical-to-logical mappings, aggregate table navigation, and other constructs.

OTB

Abbreviation for open-to-buy.

planning executive

A person who sets the strategic long-term targets from company to division level. The planning executive is responsible for merchandise planning organization and often has assortment planning, item planning, and allocation as responsibilities.

PO

Abbreviation for purchase order.

positional fact

A fact column or measure that cannot be summed to arrive at a meaningful result. For example, the ending stock-on-hand counts for an item for all the days of a week do not add up to a meaningful number. *Contrast with* additive fact. *See also* semi-additive fact.

pricing

The process of managing markups and markdowns for merchandise. Pricing is derived from factors such as cost, profit margin, quantity break, supplier quotes, and shipment or invoice date.

pricing analyst

A person responsible for pricing strategies for the company through combining the objectives set by the marketing department (increase revenues, decrease inventory) with historical and predictive analytics data.

promotion

The tactics a retailer undertakes to generate increased incremental sales volume for specific item-store combinations within a promotional event. Promotions are frequently communicated as part of a marketing campaign to ensure that awareness is generated with the target audience. Promotions are attempts to stimulate the sale of particular merchandise, by temporarily reducing the price, advertising the merchandise, or linking sales to offers of other merchandise at reduced prices or free.

promotional planner

A person responsible for planning promotions within stores.

prompt

In Oracle BI, a type of filter that allows the content designer to build and specify data values, or the end user to choose specific data values. A prompt expands or refines existing dashboard and analysis filters. *See also* filter.

psychographic segment

A traditional form of segmentation that identifies target customers based on characteristics including activities, interests, opinions, attitudes, and values.

repository

See Oracle BI repository.

retail type

The price type at which items were sold or held as inventory. There are four values for retail type:

- Regular
- Promotional
- Clearance

- Intercompany

RFM

Recency, frequency, and monetary score for a customer.

sales pack

A grouping of items under one item number. A sales pack can be either a simple pack or a complex pack. A simple pack contains multiples of one component item. A complex pack contains multiple component items.

semi-additive fact

A fact column or measure that cannot be summed in the time dimension to arrive at a meaningful result, but for which a sum in other dimensions can be meaningful. For example, the ending on-hand values for an item for each day of a week do not add up to a meaningful result. On the other hand, the sum of the ending on-hand values for all items of a subclass can be added together to obtain the ending on-hand value of the subclass. *See also* additive fact, positional fact.

set of books

Separate financial accounting for a particular part of a company, within the same accounting system or in a physically separate system. A company may use multiple sets of books to separate accounting operations by brand/chain, country/currency, or other distinctive characteristic that makes separate financial accounting desirable.

simple pack

See sales pack.

subject area

In the Oracle BI repository, an object in the presentation layer that organizes and presents data about a business model. For Oracle Retail Insights, the subject areas are Retail As-Is, Retail As-Was, and Retail Point in Time. A subject area is also called a catalog. *See also* as-is reporting, as-was reporting, point in time reporting.

support

Given an association rule that if X then Y, the frequency with which, out of all transactions, the customer purchased both X and Y.

target customer (target prospect)

The ideal consumer who lives near your stores, consumes the products you sell, and that you want to attract into your stores.

threshold

A minimum purchase amount or quantity required for the purchaser to obtain a discount amount or percentage or other deal.

transaction count

The number of transactions carried out at a retailer's stores by all customers. This is different from customer trips, because there could be several transactions in one trip, but transactions are easier to quantify through the point-of-sale system.

UDA

Abbreviation for user-defined attribute.

UOM

Abbreviation for unit of measure.

VAT

Abbreviation for value-added tax.

VMI

Abbreviation for vendor-managed inventory.

VPN

Abbreviation for vendor product number.

WF

Abbreviation for warehouse/franchise.

WH

Abbreviation for warehouse.

wholesaler

A merchant middleman who sells chiefly to retailers, other merchants, or industrial, institutional, and commercial users, mainly for resale or business use.

WOS

Abbreviation for weeks of supply.

WTD

Abbreviation for week to date.

YTD

Abbreviation for year to date.